

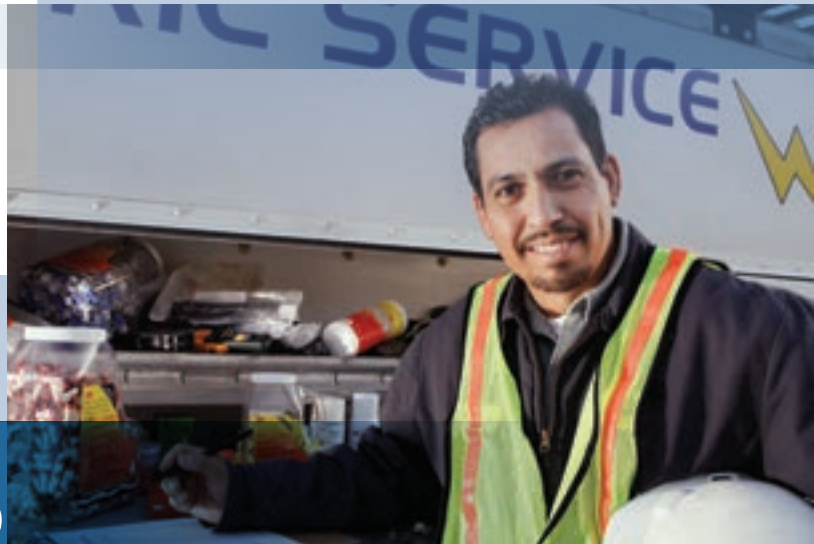


# Electrical Solutions

you can rely on



# 3M Electrical Solutions



“Every company seeks the **keys to innovation**, but few find them. Over the decades, 3M learned how to be **innovative** and today the company uses that skill to great **competitive advantage.**”

*Jerry I. Porras, Co-author, **Built to Last***

You're in a demanding industry. To be successful, you need a wide range of reliable products designed to effectively manage your daily processes. You need a supplier with a solid understanding of your industry and the technology that drives it. Quite simply, you need 3M. The Electrical Markets Division designs and manufactures a comprehensive line of products that can address your diverse applications. Widely recognised for our innovation, quality, reliability and global corporate strength, 3M has the products and services you need and the name you trust.

In your business, power, technology and reliability are essential. 3M delivers that and more. We have the power of a diversified, global manufacturer; a reputation for technical excellence and innovation; and employees committed to delivering quality products and services to you, our valued customer.

We strive to be the chosen supplier, with innovative and effective products and a commitment to high levels of service and support to your business. Our goal is to satisfy your needs through the provision of exceptional products, expertise, and quality and service excellence.

Our global technology, manufacturing and knowledge network allows us to provide superior design, expertise, widespread support and a continuously evolving range of electrical solutions. Although we design and manufacture a comprehensive line of product that can address your diverse applications, we also recognise that many projects and applications require a customised solution to meet your specific needs. 3M offers customised solutions in a number of areas to suit your application.

Please browse through our catalogue and visit our local websites to see how 3M can help you.

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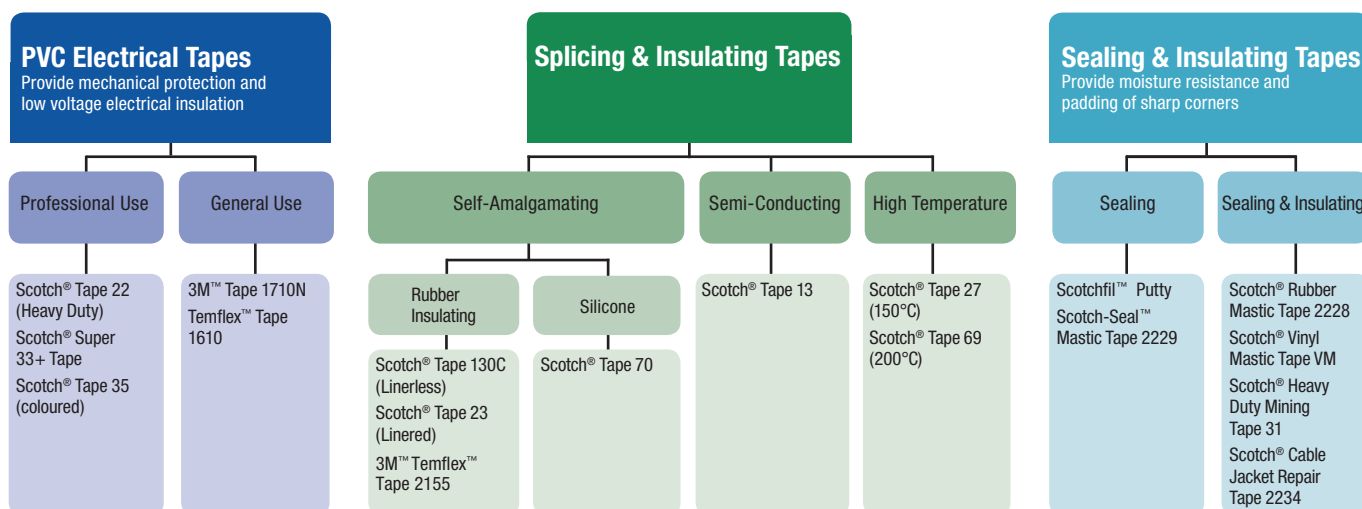
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# 3M™ Electrical Tapes

3M has been developing and manufacturing high performance, easy handling electrical tapes since the 1940s. The 3M Electrical Tapes range includes tapes for low and medium voltage insulating, colour coding, moisture sealing, padding, shaping, protective jacketing, bundling, and harnessing. Additionally, 3M manufactures a variety of tapes for technical applications; semi-conducting tape to reconstruct a medium voltage cable, track resistant tapes for terminations, and fire retardant electric arc proofing tapes to protect cables from arcs and fires from nearby cable failures.



## Taping Tips

To ensure the safest, most reliable use of PVC Electrical Tapes, always:

- Apply tape with enough stretch to conform to the objects you're wrapping. Be sure to let the last 50 mm relax before tabbing it down to prevent unwinding (sometimes called "flagging").
- Wrap an irregular mechanical connector, such as a split bolt, with rubber or mastic tape to pad sharp edges, before overwrapping with vinyl electrical tape.
- Wrap tapered shapes "uphill" – that is, from the smallest to the largest point. This way you always secure the previous layer.
- Always use scissors or a knife to cut tape. If you must tear it by hand, then keep fingers close together when tearing tape. The farther apart they are, the more the tape will stretch before it tears.
- Use the right tape for the right conditions. Vinyl tapes are rated for cold weather application in two classes: 0°C and -18°C. Tapes formulated for high temperature environments are typically rated 80°C or 105°C. Only professional grade tapes should be used on cables rated for less than 0°C and higher than 80°C.



## Wrapping Tips

| Type of Tape                                                                               | Number of Layers/Application Instructions                                                                                                                               |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Vinyl Electrical Tapes</b> - Jacketing and Mechanical Protection                        | Always use a minimum of two half-lapped layers. The last layer should be wrapped in a more relaxed manner - let the last wrap relax to prevent the layer from flagging. |
| <b>Rubber Tapes</b> - Electrical Insulation, Mechanical Padding, Water Sealing and Shaping | Wrap tape tightly to achieve the watertight seal. Rubber tapes are typically overwrapped with vinyl tape.                                                               |
| <b>High Voltage Tapes</b> - Insulating and Semi-conductive Layers                          | Apply outside of roll to the cable, in highly stretched half-lapped layers. Never use a semi-conductive tape as an insulation.                                          |
| <b>Mastic Compounds</b> - Insulating, Mechanical Padding, Moisture Sealing and Shaping     | Mastic compounds are to be overwrapped with vinyl tapes to initiate flow and watertight seal. Do not apply excessive amount of mastic to prevent oozing.                |



## Scotch® Super 33+™ Vinyl Electrical Tape

Scotch® Super 33+™ Vinyl Electrical Tape is a premium grade, 0.18 mm thick, flame retardant, all weather vinyl insulating tape. It is designed to perform continuously between a temperature range of -18 to 105°C. It has excellent resistance to abrasion, moisture, alkalis, acids, corrosion and varying weather conditions (including ultraviolet exposure). The combination of elastic backing and aggressive adhesive provides moisture tight electrical and mechanical protection with minimum bulk. Scotch® Super 33+™ Vinyl Electrical Tape is an Underwriters' Laboratories Listed and Canadian Standards Association Certified "Insulating Tape." Available in custom sizes in addition to standard sizes below.

**Agency Approvals:**  

**Applications:** Primary insulation for splices up to 600 V and 105°C  
Protective jacketing in indoor and outdoor environments



Scotch® Electrical, Industrial & Special Use Tapes

| Product                | 3M Order Code | Colour | Width | Length | Thickness | Dielectric Strength | Breaking Strength | Operating Temperature |
|------------------------|---------------|--------|-------|--------|-----------|---------------------|-------------------|-----------------------|
| Super 33+ 19 mm x 20 m | 80611207012   | Black  | 19 mm | 20 m   | 0.18 mm   | 45 kV/mm            | 2.6 kN/m          | -18 to 105°C          |
| Super 33+ 19 mm x 33 m | 80610138929   | Black  | 19 mm | 33 m   | 0.18 mm   | 45 kV/mm            | 2.6 kN/m          | -18 to 105°C          |
| Super 33+ 25 mm x 33 m | 80014001020   | Black  | 25 mm | 33 m   | 0.18 mm   | 45 kV/mm            | 2.6 kN/m          | -18 to 105°C          |

## Scotch® Vinyl Colour Coding Electrical Tape 35

Scotch® Vinyl Electrical Tape 35 is a 0.18 mm thick PVC colour-coding, flame retardant tape. Outstanding electrical and mechanical properties make this tape excellent for use in phase identification, colour coding of motor leads and piping systems, and for marking safety areas. Scotch® Tape 35 operates over a wide range of temperatures between 0 to 105°C. This tape is available in fade-resistant colours.

**Agency Approvals:**  

**Applications:** Phase identification and marking  
Harnessing  
Insulating splices up to 600 V



| Product   | 3M Order Code | Colour | Width | Length | Thickness | Dielectric Strength | Breaking Strength | Operating Temperature |
|-----------|---------------|--------|-------|--------|-----------|---------------------|-------------------|-----------------------|
| 35 Blue   | 80610833925   | Blue   | 19 mm | 20 m   | 0.18 mm   | 49 kV/mm            | 3.0 kN/m          | 0 to 105°C            |
| 35 Green  | 80610834048   | Green  | 19 mm | 20 m   | 0.18 mm   | 49 kV/mm            | 3.0 kN/m          | 0 to 105°C            |
| 35 Red    | 80610833909   | Red    | 19 mm | 20 m   | 0.18 mm   | 49 kV/mm            | 3.0 kN/m          | 0 to 105°C            |
| 35 White  | 80610833982   | White  | 19 mm | 20 m   | 0.18 mm   | 49 kV/mm            | 3.0 kN/m          | 0 to 105°C            |
| 35 Yellow | 80610833966   | Yellow | 19 mm | 20 m   | 0.18 mm   | 49 kV/mm            | 3.0 kN/m          | 0 to 105°C            |

## Scotch® Heavy Duty Vinyl Electrical Tape 22

Scotch® Heavy Duty Vinyl Electrical Tape 22 is one of 3M's thickest (0.25 mm) premium vinyl electrical tapes. It is designed for insulation applications that require greater mechanical strength and abrasion resistance. Scotch® Tape 22 provides moisture-resistant electrical and mechanical protection with fewer wraps than thinner tapes.

**Agency Approvals:**  

**Applications:** Bus bar insulation  
Cable jacket repair



| Product           | 3M Order Code | Colour | Width | Length | Thickness | Dielectric Strength | Breaking Strength | Operating Temperature |
|-------------------|---------------|--------|-------|--------|-----------|---------------------|-------------------|-----------------------|
| 22 - 19 mm x 33 m | 80012017044   | Black  | 19 mm | 33 m   | 0.25 mm   | 47.2 kV/mm          | 3.5 kN/m          | -10 to 80°C           |
| 22 - 25 mm x 33 m | 80012017051   | Black  | 25 mm | 33 m   | 0.25 mm   | 47.2 kV/mm          | 3.5 kN/m          | -10 to 80°C           |
| 22 - 38 mm x 33 m | 80012017069   | Black  | 38 mm | 33 m   | 0.25 mm   | 47.2 kV/mm          | 3.5 kN/m          | -10 to 80°C           |
| 22 - 50 mm x 33 m | 80012017077   | Black  | 50 mm | 33 m   | 0.25 mm   | 47.2 kV/mm          | 3.5 kN/m          | -10 to 80°C           |

## 3M™ PVC Electrical Tape 1710N

3M PVC Electrical Tape 1710N is a good quality general purpose PVC insulating tape. It has very good resistance to abrasion, moisture, alkalis, acids, copper corrosion and varying weather conditions. It is flame retardant, has a high wet dielectric strength, is conformable, and provides excellent mechanical protection with minimum bulk. This tape is an Underwriters' Laboratories Listed and Canadian Standards Association Certified "Insulating Tape."

**Agency Approvals:**  

**Applications:** Primary electrical insulation for all wire and cable joints rated up to 600 volts and 80°C  
Protective jacketing for cable joints and repairs  
Harnessing of wires and cables  
For indoor or outdoor applications



| Product            | 3M Order Code | Colour              | Width | Length | Thickness | Dielectric Strength | Breaking Strength | Operating Temperature |
|--------------------|---------------|---------------------|-------|--------|-----------|---------------------|-------------------|-----------------------|
| 1710N Black        | XE000724635   | Black               | 18 mm | 20 m   | 0.18 mm   | 39.4 kV/mm          | 2.6 kN/m          | 0 to 80°C             |
| 1710N Blue         | XE000724668   | Blue                | 18 mm | 20 m   | 0.18 mm   | 39.4 kV/mm          | 2.6 kN/m          | 0 to 80°C             |
| 1710N Green        | XE000724676   | Green               | 18 mm | 20 m   | 0.18 mm   | 39.4 kV/mm          | 2.6 kN/m          | 0 to 80°C             |
| 1710N Red          | XE000724650   | Red                 | 18 mm | 20 m   | 0.18 mm   | 39.4 kV/mm          | 2.6 kN/m          | 0 to 80°C             |
| 1710N White        | XE000724643   | White               | 18 mm | 20 m   | 0.18 mm   | 39.4 kV/mm          | 2.6 kN/m          | 0 to 80°C             |
| 1710N Yellow       | XE000724684   | Yellow              | 18 mm | 20 m   | 0.18 mm   | 39.4 kV/mm          | 2.6 kN/m          | 0 to 80°C             |
| 1710N Yellow/Green | XE000724692   | Yellow/Green Stripe | 18 mm | 20 m   | 0.18 mm   | 39.4 kV/mm          | 2.6 kN/m          | 0 to 80°C             |
| 1710N Rainbow NZ*  | XE000724700   | Rainbow NZ          | 18 mm | 20 m   | 0.18 mm   | 39.4 kV/mm          | 2.6 kN/m          | 0 to 80°C             |
| 1710N Rainbow AU** | XE000724718   | Rainbow AU          | 18 mm | 20 m   | 0.18 mm   | 39.4 kV/mm          | 2.6 kN/m          | 0 to 80°C             |

\*Rainbow NZ pack includes 2 rolls each of black, white, red, blue and green

\*\*Rainbow AU pack includes 3 rolls of black, 2 rolls each of white, red and blue, and 1 roll of yellow/green stripe

## 3M™ Temflex™ General Purpose Electrical Tape 1610

3M Temflex Electrical Tape 1610 is a good quality, economical, general purpose vinyl insulating tape. Temflex Tape 1610 is designed for use in phase identification, colour coding of motor leads and piping systems and for marking safety areas. It has very good resistance to abrasion, moisture, alkalis, acids and varying weather conditions (including sunlight).

**Applications:** Phase identification  
Colour coding  
Harnessing



| Product           | 3M Order Code | Colour              | Width | Length | Thickness | Dielectric Strength | Breaking Strength | Operating Temperature |
|-------------------|---------------|---------------------|-------|--------|-----------|---------------------|-------------------|-----------------------|
| 1610 Black        | AE010586764   | Black               | 19 mm | 20 m   | 0.15 mm   | 39.4 kV/mm          | 2.8 kN/m          | 0 to 80°C             |
| 1610 Blue         | AE010586749   | Blue                | 19 mm | 20 m   | 0.15 mm   | 39.4 kV/mm          | 2.8 kN/m          | 0 to 80°C             |
| 1610 Brown        | AE019172450   | Brown               | 19 mm | 20 m   | 0.15 mm   | 39.4 kV/mm          | 2.8 kN/m          | 0 to 80°C             |
| 1610 Green/Yellow | AE010586723   | Green/Yellow Stripe | 19 mm | 20 m   | 0.15 mm   | 39.4 kV/mm          | 2.8 kN/m          | 0 to 80°C             |
| 1610 Grey         | AE019312394   | Grey                | 19 mm | 20 m   | 0.15 mm   | 39.4 kV/mm          | 2.8 kN/m          | 0 to 80°C             |
| 1610 Orange       | AE019172443   | Orange              | 19 mm | 20 m   | 0.15 mm   | 39.4 kV/mm          | 2.8 kN/m          | 0 to 80°C             |
| 1610 Red          | AE010586731   | Red                 | 19 mm | 20 m   | 0.15 mm   | 39.4 kV/mm          | 2.8 kN/m          | 0 to 80°C             |
| 1610 White        | AE010586756   | White               | 19 mm | 20 m   | 0.15 mm   | 39.4 kV/mm          | 2.8 kN/m          | 0 to 80°C             |
| 1610 Rainbow      | AE009162835   | Rainbow             | 19 mm | 20 m   | 0.15 mm   | 39.4 kV/mm          | 2.8 kN/m          | 0 to 80°C             |

\*\*Rainbow pack includes 3 rolls of black, 2 rolls each of white, red and blue, and 1 roll of yellow/green stripe

**3M™ Scotchkote™ Electrical Coating** provides vinyl tapes with an extra oil, moisture and corrosion resistant layer of flexible coating for problem areas.  
See page 30 for more details.



### Scotch® Rubber Splicing Tape 23

Scotch® Rubber Splicing Tape 23 is a premium, highly conformable, self-fusing Ethylene Propylene Rubber (EPR), high voltage insulating tape. Scotch® Tape 23 has a "snakeskin" liner that is easily removed as the tape is applied. This product can be used for low and high voltage (through 69 kV) applications.

**Applications:** Primary electrical insulation for splicing all solid dielectric cables through 69 kV  
Moisture sealing electrical connections  
Jacketing on high voltage splices and terminations



| Product                | 3M Order Code | Colour | Width | Length | Thickness | Dielectric Strength | Elongation | Breaking Strength | Operating Temperature | Emergency Operating Temperature |
|------------------------|---------------|--------|-------|--------|-----------|---------------------|------------|-------------------|-----------------------|---------------------------------|
| 23 - 19 mm x 9 m       | HT002007413   | Black  | 19 mm | 9 m    | 0.76 mm   | 31.5 kV/mm          | 1000%      | 1.4 kN/m          | Up to 90°C            | 130°C                           |
| 23 - 19 mm x 9 m Bulk* | HT002007330   | Black  | 19 mm | 9 m    | 0.76 mm   | 31.5 kV/mm          | 1000%      | 1.4 kN/m          | Up to 90°C            | 130°C                           |
| 23 - 25 mm x 9 m       | HT002001283   | Black  | 25 mm | 9 m    | 0.76 mm   | 31.5 kV/mm          | 1000%      | 1.4 kN/m          | Up to 90°C            | 130°C                           |
| 23 - 38 mm x 9 m       | HT002001275   | Black  | 38 mm | 9 m    | 0.76 mm   | 31.5 kV/mm          | 1000%      | 1.4 kN/m          | Up to 90°C            | 130°C                           |
| 23 - 50 mm x 9 m       | HC000599767   | Black  | 50 mm | 9 m    | 0.76 mm   | 31.5 kV/mm          | 1000%      | 1.4 kN/m          | Up to 90°C            | 130°C                           |

\*Bulk pack is 90 rolls per carton, each roll shrink wrapped

### Scotch® Linerless Rubber Splicing Tape 130C

Scotch® Linerless Rubber Splicing Tape 130C is a premium, highly conformable, linerless Ethylene Propylene Rubber (EPR), high voltage insulating tape that provides excellent thermal dissipation of splice heat. Scotch® Splicing Tape 130C meets industry specifications and has excellent physical and electrical properties, which helps provide immediate moisture seal and void free buildups. Scotch® Splicing Tape 130C is rated up to 90°C continuous operating temperatures and short term 130°C overload service. This product can be used for low and high voltage (through 69 kV) applications. This tape should be applied like any rubber tape - that is, the side of the tape wrapped inside the roll should be applied outside on the splice (tacky side up). This will help prevent the roll from getting progressively further away from the work area.

**Applications:** Primary electrical insulation for splicing all solid dielectric cables through 69 kV  
Moisture sealing electrical connections  
Jacket repairs



| Product            | 3M Order Code | Colour | Width | Length | Thickness | Dielectric Strength | Elongation | Breaking Strength | Operating Temperature | Emergency Operating Temperature |
|--------------------|---------------|--------|-------|--------|-----------|---------------------|------------|-------------------|-----------------------|---------------------------------|
| 130C - 19 mm x 9 m | 80610833404   | Black  | 19 mm | 9 m    | 0.76 mm   | 29.5 kV/mm          | 850%       | 1.3 kN/m          | Up to 90°C            | 130°C                           |
| 130C - 25 mm x 9 m | 80610833750   | Black  | 25 mm | 9 m    | 0.76 mm   | 29.5 kV/mm          | 850%       | 1.3 kN/m          | Up to 90°C            | 130°C                           |
| 130C - 38 mm x 9 m | 80610833412   | Black  | 38 mm | 9 m    | 0.76 mm   | 29.5 kV/mm          | 850%       | 1.3 kN/m          | Up to 90°C            | 130°C                           |

### 3M™ Temflex™ Rubber Splicing Tape 2155

3M™ Temflex™ Rubber Splicing Tape 2155 is a conformable self-fusing rubber electrical insulating tape. Temflex Tape 2155 is compatible with solid dielectric cable insulations. Flexible over a wide temperature range, it is Underwriters Laboratories (UL) Listed for use up to 600 volts.

**Agency Approvals:** 

**Applications:** Low voltage electrical insulating up to 600 V  
Moisture sealing

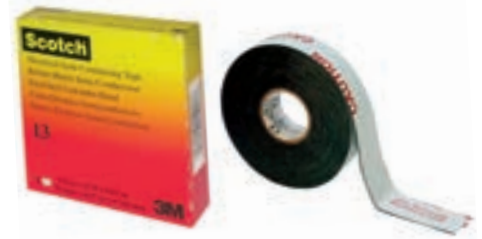


| Product              | 3M Order Code | Colour | Width | Length | Thickness | Dielectric Strength | Elongation | Breaking Strength | Operating Temperature |
|----------------------|---------------|--------|-------|--------|-----------|---------------------|------------|-------------------|-----------------------|
| 2155 - 19 mm x 6.7 m | HC000592382   | Black  | 19 mm | 6.7 m  | 0.76 mm   | 23.6 kV/mm          | 700%       | 1.57 kN/m         | Up to 80°C            |

### Scotch® Electrical Semi-Conducting Tape 13

Scotch® Electrical Semi-Conducting Tape 13 is a highly conformable, lined, semi-conducting Ethylene Propylene Rubber (EPR) based, high voltage splicing tape. Scotch® Tape 13 elongates easily to conform to irregular shapes and retains its conductivity when stretched.

**Applications:** Provides cable shield continuation



| Product            | 3M Order Code | Colour | Width | Length | Thickness | Elongation | Breaking Strength |
|--------------------|---------------|--------|-------|--------|-----------|------------|-------------------|
| 13 - 19 mm x 4.5 m | HT002000327   | Black  | 19 mm | 4.5 m  | 0.76 mm   | 800%       | 1.0 kN/m          |

### Scotch® Self-Fusing Silicone Rubber Electrical Tape 70

Scotch® Self-Fusing Silicone Rubber Electrical Tape 70 is a high temperature, arc and track resistant tape composed of self-fusing, inorganic silicone rubber with an easy-tear and easy-strip liner. It has excellent UV and ozone resistance and is workable at extremely low temperatures. Scotch® Self-Fusing Silicone Rubber Electrical Tape 70 can be used as base tape layer to enable clean re-entry of connections. Meets the requirements of Mil A-A-59163 Class I, Type I.

**Applications:** Protects and overlaps high voltage cable terminations and serves as base layer to provide clean re-entry into connections  
Protective overwrap for terminating high voltage cables



| Product          | 3M Order Code | Colour | Width | Length | Thickness | Elongation | Dielectric Strength | Breaking Strength | Operating Temperature |
|------------------|---------------|--------|-------|--------|-----------|------------|---------------------|-------------------|-----------------------|
| 70 - 25 mm x 9 m | 80611438617   | Grey   | 25 mm | 9 m    | 0.3 mm    | 450%       | 34 kV/mm            | 2.1 kN/m          | Up to 180°C           |

### Scotch® Fire-Retardant and Electric Arc Proofing Tape 77

Scotch® Fire and Electric Arc Proofing Tape 77 is a premium non-adhesive tape designed to protect most types of electrical cables when exposed to failures in an adjacent cable. Its specially formulated material expands in fire to form a thick char buildup between the flame and the cable. The resulting firewall acts as a heat shield and flame barrier, thus protecting the wrapped cables and accessories.

**Applications:** Protects cable until limiting devices can interrupt faulted current  
Use on high-energy cables that are within 457 mm of other high energy cables



| Product          | 3M Order Code | Colour | Width | Length | Thickness | Dielectric Strength | Breaking Strength |
|------------------|---------------|--------|-------|--------|-----------|---------------------|-------------------|
| 77 - 38 mm x 6 m | 80611605975   | Black  | 38 mm | 6 m    | 0.76 mm   | 19.7 kV/mm          | 6.3 kN/m          |

### Scotch® Varnished Cambric Tape 2510

Scotch® Varnished Cambric Tape 2510 is made from straight-cut woven cotton cambric fabric. The fabric is oil primed and coated with a high grade yellow electrical insulating varnish. Varnished cambric tapes are flexible, electrically insulating and moisture resistant with a smooth finish. Scotch® Tape 2510 tape is yellow, non-adhesive coated and 0.18 mm thick, providing an excellent dielectric strength with high puncture and cut-through resistance. Its electrical properties are stable up to 105°C.

**Applications:** Insulation of bus bars, motor leads (for re-entry), service drop connectors



| Product             | 3M Order Code | Colour | Width | Length | Thickness | Dielectric Strength | Breaking Strength | Operating Temperature |
|---------------------|---------------|--------|-------|--------|-----------|---------------------|-------------------|-----------------------|
| 2510 - 25 mm x 33 m | 80100220054   | Yellow | 25 mm | 33 m   | 0.18 mm   | 31.4 kV/mm          | 8.8 kN/m          | Up to 105°C           |
| 2510 - 50 mm x 33 m | 80100220096   | Yellow | 50 mm | 33 m   | 0.18 mm   | 31.4 kV/mm          | 8.8 kN/m          | Up to 105°C           |

### Scotch® Electrical Shielding Tape 24

Scotch® Electrical Shielding Tape 24 is an all-metal, flat, tinned copper open-weave shielding mesh that is compatible with power cable insulations and all high voltage splicing and terminating materials. Scotch® Electrical Shielding Tape 24 elongates easily to conform and is temperature stable.

**Note:** Scotch® Electrical Shielding Tape 24 should not be used as a ground strap or jumper wire. Its ampacity is not great enough to carry large fault currents. For ground strap applications please refer to Scotch® Electrical Grounding Braid 25.

**Applications:** Continuous electrostatic shielding across splices



| Product            | 3M Order Code | Width | Length | Thickness | Breaking Strength |
|--------------------|---------------|-------|--------|-----------|-------------------|
| 24 - 25 mm x 4.5 m | 80012024016   | 25 mm | 4.5 m  | 0.4 mm    | 3.8 kN/m          |

### Scotch® Electrical Grounding Braid 25

Scotch® Electrical Grounding Braid 25 is a flat, all-metal woven electrical grounding braid that is compatible with power cable insulations and high voltage splicing and terminating materials. The Scotch® Electrical Grounding Braid 25 is conformable and temperature stable, and has a current carrying capacity approximately that of 12 mm² wire.

**Applications:** Conformable ground braid for splices and terminations



| Product              | 3M Order Code | Width   | Length | Thickness |
|----------------------|---------------|---------|--------|-----------|
| 25 - 12.7 mm x 4.5 m | 80610000210   | 12.7 mm | 4.5 m  | 2 mm      |

### Scotch® Glass Cloth Electrical Tapes 27

Scotch® Glass Cloth Electrical Tape 27 is a 0.18 mm thick woven insulating glass cloth tape with pressure sensitive rubber thermosetting adhesive. This tape is designed to operate in 600 volt dry applications requiring high mechanical strength and resistance to high temperatures. The glass cloth is specially treated and prepared to provide corrosion protection.

**Agency Approvals:**  

**Applications:** Heat stable insulation for furnace and oven controls, motor leads and switches  
Provides corrosion free protection



| Product             | 3M Order Code | Colour | Width   | Length | Thickness | Breaking Strength | Operating Temperature |
|---------------------|---------------|--------|---------|--------|-----------|-------------------|-----------------------|
| 27 - 12.7 mm x 20 m | 80012020352   | White  | 12.7 mm | 20 m   | 0.18 mm   | 26 kN/m           | Up to 150°C           |
| 27 - 19 mm x 20 m   | 80012020360   | White  | 19 mm   | 20 m   | 0.18 mm   | 26 kN/m           | Up to 150°C           |
| 27 - 25 mm x 55 m   | 80012020139   | White  | 25 mm   | 55 m   | 0.18 mm   | 26 kN/m           | Up to 150°C           |

### Scotch® Glass Cloth Electrical Tape 69

Scotch® Glass Cloth Electrical Tape 69 is a white glass cloth tape with a high temperature thermosetting silicone adhesive. The thermosetting adhesive provides an increased bond once applied in areas of high ambient temperatures. Scotch® Tape 69 is UL recognised for continuous use up to 200°C. It conforms to Military Specification No. MIL-I-19166C.

**Applications:** Heat stable insulation for furnace and oven controls, motor leads and switches  
Replaces Scotch® Glass Cloth Electrical Tape 27 in locations where a higher temperature tape is needed



| Product             | 3M Order Code | Colour | Width   | Length | Thickness | Breaking Strength | Operating Temperature |
|---------------------|---------------|--------|---------|--------|-----------|-------------------|-----------------------|
| 69 - 12.7 mm x 33 m | 80018002420   | White  | 12.7 mm | 33 m   | 0.18 mm   | 31.5 kN/m         | Up to 200°C           |
| 69 - 19 mm x 33 m   | 80012040046   | White  | 19 mm   | 33 m   | 0.18 mm   | 31.5 kN/m         | Up to 200°C           |
| 69 - 25 mm x 33 m   | 80012040053   | White  | 25 mm   | 33 m   | 0.18 mm   | 31.5 kN/m         | Up to 200°C           |



### Scotch® Rubber Mastic Tape 2228

Scotch® Rubber Mastic Tape 2228 is a conformable self-fusing rubber electrical insulating and sealing tape. Scotch Rubber Mastic 2228 consists of ethylene propylene rubber (EPR) backing coated with a strong, temperature-stable mastic adhesive. The tape is 1.65 mm thick for quick application build-up. It is designed for electrical insulating and moisture sealing applications.

**Applications:** Primary electrical insulation for joints up to 1000 V  
 Insulate, pad and seal bus bar connections rated up to 35 kV  
 Environmental and moisture seal



| Product            | 3M Order Code | Colour | Width | Length | Thickness | Dielectric Strength | Elongation | Breaking Strength | Maximum Operating Temperature |
|--------------------|---------------|--------|-------|--------|-----------|---------------------|------------|-------------------|-------------------------------|
| 2228 - 25 mm x 3 m | 80610737662   | Black  | 25 mm | 3 m    | 1.65 mm   | 19.7 kV/mm          | 1000%      | 1.7 kN/m          | 90°C                          |
| 2228 - 50 mm x 3 m | 80610322945   | Black  | 50 mm | 3 m    | 1.65 mm   | 19.7 kV/mm          | 1000%      | 1.7 kN/m          | 90°C                          |

### 3M™ Scotch-Seal™ Mastic Tape Compound 2229

Scotch-Seal Mastic Tape Compound 2229 is designed for quick and easy insulating, padding, shaping and sealing of electrical connections. It is a conformable, durable, tacky mastic with an easy release liner for easy application over irregular surfaces and provides excellent moisture resistance. It features excellent self-healing characteristics after being punctured or cut.

**Applications:** Sealing high voltage cables and accessories  
 Environmental and moisture seal



| Product            | 3M Order Code | Colour | Width | Length | Thickness | Dielectric Strength | Maximum Operating Temperature |
|--------------------|---------------|--------|-------|--------|-----------|---------------------|-------------------------------|
| 2229 - 25 mm x 3 m | 80610732911   | Black  | 25 mm | 3 m    | 3.2 mm    | 14.9 kV/mm          | 90°C                          |
| 2229 - 95 mm x 3 m | 80610594410   | Black  | 95 mm | 3 m    | 3.2 mm    | 14.9 kV/mm          | 90°C                          |

### 3M™ Scotchfil™ Electrical Insulation Putty

Use as a build-up compound on highly irregular surfaces such as fittings and valves, providing a smooth, waterproof taping surface. Scotchfil Electrical Insulation Putty is soft and pliable - simply press putty into place on irregular surfaces, mould with finger pressure and overtape using standard methods.

**Applications:** Insulation of connections up to 600 V  
 Smoothing of bus bar irregularities  
 Shaping and padding for split bolt connections



| Product         | 3M Order Code | Colour | Width | Length | Thickness | Elongation | Dielectric Strength | Operating Temperature |
|-----------------|---------------|--------|-------|--------|-----------|------------|---------------------|-----------------------|
| Scotchfil Putty | 80610833727   | Black  | 38 mm | 1.5 m  | 3.2 mm    | 1000%      | 22.6 kV/mm          | 0 to 80°C             |

#### For best mechanical and UV protection, overwrap

- Scotch® Rubber Mastic Tape 2228
  - 3M™ Scotch-Seal™ Mastic Tape Compound 2229
  - 3M Scotchfil™ Electrical Insulation Putty
- with Scotch® Super 33+™ Vinyl Electrical Tape (see page 2)



### Scotch® Vinyl Mastic Tape VM

Two tapes in one - vinyl and mastic, designed to provide low voltage insulation, seal out moisture and protect against corrosion. Scotch® Vinyl Mastic (VM) Tape seals out moisture and protects against corrosion in one step, without the need for heating tools or using other tapes.

**Applications:**

- Cable sheath repair
- Splice case and load case protection
- Auxiliary sleeve and cable reel end sealing
- Drop wire insulating
- Conduit repair and protection of CATV components



| Product           | 3M Order Code | Colour | Width  | Length | Thickness | Dielectric Strength |
|-------------------|---------------|--------|--------|--------|-----------|---------------------|
| VM - 38 mm x 6 m  | 80050045014   | Black  | 38 mm  | 6 m    | 1.1 mm    | 11.8 kV/mm          |
| VM - 102 mm x 3 m | 80050045022   | Black  | 102 mm | 3 m    | 1.1 mm    | 11.8 kV/mm          |
| VM - 152 mm x 3 m | 80050045030   | Black  | 152 mm | 3 m    | 1.1 mm    | 11.8 kV/mm          |

### Scotch® Heavy Duty Mining Tape 31

Scotch® Heavy Duty Mining Tape 31 has a tough, abrasion resistant backing for jacket repair on mining cables. Mining cables are exposed to extremely abrasive environments which often results in the damage of their original jackets. MSHA-approved Scotch® Heavy Duty Mining Tape 31 offers an innovative solution for cable repair. With its abrasion-resistant properties and flame retardant mastic, Scotch® Heavy Duty Mining Tape 31 applies easily and remains flexible while maintaining a strong moisture seal. The tape is printed with the MSHA logo/approval number.

**Applications:**

- Jacket repair of mining cables
- Splicing of mine conduit



| Product            | 3M Order Code | Colour | Width | Length | Thickness | Elongation | Dielectric Strength | Breaking Strength | Operating Temperature |
|--------------------|---------------|--------|-------|--------|-----------|------------|---------------------|-------------------|-----------------------|
| 31 - 50 mm x 2.6 m | 80611434004   | Black  | 50 mm | 2.6 m  | 1.5 mm    | 500%       | 15.7 kV/mm          | 27.3 kN/m         | -30 to 105°C          |

### Scotch® Cable Jacket Repair Tape 2234

Scotch® Cable Jacket Repair Tape 2234 has a tough abrasion-resistant backing for jacket repair on industrial cables, such as flexible portable power cables, draglines, diesel locomotive cable, welding and shipboard cables. Due to abrasive dragging and reeling of these flexible cables, the original jacketing gets damaged often and needs to be repaired. Scotch® Cable Jacket Repair Tape 2234 is flexible and the self-healing property of the mastic helps keep out moisture.

**Agency Approvals:** 

**Applications:** Jacket repair on electrical cables in extremely harsh environments



| Product              | 3M Order Code | Colour | Width | Length | Thickness | Elongation | Dielectric Strength | Breaking Strength | Operating Temperature |
|----------------------|---------------|--------|-------|--------|-----------|------------|---------------------|-------------------|-----------------------|
| 2234 - 50 mm x 1.8 m | 80611440936   | Black  | 50 mm | 1.8 m  | 1.5 mm    | 500%       | 15.7 kV/mm          | 27.3 kN/m         | -30 to 105°C          |

### 3M™ Performance Plus Duct Tape 8979

3M Performance Plus Duct Tape 8979 has a unique tape construction that allows for both permanent and temporary applications whether indoors or outdoors. It is removable with little or no adhesive residue from most opaque surfaces up to six months after application. The tape is conformable, abrasion resistant, and water resistant. The polyethylene film and cloth scrim with rubber adhesive construction provides straight, easy tear with high tensile strength for some of the most demanding applications.

Agency Approvals: 

Applications: Cap pipe ends and conduit stored outside  
Hanging, sealing poly drapes



| Product                     | 3M Order Code | Colour     | Width | Length | Thickness | Elongation | Breaking Strength | Operating Temperature | Adhesion to Steel |
|-----------------------------|---------------|------------|-------|--------|-----------|------------|-------------------|-----------------------|-------------------|
| 8979 - Blue - 48 mm x 23 m  | 70006412756   | Slate Blue | 48 mm | 23 m   | 0.32 mm   | 21%        | 6.3 kN/m          | Up to 93°C            | 57 N/100 mm       |
| 8979 - Blue - 48 mm x 55 m  | 70006413457   | Slate Blue | 48 mm | 55 m   | 0.32 mm   | 21%        | 6.3 kN/m          | Up to 93°C            | 57 N/100 mm       |
| 8979 - Olive - 48 mm x 55 m | 70006413499   | Olive      | 48 mm | 55 m   | 0.32 mm   | 21%        | 6.3 kN/m          | Up to 93°C            | 57 N/100 mm       |
| 8979 - Black - 48 mm x 55 m | 70006413507   | Black      | 48 mm | 55 m   | 0.32 mm   | 21%        | 6.3 kN/m          | Up to 93°C            | 57 N/100 mm       |
| 8979 - Black - 72 mm x 55 m | 70006704590   | Black      | 72 mm | 55 m   | 0.32 mm   | 21%        | 6.3 kN/m          | Up to 93°C            | 57 N/100 mm       |

### 3M™ Duct Tape 3939

3M Duct Tape 3939 is composed of waterproof polyethylene film over cloth scrim backing with a rubber adhesive used for demanding duct tape applications. Meets UL 723.

Agency Approvals: 

Applications: Sealing heating ventilation and air conditioning ducts



| Product             | 3M Order Code | Colour | Width | Length | Thickness | Elongation | Breaking Strength | Operating Temperature | Adhesion to Steel |
|---------------------|---------------|--------|-------|--------|-----------|------------|-------------------|-----------------------|-------------------|
| 3939 - 48 mm x 55 m | 70006250131   | Silver | 48 mm | 55 m   | 0.23 mm   | 17%        | 4.4 kN/m          | Up to 93°C            | 60 N/100 mm       |

### 3M™ Utility Duct Tape 1910C

Polyethylene coated cloth backing with tacky rubber adhesive for sealing, holding, bundling. Available in black or silver.

Applications: Sealing, holding, bundling



| Product                       | 3M Order Code | Colour | Width | Length | Thickness | Breaking Strength | Operating Temperature | Adhesion to Steel |
|-------------------------------|---------------|--------|-------|--------|-----------|-------------------|-----------------------|-------------------|
| 1910C - Black - 48 mm x 10 m  | XT000706728   | Black  | 48 mm | 10 m   | 0.15 mm   | 2.0 kN/m          | Up to 50°C            | 106 N/100mm       |
| 1910C - Black - 48 mm x 50 m  | XT000706744   | Black  | 48 mm | 50 m   | 0.15 mm   | 2.0 kN/m          | Up to 50°C            | 106 N/100mm       |
| 1910C - Silver - 48 mm x 10 m | XT000706736   | Silver | 48 mm | 10 m   | 0.15 mm   | 2.0 kN/m          | Up to 50°C            | 106 N/100mm       |
| 1910C - Silver - 48 mm x 50 m | XT000706751   | Silver | 48 mm | 50 m   | 0.15 mm   | 2.0 kN/m          | Up to 50°C            | 106 N/100mm       |

### Scotch® 1352B & Tartan™ 2352 PVC Sealing & Joining Tapes

Scotch® 1352B and Tartan™ 2352 Tapes are stabilised and plasticised PVC film coated tapes suitable for most light industrial sealing and joining applications.

Applications: Joining polythene sheeting  
Sealing air ducts  
Temporary holding



| Product                   | 3M Order Code | Colour | Width | Length | Thickness |
|---------------------------|---------------|--------|-------|--------|-----------|
| 1352B (NZ) - 50 mm x 30 m | XT000732013   | Black  | 50 mm | 30 m   | 0.15 mm   |
| 1352B (AU) - 50 mm x 30 m | AT010575275   | Black  | 50 mm | 30 m   | 0.15 mm   |
| 2352 - 50 mm x 30 m       | AT010575283   | Silver | 50 mm | 30 m   | 0.13 mm   |

### 3M™ Temflex™ Cotton Friction Tape 1755

3M Temflex Cotton Friction Tape 1755 is a high-grade, black friction tape designed to provide mechanical protection against abrasion and cut-through for cable, wire splices and connections insulated with rubber electrical tape. The 0.33 mm thick tape is composed of a high quality cotton fabric, coated on both sides with an electrical grade, solvent free, rubber adhesive. Friction Tape 1755 has high break strength and low stretch, making it ideal as a heavy duty binding and harnessing tape.

**Applications:** Abrasion protection for splices and connections



| Product               | 3M Order Code | Colour | Width | Length | Thickness | Breaking Strength | Operating Temperature |
|-----------------------|---------------|--------|-------|--------|-----------|-------------------|-----------------------|
| 1755 - 19 mm x 18.3 m | 80611437734   | Black  | 19 mm | 18.3 m | 0.33 mm   | 8.4 kN/m          | Up to 80°C            |

### 3M™ Scotchrap™ Corrosion Protection Tape 50

3M Scotchrap Corrosion Protection Tape 50 is a tough PVC tape with high tack adhesive that resists corrosion of metal piping systems above and below ground. It applies over a wide temperature range and is resistant to impact, abrasion and punctures. Coat the pipe or other metal surfaces with 3M Scotchrap Pipe Primer before wrapping with Scotchrap Tape 50.

**Applications:** Protects pipe, conduits and fittings from corrosion



| Product            | 3M Order Code | Colour | Width  | Length | Thickness | Breaking Strength | Installation Temperature Range | Service Temperature Range |
|--------------------|---------------|--------|--------|--------|-----------|-------------------|--------------------------------|---------------------------|
| 50 - 25 mm x 30 m  | 80008006621   | Black  | 25 mm  | 30 m   | 0.25 mm   | 3.5 kN/m          | -12 to 65°C                    | -48 to 80°C               |
| 50 - 50 mm x 30 m  | 80008006639   | Black  | 50 mm  | 30 m   | 0.25 mm   | 3.5 kN/m          | -12 to 65°C                    | -48 to 80°C               |
| 50 - 100 mm x 30 m | 80008006647   | Black  | 100 mm | 30 m   | 0.25 mm   | 3.5 kN/m          | -12 to 65°C                    | -48 to 80°C               |
| 50 - 150 mm x 30 m | 80008006654   | Black  | 150 mm | 30 m   | 0.25 mm   | 3.5 kN/m          | -12 to 65°C                    | -48 to 80°C               |

### 3M™ Scotchrap™ Pipe Primer

A quick-drying, non-sag rubber based primer that fills metal surface pits and irregularities, preparing the surface for tape application. Compatible with the special adhesive on 3M Scotchrap Tapes, it enhances adhesion. To be used with 3M Scotchrap Corrosion Protection Tape 50.

**Applications:** Used with Scotchrap Corrosion Protection Tape 50 to resist corrosion of above and below ground metal piping systems

| Product     | 3M Order Code | Size  |
|-------------|---------------|-------|
| Pipe Primer | 80610925739   | 3.8 L |



### 3M™ Clear Plastic Sealing and Compression Tape E-Z Wrap 2183

A tough, thin elastic vinyl material which sticks to itself when wrapped in layers. Forms a compact, durable, flexible, moisture-proof covering.

**Applications:** Wrap up and protect bundles of copper pairs in communications cable joints  
Assists in easier re-entry where re-enterable sealants are used  
Recommended for use in foam sealed and better buried compression closures

| Product              | 3M Order Code | Width  | Length |
|----------------------|---------------|--------|--------|
| 2183 - 100 mm x 30 m | 80610759559   | 100 mm | 30 m   |



## Special Use Tapes

### 3M™ Antistatic Utility Tape 40PR

General use utility tape, clear polyester film backing, anti-static conductive polymer adhesive. With preprinted static symbol. Helps prevent electrostatic discharge (ESD) damage to sensitive electronic components in manufacturing environments.

**Applications:** For use in static sensitive areas  
Closing static shielding bags



| Product              | 3M Order Code | Colour              | Width* | Length* | Thickness | Breaking Strength | Adhesion to Steel | Static Charge Generation at 50% RH |                             |
|----------------------|---------------|---------------------|--------|---------|-----------|-------------------|-------------------|------------------------------------|-----------------------------|
|                      |               |                     |        |         |           |                   |                   | Remove from Roll                   | Remove from Stainless Steel |
| 40PR - 6.4 mm x 66 m | 80610872592   | Clear with printing | 6.4 mm | 66 m    | 0.056 mm  | 3.5 kN/m          | 17 N/100mm        | 5 V                                | 5 V                         |
| 40PR - 19 mm x 66 m  | 80610872642   | Clear with printing | 19 mm  | 66 m    | 0.056 mm  | 3.5 kN/m          | 17 N/100mm        | 5 V                                | 5 V                         |

\*Also available from 3M converters in other standard and custom sizes.

### Scotch® Pipe Thread Sealant Tape 48

A high temperature-stable (PTFE) thread sealant that provides a leak-proof seal.



| Product             | 3M Order Code | Colour | Width   | Length | Thickness | Operating Temperature |
|---------------------|---------------|--------|---------|--------|-----------|-----------------------|
| 48 - 12.7 mm x 33 m | 80018003915   | White  | 12.7 mm | 33 m   | 0.076 mm  | -268 to 260°C         |

### 3M™ Armorcast Structural Material

3M Armorcast Structural Material (roll format) is packed dry in a sealed foil envelope and is a flexible fiberglass knit fabric strip that has been saturated with a curable black urethane resin syrup that starts to cure when water is added. Once wet, the fiber strip becomes tacky and sticks to itself, so it wraps easily around almost any shape or size. Armorcast Structural Material is resistant to moisture, fungus, acid, alkali, ozone, sunlight, gasoline and high temperatures. It combines long life and very little maintenance.

**Applications:** Creates maintenance free mechanical protection for power cable splices  
For strengthening old cable, splices and auxiliary seals  
For sheath repairs as well as repairs to lead auxiliaries



| Product             | 3M Order Code | Width  | Length |
|---------------------|---------------|--------|--------|
| 4560 - 100 mm x 3 m | YP206100015   | 100 mm | 3 m    |

## 3M™ Insulating and Conductive Tapes

3M Insulating and Conductive Tapes are made from a broad range of backings and adhesives to meet the uniquely demanding requirements of different applications and environments. Extensive quality control and testing, combined with accurate process controls, are just part of the reason that 3M consistently provides high quality products.

These tapes are typically available from 3M converters in standard and custom sizes. Some tapes are available in slit sizes from 3M. Please contact your 3M representative for more details.



| Product                                               | Product Description                                            | Features                                                                                 | Total Thickness | Operating Temperature | UL Flame retardant | Dielectric Breakdown | Insulation Resistance | Breaking Strength | Adhesion to Steel | Agency Approvals                                                                    |                                                                                     |
|-------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------|-----------------------|--------------------|----------------------|-----------------------|-------------------|-------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                       |                                                                |                                                                                          |                 |                       |                    |                      |                       |                   |                   |  |  |
| Glass Cloth Electrical Tapes                          |                                                                |                                                                                          |                 |                       |                    |                      |                       |                   |                   |                                                                                     |                                                                                     |
| 27                                                    | Scotch® Glass Cloth Electrical Tape 27                         | High-performance glass cloth tape that is tough and conformable. White                   | 0.18 mm         | 150°C                 |                    | 3000 V               | 48 x 10³ MΩ           | 25.2 kN/m         | 33 N/100 mm       | ✓                                                                                   | ✓                                                                                   |
| 69                                                    | Scotch® Glass Cloth Electrical Tape 69                         | High-temperature (200°C) glass cloth tape. UL 510 flame retardant. Printable. White      | 0.18 mm         | 200°C                 | Yes                | 3000 V               | 48 x 10³ MΩ           | 31.4 kN/m         | 44 N/100 mm       | ✓                                                                                   | ✓                                                                                   |
| Filament Reinforced Paper Electrical Tape             |                                                                |                                                                                          |                 |                       |                    |                      |                       |                   |                   |                                                                                     |                                                                                     |
| 1076                                                  | 3M™ Paper Backed Filament Electrical Filament Tape 1076        | Paper/glass filament backing designed for oil-filled transformer applications            | 0.25mm          | 105°C                 |                    | 3500 V               |                       | 48.1 kN/m         | 44 N/100 mm       |                                                                                     |                                                                                     |
| Glass Fibre Reinforced Polyester Film Electrical Tape |                                                                |                                                                                          |                 |                       |                    |                      |                       |                   |                   |                                                                                     |                                                                                     |
| 1039                                                  | 3M™ Glass Fibre Reinforced Polyester Film Electrical Tape 1039 | Solvent-resistant filament tape with pressure sensitive acrylic adhesive                 | 0.18 mm         | 130°C                 |                    | 5500 V               | 1 x 10⁵ MΩ            | 48.1 kN/m         | 38 N/100 mm       | ✓                                                                                   |                                                                                     |
| Acetate Cloth Electrical Tape                         |                                                                |                                                                                          |                 |                       |                    |                      |                       |                   |                   |                                                                                     |                                                                                     |
| 28                                                    | 3M™ Acetate Cloth Electrical Tape 28                           | Thermosetting Rubber adhesive. Printable. White                                          | 0.20 mm         | 105°C                 |                    | 2500 V               | 20 x 10³ MΩ           | 7 kN/m            | 44 N/100 mm       |                                                                                     |                                                                                     |
| Crepe Paper Electrical Tape                           |                                                                |                                                                                          |                 |                       |                    |                      |                       |                   |                   |                                                                                     |                                                                                     |
| 16                                                    | 3M™ Crepe Paper Electrical Tape 16                             | Paper tape with aggressive rubber resin adhesive. Coil cover on bobbin-wound coils       | 0.23 mm         | 105°C                 |                    | 2500 V               | >1 x 10⁶ MΩ           | 4.4 kN/m          | 55 N/100 mm       |                                                                                     |                                                                                     |
| Epoxy Film Electrical Tape                            |                                                                |                                                                                          |                 |                       |                    |                      |                       |                   |                   |                                                                                     |                                                                                     |
| Super 20                                              | 3M™ Super 20 Restricting Tape White                            | Thick double sided epoxy for higher temperature and dielectric                           | 0.13 mm         | 155°C                 | Yes                | 8000 V               | >1 x 10⁶ MΩ           | 7.9 kN/m          | 33 N/100 mm       | ✓                                                                                   | ✓                                                                                   |
| Polyester Film Electrical Tape                        |                                                                |                                                                                          |                 |                       |                    |                      |                       |                   |                   |                                                                                     |                                                                                     |
| 5                                                     | 3M™ Polyester Film Electrical Tape 5                           | General purpose polyester tape with acrylic adhesive. 0.025 mm film. Clear               | 0.06 mm         | 130°C                 |                    | 5500 V               | >1 x 10⁶ MΩ           | 4.4 kN/m          | 38 N/100 mm       | ✓                                                                                   | ✓                                                                                   |
| 1318-1                                                | 3M™ Polyester Film Electrical Tape 1318-1                      | Acrylic adhesive. 0.025 mm film. Printable. Black or White                               | 0.06 mm         | 130°C                 |                    | 5500 V               | >1 x 10⁶ MΩ           | 4.4 kN/m          | 33 N/100 mm       | ✓                                                                                   | ✓                                                                                   |
| 1350F-1                                               | 3M™ Polyester Film Electrical Tape 1350F-1                     | Acrylic adhesive. 0.025 mm film. UL510 flame retardant. Yellow                           | 0.06 mm         | 130°C                 | Yes                | 5500 V               | >1 x 10⁶ MΩ           | 4.4 kN/m          | 33 N/100 mm       | ✓                                                                                   | ✓                                                                                   |
| 56                                                    | 3M™ Polyester Film Electrical Tape 56                          | General purpose polyester tape with thermosetting rubber adhesive. 0.025 mm film. Yellow | 0.06 mm         | 130°C                 |                    | 5500 V               | >1 x 10⁶ MΩ           | 4.4 kN/m          | 55 N/100 mm       | ✓                                                                                   | ✓                                                                                   |
| 58                                                    | 3M™ Polyester Film Electrical Tape 58                          | Thicker, higher dielectric. Thermosetting rubber adhesive. 0.05 mm film. Clear           | 0.08 mm         | 130°C                 |                    | 7000 V               | >1 x 10⁶ MΩ           | 8.8 kN/m          | 65 N/100 mm       | ✓                                                                                   | ✓                                                                                   |



### 3M™ Insulating and Conductive Tapes *continued*

| Product                        | Product Description                                              | Features                                                                                                                                                                                                                       | Total Thickness | Operating Temperature | UL Flame retardant | Dielectric Breakdown | Insulation Resistance   | Breaking Strength | Electrical Resistance | Adhesion to Steel | Agency Approvals                                                                    |                                                                                     |
|--------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------|--------------------|----------------------|-------------------------|-------------------|-----------------------|-------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                |                                                                  |                                                                                                                                                                                                                                |                 |                       |                    |                      |                         |                   |                       |                   |  |  |
| Composite Film Tape            |                                                                  |                                                                                                                                                                                                                                |                 |                       |                    |                      |                         |                   |                       |                   |                                                                                     |                                                                                     |
| 44                             | 3M™ Polyester Film Electrical Tape 44                            | Economical, general purpose composite film tape. This puncture-resistant tape is tough and conformable with excellent electrical properties. For general purpose insulation, anchoring, and banding in motors and transformers | 0.14 mm         | 130°C                 |                    | 5500 V               | >1 x 10 <sup>6</sup> MΩ | 7 kN/m            |                       | 71 N/100 mm       | ✓                                                                                   | ✓                                                                                   |
| 44D-A                          | 3M™ Reinforced Polyester Film Electrical Tape 44D-A              | A version of 44 Tape with twice the backing thickness for greater dielectric strength                                                                                                                                          | 0.30 mm         | 130°C                 |                    | 6000 V               | >1 x 10 <sup>6</sup> MΩ | 7 kN/m            |                       | 38 N/100 mm       | ✓                                                                                   |                                                                                     |
| Polyimide Film Electrical Tape |                                                                  |                                                                                                                                                                                                                                |                 |                       |                    |                      |                         |                   |                       |                   |                                                                                     |                                                                                     |
| 92                             | 3M™ Polyimide Film Electrical Tape 92                            | Silicone adhesive and 0.025 mm film. High temperature, puncture resistant, printable, flame retardant. Stable in coils,harnesses and capacitors that are subjected to high temperatures                                        | 0.08 mm         | 180°C                 | Yes                | 7500 V               | >1 x 10 <sup>6</sup> MΩ | 5.3 kN/m          |                       | 28 N/100 mm       | ✓                                                                                   | ✓                                                                                   |
| PTFE Film Electrical Tape      |                                                                  |                                                                                                                                                                                                                                |                 |                       |                    |                      |                         |                   |                       |                   |                                                                                     |                                                                                     |
| 60                             | 3M™ PTFE Film Electrical Tape 60                                 | Translucent, 0.05 mm PTFE film tape with silicone adhesive. For use on high temperature coils, capacitors and wire harnesses. UL510 flame retardant                                                                            | 0.10 mm         | 180°C                 | Yes                | 9500 V               | >1 x 10 <sup>6</sup> MΩ | 3.5 kN/m          |                       | 32 N/100 mm       | ✓                                                                                   |                                                                                     |
| 61                             | 3M™ PTFE Film Electrical Tape 61                                 | Translucent, thicker (0.127 mm) PTFE film tape with silicone adhesive. For use on high temperature coils, capacitors and wire harnesses where high dielectric and breaking strength are required. UL510 flame retardant        | 0.18 mm         | 180°C                 | Yes                | 15000 V              | >1 x 10 <sup>6</sup> MΩ | 7.9 kN/m          |                       | 38 N/100 mm       | ✓                                                                                   |                                                                                     |
| 63                             | 3M™ PTFE Film Electrical Tape 63                                 | Translucent, 0.05 mm PTFE film tape with solvent resistant acrylic adhesive. For use on coils, capacitors and wire harnesses. For use where chemical properties are more important than temperature resistance                 | 0.09 mm         | 155°C                 | Yes                | 9500 V               | >1 x 10 <sup>6</sup> MΩ | 3.5 kN/m          |                       | 38 N/100 mm       | ✓                                                                                   |                                                                                     |
| EMI Shielding Tapes            |                                                                  |                                                                                                                                                                                                                                |                 |                       |                    |                      |                         |                   |                       |                   |                                                                                     |                                                                                     |
| 1170                           | 3M™ Aluminium Foil Tape with Conductive Adhesive 1170            | Conductive acrylic adhesive, 0.05 mm aluminium foil                                                                                                                                                                            | 0.08 mm         |                       | Yes                |                      |                         | 3.5 kN/m          | 0.01 Ω                | 38 N/100 mm       | ✓                                                                                   |                                                                                     |
| 1181                           | 3M™ Copper Foil Tape with Conductive Adhesive 1181               | Conductive acrylic adhesive, 0.04 mm copper foil                                                                                                                                                                               | 0.07 mm         |                       | Yes                |                      |                         | 4.4 kN/m          | 0.005 Ω               | 38 N/100 mm       | ✓                                                                                   |                                                                                     |
| 1182                           | 3M™ Copper Foil Tape with Conductive Adhesive on both sides 1182 | Conductive acrylic adhesive on both sides, 0.04 mm copper foil                                                                                                                                                                 | 0.09 mm         |                       | Yes                |                      |                         | 4.4 kN/m          | 0.01 Ω                | 38 N/100 mm       | ✓                                                                                   |                                                                                     |
| 1194                           | 3M™ Copper Foil Tape with Nonconductive Adhesive 1194            | Nonconductive adhesive, 0.07 mm copper foil                                                                                                                                                                                    | 0.08 mm         |                       | Yes                |                      |                         | 4.4 kN/m          | n/a                   | 51 N/100 mm       | ✓                                                                                   |                                                                                     |
| 1245                           | 3M™ Embossed Copper Foil Tape 1245                               | Conductive acrylic adhesive, embossed 0.04 mm copper foil                                                                                                                                                                      | 0.10 mm         |                       | Yes                |                      |                         | 4.4 kN/m          | 0.001 Ω               | 38 N/100 mm       | ✓                                                                                   |                                                                                     |

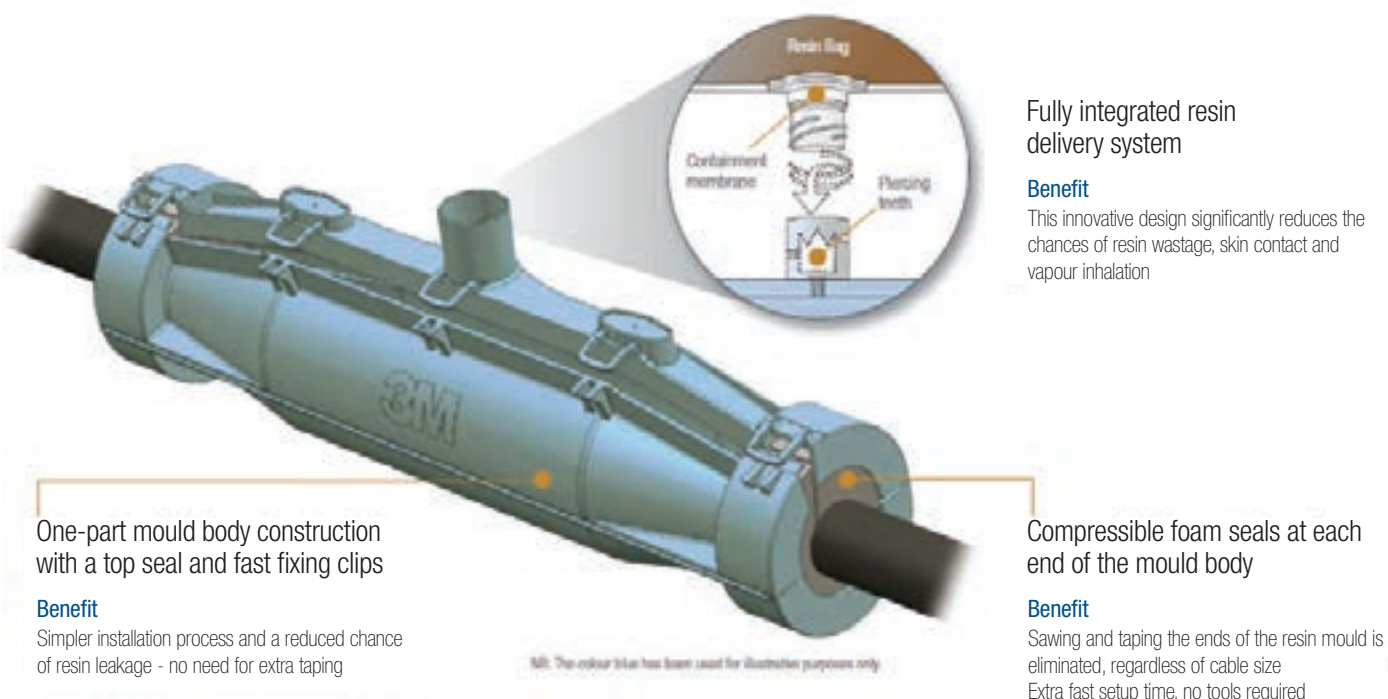


# 3M™ Scotchcast™ Resin Cable Joint Kits

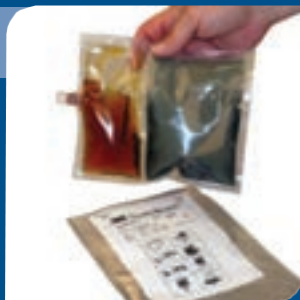
The 3M Scotchcast Resin Cable Joint range is designed to make the installation process faster, safer and more reliable than ever before. The range includes hydrocarbon resistant products specially developed for the oil and gas industries, as well as dedicated products to suit armoured cable types commonly found in mining and industrial environments. The range caters to a broad range of cable sizes and configurations, including inline and branch jointing applications.

## Features available in the new Scotchcast Resin Cable Joint Kit range include:

- “Express” one-part mould body with innovative sealing system requiring no cutting to size or taping, allowing unmatched speed of installation (excludes LVI-3 series, which uses a hydrocarbon resistant two-part mould body, and the 82-A series sold in New Zealand).
- Closed Mix-Pour with integrated resin delivery system. Designed to eliminate almost any chance of skin contact, user safety is increased and wastage from spills is minimized (excludes LVI-3 series and 82-A series).
- High quality 3M resin compounds which offer confidence through renowned reliability, and provide durability to avoid costly re-work and system down time.



The 3M Scotchcast Closed Mix-Pour resin system allows mixing and pouring of the two-part resin without exposure to the user. Further, no tools or mixing containers are required.



Sealed, two part resin bag



Integrated delivery system. Included nozzle accessory used for LVI-3 series



Internal mixing is safe and clean



Resin is released and safely poured in one easy step

### 3M™ Scotchcast™ Resin Cable Joint Kits

| Cable Type                                 | Non-Armoured  |                                                      | Armoured     |
|--------------------------------------------|---------------|------------------------------------------------------|--------------|
| Joint Configuration                        | Inline        | Branch                                               | Inline       |
| Scotchcast™ Joint Kit Hazardous Area Range |               | 92-NBB-U Series                                      | LVI-3 Series |
| Scotchcast™ Joint Kit Premium Range        | 92-NBA Series | 92-NBB-Series (Y-branch)<br>92-NBC-Series (T-branch) | LVI-2 Series |

3M™ Scotchcast Resin Cable Joint Kits and Resins

### 3M™ Scotchcast™ Premium Resin Cable Joint Range

3M Scotchcast Premium Resin Cable Joints feature 3M™ Scotchcast™ Electrical Insulating Resin 40, which is a high quality two part polyurethane compound designed for electrical insulation and mechanical protection. Scotchcast Premium Resin Cable Joints are available in a range of sizes and configurations to suit inline, Y-branch, T-branch applications, and joints requiring cable armouring components. All products in this range utilise the “express” one-part mould body, providing time and cost savings through extra fast set up.

**Applications:** Indoor, outdoor, underground and submerged applications

The 3M™ Scotchcast™ “Express” one-part mould body is available in inline, T-branch and Y-branch (pictured) configurations.



Prepare and connect cables



Install mould



Mix and pour resin



Joint complete when resin has completely filled the mould

| Product  | 3M Order Code | Cable Type   | Cable Diameter |            | Joint Configuration | Mould Body       |
|----------|---------------|--------------|----------------|------------|---------------------|------------------|
|          |               |              | Main           | Branch     |                     |                  |
| 92-NBA0  | KE235117568   | Non-armoured | 6 - 16 mm      |            | Inline              | Express one-part |
| 92-NBA1  | KE235117576   | Non-armoured | 10 - 22 mm     |            | Inline              | Express one-part |
| 92-NBA2  | KE235117584   | Non-armoured | 12 - 25 mm     |            | Inline              | Express one-part |
| 92-NBA3  | KE235117592   | Non-armoured | 13 - 32 mm     |            | Inline              | Express one-part |
| 92-NBA4  | KE235117600   | Non-armoured | 18 - 36 mm     |            | Inline              | Express one-part |
| 92-NBA5  | KE235117618   | Non-armoured | 19 - 45 mm     |            | Inline              | Express one-part |
| 92-NBA6  | KE235117626   | Non-armoured | 27 - 54 mm     |            | Inline              | Express one-part |
| 92-NBA7  | KE235117634   | Non-armoured | 29 - 64 mm     |            | Inline              | Express one-part |
| 92-NBB0  | KE235119358   | Non-armoured | 8 - 19 mm      | 8 - 19 mm  | Branch (Y Config)   | Express one-part |
| 92-NBB1  | KE235119366   | Non-armoured | 11 - 25 mm     | 11 - 25 mm | Branch (Y Config)   | Express one-part |
| 92-NBB2  | KE235119374   | Non-armoured | 16 - 35 mm     | 16 - 35 mm | Branch (Y Config)   | Express one-part |
| 92-NBC2  | KE235119408   | Non-armoured | 16 - 35 mm     | 16 - 35 mm | Branch (T Config)   | Express one-part |
| LVI-2/2* | KE235112288   | Armoured     | 12 - 25 mm     |            | Inline              | Express one-part |
| LVI-2/3* | KE235112296   | Armoured     | 13 - 32 mm     |            | Inline              | Express one-part |
| LVI-2/4  | KE235112320   | Armoured     | 18 - 36 mm     |            | Inline              | Express one-part |
| LVI-2/5  | KE235112338   | Armoured     | 19 - 45 mm     |            | Inline              | Express one-part |
| LVI-2/6  | KE235112346   | Armoured     | 27 - 54 mm     |            | Inline              | Express one-part |
| LVI-2/7  | KE235112353   | Armoured     | 29 - 64 mm     |            | Inline              | Express one-part |

\*Connectors (crimp) included

### 3M™ Scotchcast™ Hazardous Area Resin Cable Joint Range

Scotchcast Hazardous Area Resin Cable Joints feature 3M™ Scotchcast™ Insulating Resin 1402FR. Scotchcast 1402FR resin is flame retardant, halogen free, and remains virtually unaffected by immersion in hydrocarbons and chemical solvents. When exposed to petrol, diesel and aggressive solvents, rapid deterioration can be experienced by standard encapsulating resins – especially those commonly found in conventional, low cost resin jointing kits. 1402FR is an ultra-high quality, highly modified resin that demonstrates superior performance compared to other encapsulating resin types. 3M Scotchcast Hazardous Area resin joint kits are recommended for industrial or specialist applications where hydrocarbons are present.



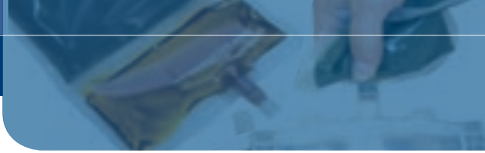
**Applications:** Indoor, outdoor, underground and submerged applications  
For use within Zone 1 and 2 areas

| Product    | 3M Order Code | Cable Type                        | Cable Diameter |            | Joint Configuration | Mould Body           |
|------------|---------------|-----------------------------------|----------------|------------|---------------------|----------------------|
|            |               |                                   | Main           | Branch     |                     |                      |
| LVI-3/2*   | KE235119523   | Armoured                          | 14 - 30 mm     |            | Inline              | Hydrocarbon two-part |
| LVI-3/3*   | KE235119531   | Armoured                          | 23 - 35 mm     |            | Inline              | Hydrocarbon two-part |
| LVI-3/4    | KE235119549   | Armoured                          | 28 - 47 mm     |            | Inline              | Hydrocarbon two-part |
| LVI-3/5    | KE235119556   | Armoured                          | 35 - 60 mm     |            | Inline              | Hydrocarbon two-part |
| LVI-3/6    | KE235119564   | Armoured                          | 45 - 70 mm     |            | Inline              | Hydrocarbon two-part |
| LVI-3/7    | KE235119572   | Armoured                          | 45 - 90 mm     |            | Inline              | Hydrocarbon two-part |
| LVI-3/8    | KE235120810   | Armoured                          | 45 - 100 mm    |            | Inline              | Hydrocarbon two-part |
| LVI-3/2-IC | KE235119580   | Instrumentation/Control, Armoured | 14 - 30 mm     |            | Inline              | Hydrocarbon two-part |
| LVI-3/3-IC | KE235119598   | Instrumentation/Control, Armoured | 23 - 35 mm     |            | Inline              | Hydrocarbon two-part |
| LVI-3/4-IC | KE235119606   | Instrumentation/Control, Armoured | 28 - 47 mm     |            | Inline              | Hydrocarbon two-part |
| LVI-3/5-IC | KE235119614   | Instrumentation/Control, Armoured | 35 - 60 mm     |            | Inline              | Hydrocarbon two-part |
| LVI-3/6-IC | KE235119622   | Instrumentation/Control, Armoured | 45 - 70 mm     |            | Inline              | Hydrocarbon two-part |
| 92-NBB1-U  | KE235109110   | Non-Armoured                      | 11 - 23 mm     | 11 - 23 mm | Branch (Y config)   | Express one-part     |
| 92-NBB2-U  | KE235109128   | Non-Armoured                      | 16 - 33 mm     | 16 - 33 mm | Branch (Y config)   | Express one-part     |

\*Connectors (crimp) included

### 3M Customised Resin Kit Solutions

The comprehensive 3M Scotchcast Resin Cable Joint range covers a vast array of applications and sizes; however we recognise that many projects require a customised solution to meet specific needs. For customised kit options, including termite and flame protection, please contact 3M with your enquiry.



## Resin Joint Kits

### 3M™ Scotchcast™ Inline Resin Power Cable Splice Kits 82-A Series (available in NZ only)

Use the 3M Scotchcast Inline Resin Splice Kits 82-A Series to insulate and seal single conductor, unshielded cable splices through 5 kV and multiple conductor cables through 1 kV. For use with UL listed connectors only.

**Agency Approvals:** 

**Important:** Use cable or connector diameter for final ordering criteria  
This range is only available in New Zealand

**Applications:** Indoor, outdoor, underground and submerged applications



| Product | 3M Order Code (NZ only) | Cable Size               | Connector Diameter (maximum) | Cable Diameter (maximum) | Joint Configuration | Mould Body        |
|---------|-------------------------|--------------------------|------------------------------|--------------------------|---------------------|-------------------|
| 82-A1   | 80610981567             | Up to 30 mm <sup>2</sup> | 10 mm                        | 16 mm                    | Inline              | Standard two-part |
| 82-A2   | 80610981575             | 35 - 80 mm <sup>2</sup>  | 16 mm                        | 25 mm                    | Inline              | Standard two-part |
| 82-A3   | 80610981583             | 95 - 200 mm <sup>2</sup> | 25 mm                        | 40 mm                    | Inline              | Standard two-part |

3M™ Scotchcast Resin Cable Joint Kits and Resins



### 3M™ Scotchcast™ Electrical Insulating Resin 1402FR

3M Scotchcast Hazard Area Electrical Insulating Resin 1402FR is a halogen free, flame retardant, two component polyurethane resin. The resin is designed with flame retardant and chemical resistant properties for electrical insulation and mechanical protection of electrical cable joints.

**Applications:** Electrical insulation and mechanical protection of low and medium voltage electrical joints installed for indoor and outdoor, underground and submerged applications in conditions where flame retardancy and/or resistance to chemicals such as hydrocarbons is required



| Product | 3M Order Code | Size     | Viscosity at 23°C (mixed) | Cured Properties |                  |                     |                     |
|---------|---------------|----------|---------------------------|------------------|------------------|---------------------|---------------------|
|         |               |          |                           | Hardness Shore D | Tensile Strength | Elongation at Break | Dielectric Strength |
| 1402FR  | KE235108906   | C 370 mL | 2500 mPas                 | 75               | 25 MPa           | 2%                  | >20 kV/mm           |

### 3M™ Scotchcast™ Encapsulating and Blocking Compound 4407

3M Scotchcast Encapsulating and Blocking Compound 4407 is a hard encapsulant designed specifically for permanent splice protection and cable blocking applications using telecommunications cables.

**Applications:** Telecommunication applications requiring a hard, non-re-enterable compound with good handling and performance characteristics



| Product     | 3M Order Code | Size   | Viscosity at 23°C (mixed) | Cured Properties |                  |                     |
|-------------|---------------|--------|---------------------------|------------------|------------------|---------------------|
|             |               |        |                           | Hardness Shore A | Tensile Strength | Elongation at Break |
| 4407 Size A | 80610060339   | 89 mL  | 1200 mPas                 | 70               | 3.45 Mpa         | 150%                |
| 4407 Size B | 80610060347   | 197 mL | 1200 mPas                 | 70               | 3.45 Mpa         | 150%                |
| 4407 Size C | 80610060362   | 396 mL | 1200 mPas                 | 70               | 3.45 Mpa         | 150%                |
| 4407 Size D | 80610060388   | 637 mL | 1200 mPas                 | 70               | 3.45 Mpa         | 150%                |

### 3M™ Scotchcast™ Electrical Insulating Resin 40

3M Scotchcast Premium Electrical Insulating Resin 40 is a high quality two part polyurethane room temperature curing (low exotherm) resin designed for electrical insulation and mechanical protection. Once hardening is complete, the resin provides impact resistance and durability against moisture and atmospheric corrosion. It features a Closed Mix and Pour Delivery System designed to improve user safety and minimise wastage from spills (note - 40 size C without nozzle does not use a closed pour system). Pot life at 23°C is 20 minutes.

**Applications:** Mechanical protection and electrical insulation of low voltage electrical joints installed for indoor and outdoor, underground and submerged applications



| Product              | 3M Order Code | Size                            | Viscosity at 23°C (mixed) | Cured Properties |                  |                     |                     |
|----------------------|---------------|---------------------------------|---------------------------|------------------|------------------|---------------------|---------------------|
|                      |               |                                 |                           | Hardness Shore D | Tensile Strength | Elongation at Break | Dielectric Strength |
| 40 Size A            | KE235117667   | A 90 mL (100 g)                 | 900 mPas                  | 57               | 15 MPa           | 50%                 | >20 kV/mm           |
| 40 Size B            | KE235117675   | B 200 mL (225 g)                | 900 mPas                  | 57               | 15 MPa           | 50%                 | >20 kV/mm           |
| 40 Size C            | KE235117683   | C 370 mL (420 g)                | 900 mPas                  | 57               | 15 MPa           | 50%                 | >20 kV/mm           |
| 40 Size C no nozzle* | KE235117741   | C 370 mL (420 g) without nozzle | 900 mPas                  | 57               | 15 MPa           | 50%                 | >20 kV/mm           |

\*No nozzle format is recommended for resin pressure method (RPM) applications

### 3M™ Scotchcast™ Re-enterable Resin 48FR

3M Scotchcast Re-enterable Resin 48FR can be used on either temporary or permanent cable joints. It is designed for easy removal, enabling further work or the recovery of parts, and can be removed with a simple plastic knife - no other tools, heat or solvents are required. It was developed to satisfy the requirements of the coal mining industry, where re-entry into joints and couplers is necessary. Flame retardant and semi-flexible. Gel time 15 minutes.

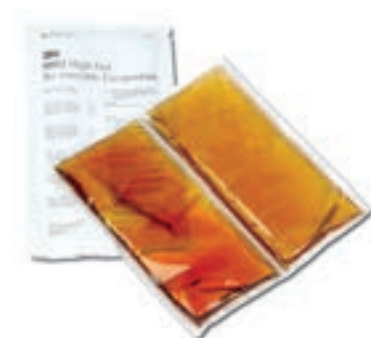
**Applications:** To provide secondary insulation and moisture sealing in joints and couplers where re-entry into that joint or coupler may be necessary

| Product | 3M Order Code | Size | Viscosity at 23°C (mixed) | Cured Properties |                  |                     |                     |
|---------|---------------|------|---------------------------|------------------|------------------|---------------------|---------------------|
|         |               |      |                           | Hardness Shore D | Tensile Strength | Elongation at Break | Dielectric Strength |
| 48FR    | UE555571905   | 4 L  | 1500 mPas                 | 12               | 0.24 MPa         | 120%                | >5 kV/mm            |

### 3M™ High Gel Re-enterable Encapsulant 8882

3M High Gel Re-enterable Encapsulant 8882 is a two-part non-urethane encapsulating compound. The encapsulant aggressively adheres to filled cable and is compatible with common plastics used in telephone splice connectors. The encapsulant permits easy cable splice re-entry for future changes and maintenance.

**Applications:** Encapsulating, sealing, potting, insulating and shock damping



| Product     | 3M Order Code | Size                   | Viscosity at 23°C (mixed) | Cured Properties    |
|-------------|---------------|------------------------|---------------------------|---------------------|
|             |               |                        |                           | Elongation at Break |
| 8882-A      | 80611166036   | 90 ml Guard Bag        | 670 mPas                  | 300%                |
| 8882-C      | 80611166044   | 385 ml Guard Bag       | 670 mPas                  | 300%                |
| 8882-D      | 80611166051   | 659 ml Guard Bag       | 670 mPas                  | 300%                |
| 8882-8000C* | 80611166143   | 8333 ml Pouch and Pail | 670 mPas                  | 300%                |

\*Pouch and pail packaging contains bucket, lid, stirrer and disposable gloves

# 3M™ Cold Shrink Low Voltage Insulators & Inline Joint Kits

3M Cold Shrink insulators and accessories offer a safe, easy to install method of insulating, sealing and protecting connectors, hoses, fittings, conduit and cable. They are well suited for in-field applications because they require no special tools or heat to install.

The unique 3M cold shrink delivery system ensures consistent installation and long term reliability. With 3M cold shrink insulators and accessories you get a water resistant seal without heat, torches or adhesive; simply unwind the core to install. It's that simple.

## Why move to 3M Cold Shrink Technology?

- No flame required
- Less chance of damaging cable material
- No cooling time needed before energising
- Constant radial pressure for optimised environmental performance
- Easier to use in enclosed areas
- No special site permits needed
- Fast, straightforward installation



## Other 3M Cold Shrink Cable Accessories:

3M Cold Shrink End Caps



page 27

3M Cold Shrink Cable Abandonment Kits



page 27

Medium Voltage (up to 33 kV) QT-III and QT-II Termination Kits



page 37

Medium Voltage (up to 33 kV) QS2000E Joint Kits



page 49

Total fire ban?  
No hot work permit?

No worries.  
3M™ Cold Shrink Cable Accessories.

### 3M™ Cold Shrink Connector Insulators 8420 and 8430 Series

3M Cold Shrink Connector Insulators 8420 and 8430 Series are designed using 3M's unique cold shrink delivery system. Products are supplied prestretched on a removable core for efficiency and ease of installation. Removal of the core (unwinding) after positioning the splice allows the product to shrink into position forming a moisture-tight seal. The live memory action of the specially formulated EPDM material promotes a permanent, durable environmental seal and insulation, with a typical operating temperature range from -40 to 90°C.

**Important:**

Use cable insulation/jacket diameters and connector outer diameter for final sizing confirmation

**Applications:**

Primary electrical insulation for all solid dielectric (rubber and plastic) insulated wire and cable splicing rated to 1000 V

Good for repairs and environmental sealing for communication and other non-electrical applications



| Product  | 3M Order Code | Typical Cable Size         | Minimum Cable Diameter for Seal | Maximum Diameter (Cable or Connector) | Maximum Connector Length | Relaxed Tube Length |
|----------|---------------|----------------------------|---------------------------------|---------------------------------------|--------------------------|---------------------|
| 8423-6   | 80610839484   | 14 - 16 mm <sup>2</sup>    | 7.8 mm                          | 14 mm                                 | 51 mm                    | 152 mm              |
| 8424-8** | 80610921928   | 6 - 50 mm <sup>2</sup>     | 2.5 mm                          | 21 mm                                 | 76 mm                    | 203 mm              |
| 8425-8   | 80610921936   | 35 - 50 mm <sup>2</sup>    | 10.1 mm                         | 21 mm                                 | 76 mm                    | 203 mm              |
| 8426-9   | 80610927669   | 70 - 125 mm <sup>2</sup>   | 13.9 mm                         | 30 mm                                 | 127 mm                   | 229 mm              |
| 8426-11  | 80610927677   | 70 - 125 mm <sup>2</sup>   | 13.9 mm                         | 30 mm                                 | 178 mm                   | 279 mm              |
| 8427-6*  | 80610456164   | -                          | 16.8 mm                         | 35 mm                                 | 51 mm                    | 152 mm              |
| 8427-12  | 80610134035   | 125 - 200 mm <sup>2</sup>  | 16.8 mm                         | 35 mm                                 | 203 mm                   | 305 mm              |
| 8427-16  | 80610134043   | 125 - 200 mm <sup>2</sup>  | 16.8 mm                         | 35 mm                                 | 305 mm                   | 406 mm              |
| 8428-6*  | 80610456172   | -                          | 24.1 mm                         | 49 mm                                 | 51 mm                    | 152 mm              |
| 8428-8   | 80611230212   | 300 - 400 mm <sup>2</sup>  | 24.1 mm                         | 49 mm                                 | 76 mm                    | 203 mm              |
| 8428-12  | 80610154603   | 300 - 400 mm <sup>2</sup>  | 24.1 mm                         | 49 mm                                 | 203 mm                   | 305 mm              |
| 8428-18  | 80610134050   | 300 - 400 mm <sup>2</sup>  | 24.1 mm                         | 49 mm                                 | 356 mm                   | 457 mm              |
| 8429-6*  | 80610456180   | -                          | 32.2 mm                         | 68 mm                                 | 51 mm                    | 152 mm              |
| 8429-9*  | 80610456313   | 500 mm <sup>2</sup>        | 32.2 mm                         | 68 mm                                 | 127 mm                   | 229 mm              |
| 8429-12  | 80610921910   | 500 mm <sup>2</sup>        | 32.2 mm                         | 68 mm                                 | 203 mm                   | 305 mm              |
| 8429-15  | 80610970446   | 500 mm <sup>2</sup>        | 32.2 mm                         | 68 mm                                 | 280 mm                   | 381 mm              |
| 8429-18  | 80610134068   | 500 mm <sup>2</sup>        | 32.2 mm                         | 68 mm                                 | 356 mm                   | 457 mm              |
| 8430-9*  | 80610839492   | 630 - 1000 mm <sup>2</sup> | 42.6 mm                         | 94 mm                                 | 127 mm                   | 229 mm              |
| 8430-18  | 80610921902   | 630 - 1000 mm <sup>2</sup> | 42.6 mm                         | 94 mm                                 | 356 mm                   | 457 mm              |

\*These sizes are not designed to be used as primary insulation. These shorter length tubes are for conduit sealing and breakouts.

\*\*8424-8 contains range-extending adapters (without adapters, 8424-8 and 8425-8 products are identical).

Note: Insulation, connector and/or jacket can be overwrapped with Scotch Rubber Mastic Tape 2228 to build up diameter if required.

**For 8420 and 8430 Series Cold Shrink Tubes continuously exposed to high levels of UV radiation, 3M recommends overwrapping with Scotch® Super 33+ Vinyl Electrical Tape or Scotch® Self Fusing Silicone Rubber Tape 70. See pages 2 and 5.**

**Other sizes of cold shrink tubes are available on request - please contact 3M.**

### 3M™ Low Voltage Inline Joint Kits 5732-5735 Series

These kits are suitable for indoor and outdoor installations, including direct burial, aerial and submersible applications. For use with three core armoured cable up to 1000 V. Connectors are not included, pre-insulated crimp connectors preferred.

| Product | 3M Order Code | Cable Size                | Cable Diameter |
|---------|---------------|---------------------------|----------------|
| 5732    | 80610981740   | 35 - 50 mm <sup>2</sup>   | 24 - 61 mm     |
| 5733    | 80610981757   | 70 - 120 mm <sup>2</sup>  | 29 - 84 mm     |
| 5734    | 80610981765   | 120 - 240 mm <sup>2</sup> | 39 - 102 mm    |
| 5735    | 80610981773   | 240 - 400 mm <sup>2</sup> | 39 - 102 mm    |



**Note:** If increased structural integrity is required, the joint can be overwrapped with two-half lapped layers of 3M™ Armorcast Structural Material (purchased separately). For 3 metre long rolls use the following number of rolls per kit: 5732 (2 rolls), 5733 & 5734 (3 rolls) and 5735 (5 rolls). See page 12 for ordering details.

# 3M™ Heat Shrink Tubing

3M Heat Shrink Tubing products provide an effective means of applying skin tight insulating and protective coverings for a wide variety of electrical, electronic and mechanical applications. 3M heat shrink products offer the important advantages of simple installation, improved performance and long term reliability. They are abrasion resistant, and withstand heat, corrosion, moisture and other hostile environments whilst offering superior dielectric properties.



| Typical Properties               | FP-221VW                                                                                                                                                                      | FP-301                                                                                                                                                                        | EPS-300                                                                                                                                                                        | IMCSN                                                                               | ITCSN                                                                                                                                                                             |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                  |                                                                                              |                                                                                              |                                                                                              |  |                                                                                                |
| Adhesive Lined?                  | No                                                                                                                                                                            | No                                                                                                                                                                            | Yes                                                                                                                                                                            | Yes                                                                                 | Yes                                                                                                                                                                               |
| Operating Temperature Range      | -55°C to 135°C                                                                                                                                                                | -55°C to 135°C                                                                                                                                                                | -55 to 110°C                                                                                                                                                                   | -55 to 110°C                                                                        | -55 to 110°C                                                                                                                                                                      |
| Shrink Temperature (Minimum)     | 100°C                                                                                                                                                                         | 100°C                                                                                                                                                                         | 121°C                                                                                                                                                                          | 121°C                                                                               | 121°C                                                                                                                                                                             |
| Shrink Ratio                     | 2:1                                                                                                                                                                           | 2:1                                                                                                                                                                           | 3:1                                                                                                                                                                            | 3:1                                                                                 | up to 4:1                                                                                                                                                                         |
| Standard Sizes Expanded Diameter | 1.5 - 50 mm                                                                                                                                                                   | 1.2 - 25.4 mm                                                                                                                                                                 | 4.8 - 38 mm                                                                                                                                                                    | 10 - 109 mm                                                                         | 10 - 152 mm                                                                                                                                                                       |
| Dielectric Strength              | 35.4 kV/mm                                                                                                                                                                    | 35.4 kV/mm                                                                                                                                                                    | 27.6 kV/mm                                                                                                                                                                     | 19.7 kV/mm                                                                          | 19.7 kV/mm                                                                                                                                                                        |
| Volume Resistivity               | 10 <sup>15</sup> Ω-cm                                                                                                                                                         | 10 <sup>15</sup> Ω-cm                                                                                                                                                         | 10 <sup>14</sup> Ω-cm                                                                                                                                                          | 10 <sup>14</sup> Ω-cm                                                               | 10 <sup>14</sup> Ω-cm                                                                                                                                                             |
| Tensile Strength                 | 16.5 N/mm <sup>2</sup>                                                                                                                                                        | 16.5 N/mm <sup>2</sup>                                                                                                                                                        | 14.4 N/mm <sup>2</sup>                                                                                                                                                         | 16.5 N/mm <sup>2</sup>                                                              | 16.5 N/mm <sup>2</sup>                                                                                                                                                            |
| Elongation                       | 400%                                                                                                                                                                          | 400%                                                                                                                                                                          | 450%                                                                                                                                                                           | 450%                                                                                | 475%                                                                                                                                                                              |
| Longitudinal Change              | +1,-10%                                                                                                                                                                       | +/- 5%                                                                                                                                                                        | +1,-15%                                                                                                                                                                        | +1,-10%                                                                             | +1,-10%                                                                                                                                                                           |
| Flammability                     | Self-Extinguish meets UL 224 VW-1                                                                                                                                             | Self-Extinguish meets UL 224 All-Tubing Flame Test (except clear)                                                                                                             | Self-Extinguish meets UL224 All-Tubing Flame Test (jacket)                                                                                                                     | n/a                                                                                 | n/a                                                                                                                                                                               |
| Corrosive Effective              | Non-corrosive                                                                                                                                                                 | Non-corrosive                                                                                                                                                                 | Non-corrosive                                                                                                                                                                  | Non-corrosive                                                                       | Non-corrosive                                                                                                                                                                     |
| Abrasion Resistance              | Good                                                                                                                                                                          | Good                                                                                                                                                                          | Good                                                                                                                                                                           | Good                                                                                | Good                                                                                                                                                                              |
| Fuel and Oil Resistance          | Good                                                                                                                                                                          | Good                                                                                                                                                                          | Good                                                                                                                                                                           | Good                                                                                | Good                                                                                                                                                                              |
| Solvent Resistance               | Excellent                                                                                                                                                                     | Excellent                                                                                                                                                                     | Good                                                                                                                                                                           | Good                                                                                | Good                                                                                                                                                                              |
| Resistance to Acids and Alkalis  | Excellent                                                                                                                                                                     | Excellent                                                                                                                                                                     | Excellent                                                                                                                                                                      | Excellent                                                                           | Excellent                                                                                                                                                                         |
| Agency Approvals                 | UL  SP  | UL  SP  | UL  SP  |                                                                                     | UL  SP  |



### 3M™ Heat Shrink Thin Wall Tubing FP-221VW

3M Heat Shrink Tubing FP-221VW offers a simple and reliable method to apply insulation, protection, or covering for a wide variety of electrical, electronic, and mechanical applications.

FP-221VW Tubing has a 2:1 shrink ratio. When freely recovered, the tubing will shrink to 50% of its as supplied internal diameter. FP-221VW is highly flame resistant and meets UL 224 VW-1.

**Format:** 1.2 m lengths  
**Voltage:** 600 V  
**Operating Temperature:** -55°C to 135°C  
**Shrink Temperature:** 100°C  
**Agency Approvals:**    
**Applications:** Fire-resistant coverings of components and flammable wire assemblies



**Note:** Always order the largest size that will shrink snugly over the item to be covered

| Product                     | 3M Order Code | Colour       | Expanded Inner Diameter | Recovered Inner Diameter | Expanded Wall Thickness as Supplied | Maximum Recovered Wall Thickness* |
|-----------------------------|---------------|--------------|-------------------------|--------------------------|-------------------------------------|-----------------------------------|
| FP-221VW Black 1.5 mm       | XA003859007   | Black        | 1.5 mm                  | 0.75 mm                  | 0.2 +/- 0.05 mm                     | 0.4 +/- 0.05 mm                   |
| FP-221VW Black 3 mm         | XA003859015   | Black        | 3 mm                    | 1.5 mm                   | 0.25 +/- 0.05 mm                    | 0.45 + 0.1 mm                     |
| FP-221VW Black 5 mm         | XA003859023   | Black        | 5 mm                    | 2.5 mm                   | 0.35 +/- 0.1 mm                     | 0.55 + 0.1 mm                     |
| FP-221VW Black 7 mm         | XA003859031   | Black        | 7 mm                    | 3.5 mm                   | 0.35 +/- 0.1 mm                     | 0.55 + 0.1 mm                     |
| FP-221VW Black 10 mm        | XA003859049   | Black        | 10 mm                   | 5 mm                     | 0.35 +/- 0.1 mm                     | 0.60 + 0.1 mm                     |
| FP-221VW Black 13 mm        | XA003859056   | Black        | 13 mm                   | 6.5 mm                   | 0.35 +/- 0.15 mm                    | 0.70 + 0.1 mm                     |
| FP-221VW Black 20 mm        | XA003859064   | Black        | 20 mm                   | 10 mm                    | 0.5 +/- 0.15 mm                     | 0.90 + 0.1 mm                     |
| FP-221VW Black 25 mm        | XA003859072   | Black        | 25 mm                   | 12.5 mm                  | 0.5 +/- 0.15 mm                     | 0.90 + 0.1 mm                     |
| FP-221VW Black 40 mm        | XA003859080   | Black        | 40 mm                   | 20 mm                    | 0.55 +/- 0.2 mm                     | 1.00 + 0.2 mm                     |
| FP-221VW Black 50 mm        | XA003859098   | Black        | 50 mm                   | 25 mm                    | 0.55 +/- 0.2 mm                     | 1.00 + 0.2 mm                     |
| FP-221VW Blue 1.5 mm        | XA003859304   | Blue         | 1.5 mm                  | 0.75 mm                  | 0.2 +/- 0.05 mm                     | 0.4 +/- 0.05 mm                   |
| FP-221VW Blue 3 mm          | XA003859312   | Blue         | 3 mm                    | 1.5 mm                   | 0.25 +/- 0.05 mm                    | 0.45 + 0.1 mm                     |
| FP-221VW Blue 5 mm          | XA003859320   | Blue         | 5 mm                    | 2.5 mm                   | 0.35 +/- 0.1 mm                     | 0.55 + 0.1 mm                     |
| FP-221VW Blue 7 mm          | XA003859338   | Blue         | 7 mm                    | 3.5 mm                   | 0.35 +/- 0.1 mm                     | 0.55 + 0.1 mm                     |
| FP-221VW Blue 10 mm         | XA003859346   | Blue         | 10 mm                   | 5 mm                     | 0.35 +/- 0.1 mm                     | 0.60 + 0.1 mm                     |
| FP-221VW Blue 13 mm         | XA003859353   | Blue         | 13 mm                   | 6.5 mm                   | 0.35 +/- 0.15 mm                    | 0.70 + 0.1 mm                     |
| FP-221VW Blue 20 mm         | XA003859361   | Blue         | 20 mm                   | 10 mm                    | 0.5 +/- 0.15 mm                     | 0.90 + 0.1 mm                     |
| FP-221VW Blue 25 mm         | XA003859379   | Blue         | 25 mm                   | 12.5 mm                  | 0.5 +/- 0.15 mm                     | 0.90 + 0.1 mm                     |
| FP-221VW Blue 40 mm         | XA003859387   | Blue         | 40 mm                   | 20 mm                    | 0.55 +/- 0.2 mm                     | 1.00 + 0.2 mm                     |
| FP-221VW Blue 50 mm         | XA003859395   | Blue         | 50 mm                   | 25 mm                    | 0.55 +/- 0.2 mm                     | 1.00 + 0.2 mm                     |
| FP-221VW Green/Yellow 3 mm  | XA003859411   | Green/Yellow | 3 mm                    | 1.5 mm                   | 0.25 +/- 0.05 mm                    | 0.45 + 0.1 mm                     |
| FP-221VW Green/Yellow 5 mm  | XA003859429   | Green/Yellow | 5 mm                    | 2.5 mm                   | 0.35 +/- 0.1 mm                     | 0.55 + 0.1 mm                     |
| FP-221VW Green/Yellow 7 mm  | XA003859437   | Green/Yellow | 7 mm                    | 3.5 mm                   | 0.35 +/- 0.1 mm                     | 0.55 + 0.1 mm                     |
| FP-221VW Green/Yellow 10 mm | XA003859445   | Green/Yellow | 10 mm                   | 5 mm                     | 0.35 +/- 0.1 mm                     | 0.60 + 0.1 mm                     |
| FP-221VW Green/Yellow 13 mm | XA003859452   | Green/Yellow | 13 mm                   | 6.5 mm                   | 0.35 +/- 0.15 mm                    | 0.70 + 0.1 mm                     |
| FP-221VW Green/Yellow 20 mm | XA003859460   | Green/Yellow | 20 mm                   | 10 mm                    | 0.5 +/- 0.15 mm                     | 0.90 + 0.1 mm                     |
| FP-221VW Green/Yellow 25 mm | XA003859478   | Green/Yellow | 25 mm                   | 12.5 mm                  | 0.5 +/- 0.15 mm                     | 0.90 + 0.1 mm                     |
| FP-221VW Green/Yellow 40 mm | XA003859486   | Green/Yellow | 40 mm                   | 20 mm                    | 0.55 +/- 0.2 mm                     | 1.00 + 0.2 mm                     |
| FP-221VW Green/Yellow 50 mm | XA003859494   | Green/Yellow | 50 mm                   | 25 mm                    | 0.55 +/- 0.2 mm                     | 1.00 + 0.2 mm                     |
| FP-221VW Red 1.5 mm         | XA003859106   | Red          | 1.5 mm                  | 0.75 mm                  | 0.2 +/- 0.05 mm                     | 0.4 +/- 0.05 mm                   |
| FP-221VW Red 3 mm           | XA003859114   | Red          | 3 mm                    | 1.5 mm                   | 0.25 +/- 0.05 mm                    | 0.45 + 0.1 mm                     |
| FP-221VW Red 5 mm           | XA003859122   | Red          | 5 mm                    | 2.5 mm                   | 0.35 +/- 0.1 mm                     | 0.55 + 0.1 mm                     |
| FP-221VW Red 7 mm           | XA003859130   | Red          | 7 mm                    | 3.5 mm                   | 0.35 +/- 0.1 mm                     | 0.55 + 0.1 mm                     |
| FP-221VW Red 10 mm          | XA003859148   | Red          | 10 mm                   | 5 mm                     | 0.35 +/- 0.1 mm                     | 0.60 + 0.1 mm                     |
| FP-221VW Red 13 mm          | XA003859155   | Red          | 13 mm                   | 6.5 mm                   | 0.35 +/- 0.15 mm                    | 0.70 + 0.1 mm                     |
| FP-221VW Red 20 mm          | XA003859163   | Red          | 20 mm                   | 10 mm                    | 0.5 +/- 0.15 mm                     | 0.90 + 0.1 mm                     |
| FP-221VW Red 25 mm          | XA003859171   | Red          | 25 mm                   | 12.5 mm                  | 0.5 +/- 0.15 mm                     | 0.90 + 0.1 mm                     |
| FP-221VW Red 40 mm          | XA003859189   | Red          | 40 mm                   | 20 mm                    | 0.55 +/- 0.2 mm                     | 1.00 + 0.2 mm                     |
| FP-221VW Red 50 mm          | XA003859197   | Red          | 50 mm                   | 25 mm                    | 0.55 +/- 0.2 mm                     | 1.00 + 0.2 mm                     |
| FP-221VW White 1.5 mm       | XA003859205   | White        | 1.5 mm                  | 0.75 mm                  | 0.2 +/- 0.05 mm                     | 0.4 +/- 0.05 mm                   |
| FP-221VW White 3 mm         | XA003859213   | White        | 3 mm                    | 1.5 mm                   | 0.25 +/- 0.05 mm                    | 0.45 + 0.1 mm                     |
| FP-221VW White 5 mm         | XA003859221   | White        | 5 mm                    | 2.5 mm                   | 0.35 +/- 0.1 mm                     | 0.55 + 0.1 mm                     |
| FP-221VW White 7 mm         | XA003859239   | White        | 7 mm                    | 3.5 mm                   | 0.35 +/- 0.1 mm                     | 0.55 + 0.1 mm                     |
| FP-221VW White 10 mm        | XA003859247   | White        | 10 mm                   | 5 mm                     | 0.35 +/- 0.1 mm                     | 0.60 + 0.1 mm                     |
| FP-221VW White 13 mm        | XA003859254   | White        | 13 mm                   | 6.5 mm                   | 0.35 +/- 0.15 mm                    | 0.70 + 0.1 mm                     |
| FP-221VW White 20 mm        | XA003859262   | White        | 20 mm                   | 10 mm                    | 0.5 +/- 0.15 mm                     | 0.90 + 0.1 mm                     |
| FP-221VW White 25 mm        | XA003859270   | White        | 25 mm                   | 12.5 mm                  | 0.5 +/- 0.15 mm                     | 0.90 + 0.1 mm                     |
| FP-221VW White 40 mm        | XA003859288   | White        | 40 mm                   | 20 mm                    | 0.55 +/- 0.2 mm                     | 1.00 + 0.2 mm                     |
| FP-221VW White 50 mm        | XA003859296   | White        | 50 mm                   | 25 mm                    | 0.55 +/- 0.2 mm                     | 1.00 + 0.2 mm                     |

\* Note: Wall thickness will be less if tubing recovery is restricted during shrinkage.

### 3M™ Heat Shrink Thin-Wall Tubing FP-301 Assorted Sizes Kits

The 3M Heat Shrink Thin-Wall Tubing FP-301 Kits are a versatile assortment of flexible polyolefin heat shrink tubing, and are available in black or assorted colours. These rugged plastic kits include product and installation information on the cover and allow an engineer, designer or technician to have a complete selection of popular sizes and colours for small projects and product development programs. FP-301 tubing has a 2:1 shrink ratio and is rated for continuous operation from -55 to 135°C.



|                               |                                                                                                                                                                              |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Voltage:</b>               | 600 V                                                                                                                                                                        |
| <b>Operating Temperature:</b> | -55°C to 135°C                                                                                                                                                               |
| <b>Shrink Temperature:</b>    | 100°C                                                                                                                                                                        |
| <b>Agency Approvals</b>       | UL SR                                                                                                                                                                        |
| <b>Applications:</b>          | Electrical insulation over cable splices and terminations<br>Lightweight wire harness covering, wire marking, wire bundling, component packaging and fire resistant covering |

| Product                     | 3M Order Code | Description                           | Colour(s)                                         | Sizes                              | Format             |
|-----------------------------|---------------|---------------------------------------|---------------------------------------------------|------------------------------------|--------------------|
| FP-301 Kit Assorted Colours | 80610855779   | 133 pieces/kit, 7 colours and 6 sizes | Black, red, white, yellow, blue, green, and clear | 2.4, 3.2, 4.8, 6.4, 9.5, 12.7 mm   | 152 mm long pieces |
| FP-301 Kit Black            | 80610906317   | 102 pieces/kit, 6 sizes               | Black                                             | 4.8, 6.4, 9.5, 12.7, 19.1, 25.4 mm | 152 mm long pieces |

### 3M™ Thin-Wall Adhesive Lined Tubing EPS-300

Flexible, adhesive lined thin wall polyolefin with a 3:1 shrink ratio. For insulation, strain relief and environmental protection of wire bundles and splices. Rated to 110°C (black).



|                               |                                                                                          |
|-------------------------------|------------------------------------------------------------------------------------------|
| <b>Format:</b>                | 1.2 m lengths                                                                            |
| <b>Voltage:</b>               | 600 V                                                                                    |
| <b>Operating Temperature:</b> | -55 to 110°C                                                                             |
| <b>Shrink Temperature:</b>    | 121°C                                                                                    |
| <b>Agency Approvals</b>       | UL SR                                                                                    |
| <b>Applications:</b>          | Environmental protection of components, splices, wire bundles and wire harness breakouts |

| Product                    | 3M Order Code | Colour | Expanded Inner Diameter | Recovered Inner Diameter | Total Recovered Wall Thickness | Melted Recovered Wall Thickness |
|----------------------------|---------------|--------|-------------------------|--------------------------|--------------------------------|---------------------------------|
| EPS-300 Black 4.8 mm       | 80611473895   | Black  | 4.8 mm                  | 1.6 mm                   | 1.0 mm                         | 0.5 mm                          |
| EPS-300 Black 6.4 mm       | 80611473903   | Black  | 6.4 mm                  | 2.0 mm                   | 1.0 mm                         | 0.5 mm                          |
| EPS-300 Black 6.4 mm Bulk  | 80611601792   | Black  | 6.4 mm                  | 2.0 mm                   | 1.0 mm                         | 0.5 mm                          |
| EPS-300 Black 9.5 mm       | 80611473911   | Black  | 9.5 mm                  | 3.1 mm                   | 1.4 mm                         | 0.6 mm                          |
| EPS-300 Black 12.7 mm      | 80611473929   | Black  | 12.7 mm                 | 4.1 mm                   | 1.8 mm                         | 0.8 mm                          |
| EPS-300 Black 19.1 mm      | 80611473937   | Black  | 19.1 mm                 | 6.4 mm                   | 2.2 mm                         | 0.9 mm                          |
| EPS-300 Black 19.1 mm Bulk | 80611601826   | Black  | 19.1 mm                 | 6.4 mm                   | 2.2 mm                         | 0.9 mm                          |
| EPS-300 Black 25.4 mm      | 80611473945   | Black  | 25.4 mm                 | 8.1 mm                   | 2.5 mm                         | 1.0 mm                          |
| EPS-300 Black 25.4 mm Bulk | 80611601834   | Black  | 25.4 mm                 | 8.1 mm                   | 2.5 mm                         | 1.0 mm                          |
| EPS-300 Black 38.1 mm      | 80611601842   | Black  | 38.1 mm                 | 13.0 mm                  | 2.5 mm                         | 1.0 mm                          |
| EPS-300 Red 12.7 mm        | 80611600232   | Red    | 12.7 mm                 | 4.1 mm                   | 1.8 mm                         | 0.8 mm                          |
| EPS-300 Red 19.1 mm        | 80611600240   | Red    | 19.1 mm                 | 6.4 mm                   | 2.2 mm                         | 0.9 mm                          |

### 3M™ Heat Shrink Medium-Wall Cable Sleeves IMCSN

Adhesive lined, medium wall polyolefin tubing with a 3:1 shrink ratio. Split resistant tubing designed to provide reliable performance for electrical splices, connections, and terminations as well as mechanical and environmental protection. Rated to 1000 V.

|                               |                                                                                                        |
|-------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Format:</b>                | 1.2 m lengths                                                                                          |
| <b>Voltage:</b>               | 1000 V                                                                                                 |
| <b>Operating Temperature:</b> | -55 to 110°C                                                                                           |
| <b>Shrink Temperature:</b>    | 121°C                                                                                                  |
| <b>Applications:</b>          | Protection and sealing of 1 kV joints, connections and terminations in indoor and outdoor applications |



| Product        | 3M Order Code | Colour | Cable Size                 | Cable Diameter (maximum - minimum) | Expanded Inner Diameter | Recovered Inner Diameter |
|----------------|---------------|--------|----------------------------|------------------------------------|-------------------------|--------------------------|
| IMCSN-0400-48A | 80610677603   | Black  | 4 - 10 mm <sup>2</sup>     | 8.8 - 3.8 mm                       | 10 mm                   | 3.8 mm                   |
| IMCSN-0800-48A | 80610677611   | Black  | 10 - 25 mm <sup>2</sup>    | 18 - 5.6 mm                        | 20 mm                   | 5.6 mm                   |
| IMCSN-1100-48A | AE010581880   | Black  | 35 - 60 mm <sup>2</sup>    | 24 - 9.4 mm                        | 28 mm                   | 9.4 mm                   |
| IMCSN-1500-48A | AE010582920   | Black  | 60 - 120 mm <sup>2</sup>   | 33 - 13 mm                         | 38 mm                   | 13 mm                    |
| IMCSN-2000-48A | 80610677645   | Black  | 185 - 250 mm <sup>2</sup>  | 44 - 19 mm                         | 51 mm                   | 19 mm                    |
| IMCSN-3000-48A | 80610677652   | Black  | 325 - 625 mm <sup>2</sup>  | 63 - 25 mm                         | 76 mm                   | 25 mm                    |
| IMCSN-4300-48A | 80610677595   | Black  | 625 - 1000 mm <sup>2</sup> | 91 - 38 mm                         | 109 mm                  | 38 mm                    |

### 3M™ Heat Shrink Heavy-Wall Cable Sleeves ITCSN

Adhesive lined, thick wall polyolefin tubing with a shrink ratio as high as 4:1. Split resistant tubing designed to provide reliable performance for electrical splices, connections and terminations, as well as mechanical and abrasion resistance. Rated to 1000 V.

|                               |                                                                                                                                                                            |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Format:</b>                | 1.2 m lengths                                                                                                                                                              |
| <b>Voltage:</b>               | 1000 V                                                                                                                                                                     |
| <b>Operating Temperature:</b> | -55 to 110°C                                                                                                                                                               |
| <b>Shrink Temperature:</b>    | 121°C                                                                                                                                                                      |
| <b>Agency Approvals:</b>      | UL   |
| <b>Applications:</b>          | Protection and sealing of 1 kV joints, connections and terminations in indoor and outdoor applications                                                                     |



| Product             | 3M Order Code | Colour | Cable Size                 | Cable Diameter (maximum - minimum) | Expanded Inner Diameter | Recovered Inner Diameter |
|---------------------|---------------|--------|----------------------------|------------------------------------|-------------------------|--------------------------|
| ITCSN-0400 48A      | 80610229611   | Black  | 4 - 10 mm <sup>2</sup>     | 8.9 - 4.3 mm                       | 10 mm                   | 3.8 mm                   |
| ITCSN-0400 48A Bulk | 80008007181   | Black  | 4 - 10 mm <sup>2</sup>     | 8.9 - 4.3 mm                       | 10 mm                   | 3.8 mm                   |
| ITCSN-0800 48A      | 80610229629   | Black  | 10 - 15 mm <sup>2</sup>    | 17 - 6.1 mm                        | 20 mm                   | 5.1 mm                   |
| ITCSN-0800 48A Bulk | 80008007223   | Black  | 10 - 15 mm <sup>2</sup>    | 17 - 6.1 mm                        | 20 mm                   | 5.1 mm                   |
| ITCSN-1100 48A      | 80610229637   | Black  | 35 - 95 mm <sup>2</sup>    | 22 - 10 mm                         | 28 mm                   | 9.4 mm                   |
| ITCSN-1100 48A Bulk | 80008007264   | Black  | 35 - 95 mm <sup>2</sup>    | 22 - 10 mm                         | 28 mm                   | 9.4 mm                   |
| ITCSN-1500 48A      | 80610229645   | Black  | 95 - 185 mm <sup>2</sup>   | 30 - 15 mm                         | 38 mm                   | 13 mm                    |
| ITCSN-2000 48A      | 80610229652   | Black  | 150 - 300 mm <sup>2</sup>  | 41 - 19 mm                         | 51 mm                   | 17 mm                    |
| ITCSN-2000 48A Bulk | 80008007322   | Black  | 150 - 300 mm <sup>2</sup>  | 41 - 19 mm                         | 51 mm                   | 17 mm                    |
| ITCSN-3000 48A      | 80610229660   | Black  | 400 - 625 mm <sup>2</sup>  | 57 - 31 mm                         | 76 mm                   | 25 mm                    |
| ITCSN-3000 48A Bulk | 80008007348   | Black  | 400 - 625 mm <sup>2</sup>  | 57 - 31 mm                         | 76 mm                   | 25 mm                    |
| ITCSN-4500 48A      | 80610858716   | Black  | 800 - 1000 mm <sup>2</sup> | 102 - 38 mm                        | 114 mm                  | 38 mm                    |
| ITCSN-6000 48A Bulk | 80008007363   | Black  |                            | 140 - 46 mm                        | 152 mm                  | 46 mm                    |

# 3M™ Cable Accessories

3M offers accessory products to assist with splice repair, cable jacket sealing, cable preparation and cleaning, cable handling and surface protection.

## 3M™ Cold Shrink Cable Abandonment Kits CSCAK

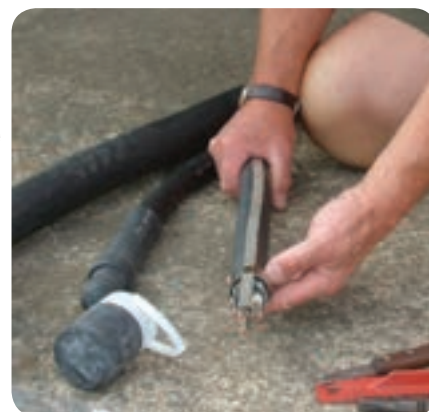
3M Cold Shrink Cable Abandonment Kits are a complete solution to abandon low voltage polymeric cables either temporarily or permanently. Environmental sealing and mechanical protection is provided using 3M Cold Shrink technology, eliminating the need for heat and special tools, making a quick, simple and reliable installation.

### Kit Contents:

- Cold shrink end cap
- Cold shrink tube
- Self-amalgamating insulating tape
- Armour/earth connection components
- Full installation Instructions

### Applications:

Single and multi core low voltage polymeric power cables up to and including 1.9/3.3 kV (with or without lead sheath and/or armour)



| Product | 3M Order Code | Cable Diameter |
|---------|---------------|----------------|
| CSCAK/1 | TE100048780   | 12 - 18 mm     |
| CSCAK/2 | TE100048798   | 18 - 25 mm     |
| CSCAK/3 | TE100048806   | 25 - 42 mm     |
| CSCAK/4 | TE100048814   | 42 - 55 mm     |
| CSCAK/5 | TE100048822   | 56 - 81 mm     |

## 3M™ Cold Shrink End Caps EC-Series

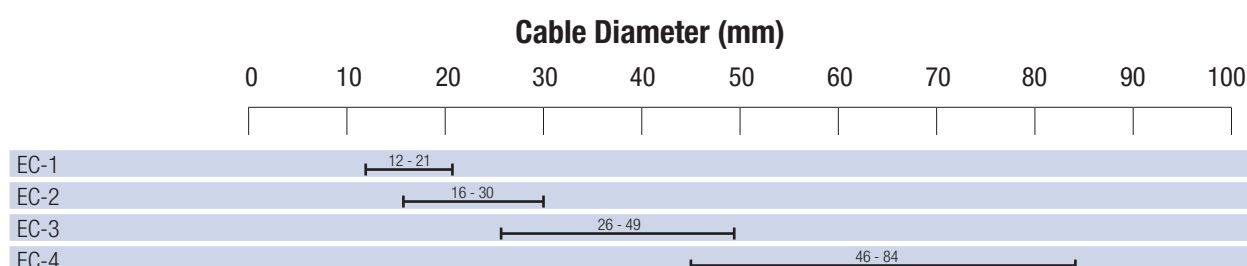
3M Cold Shrink End Caps EC-Series are close-ended, tubular rubber sleeves that are factory expanded and loaded onto a removable core. When positioned over the end of a cable or other cylindrical object, the core is removed to provide a reliable environmental seal. Four different end caps are available to accommodate a wide range of sizes. They are easily installed and can be removed cleanly.

### Applications:

Environmentally seal and mechanically protect exposed cable ends using no tools, mastics or tapes  
Protect cables and pipes from exposure to moisture, contamination, corrosion, ozone, ultra-violet radiation and other environmental hazards



| Product | 3M Order Code | Colour | Cable Diameter |
|---------|---------------|--------|----------------|
| EC-1    | XA003895001   | Black  | 12 - 21 mm     |
| EC-2    | XA003895019   | Black  | 16 - 30 mm     |
| EC-3    | XA003895027   | Black  | 26 - 49 mm     |
| EC-4    | XA003895035   | Black  | 46 - 84 mm     |



### 3M™ Heat Shrink Wraparound Cable Repair Wrap Sleeve HDCW

3M Wraparound Heat Shrink Cable Repair Sleeve HDCW is designed to repair damaged cable sheaths. It is also suitable for use with cable joints and as additional corrosion protection on undamaged cables. Quick and easy to apply, it provides maximum protection against mechanical stress, even in the most aggressive environments. The inner wall of the sleeve is coated with hot melt adhesive to achieve a safe and watertight bond with the cable and give a perfect seal when heat is applied, while a corrosion proof metal clip is used to fully close the sleeve.

**Applications:** Quickly and safely repair damaged cable sheaths  
Additional corrosion protection on joints or undamaged cables



| Product          | 3M Order Code | Cable Diameter<br>(maximum - minimum) | Length  | Expanded Inner<br>Diameter | Recovered Inner<br>Diameter | Minimum Recovered<br>Wall Thickness |
|------------------|---------------|---------------------------------------|---------|----------------------------|-----------------------------|-------------------------------------|
| HDCW 35/10-250   | DE272920799   | 35 - 10 mm                            | 250 mm  | 50 mm                      | 8 mm                        | 2.0 mm                              |
| HDCW 35/10-500   | DE272920781   | 35 - 10 mm                            | 500 mm  | 50 mm                      | 8 mm                        | 2.0 mm                              |
| HDCW 35/10-750   | DE272920773   | 35 - 10 mm                            | 750 mm  | 50 mm                      | 8 mm                        | 2.0 mm                              |
| HDCW 35/10-1000  | DE272920765   | 35 - 10 mm                            | 1000 mm | 50 mm                      | 8 mm                        | 2.0 mm                              |
| HDCW 55/15-250   | DE272909834   | 55 - 15 mm                            | 250 mm  | 75 mm                      | 13 mm                       | 2.0 mm                              |
| HDCW 55/15-500   | DE272909842   | 55 - 15 mm                            | 500 mm  | 75 mm                      | 13 mm                       | 2.0 mm                              |
| HDCW 55/15-750   | DE272909859   | 55 - 15 mm                            | 750 mm  | 75 mm                      | 13 mm                       | 2.0 mm                              |
| HDCW 55/15-1000  | DE272909867   | 55 - 15 mm                            | 1000 mm | 75 mm                      | 13 mm                       | 2.0 mm                              |
| HDCW 80/25-250   | DE272909883   | 80 - 25 mm                            | 250 mm  | 100 mm                     | 23 mm                       | 2.0 mm                              |
| HDCW 80/25-500   | DE272909891   | 80 - 25 mm                            | 500 mm  | 100 mm                     | 23 mm                       | 2.0 mm                              |
| HDCW 80/25-750   | DE272909909   | 80 - 25 mm                            | 750 mm  | 100 mm                     | 23 mm                       | 2.0 mm                              |
| HDCW 80/25-1000  | DE272909917   | 80 - 25 mm                            | 1000 mm | 100 mm                     | 23 mm                       | 2.0 mm                              |
| HDCW 110/30-500  | DE272909941   | 110 - 30 mm                           | 500 mm  | 132 mm                     | 25 mm                       | 2.0 mm                              |
| HDCW 110/30-1000 | DE272909966   | 110 - 30 mm                           | 1000 mm | 132 mm                     | 25 mm                       | 2.0 mm                              |
| HDCW 140/40-250  | DE272909982   | 140 - 40 mm                           | 250 mm  | 145 mm                     | 32 mm                       | 1.8 mm                              |
| HDCW 140/40-500  | DE272909990   | 140 - 40 mm                           | 500 mm  | 145 mm                     | 32 mm                       | 1.8 mm                              |
| HDCW 140/40-1000 | DE272910014   | 140 - 40 mm                           | 1000 mm | 145 mm                     | 32 mm                       | 1.8 mm                              |

### 3M™ Heat Shrink Heavy Duty End Caps SKE

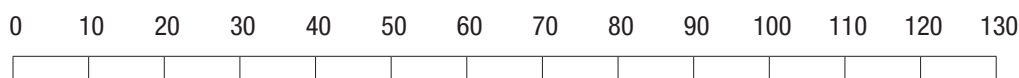
3M Heat Shrink End Caps provide a reliable and easy method of sealing cables for both indoor and outdoor applications whilst offering excellent electrical and mechanical protection. Internal adhesive helps to form a watertight seal. The materials used are halogen free.

**Applications:** Insulating/sealing of cable ends for indoor and outdoor applications



| Product    | 3M Order Code | Cable Diameter | Expanded Diameter | Fully Recovered Dimensions |        |                |
|------------|---------------|----------------|-------------------|----------------------------|--------|----------------|
|            |               |                |                   | Diameter                   | Length | Wall Thickness |
| SKE 4/10   | DE272919635   | 4 - 8 mm       | 10 mm             | 4 mm                       | 40 mm  | 2.5 mm         |
| SKE 8/20   | DE272919643   | 8 - 16 mm      | 20 mm             | 8 mm                       | 65 mm  | 2.5 mm         |
| SKE 15/40  | DE272919718   | 15 - 32 mm     | 40 mm             | 15 mm                      | 105 mm | 3.0 mm         |
| SKE 25/63  | DE272919650   | 25 - 51 mm     | 63 mm             | 25 mm                      | 160 mm | 4.5 mm         |
| SKE 30/76  | DE272919668   | 30 - 61 mm     | 76 mm             | 30 mm                      | 140 mm | 4.5 mm         |
| SKE 45/100 | DE272919676   | 45 - 80 mm     | 100 mm            | 45 mm                      | 160 mm | 4.0 mm         |
| SKE 61/158 | DE272919767   | 61 - 126 mm    | 158 mm            | 63 mm                      | 190 mm | 4.0 mm         |

Cable Diameter (mm)



#### Heat Shrink Part Numbers

|            |          |
|------------|----------|
| SKE 4/10   | 4 - 8    |
| SKE 8/20   | 8 - 16   |
| SKE 15/40  | 15 - 32  |
| SKE 25/63  | 25 - 51  |
| SKE 30/76  | 30 - 61  |
| SKE 45/100 | 45 - 80  |
| SKE 61/158 | 61 - 126 |



### 3M™ Heat Shrink Cable Breakouts

3M Heat Shrink Cable Breakouts are designed for quick and easy insulation and sealing of cable breakout areas, and provide resistance to abrasion, weathering and chemical attack. The parts are made from semi-rigid, cross-linked modified polyolefin material that is coated internally with hot melt adhesive. The materials used are halogen free. On application of heat the adhesive melts and the part shrinks forming a watertight seal.



**Applications:** Cable breakout area sealing

| Product      | 3M Order Code | Description  | Conductor Size Range (LV cable) | Neck Expanded Diameter | Neck Recovered Diameter | Finger Expanded Diameter | Finger Recovered Diameter | Recovered Length | Neck Recovered Wall Thickness | Finger Recovered Wall Thickness |
|--------------|---------------|--------------|---------------------------------|------------------------|-------------------------|--------------------------|---------------------------|------------------|-------------------------------|---------------------------------|
| SKE-3F/1-1.5 | DE272919734   | 3 way outlet | 6 - 16 mm <sup>2</sup>          | 25 mm                  | 9 mm                    | 9 mm                     | 3 mm                      | 70 mm            | 2.5 mm                        | 1.8 mm                          |
| SKE-3F/2     | DE272919577   | 3 way outlet | 10 - 50 mm <sup>2</sup>         | 35 mm                  | 15 mm                   | 13 mm                    | 4 mm                      | 100 mm           | 2.5 mm                        | 1.8 mm                          |
| SKE-3F/4     | DE272919684   | 3 way outlet | 50 - 150 mm <sup>2</sup>        | 55 mm                  | 23 mm                   | 30 mm                    | 8 mm                      | 170 mm           | 3.5 mm                        | 2.7 mm                          |
| SKE-3F/5     | DE272919783   | 3 way outlet | 185 - 400 mm <sup>2</sup>       | 110 mm                 | 35 mm                   | 50 mm                    | 17 mm                     | 215 mm           | 3.5 mm                        | 3.5 mm                          |
| SKE-3F/6     | DE272919817   | 4 way outlet | -                               | 110 mm                 | 35 mm                   | 50 mm                    | 17 mm                     | 215 mm           | 3.5 mm                        | 3.5 mm                          |
| SKE-4F/1+2   | DE272919528   | 4 way outlet | 4 - 35 mm <sup>2</sup>          | 35 mm                  | 15 mm                   | 15 mm                    | 4 mm                      | 100 mm           | 3.8 mm                        | 1.8 mm                          |
| SKE-4F/3+4   | DE272919536   | 4 way outlet | 25 - 150 mm <sup>2</sup>        | 57 mm                  | 23 mm                   | 30 mm                    | 6 mm                      | 170 mm           | 4.0 mm                        | 3.0 mm                          |
| SKE-4F/5     | DE272919601   | 4 way outlet | 120 - 400 mm <sup>2</sup>       | 95 mm                  | 36 mm                   | 38 mm                    | 14 mm                     | 220 mm           | 3.5 mm                        | 2.5 mm                          |

### 3M™ Constant Force Springs

3M Constant Force Springs are a range of solderless connections for earthing or grounding use on:

- Lead and aluminium cable sheaths
- Cable screening tapes or wires
- Steel or aluminium armour wires

The spring is easily applied by rolling onto the cable core or outside diameter, whereupon it continues to exert a constant radial pressure.



**Applications:** For power, control or telecom cables  
For use on lead or aluminium sheaths and copper screened cables

| Product | 3M Order Code | Application Range | Country Availability |
|---------|---------------|-------------------|----------------------|
| CFS 1   | 78801595196   | 12 - 20 mm        | AU                   |
| CFS 2   | 78801595170   | 17 - 32 mm        | AU                   |
| CFS 3   | 78801595188   | 20 - 37 mm        | AU                   |
| CFS 4   | 78801899465   | 25 - 56 mm        | AU                   |
| CFS 5   | 78801899820   | 38 - 74 mm        | AU                   |
| CFS 6   | 78801899838   | 45 - 107 mm       | AU                   |
| P59     | DE713059009   | 4 - 10 mm         | AU                   |
| P60     | DE713060007   | 9 - 15 mm         | NZ                   |
| P61     | DE713061005   | 14 - 22 mm        | NZ                   |
| P62     | DE713062003   | 18.5 - 29 mm      | AU, NZ               |
| P63     | DE713063001   | 23.5 - 37 mm      | NZ                   |
| P64     | DE713064009   | 31 - 50 mm        | NZ                   |
| P65     | DE713065006   | 44 - 70 mm        | NZ                   |
| P66     | DE713066004   | 58 - 94 mm        | NZ                   |

### 3M™ Cable Cleaning System CC Series

3M Cable Cleaning System CC Series cleans cable insulation, metal, electrical and mechanical parts. CC series solvent is suitable for use on transformers, generators, motors and metal parts of all sorts. It can be used for PCB cleanup and in parts cleaners for degreasing. It removes surface oils, tars and heavy greases. Use of solvent on carbon-containing semiconductive surfaces such as cable insulation shields is not recommended. 3M Cable Cleaning System CC Series solvent can effectively replace 1,1,1- trichloroethane and other hazardous solvents.



| Product | 3M Order Code | Description                    | Kit Contents                                                                        |
|---------|---------------|--------------------------------|-------------------------------------------------------------------------------------|
| CC-2    | 80610592992   | Cable Cleaning Preparation Kit | 3 x solvent saturated cable cleaning pads<br>1 x Non-conductive grit abrasive cloth |
| CC-3    | 80610593008   | Cable Cleaning Pad Kit         | 3 x solvent saturated pads                                                          |
| CC-4    | AE010587481   | Cable Cleaning Solvent         | 940 mL                                                                              |

### 3M™ Cable Cleaning/Degreasing Wipes

3M Cable Cleaning/Degreasing Wipes are designed specifically to remove contaminants such as grease, oil, sealants and cable gel from switchgear and cables. The product will even remove heavy or old deposits without hazard to the user, environment, substrate or insulation materials.

**Applications:** Cable cleaning prior to jointing  
Removal of protective greases and gel from switchgear



| Product            | 3M Order Code | Description | Kit Contents |
|--------------------|---------------|-------------|--------------|
| Cleaning Wipes 1 L | GE700027966   | 1 L pail    | 75 wipes     |
| Cleaning Wipes 3 L | GE700027974   | 3 L pail    | 250 wipes    |

### 3M™ Wire Pulling Lubricant Gel

3M Wire Pulling Lubricant is a clear, colourless, slow-drying, easy-to-apply gel which is an excellent lubricant for everyday pulling of both electrical and communication cable. The clear formula makes this an ideal choice where cleanliness is a concern. 3M Wire Pulling Lubricant has a low residue (less than 5% solids).

**Agency Approvals:** 

**Applications:** For pulling a wide variety of cable types, such as power, control, instrumentation and communication cables, including coaxial and fibre optic cables



| Product | 3M Order Code | Size   | Colour | Temperature Use Range |
|---------|---------------|--------|--------|-----------------------|
| WL-QT   | 80610736623   | 950 mL | Clear  | -6 to 43°C            |

### 3M™ Scotchkote™ Electrical Coating FD

3M Scotchkote Electrical Coating FD is designed as a fast-drying sealant and bonding agent intended for use on joints wrapped with vinyl electrical tape. For direct burial, direct water immersion or above-ground applications. A brush-on, fast drying sealant with self contained applicator for quick and easy application.

**Applications:** Provides vinyl tapes with an extra oil, moisture and corrosion-resistant layer of flexible coating for problem areas



| Product    | 3M Order Code | Size   |
|------------|---------------|--------|
| Scotchkote | 80611604135   | 440 mL |

# 3M™ Connectors and 3M™ Scotchlok™ Connectors & Tools

3M Connectors and 3M Scotchlok Connectors offer the quick installation and reliability that contractors demand. They come in a variety of shapes and sizes with different properties to fit a wide range of applications and cable sizes. See page 36 for details of recommended 3M™ Scotchlok™ Crimping Tools.

## Electrical Wire Connectors

### Spring Connectors - 3M™ Performance Plus Wire Connectors

Because of their increased wire range, just three 3M™ Performance Plus Wire Connectors do the work of eight standard connectors and are suitable for commercial, residential, industrial and maintenance applications. The rounded wings make 3M wire connectors exceptionally easy to handle. The flexible skirt covers over-strips yet conforms to whatever space is available in a box. Inside, the unique spring grips quickly and bites into conductors for solid, secure connections.

| Product                       | B/G+BOX                                                                           | O/B+BOX                                                                            | R/Y+BOX                                                                             |
|-------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                               |  |  |  |
| 3M Order Code                 | 80610984330                                                                       | 80610984298                                                                        | 80610984314                                                                         |
| Colour                        | Blue/Grey                                                                         | Orange/Blue                                                                        | Red/Yellow                                                                          |
| Conductor Size Combinations*  | 3 x 2.5 mm <sup>2</sup> to 2 x 10 mm <sup>2</sup><br>Solid/Stranded               | 2 x 0.5 mm <sup>2</sup> Solid/Stranded to<br>3 x 2.5 mm <sup>2</sup> Solid         | 2 x 1.0 mm <sup>2</sup> to 2 x 6 mm <sup>2</sup><br>Solid/Stranded                  |
| Connector Style               | Twist On                                                                          | Twist On                                                                           | Twist On                                                                            |
| Flame Retardant               | Yes                                                                               | Yes                                                                                | Yes                                                                                 |
| Maximum Voltage Rating        | 600 V<br>(1000 V in signs, lighting<br>fixtures and luminaries)                   | 600 V<br>(1000 V in signs, lighting<br>fixtures and luminaries)                    | 600 V<br>(1000 V in signs, lighting<br>fixtures and luminaries)                     |
| Maximum Operating Temperature | 105°C                                                                             | 105°C                                                                              | 105°C                                                                               |

\* See data sheet for all combinations

## Insulation Displacement Connectors and Tools for Electrical Applications

### 3M™ Scotchlok™ IDC Electrical Double Run or Tap Connectors 560, 560B and 564

3M Scotchlok IDC Electrical Connectors 560 and 560B electrically connect a (tap) wire end to a through (run) wire and insulates the connection. 3M Scotchlok IDC Electrical Connector 564 electrically connects two through (run) wires and insulates the connection.

| Product                        | 560                                                                                 | 560B                                                                                 | 564                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                |  |  |  |
| 3M Order Code                  | 80610031058                                                                         | 80610052773                                                                          | 80601103031                                                                           |
| Colour                         | Light Blue                                                                          | Blue                                                                                 | White                                                                                 |
| Conductor Size                 | 0.75 - 1.0 mm <sup>2</sup> Solid/Stranded<br>1.5 mm <sup>2</sup> Stranded           | 0.75 - 1.0 mm <sup>2</sup> Solid/Stranded<br>1.5 mm <sup>2</sup> Stranded            | 0.75 - 1.5 mm <sup>2</sup> Solid/Stranded                                             |
| Connector Style                | Insulation Displacement (IDC)                                                       | Insulation Displacement (IDC)                                                        | Insulation Displacement (IDC)                                                         |
| Maximum Insulation Diameter    | 3.7 mm                                                                              | 3.7 mm                                                                               | 3.7 mm                                                                                |
| Flame Retardant                | Yes                                                                                 | Yes                                                                                  | No                                                                                    |
| Maximum Voltage Rating         | 600 V<br>(1000 V in signs, lighting fixtures and<br>luminaries)                     | 600 V<br>(1000 V in signs, lighting fixtures and<br>luminaries)                      | 32 V                                                                                  |
| Maximum Operating Temperature  | 105°C                                                                               | 90°C                                                                                 | 90°C                                                                                  |
| Recommended Installation Tools | 3M Crimping Tool E-9BM<br>Linesman Pliers                                           | 3M Crimping Tool E-9BM<br>Linesman Pliers                                            | 3M Crimping Tool E-9BM<br>Linesman Pliers<br>Multigrip (Slip Joint) Pliers            |

## Insulation Displacement Connectors and Tools for Electrical Applications

### 3M™ Scotchlok™ IDC Run and Tap Connectors 558 and 567

Electrically connects a (tap) wire end to a through (run) wire and insulates the connection. Designed for control circuit wiring, fixture wiring, appliance wiring, signal and PA systems, and automotive, boat or recreational vehicle wiring. Flame retardant.

Agency Approvals:



| Product                        | 558                                                                               | 567                                                                                 |
|--------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                |  |   |
| 3M Order Code                  | 80014000808                                                                       | 80610031439                                                                         |
| Colour                         | Red                                                                               | Brown                                                                               |
| Conductor Size                 | 0.5 - 1.5 mm <sup>2</sup> Solid/Stranded                                          | Tap: 0.75 - 1.5 mm <sup>2</sup><br>Run: 3.0 - 4.0 mm <sup>2</sup><br>Solid/Stranded |
| Connector Style                | Insulation Displacement (IDC)                                                     | Insulation Displacement (IDC)                                                       |
| Maximum Insulation Diameter    | 3.0 mm                                                                            | Tap: 3.7 mm<br>Run: 4.8 mm                                                          |
| Flame Retardant                | Yes                                                                               | Yes                                                                                 |
| Maximum Voltage Rating         | 600 V<br>(1000 V in signs, lighting fixtures and luminaries)                      | 600 V<br>(1000 V in signs, lighting fixtures and luminaries)                        |
| Operating Temperature          | 105°C                                                                             | 105°C                                                                               |
| Recommended Installation Tools | 3M Crimping Tool E-9BM<br>Linesman Pliers                                         | 3M Crimping Tool E-9BM<br>Linesman Pliers                                           |

### 3M™ Scotchlok™ Fuse Holder 972

The 3M Scotchlok Fuse Holder 972 is used to install a blade-type automotive fuse between power source and device.

Recommended installation tool: Multigrip (Slip Joint) Pliers

| Product                     | 972                                                                                 |
|-----------------------------|-------------------------------------------------------------------------------------|
|                             |  |
| 3M Order Code               | 80611441579                                                                         |
| Colour                      | Blue                                                                                |
| Conductor Size              | 0.75 - 1.5 mm <sup>2</sup>                                                          |
| Connector Style             | Insulation Displacement (IDC)                                                       |
| Maximum Insulation Diameter | 3.8 mm                                                                              |
| Flame Retardant             | No                                                                                  |
| Operating Temperature       | 105°C                                                                               |

## Communication Connectors

### 3M™ Scotchlok™ IDC Butt Connectors UR2 and UY2

3M Scotchlok IDC Butt Connectors employ a specially designed, wire insulation displacement contact to make a reliable electrical connection to each wire. A “live-spring” joint is made by driving the wire down into the “U” contact connector. This simple process displaces the insulation and grasps all conductors with a firm, resilient pressure, all in one motion. No stripping of wire insulation is required. Scotchlok butt connectors include a factory-installed sealant to protect against corrosion and seal out moisture.

#### 3M™ Scotchlok™ Butt Connector UR2

The UR2 connector accepts two or three solid copper conductors for butt splicing. The connector is filled with a sealant to provide moisture resistance.

**Recommended installation tool:** 3M Crimping Tools E-9BM, E-9J or E-9Y

**Agency Approvals:**



| Product        | 3M Order Code | Connector Type              | Colour    | Conductor Size | Maximum Insulation Diameter |
|----------------|---------------|-----------------------------|-----------|----------------|-----------------------------|
| UR2 25/pk      | 80611326754   | Butt, 2 or 3 Conductor, IDC | Red (top) | 0.4 - 0.9 mm   | 2.1 mm                      |
| UR2 100/pk AU  | AE010419032   | Butt, 2 or 3 Conductor, IDC | Red (top) | 0.4 - 0.9 mm   | 2.1 mm                      |
| UR2 100/box NZ | 80611327596   | Butt, 2 or 3 Conductor, IDC | Red (top) | 0.4 - 0.9 mm   | 2.1 mm                      |
| UR2 500/jar    | 80611327653   | Butt, 2 or 3 Conductor, IDC | Red (top) | 0.4 - 0.9 mm   | 2.1 mm                      |

#### 3M™ Scotchlok™ Butt Connector UY2

The small size of the UY2 connector reduces the splicing bundle size to a minimum. The connector's two ports accept two solid copper conductors. The connector is filled with a sealant to provide moisture resistance.

**Recommended installation tool:** 3M Crimping Tools E-9BM, E-9J or E-9Y

**Agency Approvals:**



| Product        | 3M Order Code | Connector Type         | Colour       | Conductor Size | Maximum Insulation Diameter |
|----------------|---------------|------------------------|--------------|----------------|-----------------------------|
| UY2 25/pk      | 80611326770   | Butt, 2 Conductor, IDC | Yellow (top) | 0.4 - 0.9 mm   | 2.1 mm                      |
| UY2 100/pk AU  | AE010419024   | Butt, 2 Conductor, IDC | Yellow (top) | 0.4 - 0.9 mm   | 2.1 mm                      |
| UY2 100/box NZ | 80611326796   | Butt, 2 Conductor, IDC | Yellow (top) | 0.4 - 0.9 mm   | 2.1 mm                      |
| UY2 500/jar    | 80611326762   | Butt, 2 Conductor, IDC | Yellow (top) | 0.4 - 0.9 mm   | 2.1 mm                      |

### 3M™ Scotchlok™ Self Stripping Dropwire Connector 557-TG2

Use the 557-TG2 aerial dropwire connector to electrically connect two solid copper conductors, insulate the connection and provide moisture protection. Flame retardant. Available in NZ only.

**Recommended installation tool:** 3M Crimping Tools E-9BM or E-9J



| Product | 557-TG2 100/Jar | 557-TG2 500/Box | Conductor Size | Maximum Insulation Diameter |
|---------|-----------------|-----------------|----------------|-----------------------------|
| 557-TG2 | XE000700049     | 80611322076     | 0.6 - 1.3 mm   | 3.0 mm                      |



### 3M™ Scotchlok™ Trim-out Connector 211

The 3M Scotchlok Trim-out Connector 211 is a moisture-resistant, self-stripping insulation displacement connector with a built-in cut-off blade and a test port. Wires are positioned in the connector from the sides, allowing the 211 connector to be used without interrupting service. The 211 connector may also be used for standard two-wire butt type splicing operations. For interruption free butt splice replacement.

**Recommended installation tool:** 3M Crimping Tools E-9BM, E-9J or E-9Y

**Agency Approvals:**

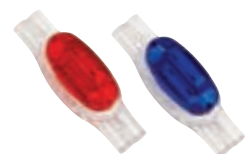


| Product | 3M Order Code | Conductor Size | Maximum Insulation Diameter |
|---------|---------------|----------------|-----------------------------|
| 211     | 80611327430   | 0.4 - 0.9 mm   | 2.1 mm                      |

### 3M™ Scotchlok™ Inline Connectors U1R and U1B

The U1R and U1B connectors are sealed moisture-resistant four-wire (1 full pair) inline connectors for larger gauge solid copper.

**Recommended installation tool:** 3M Crimping Tool E-9BM



| Product | 3M Order Code | Colour     | Wire Range   | Maximum Insulation Diameter |
|---------|---------------|------------|--------------|-----------------------------|
| U1R     | FQ100057535   | Red (top)  | 0.5 - 0.9 mm | 3.2 mm                      |
| U1B     | FQ100057527   | Blue (top) | 0.9 - 1.3 mm | 3.2 mm                      |

### 3M™ Scotchlok™ Tap Connector UB2A

By positioning the 3M Scotchlok IDC Tap Connector UB2A on the conductor and pre-crimping, the conductor is prevented from slipping out of the connector before the crimp is completed. The UB2A permits tapping directly onto an existing conductor without interrupting service. In ready access closures, the UB2A eliminates cutting cable pairs, opening pairs, and piecing out wires. The conductors joined can be different sizes.

**Recommended installation tool:** 3M Crimping Tools E-9BM, E-9J or E-9Y

**Agency Approvals:**



| Product | 3M Order Code | Conductor Size | Maximum Insulation Diameter |
|---------|---------------|----------------|-----------------------------|
| UB2A    | 80611327471   | 0.4 - 0.9 mm   | 2.1 mm                      |

### 3M™ Scotchlok™ Moisture Guard Connector (MGC)

The 3M Scotchlok Moisture Guard Connector MGC provides a convenient way to connect wires for landscape irrigation and lighting applications. Just press the MGC cap and a metal element inside pushes through the wire insulation to make a secure, reliable connection. The grease in the MGC protects against moisture while the MGC housing is UV resistant for above-ground applications.

**Recommended installation tool:** Multigrip (Slip Joint) Pliers  
**Applications:** Residential and commercial landscape lighting  
 Irrigation applications



| Product name  | 3M Order Code | Connector Style               | Outside port                                             |                     | Inside port                                                       |                     | Flame Retardant | Maximum Voltage Rating                                    | Maximum Operating Temperature |
|---------------|---------------|-------------------------------|----------------------------------------------------------|---------------------|-------------------------------------------------------------------|---------------------|-----------------|-----------------------------------------------------------|-------------------------------|
|               |               |                               | Wire Range                                               | Insulation Diameter | Wire Range                                                        | Insulation Diameter |                 |                                                           |                               |
| MGC (25/Bag)  | 80611434152   | Insulation Displacement (IDC) | 1.0 mm <sup>2</sup> - 2.5 mm <sup>2</sup> Solid/Stranded | 5.3 mm              | 0.5 mm <sup>2</sup> Stranded, 0.75 mm <sup>2</sup> Solid/Stranded | 3.8 mm              | Yes             | 600 V (1000 V in signs, lighting fixtures and luminaries) | 105°C                         |
| MGC (100/Jar) | 80611434160   | Insulation Displacement (IDC) | 1.0 mm <sup>2</sup> - 2.5 mm <sup>2</sup> Solid/Stranded | 5.3 mm              | 0.5 mm <sup>2</sup> Stranded, 0.75 mm <sup>2</sup> Solid/Stranded | 3.8 mm              | Yes             | 600 V (1000 V in signs, lighting fixtures and luminaries) | 105°C                         |

### 3M™ Direct Bury Splice Kits DBO/B-6 and DBR/Y-6

The 3M Direct Bury Splice Kits DBO/B-6 and DBR/Y-6 are used to electrically connect two or more pre-stripped copper wires and moisture seal the connection for direct burial. The DBO/B-6 kit includes a 3M Performance Plus Wire Connector O/B+ and a high impact, UV-resistant polypropylene tube prefilled with moisture-resistant grease and is flame retardant. The DBR/Y-6 kit includes a 3M Performance Plus Wire Connector R/Y+ and a high impact, UV-resistant polypropylene tube prefilled with moisture-resistant grease. Flame retardant.

**Applications:** Wiring up to 600 V in water-intensive applications such as golf courses, irrigation controls and outdoor lighting



| Product name | 3M Order Code | Conductor Size                             | Connector Style | Common Wire Combinations (Copper only)*            | Flame Retardant | Maximum Voltage Rating | Maximum Operating Temperature |
|--------------|---------------|--------------------------------------------|-----------------|----------------------------------------------------|-----------------|------------------------|-------------------------------|
| DBO/B-6 BULK | 80611467293   | 0.75 mm <sup>2</sup> - 2.5 mm <sup>2</sup> | Direct Bury     | 2 x 1.0 mm <sup>2</sup> to 3 x 2.5 mm <sup>2</sup> | Yes             | 600 V                  | 105°C                         |
| DBR/Y-6 BULK | 80611457195   | 1.0 mm <sup>2</sup> - 6.0 mm <sup>2</sup>  | Direct Bury     | 2 x 1.0 mm <sup>2</sup> to 3 x 4.0 mm <sup>2</sup> | Yes             | 600 V                  | 105°C                         |

\* See data sheet for all combinations

### 3M™ Scotchlok™ Moisture Resistant Connectors 314 and 316IR

3M Scotchlok Connectors 314 and 316IR are used to electrically connect two or three wire ends, insulate the connection, and provide a moisture resistant seal. 316-IR is recommended for use with low energy underground circuit wires, sprinkler systems, landscape lighting or other moisture-resistant applications less than 30 volts.



**Recommended installation tool:** 3M™ Scotchlok™ Crimp Tool E-9BM or Multigrip (Slip Joint) Pliers

| Product    | 3M Order Code | Colour                | Conductor Size                           | Maximum Insulation Diameter | Flame Retardant | Maximum Voltage Rating | Maximum Operating Temperature |
|------------|---------------|-----------------------|------------------------------------------|-----------------------------|-----------------|------------------------|-------------------------------|
| 314        | 80610253660   | Blue Cap, White Body  | 0.5 - 1.5 mm <sup>2</sup> Solid/Stranded | 3.8 mm                      | Yes             | 600 V                  | 105°C                         |
| 314 (bulk) | 80610253678   | Blue Cap, White Body  | 0.5 - 1.5 mm <sup>2</sup> Solid/Stranded | 3.8 mm                      | Yes             | 600 V                  | 105°C                         |
| 316IR      | 80610734537   | Black Cap, White Body | 0.5 - 1.0 mm <sup>2</sup> Solid/Stranded | 3.9 mm                      | Yes             | 30 V                   | 105°C                         |

### 3M™ Scotchlok™ Butt Connector UAL

The UAL connector is a sealed, moisture resistant two or three wire insulation displacement connector. Outside ports accept solid copper, aluminium or a combination of both.



**Recommended installation tool:** 3M™ Scotchlok™ Crimp Tool E-9BM, E-9J or E-9Y

| Product | 3M Order Code | Colour | Conductor Size | Maximum Insulation Diameter                 | Flame Retardant | Maximum Operating Temperature |
|---------|---------------|--------|----------------|---------------------------------------------|-----------------|-------------------------------|
| UAL     | 80611327463   | Clear  | 0.5 - 1.2 mm   | Outside port: 2.1 mm<br>Centre port: 1.9 mm | No              | 140°C                         |

### 3M™ Scotchlok™ Crimping Tools

3M recommends the use of 3M Scotchlok Crimping Tools when installing 3M Scotchlok IDC Connectors. These tools ensure repeated fast, reliable connections. In projects where large numbers of connectors are being used, the high mechanical advantage designed into the tool will ensure minimal operator fatigue.

| Product       | E-9BM                                                                                                                                                                                       | E-9J                                                                                                                                                                                              | E-9Y-P                                                                                                                                                                                                     |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |                                                                                                                                                                                             |                                                                                                                                                                                                   |                                                                                                                                                                                                            |
| 3M Order Code | 80611141294                                                                                                                                                                                 | 80611314065                                                                                                                                                                                       | 80611323645                                                                                                                                                                                                |
| Product name  | 3M™ Scotchlok™ Hand Crimping Tool E-9BM                                                                                                                                                     | 3M™ Scotchlok™ Hand Crimping Tool E-9J                                                                                                                                                            | 3M™ Scotchlok™ Hand Crimping Tool E-9Y-P                                                                                                                                                                   |
| Description   | This heavy duty tool is capable of crimping all Scotchlok connectors. Its closing action and adjustable jaws provide a 10 to 1 mechanical advantage, allowing it to handle all wire gauges. | The E-9J tool is a lightweight, handheld tool featuring a single stroke, with a work-saving 10 to 1 mechanical advantage over applied hand force. For use with Scotchlok butt and tap connectors. | The E-9Y tool has stepped jaws and a long nose and side wire cutter which provides crimping action for two or three conductor splicing. The E-9Y tool is not recommended for 0.9 mm and larger conductors. |

# 3M™ Medium Voltage Cold Shrink

## Cable Terminations & Joints up to 33 kV

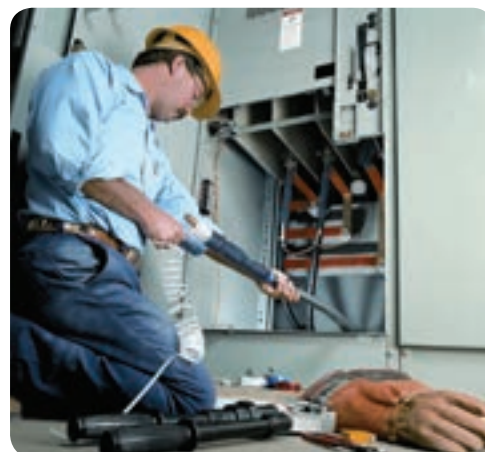
Since the conception of 3M Cold Shrink more than 40 years ago, 3M Cold Shrink technology has been found to be a safer, more reliable and easier to install solution for medium and high voltage jointing and terminating versus conventional heat shrink alternatives. It is a preferred solution for power utilities, private power network operators and electrical specifiers globally.

### Medium and High Voltage Cable Accessories

After many years of developing our 3M cold shrink product range, with our customers' needs in mind, we are proud to offer contractors a wide range of time and money saving joints and terminations to fit almost any application.

#### Why move to 3M Cold Shrink?

- Fast, straightforward installation
- No flame required
- No special site permits needed
- No cooling time needed before energising
- Easier to use in enclosed areas
- Constant radial pressure for optimised environmental performance
- Less chance of damaging XLPE cable material
- Extensive quality and factory testing programmes



3M cold shrink products  
installed and trusted worldwide  
for over **40 years**

### 3M™ Cold Shrink Cable Termination Products

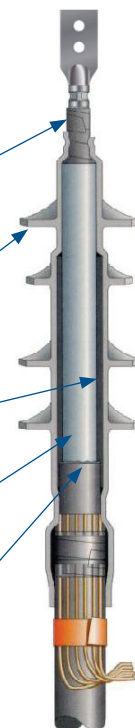
#### Premium 3M™ Cold Shrink Terminations Fully Integrated: Quick Term III (QT-III)

This fully integrated premium cable termination offers the greatest simplicity and flexibility in our range. Our premium QT-III termination covers a wide range of cable sizes and types as well as accommodating voltages up to 69 kV. Shorter installation length enables this product to fit into a wide range of boxes, and fewer installation steps reduce the risk of error.

#### Standard 3M™ Cold Shrink Terminations Part Integrated: Quick Term II (QT-II)

Our part integrated Cold Shrink termination offers a viable cost-based alternative to heat shrink cable terminating technology. Additional process steps to our QT-III premium range mean that comparative time savings are less but the benefits of not having to use heat or extra tooling still apply. This range covers many of the most common cable configurations and size ranges.

| QT-III                                 | QT-II                         |
|----------------------------------------|-------------------------------|
| <b>Moisture Blocking Mastic</b>        |                               |
| Integrated into termination            | Applied separately            |
| <b>Outer Insulator</b>                 |                               |
| Very good track resistance             | Good track resistance         |
| <b>Stress Control Tube</b>             |                               |
| Integrated into termination            | Integrated into termination   |
| <b>Silicone Grease - Stress Relief</b> |                               |
| No - Integrated mastic is sufficient   | Yes - Applied separately      |
| <b>Stress Control Mastic</b>           |                               |
| Integrated into termination            | No - Requires silicone grease |



### The simple application of a 3M™ Cold Shrink Cable Termination



1 Prepare the cable as normal and clean with 3M™ Cable Wipes



2 Place the 3M™ Cold Shrink Termination Body over the cable end and position at the correct point on the cable



3 Begin to remove the inner core, allowing the termination to shrink down onto the cable



4 Once the inner core has been fully removed, the termination installation is complete!



### 3M™ Cold Shrink QT-III Termination Kits for Single Core Cable (AU)

3M Cold Shrink QT-III Terminations offer easy and safe installation, and reliable, consistent performance when terminating indoor and outdoor medium voltage cable. No flame is required for installation. The silicone rubber body provides UV stability, track and erosion resistance, high creepage and BIL, hydrophobicity and constant radial pressure, resulting in maximum performance and durability. Kits are designed for use with crimp lugs. For use with mechanical lugs please contact 3M.

#### 3M Cold Shrink QT-III Termination Kits / Single Core Cable - 3.3 kV, 6.6 kV, 11 kV

**Cable:** Polymeric Insulation, Copper Wire Screened\*, Non-Armoured or Armoured

**Contents:** Each kit will make three single core terminations. Lugs not included.

Termination kits for single and three core cable are specifically designed and optimised for Australian conditions, and meet or exceed the requirements of IEC 60502 and IEEE Standard 48.

| Voltage | Description | No. Cores | Cable Size mm <sup>2</sup> | Cable Insulation Range mm | BIL kV | NON-ARMoured CABLE       |                      |               | ARMoured CABLE           |                         |               |
|---------|-------------|-----------|----------------------------|---------------------------|--------|--------------------------|----------------------|---------------|--------------------------|-------------------------|---------------|
|         |             |           |                            |                           |        | Jacket Diameter Range mm | 3M Kit               | 3M Order Code | Jacket Diameter Range mm | 3M Kit                  | 3M Order Code |
| 3.3 kV  | Indoor      | 1         | 25                         | 8.2 - 15.0                | 95     | 13 - 20                  | <b>7620-T-95-AU</b>  | AE010591541   | 14 - 24                  | <b>7620-T-95-AR-AU</b>  | AE010591731   |
|         |             |           | 35 - 95                    | 11.2 - 22.7               | 95     | 17 - 27                  | <b>7621-T-95-AU</b>  | AE010591558   | 23 - 41                  | <b>7621-T-95-AR-AU</b>  | AE010591749   |
|         |             |           | 120 - 185                  | 16.3 - 27.4               | 110    | 25 - 38                  | <b>7642-T-110-AU</b> | AE010591566   | 25 - 41                  | <b>7642-T-110-AR-AU</b> | AE010591756   |
|         |             |           | 240 - 400                  | 21.1 - 38.9               | 110    | 28 - 48                  | <b>7644-T-110-AU</b> | AE010591574   | 33 - 56                  | <b>7644-T-110-AR-AU</b> | AE010591764   |
|         |             |           | 500 - 630                  | 26.7 - 45.7               | 110    | 35 - 61                  | <b>7645-T-110-AU</b> | AE010591582   | 42 - 79                  | <b>7645-T-110-AR-AU</b> | AE010591772   |
|         |             |           | 800 - 1000                 | 38.9 - 58.9               | 110    | 47 - 71                  | <b>7646-T-110-AU</b> | AE010591590   | 47 - 79                  | <b>7646-T-110-AR-AU</b> | AE010591780   |
|         | Outdoor     | 1         | 25                         | 8.2 - 15.0                | 95     | 13 - 20                  | <b>7620-S-2-AU</b>   | AE010591632   | 14 - 24                  | <b>7620-S-2-AR-AU</b>   | AE010591863   |
|         |             |           | 35 - 95                    | 11.2 - 22.7               | 95     | 17 - 27                  | <b>7621-S-2-AU</b>   | AE010591640   | 23 - 41                  | <b>7621-S-2-AR-AU</b>   | AE010591871   |
|         |             |           | 120 - 185                  | 16.3 - 27.4               | 150    | 25 - 38                  | <b>7652-S-4-AU</b>   | AE010591657   | 25 - 41                  | <b>7652-S-4-AR-AU</b>   | AE010591889   |
|         |             |           | 240 - 400                  | 21.1 - 38.9               | 150    | 28 - 48                  | <b>7654-S-4-AU</b>   | AE010591665   | 33 - 56                  | <b>7654-S-4-AR-AU</b>   | AE010591897   |
|         |             |           | 500 - 630                  | 26.7 - 45.7               | 150    | 35 - 61                  | <b>7655-S-4-AU</b>   | AE010591673   | 42 - 79                  | <b>7655-S-4-AR-AU</b>   | AE010591905   |
|         |             |           | 800 - 1000                 | 38.9 - 58.9               | 150    | 47 - 71                  | <b>7656-S-4-AU</b>   | AE010591681   | 47 - 79                  | <b>7656-S-4-AR-AU</b>   | AE010591913   |
| 6.6 kV  | Indoor      | 1         | 16 - 25                    | 8.2 - 15.0                | 95     | 13 - 20                  | <b>7620-T-95-AU</b>  | AE010591541   | 14 - 24                  | <b>7620-T-95-AR-AU</b>  | AE010591731   |
|         |             |           | 35 - 70                    | 11.2 - 22.7               | 95     | 17 - 27                  | <b>7621-T-95-AU</b>  | AE010591558   | 23 - 41                  | <b>7621-T-95-AR-AU</b>  | AE010591749   |
|         |             |           | 95 - 150                   | 16.3 - 27.4               | 110    | 25 - 38                  | <b>7642-T-110-AU</b> | AE010591566   | 25 - 41                  | <b>7642-T-110-AR-AU</b> | AE010591756   |
|         |             |           | 185 - 240                  | 21.1 - 38.9               | 110    | 28 - 48                  | <b>7644-T-110-AU</b> | AE010591574   | 33 - 56                  | <b>7644-T-110-AR-AU</b> | AE010591764   |
|         |             |           | 300 - 500                  | 26.7 - 45.7               | 110    | 35 - 61                  | <b>7645-T-110-AU</b> | AE010591582   | 42 - 79                  | <b>7645-T-110-AR-AU</b> | AE010591772   |
|         |             |           | 630 - 1000                 | 38.9 - 58.9               | 110    | 47 - 71                  | <b>7646-T-110-AU</b> | AE010591590   | 47 - 79                  | <b>7646-T-110-AR-AU</b> | AE010591780   |
|         | Outdoor     | 1         | 16 - 25                    | 8.2 - 15.0                | 95     | 13 - 20                  | <b>7620-S-2-AU</b>   | AE010591632   | 14 - 24                  | <b>7620-S-2-AR-AU</b>   | AE010591863   |
|         |             |           | 35 - 70                    | 11.2 - 22.7               | 95     | 17 - 27                  | <b>7621-S-2-AU</b>   | AE010591640   | 23 - 41                  | <b>7621-S-2-AR-AU</b>   | AE010591871   |
|         |             |           | 95 - 150                   | 16.3 - 27.4               | 150    | 25 - 38                  | <b>7652-S-4-AU</b>   | AE010591657   | 25 - 41                  | <b>7652-S-4-AR-AU</b>   | AE010591889   |
|         |             |           | 185 - 240                  | 21.1 - 38.9               | 150    | 28 - 48                  | <b>7654-S-4-AU</b>   | AE010591665   | 33 - 56                  | <b>7654-S-4-AR-AU</b>   | AE010591897   |
|         |             |           | 300 - 500                  | 26.7 - 45.7               | 150    | 35 - 61                  | <b>7655-S-4-AU</b>   | AE010591673   | 42 - 79                  | <b>7655-S-4-AR-AU</b>   | AE010591905   |
|         |             |           | 630 - 1000                 | 38.9 - 58.9               | 150    | 47 - 71                  | <b>7656-S-4-AU</b>   | AE010591681   | 47 - 79                  | <b>7656-S-4-AR-AU</b>   | AE010591913   |
| 11 kV   | Indoor      | 1         | 16                         | 8.2 - 15.0                | 95     | 13 - 20                  | <b>7620-T-95-AU</b>  | AE010591541   | 14 - 24                  | <b>7620-T-95-AR-AU</b>  | AE010591731   |
|         |             |           | 25 - 70                    | 11.2 - 22.7               | 95     | 17 - 27                  | <b>7621-T-95-AU</b>  | AE010591558   | 23 - 41                  | <b>7621-T-95-AR-AU</b>  | AE010591749   |
|         |             |           | 95 - 150                   | 16.3 - 27.4               | 110    | 25 - 38                  | <b>7642-T-110-AU</b> | AE010591566   | 25 - 41                  | <b>7642-T-110-AR-AU</b> | AE010591756   |
|         |             |           | 185 - 240                  | 21.1 - 38.9               | 110    | 28 - 48                  | <b>7644-T-110-AU</b> | AE010591574   | 33 - 56                  | <b>7644-T-110-AR-AU</b> | AE010591764   |
|         |             |           | 120 - 400                  | 18.3 - 32.8               | 150    | 26 - 41                  | <b>7653-T-150-AU</b> | AE010591608   | 33 - 56                  | <b>7653-T-150-AR-AU</b> | AE010591798   |
|         |             |           | 300 - 500                  | 26.7 - 45.7               | 110    | 35 - 61                  | <b>7645-T-110-AU</b> | AE010591582   | 42 - 79                  | <b>7645-T-110-AR-AU</b> | AE010591772   |
|         |             |           |                            |                           | 150    |                          | <b>7655-T-150-AU</b> | AE010591616   |                          | <b>7655-T-150-AR-AU</b> | AE010591806   |
|         |             |           | 630 - 1000                 | 38.9 - 58.9               | 110    |                          | <b>7646-T-110-AU</b> | AE010591590   |                          | <b>7646-T-110-AR-AU</b> | AE010591780   |
|         |             |           |                            |                           | 150    | 47 - 71                  | <b>7656-T-150-AU</b> | AE010591624   | 47 - 79                  | <b>7656-T-150-AR-AU</b> | AE010591814   |
|         | Outdoor     | 1         | 16                         | 8.2 - 15.0                | 95     | 13 - 20                  | <b>7620-S-2-AU</b>   | AE010591632   | 14 - 24                  | <b>7620-S-2-AR-AU</b>   | AE010591863   |
|         |             |           | 25 - 70                    | 11.2 - 22.7               | 95     | 17 - 27                  | <b>7621-S-2-AU</b>   | AE010591640   | 23 - 41                  | <b>7621-S-2-AR-AU</b>   | AE010591871   |
|         |             |           | 95 - 150                   | 16.3 - 27.4               | 150    | 25 - 38                  | <b>7652-S-4-AU</b>   | AE010591657   | 25 - 41                  | <b>7652-S-4-AR-AU</b>   | AE010591889   |
|         |             |           | 185 - 240                  | 21.1 - 38.9               | 150    | 28 - 48                  | <b>7654-S-4-AU</b>   | AE010591665   | 33 - 56                  | <b>7654-S-4-AR-AU</b>   | AE010591897   |
|         |             |           |                            |                           | 200    |                          | <b>7664-S-8-AU</b>   | AE010591707   |                          | <b>7664-S-8-AR-AU</b>   | AE010591830   |
|         |             |           | 120 - 400                  | 18.3 - 32.8               | 200    | 26 - 41                  | <b>7663-S-8-AU</b>   | AE010591699   | 33 - 56                  | <b>7663-S-8-AR-AU</b>   | AE010591822   |
|         |             |           | 300 - 500                  | 26.7 - 45.7               | 150    | 35 - 61                  | <b>7655-S-4-AU</b>   | AE010591673   | 42 - 79                  | <b>7655-S-4-AR-AU</b>   | AE010591905   |
|         |             |           |                            |                           | 200    |                          | <b>7665-S-8-AU</b>   | AE010591715   |                          | <b>7665-S-8-AR-AU</b>   | AE010591848   |
|         |             |           | 630 - 1000                 | 38.9 - 58.9               | 150    |                          | <b>7656-S-4-AU</b>   | AE010591681   |                          | <b>7656-S-4-AR-AU</b>   | AE010591913   |
|         |             |           |                            |                           | 200    | 47 - 71                  | <b>7666-S-8-AU</b>   | AE010591723   | 47 - 79                  | <b>7666-S-8-AR-AU</b>   | AE010591855   |

Final determining factors are cable jacket and insulation diameters.

\* Kits for copper tape screened cable available on request

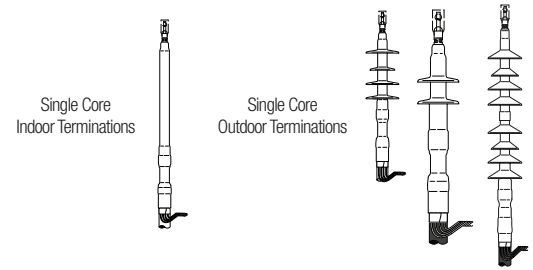


## Cold Shrink QT-III Termination Kits for Single Core Cable (AU)

### 3M Cold Shrink QT-III Termination Kits Single Core Cable - 15 kV, 22 kV, 33 kV

**Cable:** Polymeric Insulation, Copper Wire Screened\*\*, Non-Armoured or Armoured

**Contents:** Each kit will make three single core terminations. Lugs not included.



| Voltage   | Description | No. Cores   | Cable Size mm² | Cable Insulation Range mm  | BIL kV     | NON-ARMoured CABLE       |                                |                            | ARMoured CABLE           |                                      |                            |                |                  |             |
|-----------|-------------|-------------|----------------|----------------------------|------------|--------------------------|--------------------------------|----------------------------|--------------------------|--------------------------------------|----------------------------|----------------|------------------|-------------|
|           |             |             |                |                            |            | Jacket Diameter Range mm | 3M Kit                         | 3M Order Code              | Jacket Diameter Range mm | 3M Kit                               | 3M Order Code              |                |                  |             |
| 15 kV     | Indoor      | 1           | 16             | 8.2 - 15.0                 | 95         | 13 - 20                  | 7620-T-95-AU                   | AE010591541                | 14 - 24                  | 7620-T-95-AR-AU                      | AE010591731                |                |                  |             |
|           |             |             | 25             | 11.2 - 22.7                | 95         | 17 - 27                  | 7621-T-95-AU                   | AE010591558                | 23 - 41                  | 7621-T-95-AR-AU                      | AE010591749                |                |                  |             |
|           |             |             | 35 - 120       | 16.3 - 27.4                | 110        | 25 - 38                  | 7642-T-110-AU                  | AE010591566                | 25 - 41                  | 7642-T-110-AR-AU                     | AE010591756                |                |                  |             |
|           |             |             | 120 - 240      | 21.1 - 38.9                | 110        | 28 - 48                  | 7644-T-110-AU                  | AE010591574                | 33 - 56                  | 7644-T-110-AR-AU                     | AE010591764                |                |                  |             |
|           |             |             | 70 - 150       | 18.3 - 32.8                | 150        | 26 - 41                  | 7653-T-150-AU                  | AE010591608                | 33 - 56                  | 7653-T-150-AR-AU                     | AE010591798                |                |                  |             |
|           |             |             | 240 - 500      | 26.7 - 45.7                | 110<br>150 | 35 - 61                  | 7645-T-110-AU<br>7655-T-150-AU | AE010591582<br>AE010591616 | 42 - 79                  | 7645-T-110-AR-AU<br>7655-T-150-AR-AU | AE010591772<br>AE010591806 |                |                  |             |
|           |             |             | 500 - 1000     | 38.9 - 58.9                | 110<br>150 | 47 - 71                  | 7646-T-110-AU<br>7656-T-150-AU | AE010591590<br>AE010591624 | 47 - 79                  | 7646-T-110-AR-AU<br>7656-T-150-AR-AU | AE010591780<br>AE010591814 |                |                  |             |
|           |             |             | Outdoor        | 1                          | 16         | 8.2 - 15.0               | 95                             | 13 - 20                    | 7620-S-2-AU              | AE010591632                          | 14 - 24                    | 7620-S-2-AR-AU | AE010591863      |             |
|           |             |             |                |                            | 25         | 11.2 - 22.7              | 95                             | 17 - 27                    | 7621-S-2-AU              | AE010591640                          | 23 - 41                    | 7621-S-2-AR-AU | AE010591871      |             |
|           | 35 - 120    | 16.3 - 27.4 |                |                            | 150        | 25 - 38                  | 7652-S-4-AU                    | AE010591657                | 25 - 41                  | 7652-S-4-AR-AU                       | AE010591889                |                |                  |             |
|           | 120 - 240   | 21.1 - 38.9 |                |                            | 150<br>200 | 28 - 48                  | 7654-S-4-AU<br>7664-S-8-AU     | AE010591665<br>AE010591707 | 33 - 56                  | 7654-S-4-AR-AU<br>7664-S-8-AR-AU     | AE010591897<br>AE010591830 |                |                  |             |
|           | 70 - 150    | 18.3 - 32.8 |                |                            | 200        | 26 - 41                  | 7663-S-8-AU                    | AE010591699                | 33 - 56                  | 7663-S-8-AR-AU                       | AE010591822                |                |                  |             |
|           | 240 - 500   | 26.7 - 45.7 |                |                            | 150<br>200 | 35 - 61                  | 7655-S-4-AU<br>7665-S-8-AU     | AE010591673<br>AE010591715 | 42 - 79                  | 7655-S-4-AR-AU<br>7665-S-8-AR-AU     | AE010591905<br>AE010591848 |                |                  |             |
|           | 630 - 1000  | 38.9 - 58.9 |                |                            | 150<br>200 | 47 - 71                  | 7656-S-4-AU<br>7666-S-8-AU     | AE010591681<br>AE010591723 | 47 - 79                  | 7656-S-4-AR-AU<br>7666-S-8-AR-AU     | AE010591913<br>AE010591855 |                |                  |             |
|           | 22 kV       | Indoor      |                |                            | 1          | 35 - 150                 | 18.3 - 32.8                    | 150                        | 26 - 41                  | 7653-T-150-AU                        | AE010591608                | 33 - 56        | 7653-T-150-AR-AU | AE010591798 |
|           |             |             |                |                            |            | 35 - 120                 | 18.3 - 32.8                    | 200                        | 26 - 41                  | 7663-S-8-AU*                         | AE010591699                | 33 - 56        | 7663-S-8-AR-AU*  | AE010591822 |
|           |             |             | 70 - 150       | 21.1 - 38.9                |            | 200                      | 28 - 48                        | 7664-S-8-AU*               | AE010591707              | 33 - 56                              | 7664-S-8-AR-AU*            | AE010591830    |                  |             |
|           |             |             | 185 - 400      | 26.7 - 45.7                |            | 150                      | 35 - 61                        | 7655-T-150-AU              | AE010591616              | 42 - 79                              | 7655-T-150-AR-AU           | AE010591806    |                  |             |
|           |             |             | 150 - 400      | 26.7 - 45.7                |            | 200                      | 35 - 61                        | 7665-S-8-AU*               | AE010591715              | 42 - 79                              | 7665-S-8-AR-AU*            | AE010591848    |                  |             |
| 500 - 800 |             |             | 38.9 - 58.9    | 150<br>200                 |            | 47 - 71                  | 7656-T-150-AU<br>7666-S-8-AU*  | AE010591624<br>AE010591723 | 47 - 79                  | 7656-T-150-AR-AU<br>7666-S-8-AR-AU*  | AE010591814<br>AE010591855 |                |                  |             |
| Outdoor   |             | 1           | 35 - 120       | 16.3 - 27.4<br>18.3 - 32.8 | 150<br>200 | 25 - 38<br>26 - 41       | 7652-S-4-AU<br>7663-S-8-AU     | AE010591657<br>AE010591699 | 25 - 41<br>33 - 56       | 7652-S-4-AR-AU<br>7663-S-8-AR-AU     | AE010591889<br>AE010591822 |                |                  |             |
|           |             |             | 70 - 150       | 21.1 - 38.9                | 150<br>200 | 28 - 48                  | 7654-S-4-AU<br>7664-S-8-AU     | AE010591665<br>AE010591707 | 33 - 56                  | 7654-S-4-AR-AU<br>7664-S-8-AR-AU     | AE010591897<br>AE010591830 |                |                  |             |
|           |             |             | 150 - 400      | 26.7 - 45.7                | 150<br>200 | 35 - 61                  | 7655-S-4-AU<br>7665-S-8-AU     | AE010591673<br>AE010591715 | 42 - 79                  | 7655-S-4-AR-AU<br>7665-S-8-AR-AU     | AE010591905<br>AE010591848 |                |                  |             |
|           |             |             | 500 - 800      | 38.9 - 58.9                | 150<br>200 | 47 - 71                  | 7656-S-4-AU<br>7666-S-8-AU     | AE010591681<br>AE010591723 | 47 - 79                  | 7656-S-4-AR-AU<br>7666-S-8-AR-AU     | AE010591913<br>AE010591855 |                |                  |             |
| 33 kV     | Indoor      | 1           | 35 - 70        | 18.3 - 32.8                | 200        | 26 - 41                  | 7663-S-8-AU*                   | AE010591699                | 33 - 56                  | 7663-S-8-AR-AU*                      | AE010591822                |                |                  |             |
|           |             |             | 35 - 120       | 21.1 - 38.9                | 200        | 28 - 48                  | 7664-S-8-AU*                   | AE010591707                | 33 - 56                  | 7664-S-8-AR-AU*                      | AE010591830                |                |                  |             |
|           |             |             | 95 - 300       | 26.7 - 45.7                | 200        | 35 - 61                  | 7665-S-8-AU*                   | AE010591715                | 42 - 79                  | 7665-S-8-AR-AU*                      | AE010591848                |                |                  |             |
|           |             |             | 400 - 800      | 38.9 - 58.9                | 200        | 47 - 71                  | 7666-S-8-AU*                   | AE010591723                | 47 - 79                  | 7666-S-8-AR-AU*                      | AE010591855                |                |                  |             |
|           | Outdoor     | 1           | 35 - 70        | 18.3 - 32.8                | 200        | 26 - 41                  | 7663-S-8-AU                    | AE010591699                | 33 - 56                  | 7663-S-8-AR-AU                       | AE010591822                |                |                  |             |
|           |             |             | 35 - 120       | 21.1 - 38.9                | 200        | 28 - 48                  | 7664-S-8-AU                    | AE010591707                | 33 - 56                  | 7664-S-8-AR-AU                       | AE010591830                |                |                  |             |
|           |             |             | 95 - 300       | 26.7 - 45.7                | 200        | 35 - 61                  | 7665-S-8-AU                    | AE010591715                | 42 - 79                  | 7665-S-8-AR-AU                       | AE010591848                |                |                  |             |
|           |             |             | 400 - 800      | 38.9 - 58.9                | 200        | 47 - 71                  | 7666-S-8-AU                    | AE010591723                | 47 - 79                  | 7666-S-8-AR-AU                       | AE010591855                |                |                  |             |

\* Suitable for indoor & outdoor terminations.

\*\* Kits for copper tape screened cable available on request

Final determining factors are cable jacket and insulation diameters.

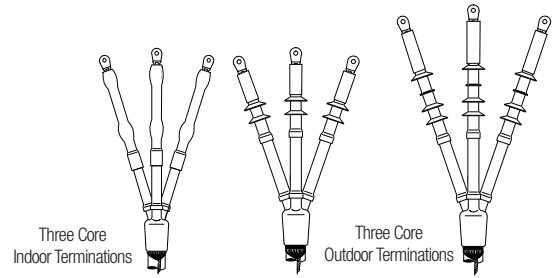
## Cold Shrink QT-III Termination Kits for Three Core Cable (AU)

### 3M Cold Shrink QT-III Termination Kits

#### Three Core Cable - 3.3 kV, 6.6 kV, 11 kV

**Cable:** Polymeric Insulation, Copper Wire Screened\*, Non-Armoured or Armoured

**Contents:** Each kit will make one three core termination. Lugs not included.



| Voltage   | Description | No. Cores   | Cable Size<br>mm² | Cable<br>Insulation<br>Range<br>mm | Jacket<br>Diameter<br>Range<br>mm | BIL<br>kV      | NON-ARMoured or<br>ARMoured CABLE |               |
|-----------|-------------|-------------|-------------------|------------------------------------|-----------------------------------|----------------|-----------------------------------|---------------|
|           |             |             |                   |                                    |                                   |                | 3M Kit                            | 3M Order Code |
| 3.3 kV    | Indoor      | 3           | 16 - 35           | 8.4 - 12.7                         | 33 - 49                           | 95             | 7620-T-95-3W-AU                   | AE010592309   |
|           |             |             | 50 - 95           | 12.7 - 17.8                        | 37 - 68                           | 95             | 7621-T-95-3W-AU                   | AE010592317   |
|           |             |             |                   |                                    |                                   | 110            | 7621-T-110-3W-AU                  | AE010592325   |
|           |             |             |                   |                                    |                                   | 110            | 7622-T-110-3W-AU                  | AE010592333   |
|           |             |             |                   |                                    |                                   | 110            | 7624-T-110-3W-AU                  | AE010592341   |
|           | 400 - 500   | 30.0 - 38.6 | 66 - 119          | 110                                | 7625-T-110-3W-AU                  | AE010592358    |                                   |               |
|           | Outdoor     | 3           | 16 - 35           | 8.4 - 12.7                         | 33 - 49                           | 95             | 7620-S-2-3W-AU                    | AE010592408   |
|           |             |             | 50 - 95           | 12.7 - 17.8                        | 37 - 68                           | 95             | 7621-S-2-3W-AU                    | AE010591178   |
|           |             |             |                   |                                    |                                   | 150            | 7691-S-4-3W-AU                    | AE010592424   |
|           |             |             |                   |                                    |                                   | 150            | 7692-S-4-3W-AU                    | AE010591525   |
| 150       |             |             |                   |                                    |                                   | 7693-S-4-3W-AU | AE010592440                       |               |
| 400 - 500 | 30.0 - 38.6 | 66 - 119    | 150               | 7695-S-4-3W-AU                     | AE010592457                       |                |                                   |               |
| 6.6 kV    | Indoor      | 3           | 16 - 25           | 8.4 - 12.7                         | 33 - 49                           | 95             | 7620-T-95-3W-AU                   | AE010592309   |
|           |             |             | 35 - 70           | 12.7 - 17.8                        | 37 - 68                           | 95             | 7621-T-95-3W-AU                   | AE010592317   |
|           |             |             |                   |                                    |                                   | 110            | 7621-T-110-3W-AU                  | AE010592325   |
|           |             |             |                   |                                    |                                   | 110            | 7622-T-110-3W-AU                  | AE010592333   |
|           |             |             |                   |                                    |                                   | 110            | 7624-T-110-3W-AU                  | AE010592341   |
|           | 400 - 500   | 30.0 - 38.6 | 66 - 119          | 110                                | 7625-T-110-3W-AU                  | AE010592358    |                                   |               |
|           | Outdoor     | 3           | 16 - 25           | 8.4 - 12.7                         | 33 - 49                           | 95             | 7620-S-2-3W-AU                    | AE010592408   |
|           |             |             | 35 - 70           | 12.7 - 17.8                        | 37 - 68                           | 95             | 7621-S-2-3W-AU                    | AE010591178   |
|           |             |             |                   |                                    |                                   | 150            | 7691-S-4-3W-AU                    | AE010592424   |
|           |             |             |                   |                                    |                                   | 150            | 7692-S-4-3W-AU                    | AE010591525   |
| 150       |             |             |                   |                                    |                                   | 7693-S-4-3W-AU | AE010592440                       |               |
| 400 - 500 | 30.0 - 38.6 | 66 - 119    | 150               | 7695-S-4-3W-AU                     | AE010592457                       |                |                                   |               |
| 11 kV     | Indoor      | 3           | 10 - 50           | 12.7 - 17.8                        | 37 - 68                           | 95             | 7621-T-95-3W-AU                   | AE010592317   |
|           |             |             |                   |                                    |                                   | 110            | 7621-T-110-3W-AU                  | AE010592325   |
|           |             |             | 70 - 150          | 17.8 - 23.4                        | 49 - 79                           | 110            | 7622-T-110-3W-AU                  | AE010592333   |
|           |             |             |                   |                                    |                                   | 150            | 7693-T-150-3W-AU                  | AE010592366   |
|           |             |             |                   |                                    |                                   | 150            | 7624-T-110-3W-AU                  | AE010592341   |
|           | Outdoor     | 3           | 185 - 300         | 23.4 - 30.0                        | 64 - 110                          | 150            | 7694-T-150-3W-AU                  | AE010592374   |
|           |             |             |                   |                                    |                                   | 150            | 7625-T-110-3W-AU                  | AE010592358   |
|           |             |             | 400 - 500         | 30.0 - 38.6                        | 66 - 119                          | 110            | 7695-T-150-3W-AU                  | AE010592382   |
|           |             |             |                   |                                    |                                   | 150            | 7691-S-4-3W-AU                    | AE010592424   |
|           |             |             |                   |                                    |                                   | 150            | 7692-S-4-3W-AU                    | AE010591525   |
| Outdoor   | 3           | 185 - 300   | 23.4 - 30.0       | 64 - 110                           | 150                               | 7693-S-4-3W-AU | AE010592440                       |               |
|           |             | 400 - 500   | 30.0 - 38.6       | 66 - 119                           | 150                               | 7695-S-4-3W-AU | AE010592457                       |               |
|           |             |             |                   |                                    | 200                               | 7685-S-8-3W-AU | AE010592390                       |               |

Final determining factors are cable jacket and insulation diameters.

\* Kits for copper tape screened cable available on request

## Cold Shrink QT-III Termination Kits for Three Core Cable (AU)

### 3M Cold Shrink QT-III Termination Kits Three Core Cable - 15 kV, 22 kV, 33 kV

**Cable:** Polymeric Insulation, Copper Wire Screened\*\*, Non-Armoured or Armoured

**Contents:** Each kit will make one three core termination. Lugs not included.



| Voltage | Description | No. Cores | Cable Size<br>mm <sup>2</sup> | Cable<br>Insulation<br>Range<br>mm | Jacket<br>Diameter<br>Range<br>mm | BIL<br>kV | NON-ARMoured or<br>ARMoured CABLE |               |
|---------|-------------|-----------|-------------------------------|------------------------------------|-----------------------------------|-----------|-----------------------------------|---------------|
|         |             |           |                               |                                    |                                   |           | 3M Kit                            | 3M Order Code |
| 15 kV   | Indoor      | 3         | 16 - 25                       | 12.7-17.8                          | 37 - 68                           | 110       | 7621-T-110-3W-AU                  | AE010592325   |
|         |             |           | 35 - 95                       | 17.8 - 23.4                        | 49 - 79                           | 110       | 7622-T-110-3W-AU                  | AE010592333   |
|         |             |           |                               |                                    |                                   | 150       | 7693-T-150-3W-AU                  | AE010592366   |
|         |             |           | 120 - 185                     | 23.4 - 30.0                        | 64 - 110                          | 110       | 7624-T-110-3W-AU                  | AE010592341   |
|         |             |           |                               |                                    |                                   | 150       | 7694-T-150-3W-AU                  | AE010592374   |
|         | Outdoor     | 3         | 240 - 300                     | 30.0 - 38.6                        | 66 - 119                          | 110       | 7625-T-110-3W-AU                  | AE010592358   |
|         |             |           |                               |                                    |                                   | 150       | 7695-T-150-3W-AU                  | AE010592382   |
|         |             |           | 16 - 25                       | 12.7 - 17.8                        | 37 - 68                           | 150       | 7691-S-4-3W-AU                    | AE010592424   |
|         |             |           | 35 - 95                       | 17.8 - 23.4                        | 49 - 79                           | 150       | 7692-S-4-3W-AU                    | AE010591525   |
|         |             |           | 120 - 185                     | 23.4 - 30.0                        | 64 - 110                          | 150       | 7693-S-4-3W-AU                    | AE010592440   |
| 22 kV   | Indoor      | 3         | 240 - 300                     | 30.0 - 38.6                        | 66 - 119                          | 150       | 7695-S-4-3W-AU                    | AE010592457   |
|         |             |           | 240 - 300                     | 30.0 - 38.6                        | 66 - 119                          | 200       | 7685-S-8-3W-AU                    | AE010592390   |
|         | Outdoor     | 3         | 25 - 70                       | 17.8 - 23.4                        | 49 - 79                           | 150       | 7693-T-150-3W-AU                  | AE010592366   |
|         |             |           | 95 - 185                      | 23.4 - 30.0                        | 64 - 110                          | 150       | 7694-T-150-3W-AU                  | AE010592374   |
|         |             |           | 240 - 300                     | 30.0 - 38.6                        | 66 - 119                          | 150       | 7695-T-150-3W-AU                  | AE010592382   |
|         |             |           |                               |                                    |                                   | 200       | 7685-S-8-3W-AU*                   | AE010592390   |
|         |             |           | 25 - 70                       | 17.8 - 23.4                        | 49 - 79                           | 150       | 7692-S-4-3W-AU                    | AE010591525   |
|         |             |           | 95 - 185                      | 23.4 - 30.0                        | 64 - 110                          | 150       | 7693-S-4-3W-AU                    | AE010592440   |
| 33 kV   | Indoor      | 3         | 240 - 300                     | 30.0 - 38.6                        | 66 - 119                          | 150       | 7695-S-4-3W-AU                    | AE010592457   |
|         |             |           | 240 - 300                     | 30.0 - 38.6                        | 66 - 119                          | 200       | 7685-S-8-3W-AU                    | AE010592390   |
|         | Outdoor     | 3         | 95 - 240                      | 30.0 - 38.6                        | 66 - 119                          | 200       | 7685-S-8-3W-AU*                   | AE010592390   |
|         |             |           | 95 - 240                      | 30.0 - 38.6                        | 66 - 119                          | 200       | 7685-S-8-3W-AU*                   | AE010592390   |

\* Suitable for indoor & outdoor terminations.

\*\* Kits for copper tape screened cable available on request

Final determining factors are cable jacket and insulation diameters.

## Cold Shrink QT-II Termination Kits for Single Core Cable (AU)

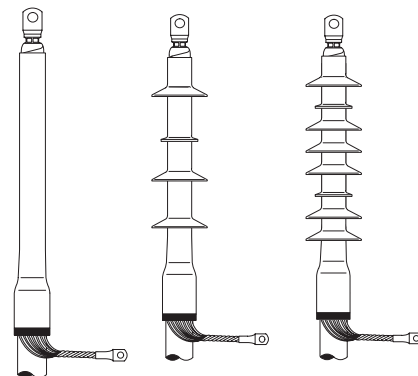
3M Cold Shrink QT-II terminations provide easy installation for a broad spectrum of indoor and outdoor applications. The Cold Shrink QT-II is based on specially formulated, track-resistant silicone rubber insulators with built-in Hi-K stress relief. Once applied this provides a void-free, flexible seal without the need for special tools or torches. Kits are designed for use with crimp lugs. For use with mechanical lugs please contact 3M.

Termination kits for single and three core cable are specifically designed and optimised for Australian conditions, and meet or exceed the requirements of IEC 60502-4 and IEEE Standard 48.

### 3M Cold Shrink QT-II Termination Kits Single Core Cable - 3.3 kV, 6.6 kV

**Cable:** Polymeric Insulation, Copper Wire Screened, Non-Armoured or Armoured

**Contents:** Each kit will make three single core terminations. Lugs not included.



| Voltage | Description | No. Cores | Cable Size mm <sup>2</sup> | Cable Insulation Range mm | BIL kV | NON-ARMoured CABLE       |               |               | ARMoured CABLE           |                  |               |
|---------|-------------|-----------|----------------------------|---------------------------|--------|--------------------------|---------------|---------------|--------------------------|------------------|---------------|
|         |             |           |                            |                           |        | Jacket Diameter Range mm | 3M Kit        | 3M Order Code | Jacket Diameter Range mm | 3M Kit           | 3M Order Code |
| 3.3 kV  | Indoor      | 1         | 25 - 70                    | 11.2 - 16.5               | 95     | Max. 23                  | 92-EB 60-1-AU | AE010591962   | 14 - 24                  | 92-EB 60-1-AR-AU | AE010592135   |
|         |             |           | 70 - 185                   | 14.2 - 22.1               | 95     | Max. 28                  | 92-EB 61-1-AU | AE010591970   | 23 - 41                  | 92-EB 61-1-AR-AU | AE010592143   |
|         |             |           | 95 - 300                   | 15.9 - 30.0               | 95     | 18 - 37                  | 92-EB 62-1-AU | AE010591988   | 23 - 41                  | 92-EB 62-1-AR-AU | AE010592150   |
|         |             |           | 240 - 500                  | 22.6 - 41.4               | 95     | 25 - 50                  | 92-EB 63-1-AU | AE010591996   | 33 - 56                  | 92-EB 63-1-AR-AU | AE010592168   |
|         |             |           | 400 - 630                  | 27.3 - 49.3               | 95     | 29 - 61                  | 92-EB 64-1-AU | AE010592002   | 42 - 79                  | 92-EB 64-1-AR-AU | AE010592176   |
|         | Outdoor     | 1         | 500 - 1000                 | 31.5 - 61.5               | 95     | 34 - 74                  | 92-EB 65-1-AU | AE010592010   | 42 - 79                  | 92-EB 65-1-AR-AU | AE010592184   |
|         |             |           | 95 - 300                   | 16.0 - 28.5               | 125    | 23 - 35                  | 93-EB 62-1-AU | AE010592028   | 23 - 41                  | 93-EB 62-1-AR-AU | AE010592192   |
|         |             |           | 240 - 500                  | 21.3 - 35.0               | 125    | 30 - 44                  | 93-EB 63-1-AU | AE010592036   | 33 - 56                  | 93-EB 63-1-AR-AU | AE010592200   |
|         |             |           | 400 - 630                  | 27.0 - 45.7               | 125    | 35 - 52                  | 93-EB 64-1-AU | AE010592044   | 35 - 56                  | 93-EB 64-1-AR-AU | AE010592218   |
|         |             |           | 500 - 1000                 | 33.0 - 53.3               | 125    | 41 - 65                  | 93-EB 65-1-AU | AE010592051   | 42 - 79                  | 93-EB 65-1-AR-AU | AE010592226   |
| 6.6 kV  | Indoor      | 1         | 25 - 50                    | 11.2 - 16.5               | 95     | Max. 23                  | 92-EB 60-1-AU | AE010591962   | 14 - 24                  | 92-EB 60-1-AR-AU | AE010592135   |
|         |             |           | 70 - 150                   | 14.2 - 22.1               | 95     | Max. 28                  | 92-EB 61-1-AU | AE010591970   | 23 - 41                  | 92-EB 61-1-AR-AU | AE010592143   |
|         |             |           | 95 - 300                   | 15.9 - 30.0               | 95     | 18 - 37                  | 92-EB 62-1-AU | AE010591988   | 23 - 41                  | 92-EB 62-1-AR-AU | AE010592150   |
|         |             |           | 240 - 500                  | 22.6 - 41.4               | 95     | 25 - 50                  | 92-EB 63-1-AU | AE010591996   | 33 - 56                  | 92-EB 63-1-AR-AU | AE010592168   |
|         |             |           | 400 - 630                  | 27.3 - 49.3               | 95     | 29 - 61                  | 92-EB 64-1-AU | AE010592002   | 42 - 79                  | 92-EB 64-1-AR-AU | AE010592176   |
|         | Outdoor     | 1         | 500 - 1000                 | 31.5 - 61.5               | 95     | 34 - 74                  | 92-EB 65-1-AU | AE010592010   | 42 - 79                  | 92-EB 65-1-AR-AU | AE010592184   |
|         |             |           | 95 - 240                   | 16.0 - 28.5               | 125    | 23 - 35                  | 93-EB 62-1-AU | AE010592028   | 23 - 41                  | 93-EB 62-1-AR-AU | AE010592192   |
|         |             |           | 240 - 400                  | 21.3 - 35.0               | 125    | 30 - 44                  | 93-EB 63-1-AU | AE010592036   | 33 - 56                  | 93-EB 63-1-AR-AU | AE010592200   |
|         |             |           | 400 - 630                  | 27.0 - 45.7               | 125    | 35 - 52                  | 93-EB 64-1-AU | AE010592044   | 35 - 56                  | 93-EB 64-1-AR-AU | AE010592218   |
|         |             |           | 500 - 1000                 | 33.0 - 53.3               | 125    | 41 - 65                  | 93-EB 65-1-AU | AE010592051   | 42 - 79                  | 93-EB 65-1-AR-AU | AE010592226   |

Final determining factors are cable jacket and insulation diameters.

3M™ Medium Voltage Solutions  
up to 33 kV

Total fire ban?  
No hot work permit?

No worries.  
3M™ Cold Shrink Cable Accessories.



## Cold Shrink QT-II Termination Kits for Single Core Cable (AU)

### 3M Cold Shrink QT-II Termination Kits Single Core Cable - 11kV, 15 kV, 22 kV, 33 kV

**Cable:** Polymeric Insulation, Copper Wire Screened, Non-Armoured or Armoured

**Contents:** Each kit will make three single core terminations. Lugs not included.



| Voltage | Description | No. Cores | Cable Size mm <sup>2</sup> | Cable Insulation Range mm | BIL kV | NON-ARMoured CABLE       |                      |               | ARMoured CABLE           |                         |               |
|---------|-------------|-----------|----------------------------|---------------------------|--------|--------------------------|----------------------|---------------|--------------------------|-------------------------|---------------|
|         |             |           |                            |                           |        | Jacket Diameter Range mm | 3M Kit               | 3M Order Code | Jacket Diameter Range mm | 3M Kit                  | 3M Order Code |
| 11 kV   | Indoor      | 1         | 16 - 25                    | 11.2 - 16.5               | 95     | Max. 23                  | <b>92-EB 60-1-AU</b> | AE010591962   | 14 - 24                  | <b>92-EB 60-1-AR-AU</b> | AE010592135   |
|         |             |           | 35                         | 14.2 - 22.1               | 95     | Max. 28                  | <b>92-EB 61-1-AU</b> | AE010591970   | 23 - 41                  | <b>92-EB 61-1-AR-AU</b> | AE010592143   |
|         |             |           | 50 - 150                   | 15.9 - 30.0               | 95     | 18 - 37                  | <b>92-EB 62-1-AU</b> | AE010591988   | 23 - 41                  | <b>92-EB 62-1-AR-AU</b> | AE010592150   |
|         |             |           | 185 - 500                  | 22.6 - 41.4               | 95     | 25 - 50                  | <b>92-EB 63-1-AU</b> | AE010591996   | 33 - 56                  | <b>92-EB 63-1-AR-AU</b> | AE010592168   |
|         |             |           | 300 - 630                  | 27.3 - 49.3               | 95     | 29 - 61                  | <b>92-EB 64-1-AU</b> | AE010592002   | 42 - 79                  | <b>92-EB 64-1-AR-AU</b> | AE010592176   |
|         |             |           | 500 - 1000                 | 31.5 - 61.5               | 95     | 34 - 74                  | <b>92-EB 65-1-AU</b> | AE010592010   | 42 - 79                  | <b>92-EB 65-1-AR-AU</b> | AE010592184   |
|         | Outdoor     | 1         | 50 - 150                   | 16.0 - 28.5               | 125    | 23 - 35                  | <b>93-EB 62-1-AU</b> | AE010592028   | 23 - 41                  | <b>93-EB 62-1-AR-AU</b> | AE010592192   |
|         |             |           | 150 - 300                  | 21.3 - 35.0               | 125    | 30 - 44                  | <b>93-EB 63-1-AU</b> | AE010592036   | 33 - 56                  | <b>93-EB 63-1-AR-AU</b> | AE010592200   |
|         |             |           | 300 - 630                  | 27.0 - 45.7               | 125    | 35 - 52                  | <b>93-EB 64-1-AU</b> | AE010592044   | 35 - 56                  | <b>93-EB 64-1-AR-AU</b> | AE010592218   |
|         |             |           | 500 - 1000                 | 33.0 - 53.3               | 125    | 41 - 65                  | <b>93-EB 65-1-AU</b> | AE010592051   | 42 - 79                  | <b>93-EB 65-1-AR-AU</b> | AE010592226   |
| 15 kV   | Indoor      | 1         | 25                         | 14.2 - 22.1               | 95     | Max. 28                  | <b>92-EB 61-1-AU</b> | AE010591970   | 23 - 41                  | <b>92-EB 61-1-AR-AU</b> | AE010592143   |
|         |             |           | 35 - 120                   | 15.9 - 30.0               | 95     | 18 - 37                  | <b>92-EB 62-1-AU</b> | AE010591988   | 23 - 41                  | <b>92-EB 62-1-AR-AU</b> | AE010592150   |
|         |             |           | 150 - 400                  | 22.6 - 41.4               | 95     | 25 - 50                  | <b>92-EB 63-1-AU</b> | AE010591996   | 33 - 56                  | <b>92-EB 63-1-AR-AU</b> | AE010592168   |
|         |             |           | 240 - 500                  | 27.3 - 49.3               | 95     | 29 - 61                  | <b>92-EB 64-1-AU</b> | AE010592002   | 42 - 79                  | <b>92-EB 64-1-AR-AU</b> | AE010592176   |
|         |             |           | 400 - 800                  | 31.5 - 61.5               | 95     | 34 - 74                  | <b>92-EB 65-1-AU</b> | AE010592010   | 42 - 79                  | <b>92-EB 65-1-AR-AU</b> | AE010592184   |
|         | Outdoor     | 1         | 35 - 120                   | 16.0 - 28.5               | 125    | 23 - 35                  | <b>93-EB 62-1-AU</b> | AE010592028   | 23 - 41                  | <b>93-EB 62-1-AR-AU</b> | AE010592192   |
|         |             |           | 120 - 240                  | 21.3 - 35.0               | 125    | 30 - 44                  | <b>93-EB 63-1-AU</b> | AE010592036   | 33 - 56                  | <b>93-EB 63-1-AR-AU</b> | AE010592200   |
|         |             |           | 240 - 500                  | 27.0 - 45.7               | 125    | 35 - 52                  | <b>93-EB 64-1-AU</b> | AE010592044   | 35 - 56                  | <b>93-EB 64-1-AR-AU</b> | AE010592218   |
|         |             |           | 400 - 1000                 | 33.0 - 53.3               | 125    | 41 - 65                  | <b>93-EB 65-1-AU</b> | AE010592051   | 42 - 79                  | <b>93-EB 65-1-AR-AU</b> | AE010592226   |
| 22 kV   | Indoor      | 1         | 25 - 95                    | 16.0 - 28.5               | 125    | 23 - 35                  | <b>93-EB 62-1-AU</b> | AE010592028   | 23 - 41                  | <b>93-EB 62-1-AR-AU</b> | AE010592192   |
|         |             |           | 70 - 240                   | 21.3 - 35.0               | 125    | 30 - 44                  | <b>93-EB 63-1-AU</b> | AE010592036   | 33 - 56                  | <b>93-EB 63-1-AR-AU</b> | AE010592200   |
|         |             |           | 185 - 500                  | 27.0 - 45.7               | 125    | 35 - 52                  | <b>93-EB 64-1-AU</b> | AE010592044   | 35 - 56                  | <b>93-EB 64-1-AR-AU</b> | AE010592218   |
|         |             |           | 400 - 1000                 | 33.0 - 53.3               | 125    | 41 - 65                  | <b>93-EB 65-1-AU</b> | AE010592051   | 42 - 79                  | <b>93-EB 65-1-AR-AU</b> | AE010592226   |
|         | Outdoor     | 1         | 25 - 95                    | 16.2 - 28.5               | 170    | 23 - 35                  | <b>94-EB 62-1-AU</b> | AE010592069   | 23 - 41                  | <b>94-EB 62-1-AR-AU</b> | AE010592234   |
|         |             |           | 70 - 240                   | 21.3 - 35.0               | 170    | 30 - 44                  | <b>94-EB 63-1-AU</b> | AE010592077   | 33 - 56                  | <b>94-EB 63-1-AR-AU</b> | AE010592242   |
|         |             |           | 185 - 500                  | 27.4 - 45.7               | 170    | 35 - 52                  | <b>94-EB 64-1-AU</b> | AE010592085   | 35 - 56                  | <b>94-EB 64-1-AR-AU</b> | AE010592259   |
|         |             |           | 400 - 1000                 | 33.3 - 53.3               | 170    | 41 - 65                  | <b>94-EB 65-1-AU</b> | AE010592093   | 42 - 79                  | <b>94-EB 65-1-AR-AU</b> | AE010592267   |
| 33 kV   | Indoor      | 1         | 25 - 50                    | 16.2 - 28.5               | 170    | 23 - 35                  | <b>94-EB 62-1-AU</b> | AE010592069   | 23 - 41                  | <b>94-EB 62-1-AR-AU</b> | AE010592234   |
|         |             |           | 50 - 150                   | 21.3 - 35.0               | 170    | 30 - 44                  | <b>94-EB 63-1-AU</b> | AE010592077   | 33 - 56                  | <b>94-EB 63-1-AR-AU</b> | AE010592242   |
|         |             |           | 120 - 300                  | 27.4 - 45.7               | 170    | 35 - 52                  | <b>94-EB 64-1-AU</b> | AE010592085   | 35 - 56                  | <b>94-EB 64-1-AR-AU</b> | AE010592259   |
|         |             |           | 240 - 500                  | 33.3 - 53.3               | 170    | 41 - 65                  | <b>94-EB 65-1-AU</b> | AE010592093   | 42 - 79                  | <b>94-EB 65-1-AR-AU</b> | AE010592267   |
|         | Outdoor     | 1         | 50 - 150                   | 21.3 - 35.0               | 170    | 30 - 44                  | <b>94-EB 62-2-AU</b> | AE010592101   | 33 - 56                  | <b>94-EB 62-2-AR-AU</b> | AE010592275   |
|         |             |           | 120 - 240                  | 27.0 - 45.7               | 170    | 34 - 52                  | <b>94-EB 63-2-AU</b> | AE010592119   | 34 - 56                  | <b>94-EB 63-2-AR-AU</b> | AE010592283   |
|         |             |           | 240 - 630                  | 33.3 - 53.3               | 170    | 41 - 65                  | <b>94-EB 64-2-AU</b> | AE010592127   | 42 - 79                  | <b>94-EB 64-2-AR-AU</b> | AE010592291   |
|         |             |           |                            |                           |        |                          |                      |               |                          |                         |               |

Final determining factors are cable jacket and insulation diameters.

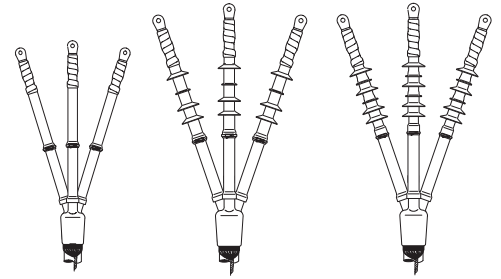


## Cold Shrink QT-II Termination Kits for Three Core Cable (AU)

### 3M Cold Shrink QT-II Termination Kits Three Core Cable - 3.3 kV to 33 kV

**Cable:** Polymeric Insulation, Copper Wire Screened, Non-Armoured or Armoured

**Contents:** Each kit will make one three core termination. Lugs not included.



| Voltage | Description | No. Cores | Cable Size mm <sup>2</sup> | Cable Insulation Range mm | Jacket Diameter Range mm | BIL kV | NON-ARMoured or ARMoured CABLE |               |
|---------|-------------|-----------|----------------------------|---------------------------|--------------------------|--------|--------------------------------|---------------|
|         |             |           |                            |                           |                          |        | 3M Kit                         | 3M Order Code |
| 3.3 kV  | Indoor      | 3         | 25 - 70                    | 11.2 - 16.5               | 36 - 61                  | 95     | 92-EB 60-3-AU                  | AE010592473   |
|         |             |           | 70 - 185                   | 14.2 - 22.1               | 36 - 61                  | 95     | 92-EB 61-3-AU                  | AE010592481   |
|         |             |           | 95 - 185                   | 16.5 - 22.1               | 49 - 79                  | 95     | 92-EB 62-3-AU                  | AE010592499   |
|         |             |           | 185 - 400                  | 19.8 - 33.0               | 49 - 79                  | 95     | 92-EB 63-3-AU                  | AE010592507   |
|         | Outdoor     | 3         | 240 - 400                  | 22.0 - 33.0               | 64 - 110                 | 95     | 92-EB 64-3-AU                  | AE010592515   |
|         |             |           | 50 - 150                   | 14.2 - 22.1               | 36 - 61                  | 125    | 93-EB 60-3-AU                  | AE010592523   |
|         |             |           | 95 - 150                   | 16.0 - 28.4               | 36 - 61                  | 125    | 93-EB 61-3-AU                  | AE010592531   |
|         |             |           | 185 - 300                  | 16.0 - 28.4               | 49 - 79                  | 125    | 93-EB 62-3-AU                  | AE010592549   |
| 6.6 kV  | Indoor      | 3         | 400 - 500                  | 21.3 - 35.0               | 64 - 110                 | 125    | 93-EB 63-3-AU                  | AE010592556   |
|         | Outdoor     | 3         | 25 - 70                    | 11.2 - 16.5               | 36 - 61                  | 95     | 92-EB 60-3-AU                  | AE010592473   |
|         |             |           | 70 - 150                   | 14.2 - 22.1               | 36 - 61                  | 95     | 92-EB 61-3-AU                  | AE010592481   |
|         |             |           | 95 - 150                   | 16.5 - 22.1               | 49 - 79                  | 95     | 92-EB 62-3-AU                  | AE010592499   |
|         | Outdoor     | 3         | 185 - 300                  | 19.8 - 33.0               | 49 - 79                  | 95     | 92-EB 63-3-AU                  | AE010592507   |
|         |             |           | 240 - 400                  | 22.0 - 33.0               | 64 - 110                 | 95     | 92-EB 64-3-AU                  | AE010592515   |
|         |             |           | 50 - 150                   | 14.2 - 22.1               | 36 - 61                  | 125    | 93-EB 60-3-AU                  | AE010592523   |
|         |             |           | 95 - 150                   | 16.0 - 28.4               | 36 - 61                  | 125    | 93-EB 61-3-AU                  | AE010592531   |
| 11 kV   | Indoor      | 3         | 185 - 300                  | 16.0 - 28.4               | 49 - 79                  | 125    | 93-EB 62-3-AU                  | AE010592549   |
|         | Outdoor     | 3         | 400 - 500                  | 21.3 - 35.0               | 64 - 110                 | 125    | 93-EB 63-3-AU                  | AE010592556   |
|         | Indoor      | 3         | 10 - 25                    | 11.2 - 16.5               | 36 - 61                  | 95     | 92-EB 60-3-AU                  | AE010592473   |
|         |             |           | 35 - 70                    | 14.2 - 22.1               | 36 - 61                  | 95     | 92-EB 61-3-AU                  | AE010592481   |
|         | Outdoor     | 3         | 70 - 95                    | 16.5 - 22.1               | 49 - 79                  | 95     | 92-EB 62-3-AU                  | AE010592499   |
|         |             |           | 120 - 150                  | 19.8 - 33.0               | 49 - 79                  | 95     | 92-EB 63-3-AU                  | AE010592507   |
|         |             |           | 185 - 300                  | 22.0 - 33.0               | 64 - 110                 | 95     | 92-EB 64-3-AU                  | AE010592515   |
|         |             |           | 35                         | 14.2 - 22.1               | 36 - 61                  | 125    | 93-EB 60-3-AU                  | AE010592523   |
| 15 kV   | Indoor      | 3         | 50 - 70                    | 16.0 - 28.4               | 36 - 61                  | 125    | 93-EB 61-3-AU                  | AE010592531   |
|         | Outdoor     | 3         | 95 - 150                   | 16.0 - 28.4               | 49 - 79                  | 125    | 93-EB 62-3-AU                  | AE010592549   |
|         | Indoor      | 3         | 185 - 300                  | 21.3 - 35.0               | 64 - 110                 | 125    | 93-EB 63-3-AU                  | AE010592556   |
|         | Outdoor     | 3         | 25 - 50                    | 14.2 - 22.1               | 36 - 61                  | 95     | 92-EB 60-3-AU                  | AE010592473   |
|         | Indoor      | 3         | 50 - 70                    | 16.5 - 22.1               | 49 - 79                  | 95     | 92-EB 61-3-AU                  | AE010592481   |
|         | Outdoor     | 3         | 95 - 120                   | 19.8 - 33.0               | 49 - 79                  | 95     | 92-EB 62-3-AU                  | AE010592499   |
|         | Indoor      | 3         | 150 - 240                  | 22.0 - 33.0               | 64 - 110                 | 95     | 92-EB 63-3-AU                  | AE010592507   |
|         | Outdoor     | 3         | 25                         | 14.2 - 22.1               | 36 - 61                  | 125    | 92-EB 64-3-AU                  | AE010592515   |
| 22 kV   | Indoor      | 3         | 35 - 50                    | 16.0 - 28.4               | 36 - 61                  | 125    | 93-EB 60-3-AU                  | AE010592523   |
|         | Outdoor     | 3         | 70 - 120                   | 16.0 - 28.4               | 49 - 79                  | 125    | 93-EB 61-3-AU                  | AE010592531   |
|         | Indoor      | 3         | 150 - 240                  | 21.3 - 35.0               | 64 - 110                 | 125    | 93-EB 62-3-AU                  | AE010592549   |
|         | Outdoor     | 3         | 10 - 16                    | 14.2 - 22.1               | 36 - 61                  | 125    | 93-EB 63-3-AU                  | AE010592556   |
|         | Indoor      | 3         | 25 - 35                    | 16.0 - 28.4               | 36 - 61                  | 125    | 93-EB 64-3-AU                  | AE010592564   |
|         | Outdoor     | 3         | 50 - 120                   | 16.0 - 28.4               | 49 - 79                  | 125    | 94-EB 60-3-AU                  | AE010592572   |
|         | Indoor      | 3         | 120 - 240                  | 21.3 - 35.0               | 64 - 110                 | 125    | 94-EB 61-3-AU                  | AE010592580   |
|         | Outdoor     | 3         | 25 - 35                    | 16.2 - 24.4               | 36 - 61                  | 170    | 94-EB 62-3-AU                  | AE010592598   |
| 33 kV   | Indoor      | 3         | 50 - 120                   | 16.2 - 28.4               | 49 - 79                  | 170    | 94-EB 63-3-AU                  | AE010592606   |
|         | Outdoor     | 3         | 120 - 240                  | 21.3 - 35.0               | 64 - 110                 | 170    | 94-EB 64-3-AU                  | AE010592614   |
|         | Indoor      | 3         | 25 - 50                    | 16.2 - 28.4               | 49 - 79                  | 170    | 94-EB 60-3-AU                  | AE010592622   |
|         | Outdoor     | 3         | 25 - 150                   | 21.3 - 35.0               | 64 - 110                 | 170    | 94-EB 61-3-AU                  | AE010592630   |
|         | Indoor      | 3         | 95 - 240                   | 27.4 - 45.7               | 64 - 110                 | 170    | 94-EB 62-3-AU                  | AE010592638   |
|         | Outdoor     | 3         | 25 - 150                   | 21.3 - 35.0               | 64 - 110                 | 170    | 94-EB 63-3-AU                  | AE010592646   |

Final determining factors are cable jacket and insulation diameters.

## 3M™ Cold Shrink Trifurcating Kits - Above Ground

**Cable:** Polymeric Insulation, Copper Wire Screened, Non-Armoured

**Contents:** Each kit contains components for three cores.

For converting three core cables to three single cores.

**Note** that 3M termination kits for three core cables already include trifurcating components.

Trifurcation kits will make each core up to 4 m in length.

| Cable Size mm <sup>2</sup> |           |           |           |           |           | Jacket Diameter Range mm | Phase Diameter Range mm | 3M Kit   | 3M Order Code |
|----------------------------|-----------|-----------|-----------|-----------|-----------|--------------------------|-------------------------|----------|---------------|
| 3.3 kV                     | 6.6 kV    | 11 kV     | 15 kV     | 22 kV     | 33 kV     |                          |                         |          |               |
| 50 - 150                   | 35 - 120  | 25 - 50   | 25 - 35   | -         | -         | 37 - 68                  | 15 - 21                 | RJK-1-AU | AE019309515   |
| 185 - 240                  | 150 - 185 | 70 - 150  | 50 - 120  | 35 - 70   | -         | 49 - 79                  | 21 - 26                 | RJK-2-AU | AE019309523   |
| 300 - 400                  | 240 - 400 | 185 - 240 | 150 - 185 | 95 - 185  | 50 - 120  | 64 - 110                 | 26 - 33                 | RJK-3-AU | AE019309531   |
| -                          | -         | 300 - 400 | 240 - 400 | 240 - 400 | 150 - 240 | 66 - 119                 | 33 - 41                 | RJK-4-AU | AE019309549   |

Final determining factors are cable jacket and phase diameters.

## 3M™ Cold Shrink Trifurcating Kits - Direct Bury

**Cable:** Polymeric Insulation, Copper Wire Screened, Non-Armoured

**Contents:** Each kit contains components for three cores

For converting three core cables to three single cores. Kits contain EPDM components.

Trifurcation kits will make each core up to 4 m in length.

| Cable Size mm <sup>2</sup> |           |           |           |           |           | Jacket Diameter Range mm | Phase Diameter Range mm | 3M Kit      | 3M Order Code |
|----------------------------|-----------|-----------|-----------|-----------|-----------|--------------------------|-------------------------|-------------|---------------|
| 3.3 kV                     | 6.6 kV    | 11 kV     | 15 kV     | 22 kV     | 33 kV     |                          |                         |             |               |
| 50 - 150                   | 35 - 120  | 25 - 50   | 25 - 35   | -         | -         | 37 - 61                  | 15 - 24                 | RJK-DB-1-AU | AE019311495   |
| 185 - 240                  | 150 - 185 | 70 - 150  | 50 - 120  | 35 - 70   | -         | 49 - 78                  | 21 - 35                 | RJK-DB-2-AU | AE019311503   |
| 300 - 400                  | 240 - 400 | 185 - 300 | 150 - 185 | 95 - 185  | 50 - 120  | 64 - 110                 | 26 - 41                 | RJK-DB-3-AU | AE019311511   |
| -                          | -         | 300 - 400 | 240 - 400 | 240 - 400 | 150 - 240 | 66 - 120                 | 27 - 49                 | RJK-DB-4-AU | AE019311529   |

Final determining factors are cable jacket and phase diameters.

## 3M™ Cold Shrink QT-III Termination Kits for Single Core Cable

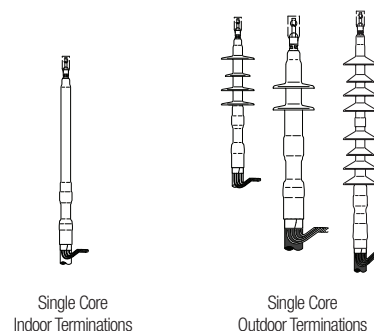
3M Cold Shrink QT-III Terminations offer easy and safe installation, and reliable, consistent performance when terminating indoor and outdoor medium voltage cable. No flame is required for installation. The silicone rubber body provides UV stability, track and erosion resistance, hydrophobicity and constant radial pressure, resulting in maximum performance and durability.

Termination kits for single and three core cable are specifically designed and optimised for New Zealand conditions, and meet or exceed the requirements of IEC 60502-4 and IEEE Standard 48.

### 3M Cold Shrink QT-III Termination Kits Single Core Cable - 11 kV, 22 kV, 33 kV

**Cable:** Polymeric Insulation, Copper Wire Screened\*, Non-Armoured

**Contents:** Each kit will make three single core terminations and is supplied with mechanical lugs



| Voltage | Description | No. Cores | Cable Size mm <sup>2</sup> | Insulation Diameter mm | BIL kV | 3M Kit             |
|---------|-------------|-----------|----------------------------|------------------------|--------|--------------------|
| 11 kV   | Indoor      | 1         | 25 - 50                    | 11.2 - 22.7            | 95     | 7621-T-95-NZ-1     |
|         |             |           | 70 - 95                    | 16.3 - 27.4            | 110    | 7642-T-110-NZ-1    |
|         |             |           |                            | 18.3 - 32.8            | 150    | 7653-T-150-NZ-1    |
|         |             |           | 120 - 150                  | 21.1 - 38.9            | 110    | 7644-T-110-NZ-2    |
|         |             |           |                            | 18.3 - 32.8            | 150    | 7653-T-150-NZ-2    |
|         |             |           | 185 - 240                  | 21.1 - 38.9            | 110    | 7644-T-110-NZ-3    |
|         |             |           |                            | 18.3 - 32.8            | 150    | 7653-T-150-NZ-3    |
|         |             |           | 300                        | 26.7 - 45.7            | 110    | 7645-T-110-NZ-4    |
|         |             |           |                            | 26.7 - 45.7            | 150    | 7655-T-150-NZ-4    |
|         | Outdoor     | 1         | 400                        | 26.7 - 45.7            | 110    | 7645-T-110-NZ-5    |
|         |             |           |                            | 26.7 - 45.7            | 150    | 7655-T-150-NZ-5    |
|         |             |           | 500                        | 26.7 - 45.7            | 110    | 7645-T-110-NZ-6    |
|         |             |           |                            | 26.7 - 45.7            | 150    | 7655-T-150-NZ-6    |
|         |             |           | 630                        | 38.9 - 58.9            | 110    | 7646-T-110-NZ-6    |
|         |             |           |                            | 38.9 - 58.9            | 150    | 7656-T-150-NZ-6    |
|         |             |           | 25 - 50                    | 11.2 - 22.7            | 95     | 7621-S-2-NZ-1      |
|         |             |           | 70 - 95                    | 18.3 - 32.8            | 150    | 7653-S-4-NZ-1      |
|         |             |           | 120 - 150                  | 18.3 - 32.8            | 150    | 7653-S-4-NZ-2      |
| 22 kV   | Indoor      | 1         | 185 - 240                  | 18.3 - 32.8            | 150    | 7653-S-4-NZ-3      |
|         |             |           | 300                        | 26.7 - 45.7            | 150    | 7655-S-4-NZ-4      |
|         |             |           | 400                        | 26.7 - 45.7            | 150    | 7655-S-4-NZ-5      |
|         |             |           | 500                        | 26.7 - 45.7            | 150    | 7655-S-4-NZ-6      |
|         |             |           | 630                        | 38.9 - 58.9            | 150    | 7656-S-4-NZ-6      |
|         | Outdoor     | 1         | 35 - 95                    | 18.3 - 32.8            | 150    | 7653-T-150-NZ-1    |
|         |             |           | 120 - 150                  | 18.3 - 32.8            | 150    | 7653-T-150-NZ-2    |
|         |             |           | 185 - 240                  | 26.7 - 45.7            | 150    | 7655-T-150-NZ-3    |
|         |             |           | 300                        | 26.7 - 45.7            | 150    | 7655-T-150-NZ-4    |
|         |             |           | 400                        | 26.7 - 45.7            | 150    | 7655-T-150-NZ-5    |
|         |             |           | 500 - 630                  | 38.9 - 58.9            | 150    | 7656-T-150-NZ-6    |
|         |             |           | 800                        | 40.4 - 55.9            | 150    | 7695-T-150(S)-NZ-7 |
|         |             |           | 1000 - 1200                | 46.0 - 64.8            | 150    | 7696-T-150(S)-NZ-7 |
|         | Outdoor     | 1         | 35 - 95                    | 18.3 - 32.8            | 150    | 7653-S-4-NZ-1      |
|         |             |           | 120 - 150                  | 18.3 - 32.8            | 150    | 7653-S-4-NZ-2      |
|         |             |           | 185 - 240                  | 26.7 - 45.7            | 150    | 7655-S-4-NZ-3      |
|         |             |           | 300                        | 26.7 - 45.7            | 150    | 7655-S-4-NZ-4      |
|         |             |           | 400                        | 26.7 - 45.7            | 150    | 7655-S-4-NZ-5      |
|         |             |           | 500 - 630                  | 38.9 - 58.9            | 150    | 7656-S-4-NZ-6      |
|         |             |           | 800                        | 40.4 - 55.9            | 200    | 7695-S-4(S)-NZ-7   |
|         |             |           | 1000 - 1200                | 46.0 - 64.8            | 200    | 7696-S-4(S)-NZ-7   |
| 33 kV   | Indoor      | 1         | 50                         | 21.1 - 38.9            | 200    | 7664-S-8-NZ-1**    |
|         |             |           | 70 - 240                   | 26.7 - 45.7            | 200    | 7665-S-8-NZ-3**    |
|         |             |           | 300 - 630                  | 38.9 - 58.9            | 200    | 7666-S-8-NZ-6**    |
|         |             |           | 800                        | 40.4 - 55.9            | 200    | 7695-S-4(S)-NZ-7*  |
|         |             |           | 1000                       | 46.0 - 64.8            | 200    | 7696-S-4(S)-NZ-7*  |
|         | Outdoor     | 1         | 50                         | 21.1 - 38.9            | 200    | 7664-S-8-NZ-1      |
|         |             |           | 70 - 240                   | 26.7 - 45.7            | 200    | 7665-S-8-NZ-3      |
|         |             |           | 300 - 630                  | 38.9 - 58.9            | 200    | 7666-S-8-NZ-6      |
|         |             |           | 800                        | 40.4 - 55.9            | 200    | 7695-S-4(S)-NZ-7   |
|         |             |           | 1000                       | 46.0 - 64.8            | 200    | 7696-S-4(S)-NZ-7   |

\*Kits for copper tape screened cable available on request.

\*\*Suitable for indoor and outdoor terminations

For information on using higher voltage terminations for lower voltage applications please contact 3M.  
Final determining factors are cable jacket and insulation diameters.

### 3M™ Cold Shrink QT-III Termination Kits for Three Core Cable

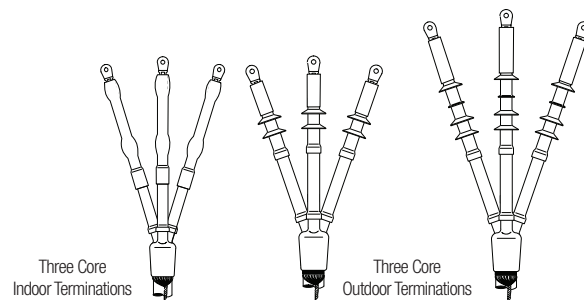
Kits include all components required to terminate a pre-prepared cable including trifurcation standard tail lengths of one metre. Other lengths are available on request.

#### 3MTM Cold Shrink QTIII Termination Kits - Three Core Cable

##### Three Core Cable - 11 kV, 22 kV

**Cable:** Polymeric Insulation, Copper Wire Screened\*, Non-Armoured

**Contents:** Each kit will make one three core termination and is supplied with mechanical lugs



| Voltage | Description | No. Cores | Cable Size mm <sup>2</sup> | Insulation Diameter mm | BIL kV | 3M Kit              |
|---------|-------------|-----------|----------------------------|------------------------|--------|---------------------|
| 11 kV   | Indoor      | 3         | 25 - 50                    | 12.7 - 17.8            | 95     | 7621-T-95-3W-NZ-1   |
|         |             |           | 70 - 95                    | 17.8 - 21.1            | 110    | 7642-T-110-3W-NZ-1  |
|         |             |           |                            | 17.8 - 23.4            | 150    | 7653-T-150-3W-NZ-1  |
|         |             |           | 120 - 150                  | 21.1 - 23.4            | 110    | 7643-T-110-3W-NZ-2  |
|         |             |           |                            | 17.8 - 23.4            | 150    | 7653-T-150-3W-NZ-2  |
|         |             |           | 185                        | 23.4 - 26.1            | 110    | 7644-T-110-3WS-NZ-3 |
|         |             |           | 185 - 240                  | 23.4 - 30.0            | 110    | 7644-T-110-3W-NZ-3  |
|         | Outdoor     | 3         |                            | 23.4 - 30.0            | 150    | 7654-T-150-3W-NZ-3  |
|         |             |           | 300                        | 30.0 - 38.6            | 110    | 7645-T-110-3W-NZ-4  |
|         |             |           |                            | 30.0 - 38.6            | 150    | 7655-T-150-3W-NZ-4  |
|         |             |           | 400                        | 30.0 - 38.6            | 110    | 7645-T-110-3W-NZ-5  |
|         |             |           |                            | 30.0 - 38.6            | 150    | 7655-T-150-3W-NZ-5  |
|         |             |           | 25 - 50                    | 12.7 - 17.8            | 95     | 7621-S-2-3W-NZ-1    |
|         |             |           | 70 - 95                    | 17.8 - 23.4            | 150    | 7653-S-4-3W-NZ-1    |
|         |             |           | 120 - 150                  | 17.8 - 23.4            | 150    | 7653-S-4-3W-NZ-2    |
| 22 kV   | Indoor      | 3         | 185                        | 23.4 - 26.1            | 150    | 7654-S-4-3WS-NZ-3   |
|         |             |           | 185 - 240                  | 23.4 - 30.0            | 150    | 7654-S-4-3W-NZ-3    |
|         |             |           | 300                        | 30.0 - 38.6            | 150    | 7655-S-4-3W-NZ-4    |
|         |             |           | 400                        | 30.0 - 38.6            | 150    | 7655-S-4-3W-NZ-5    |
|         | Outdoor     | 3         | 35 - 70                    | 17.8 - 23.4            | 150    | 7653-T-150-3W-NZ-1  |
|         |             |           | 95                         | 23.4 - 26.1            | 150    | 7654-T-150-3WS-NZ-1 |
|         |             |           | 120 - 150                  | 23.4 - 30.3            | 150    | 7654-T-150-3W-NZ-2  |
|         |             |           | 185                        | 23.4 - 30.3            | 150    | 7654-T-150-3W-NZ-3  |
|         |             |           | 240 - 400                  | 30.0 - 38.6            | 150    | 7655-T-150-3W-NZ-5  |
|         |             |           | 35 - 70                    | 17.8 - 23.4            | 150    | 7653-S-4-3W-NZ-1    |
|         |             |           | 95                         | 23.4 - 26.1            | 150    | 7654-S-4-3WS-NZ-1   |
|         |             |           | 120 - 150                  | 23.4 - 30.3            | 150    | 7654-S-4-3W-NZ-2    |
|         |             |           | 185                        | 23.4 - 30.3            | 150    | 7654-S-4-3W-NZ-3    |
|         |             |           | 240 - 400                  | 30.0 - 38.6            | 150    | 7655-S-4-3W-NZ-5    |

\*Kits for copper tape screen cable available on request.

For information on using higher voltage terminations for lower voltage applications please contact 3M.

Final determining factors are cable jacket and insulation diameters.

### 3M™ Cold Shrink Trifurcating Kits - Above Ground

**Cable:** Polymeric Insulation, Copper Wire Screened, Non-Armoured

**Contents:** Each kit contains components for three cores.

For converting three core cables to three single cores.

**Note** that kits listed previously for three core cables already include trifurcating components.

Trifurcation kits will make each core up to 4 m in length (specify required length when ordering).

| Cable Size mm <sup>2</sup> |           | Jacket Diameter<br>Range mm | Phase<br>Diameter Range mm | 3M Kit   |
|----------------------------|-----------|-----------------------------|----------------------------|----------|
| 11 kV                      | 22 kV     |                             |                            |          |
| 25 - 70                    | -         | 37 - 68                     | 15 - 21                    | RJK-1-NZ |
| 95 - 185                   | 35 - 95   | 49 - 79                     | 21 - 26                    | RJK-2-NZ |
| 240 - 300                  | 120 - 240 | 64 - 110                    | 26 - 33                    | RJK-3-NZ |
| 400                        | 300 - 400 | 66 - 120                    | 33 - 41                    | RJK-4-NZ |

Final determining factors are cable jacket and phase diameters.

### 3M™ Cold Shrink Trifurcating Kits - Direct Bury

**Cable:** Polymeric Insulation, Copper Wire Screened, Non-Armoured

**Contents:** Each kit contains components for three cores.

For converting three core cables to three single cores. Kits contain EPDM components.

Trifurcation kits will make each core up to 3 m in length (specify required length when ordering).

| Cable Size mm <sup>2</sup> |           | Jacket Diameter<br>Range mm | Phase<br>Diameter Range mm | 3M Kit      |
|----------------------------|-----------|-----------------------------|----------------------------|-------------|
| 11 kV                      | 22 kV     |                             |                            |             |
| 25 - 70                    | -         | 37 - 61                     | 15 - 24                    | RJK-DB-1-NZ |
| 95 - 185                   | 35 - 95   | 49 - 78                     | 21 - 35                    | RJK-DB-2-NZ |
| 240 - 300                  | 120 - 240 | 64 - 110                    | 26 - 41                    | RJK-DB-3-NZ |
| 400                        | 300 - 400 | 66 - 120                    | 27 - 49                    | RJK-DB-4-NZ |

Final determining factors are cable jacket and phase diameters.



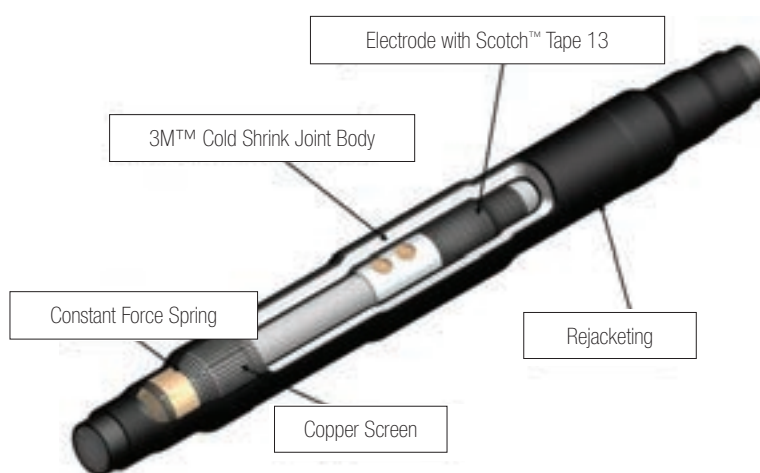
# 3M™ Medium Voltage Cold Shrink Cable Joints up to 33 kV

## 3M™ Cold Shrink QS2000E Cable Jointing Kits

All 3M cold shrink products include built in components to ensure excellent insulation and stress control. With peace of mind and reliability top of our agenda; unlike heat shrink alternatives, a molecular permanent set ensures constant radial pressure is exerted on the cable for the duration of the cable joints' life. Additionally, many of the joint bodies are comprehensively factory tested before release - something simply not possible with heat shrink due to its material nature. Finally, as a result of continuous development and refinement over more than 40 years, only 3M can offer you such a choice in cold shrink technology in terms of product cost and flexibility in its application.

## Standard 3M Cold Shrink Joints with Taped Electrode

The 3M cold shrink taped electrode splice offers a viable cost-based alternative to heat shrink cable jointing technology. The range covers many of the most common cable configurations and size ranges. The electrode in this case is built up by the joiner using Scotch™ Electrical Semi-Conducting Tape 13 and the 3M cold shrink joint does the rest - still no heat or tools needed at all!



## The simple application of a 3M™ Cold Shrink Cable Joint



Park the 3M™ Cold Shrink Joint Body onto the prepared cable, connect the cores and clean thoroughly



Overtape the connector with two layers of Scotch® Tape 13. Grease the splice area



Once in position, begin to remove the inner coil from the joint body



For extra peace of mind, take advantage of the fact that splice body position is easily checked



Place the earth stocking over the splice body. Ground and secure with 3M™ Constant Force Springs



Insulate the constant force springs with Scotch® Rubber Splicing Tape 23 and then overlay with Scotch® Rubber Mastic Tape 2228



Position the pre-parked 3M™ Cold Shrink Outer Protection Tube over the stocking and begin to remove the inner supporting core



Continue to remove the inner core until the outer tube is fully shrunk, completing the cable joint

## Medium Voltage Cold Shrink Cable Jointing Kits (Australia)

### 3M™ Cold Shrink QS2000E Cable Jointing Kits

- Simple installation - easier to use in enclosed areas
- Safe installation - no torches or heat required
- Extensive quality and factory testing programme

Joints for single and three core cables are specifically designed and optimised for Australian conditions, and meet or exceed the requirements of IEC 60502-4 and CENELEC HD 629.1



### 3M Cold Shrink QS2000E Cable Jointing Kits Single Core Cable

**Cable:** Polymeric Insulation, Copper Wire Screened<sup>®</sup>, Non-Armoured or Armoured

**Contents:** Each kit contains components for one single core cable. Connectors not included. See data sheet for connector compatibility details.

| Voltage | No. Cores | Cable Size<br>mm <sup>2</sup> | Cable Insulation Range<br>mm | Jacket Diameter Range<br>Max. mm | Connector Dimensions |                   | BIL<br>kV | NON-ARMoured CABLE |               | ARMoured CABLE       |               |
|---------|-----------|-------------------------------|------------------------------|----------------------------------|----------------------|-------------------|-----------|--------------------|---------------|----------------------|---------------|
|         |           |                               |                              |                                  | Diameter<br>Max. mm  | Length<br>Max. mm |           | 3M Kit             | 3M Order Code | 3M Kit               | 3M Order Code |
| 6.6 kV  | 1         | 70 - 185                      | 14.6 - 25.2                  | 36                               | 28                   | 135               | 95        | 92-AS 610-1-AU**   | AE010595203   | 92-AS 610-1-AR-AU**  | AE010595328   |
|         |           | 240 - 400                     | 19.1 - 36.8                  | 46                               | 38                   | 230               | 95        | 92-AS 620-1-AU**   | AE010595211   | 92-AS 620-1-AR-AU**  | AE010595336   |
| 11 kV   | 1         | 25* - 150                     | 14.6 - 25.2                  | 36                               | 28                   | 135               | 95        | 92-AS 610-1-AU**   | AE010595203   | 92-AS 610-1-AR-AU**  | AE010595328   |
|         |           | 185 - 400                     | 19.1 - 36.8                  | 46                               | 38                   | 230               | 95        | 92-AS 620-1-AU**   | AE010595211   | 92-AS 620-1-AR-AU**  | AE010595336   |
|         |           | 500 - 800                     | 33.4 - 67.6                  | 74                               | 60                   | 300               | 95        | 92-AS 630-1-AU**   | AE010595229   | 92-AS 630-1-AR-AU**  | AE010595344   |
| 22 kV   | 1         | 35 - 300                      | 19.1 - 36.8                  | 46                               | 38                   | 170               | 125       | 93-AS 620-1-AU***  | AE010595237   | 93-AS 620-1-AR-AU*** | AE010595351   |
|         |           | 400 - 630                     | 33.4 - 67.6                  | 74                               | 60                   | 270               | 125       | 93-AS 630-1-AU***  | AE010595245   | 93-AS 630-1-AR-AU*** | AE010595369   |
| 33 kV   | 1         | 50 - 240                      | 20.6 - 36.8                  | 46                               | 38                   | 150               | 194       | 94-AS 620-1-AU     | AE010595252   | 94-AS 620-1-AR-AU    | AE010595377   |
|         |           | 300 - 630                     | 35.9 - 67.6                  | 74                               | 60                   | 250               | 194       | 94-AS 630-1-AU     | AE010595260   | 94-AS 630-1-AR-AU    | AE010595385   |

### 3M Cold Shrink QS2000E Cable Jointing Kits Three Core Cable

**Cable:** Polymeric Insulation, Copper Wire Screened<sup>®</sup>, Non-Armoured or Armoured

**Contents:** Each kit contains components for three cores. Connectors not included. See data sheet for connector compatibility details.

| Voltage | No. Cores | Cable Size<br>mm <sup>2</sup> | Cable Insulation Range<br>mm | Connector Dimensions |                   | BIL<br>kV | NON-ARMoured CABLE |               | ARMoured CABLE       |               |
|---------|-----------|-------------------------------|------------------------------|----------------------|-------------------|-----------|--------------------|---------------|----------------------|---------------|
|         |           |                               |                              | Diameter<br>Max. mm  | Length<br>Max. mm |           | 3M Kit             | 3M Order Code | 3M Kit               | 3M Order Code |
| 6.6 kV  | 3         | 70 - 185                      | 14.6 - 25.2                  | 28                   | 135               | 95        | 92-AS 610-3-AU**   | AE010595278   | 92-AS 610-3-AR-AU**  | AE010595393   |
|         |           | 240 - 400                     | 19.1 - 36.8                  | 38                   | 230               | 95        | 92-AS 620-3-AU**   | AE010595286   | 92-AS 620-3-AR-AU**  | AE010595401   |
| 11 kV   | 3         | 25* - 150                     | 14.6 - 25.2                  | 28                   | 135               | 95        | 92-AS 610-3-AU**   | AE010595278   | 92-AS 610-3-AR-AU**  | AE010595393   |
|         |           | 185 - 400                     | 19.1 - 36.8                  | 38                   | 230               | 95        | 92-AS 620-3-AU**   | AE010595286   | 92-AS 620-3-AR-AU**  | AE010595401   |
| 22 kV   | 3         | 35 - 300                      | 19.1 - 36.8                  | 38                   | 170               | 125       | 93-AS 620-3-AU***  | AE010595294   | 93-AS 620-3-AR-AU*** | AE010595419   |

\*With adaptor kit 92-PG 610-1-AU (1 kit per core)/92-PG 610-3-AU (1 kit per set of three cores).

\*\*Kits for copper tape screened cable available on request.

\*\*\*Note: These joints are also suitable for 3.3 kV cables. Please select the right kit based on the jacket and insulation diameter ranges.

\*\*\*Note: These joints are also suitable for 15 kV cables. Please select the right kit based on the jacket and insulation diameter ranges.

Final determining factors are cable size and cable insulation diameters.

## 3M™ Cold Shrink QS2000E Cable Jointing Kits

Joints for single and three core cables are specifically designed and optimised for New Zealand conditions, and meet or exceed the requirements of IEC 60502-4 and CENELEC HD 629.1

- Simple installation - easier to use in enclosed areas
- Safe installation - no torches or heat required
- Extensive quality and factory testing programme

### 3M™ Cold Shrink QS2000E Cable Jointing Kits

#### Single Core Cable - 11 kV, 22 kV, 33 kV

**Cable:** Polymeric Insulation, Copper Wire Screened<sup>®</sup>, Non-Armoured

**Contents:** Each kit will make three single core joints and is supplied with mechanical connectors



| Voltage | No. Cores | Cable Size mm <sup>2</sup> | Cable Insulation Range mm | BIL kV | 3M Kit           |
|---------|-----------|----------------------------|---------------------------|--------|------------------|
| 11 kV   | 1         | 25** - 95                  | 14.6 - 25.2               | 95     | 92-AS 610-1-NZ-1 |
|         |           | 50 - 120                   | 14.6 - 25.2               | 95     | 92-AS 610-1-NZ-2 |
|         |           | 120 - 300                  | 19.1 - 36.8               | 95     | 92-AS 620-1-NZ-4 |
|         |           | 500 - 630                  | 33.4 - 67.6               | 95     | 92-AS 630-1-NZ-6 |
| 22 kV   | 1         | 35 - 95                    | 19.1 - 36.8               | 125    | 93-AS 620-1-NZ-1 |
|         |           | 50 - 150                   | 19.1 - 36.8               | 125    | 93-AS 620-1-NZ-2 |
|         |           | 120 - 300                  | 19.1 - 36.8               | 125    | 93-AS 620-1-NZ-4 |
|         |           | 400 - 630                  | 33.4 - 67.6               | 125    | 93-AS 630-1-NZ-6 |
| 33 kV   | 1         | 50 - 150                   | 20.6 - 36.8               | 194    | 94-AS 620-1-NZ-2 |
|         |           | 120 - 240                  | 20.6 - 36.8               | 194    | 94-AS 620-1-NZ-4 |
|         |           | 300 - 630                  | 35.9 - 67.6               | 194    | 94-AS 630-1-NZ-6 |

### 3M™ Cold Shrink QS2000E Cable Jointing Kits

#### Three Core Cable - 11 kV, 22 kV

**Cable:** Polymeric Insulation, Copper Wire Screened<sup>®</sup>, Non-Armoured

**Contents:** Each kit will make one three core joint and is supplied with mechanical connectors

| Voltage | No. Cores | Cable Size mm <sup>2</sup> | Cable Insulation Range mm | BIL kV | 3M Kit           |
|---------|-----------|----------------------------|---------------------------|--------|------------------|
| 11 kV   | 3         | 25** - 95                  | 14.6 - 25.2               | 95     | 92-AS 610-3-NZ-1 |
|         |           | 50 - 120                   | 14.6 - 25.2               | 95     | 92-AS 610-3-NZ-2 |
|         |           | 120 - 300                  | 19.1 - 36.8               | 95     | 92-AS 620-3-NZ-4 |
| 22 kV   | 3         | 35 - 95                    | 19.1 - 36.8               | 125    | 93-AS 620-3-NZ-1 |
|         |           | 50 - 150                   | 19.1 - 36.8               | 125    | 93-AS 620-3-NZ-2 |
|         |           | 120 - 300                  | 19.1 - 36.8               | 125    | 93-AS 620-3-NZ-4 |

∞Kits for copper tape screened cable available on request.

\*\*Adaptor Kit 92-PG 610-1-NZ (1 kit per core) or 92-PG-610-3 (1 kit per set of three cores) required for 25mm<sup>2</sup> cable

Final determining factors are cable jacket and insulation diameters.

## 3M™ Transition Joint Kits

Joints are specifically designed and optimised for New Zealand conditions, and meet or exceed the requirements of IEC 60502-4.

### 3M™ QS2000E Three Core Transition Straight Joint Kit

#### 11 kV Cable

**Cable:** Three core armoured PILC to Three Single Core XLPE (Polymeric Insulation, Copper Wire Screened<sup>®</sup>, Non-Armoured)

**Contents:** Each kit contains components to joint three cores and is supplied with mechanical connectors

| Voltage | Paper Insulated Cable |                            |                           | Polymeric Insulated Cable |                            |                           | BIL kV | 3M Kit             |
|---------|-----------------------|----------------------------|---------------------------|---------------------------|----------------------------|---------------------------|--------|--------------------|
|         | No. Cores             | Cable Size mm <sup>2</sup> | Cable Insulation Range mm | No. Cores                 | Cable Size mm <sup>2</sup> | Cable Insulation Range mm |        |                    |
| 11 kV   | 3                     | 25 - 95                    | 12                        | 1                         | 25* - 95                   | 14.6 - 25.2               | 95     | 92-FS 213-3-1-NZ-1 |
|         |                       | 95 - 300                   | 17.4                      |                           | 120 - 300                  | 19.1 - 36.8               | 95     | 92-FS 233-3-1-NZ-4 |

\* With adapter tubes (included in kit). † Round Conductors only. ∞Kits for copper tape screened cable available on request.

**Cable:** Three core armoured PILC to Three Core XLPE (Polymeric Insulation, Copper Wire Screened<sup>®</sup>, Non-Armoured)

**Contents:** Each kit contains components to joint three cores and is supplied with mechanical connectors

| Voltage | Paper Insulated Cable |                            |                           | Polymeric Insulated Cable |                            |                           | BIL kV | 3M Kit             |
|---------|-----------------------|----------------------------|---------------------------|---------------------------|----------------------------|---------------------------|--------|--------------------|
|         | No. Cores             | Cable Size mm <sup>2</sup> | Cable Insulation Range mm | No. Cores                 | Cable Size mm <sup>2</sup> | Cable Insulation Range mm |        |                    |
| 11 kV   | 3                     | 25 - 95                    | 12                        | 3                         | 25* - 95                   | 14.6 - 25.2               | 95     | 92-FS 213-3-3-NZ-1 |
|         |                       | 95 - 300                   | 17.4                      |                           | 120 - 300                  | 19.1 - 36.8               | 95     | 92-FS 233-3-3-NZ-4 |

\* With adapter tubes (included in kit) † Round Conductors only. ∞Kits for copper tape screened cable available on request.

### 3M™ Termination Barrier Boots

3M Barrier Boots are suitable for both cold shrink and heat shrink medium voltage terminations and cover a wide range of cable sizes.



| Product     | 3M Order Code | Description                                            | Features                                                                                                                                                                                                                                                                                  | Application Range          | Voltage Rating | Availability |
|-------------|---------------|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------|--------------|
| 92-EE 616-1 | KE232079936   | 15 kV Inline or Right Angle Barrier Boot (3 cores/kit) | <ul style="list-style-type: none"> <li>One piece push on silicone boot</li> <li>Suitable for straight and right angle application                             <ul style="list-style-type: none"> <li>Easy installation</li> </ul> </li> <li>Facilitates direct voltage testing</li> </ul> | 50 - 300 mm <sup>2</sup>   | up to 15 kV    | AU, NZ       |
| 92-EE 717-1 | TE100052030   | 15 kV Inline or Right Angle Barrier Boot (3 cores/kit) | <ul style="list-style-type: none"> <li>One piece push on EPDM boot</li> <li>Suitable for straight and right angle application                             <ul style="list-style-type: none"> <li>Easy installation</li> </ul> </li> </ul>                                                 | 50 - 300 mm <sup>2</sup>   | up to 15 kV    | AU, NZ       |
| MB63-NZ     |               | 11 kV Inline Cold Shrink Barrier Boot (3 cores/kit)    | <ul style="list-style-type: none"> <li>Cold shrink technology</li> <li>Easy installation</li> <li>Track resistant EPDM material</li> </ul>                                                                                                                                                | up to 630 mm <sup>2</sup>  | up to 11 kV    | NZ           |
| MB61-NZ     |               | 11 kV Universal Taped System (3 cores/kit)             | <ul style="list-style-type: none"> <li>Versatile taped barrier boot system</li> <li>Inline and right angle application</li> </ul>                                                                                                                                                         | up to 1000 mm <sup>2</sup> | up to 11 kV    | NZ           |

### 3M™ Electrostatic Animal Guard

This is a patented electrostatic barrier that attaches to energised electrical insulators/bushings rated up to 35 kV. The 3M Electrostatic Animal Guard consists of rugged plastic with metal spokes radiating outward. When an animal touches the spokes, it receives an electric shock, similar to those generated by electrified livestock fences. The animal is not injured and power service is not interrupted.



**Note:** Insulator neck diameter range is defined as the diameter of the insulator in between the skirts

| Product | 3M Order Code | Insulator Neck Diameter Range | Voltage     |
|---------|---------------|-------------------------------|-------------|
| GG-1525 | 80610981120   | 38 - 64 mm                    | Up to 35 kV |
| GG-2545 | 80610981138   | 64 - 114 mm                   | Up to 35 kV |
| GG-4565 | 80610981146   | 114 - 165 mm                  | Up to 35 kV |



# 3M™ Aluminum Conductor Composite Reinforced (ACCR)

**More amps, more confidence  
For your most challenging applications**

**Higher capacity, lower costs, less installation time and fewer environmental impacts compared to conventional upgrade options**

## Benefits

- Two to three times the ampacity, using existing towers and clearances
- Reduced total project costs
- Proven performance in numerous field installations, several years field experience around the world and extensive testing
- Avoid the environmental impact of towers and ROW
- Shorter permitting and installation times
- Fully documented installation procedures, design and implementation support, and a complete range of accessories optimised for 3M ACCR
- Peace of mind from using a technology backed by the technical, financial and manufacturing resources of 3M

## Technology

**Advanced aluminum and ceramic fiber composite core wrapped in high temperature, hardened aluminum outer strands results in:**

- Core strength comparable to steel and eight times that of aluminum
- Core weight less than half that of steel
- Core conductivity approximately four times that of steel and half that of aluminum
- Thermal expansion of the core approximately one-fourth that of aluminum and half that of steel
- Rated for 210°C/240°C emergency, 1,000 hours cumulative
- Creep lower than steel
- Core stiffness three times aluminum
- Excellent fatigue resistance
- No degradation through corrosion and other environmental factors
- Standard sizes, round or trapezoidal constructions for more energy efficiency

## Applications

- Thermal upgrades, such as transmission bottlenecks or high load growth areas
- Difficult or environmentally sensitive areas, such as mountains, wetlands, parks and wildlife refuges, or densely populated areas
- Long span, high strength applications, such as river, canyon or lake crossings
- Corrosive or challenging environments, such as coastal, desert or cold regions





# Solutions for your most difficult challenges

## High capacity solution

We produce 3M™ Aluminum Conductor Composite Reinforced (ACCR) with a highly advanced aluminum alloy. Each strand of 3M ACCR core wire is reinforced with thousands of ultra high strength, high purity aluminum oxide fibers. The result is a solution specifically designed for high temperature operation – providing dramatic ampacity gains with significantly less sag than standard options.

## Reliable solution

3M is a global leader in power utility solutions and in the development and commercialisation of innovative advanced materials. 3M ACCR is operating in commercial installations around the world, including extreme environmental and operating conditions. 3M ACCR has delivered superior performance and has a track record of 100% successful installations.

## Environmental solution

In many areas of the world, building new transmission lines means building towers in environmentally sensitive, protected or densely populated areas. 3M ACCR can substantially increase the capacity of existing lines simply by replacing existing conductors on the existing towers, often avoiding years of environmental impact analyses and debate. Installation is quick, the ampacity gains are large, and the outstanding strength-to-weight ratio and low thermal expansion enables long spans across rivers and other areas. We also offer a trapwire design that can help you improve the energy efficiency of your line.

## Total solution

3M has partnered with industrial leaders to provide the total solution, from finished conductor to a full line of accessories and hardware. Our qualified engineers are ready to assist you with design and installation support. By providing us with some key information about your application, we can quickly provide feedback on the performance gains for you to review.

For more information, please visit us at [www.3M.com/ACCR](http://www.3M.com/ACCR) or contact us on 136 136 (AU) or 0800 474 787 (NZ)



# 3M™ Identification Systems

3M Identification Systems help you quickly and easily create highly visible and durable identification for wires, panels, terminal blocks, devices and other components.

The **3M Portable Labeller and Refill Cartridge** portfolio (pages 56 to 59) offers rugged portable labellers paired with convenient cartridge format labels in various materials including heat shrink tubing and adhesive backed flexible nylon, polyester and vinyl.

The **3M Portable Labeller Embosser** tool (page 57) is used with rolls of aluminium or stainless steel to create durable embossed tags for harsh environments.

The **3M Scotchcode™ Wire Marker System** (page 60) features handy and portable pre-printed or write-on materials to label components and cable.

## 3M™ Portable Labellers

3M Portable Labellers are rugged, powerful and lightweight labellers for industrial applications. All units feature exclusive one-touch hot keys that provide shortcuts for common formatting tasks. The chart below highlights the key features of each machine. See next pages for more details.

3M Portable Labellers PL200 and PL300 are also available in a hard case kit format (PL200K and PL300K).



|                          | PL150                                                                              | PL200K/PL200                                                                        | PL300K/PL300                                                                         |
|--------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                          |  |  |  |
| Hot Keys                 | ✓                                                                                  | ✓                                                                                   | ✓                                                                                    |
| PC Connectivity          |                                                                                    |                                                                                     | ✓                                                                                    |
| Backlit LCD              | ✓                                                                                  | ✓                                                                                   | ✓                                                                                    |
| Power Cutter             |                                                                                    |                                                                                     | ✓                                                                                    |
| Rubber protective bumper | ✓                                                                                  | ✓                                                                                   | ✓                                                                                    |
| Symbol library terms     | 80                                                                                 | 122                                                                                 | 150                                                                                  |
| Bar code capability      | ✓                                                                                  | ✓                                                                                   | ✓                                                                                    |
| Label storage            | 25                                                                                 | 100+                                                                                | 1000+                                                                                |
| Prints on heat shrink    | ✓                                                                                  | ✓                                                                                   | ✓                                                                                    |
| Maximum label width      | 19 mm                                                                              | 19 mm                                                                               | 24 mm                                                                                |
| Offered as a kit         |                                                                                    | ✓                                                                                   | ✓                                                                                    |
| AC adaptor               | Optional extra                                                                     | PL200K - included<br>PL200 - optional extra                                         | ✓                                                                                    |
| Rechargeable battery     | Optional extra                                                                     | PL200K - included<br>PL200 - optional extra                                         | PL300K - included<br>PL300 - optional extra                                          |



### 3M™ Portable Labeller PL300K/PL300

The 3M Portable Labeller PL300 is a revolutionary printer with excellent ease-of-use, ideal functionality and PC connectivity. The 3M Portable Labeller PL300 printer features exclusive one-touch "hot keys" for quick and easy creation of commonly used label types. Utilising the 3M Portable Labeller Software, the installer can create labels before reaching the worksite or create and edit labels on site.

**Tape Widths:** 6 mm to 24 mm

**Tape Types:** All (PLFN, PLHS, PLP, PLV, PLSL)



| Product | 3M Order Code | Kit Includes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Power                                                                                    | Suggested Accessories* | Product Dimensions (H x W x D) | Unit Weight  |
|---------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------|--------------------------------|--------------|
| PL300K  | AE010585246   | <ul style="list-style-type: none"> <li>3M Portable Labeller PL300</li> <li>3M Portable Labeller Software</li> <li>Durable hard carry case</li> <li>Refill cartridge 19 mm black on white vinyl (PLV-WHT-3/4)</li> <li>Refill cartridge 12 mm black on white polyester (PLP-WHT-1/2)</li> <li>3M Rechargeable Lithium-Ion Battery Pack PL300-BAT</li> <li>3M AC Adaptor PL-ACPS</li> <li>USB cable</li> <li>Quick Reference Guide</li> <li>User Guide on CD</li> <li>Limited one-year warranty</li> </ul> | Lithium-ion rechargeable battery with AC adaptor (included) or optional 6 "AA" batteries |                        | 349 x 445 x 102 mm (kit)       | 2.3 kg (kit) |
| PL300   | AE010585238   | <ul style="list-style-type: none"> <li>3M Portable Labeller PL300</li> <li>User Guide on CD</li> <li>Quick Reference Guide</li> <li>1 refill cartridge 19 mm black on white vinyl (PLV-WHT-3/4)</li> <li>AC Adaptor PL-ACPS</li> <li>Limited one-year warranty</li> </ul>                                                                                                                                                                                                                                | 6 "AA" batteries or optional lithium-ion rechargeable battery (not included)             | PL300-BAT              | 246 x 137 x 64 mm              | 1.8 kg       |

\*See page 57 for details of Accessories

### 3M™ Portable Labeller PL200K/PL200

The 3M Portable Labeller PL200 is an excellent portable labelling tool for high-end electrical, MRO, datacom and construction professionals. The 3M Portable Labeller PL200 is the advanced, easy-to-use labelling system that saves time and helps deliver a professional result. Used in real-world jobsite conditions, the rugged, powerful and lightweight 3M Portable Labeller PL200 offers features and functionality to save time and money.

**Tape Widths:** 6 mm to 19 mm

**Tape Types:** PLFN, PLHS, PLP, PLV



| Product | 3M Order Code | Kit Includes                                                                                                                                                                                                                                                                                                                                                                                                                             | Power                                                                                    | Suggested Accessories*     | Product Dimensions (H x W x D) | Unit Weight  |
|---------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------|--------------------------------|--------------|
| PL200K  | AE010585279   | <ul style="list-style-type: none"> <li>3M Portable Labeller PL200</li> <li>Durable hard carry case</li> <li>Refill cartridge 19 mm black on white vinyl (PLV-WHT-3/4)</li> <li>Refill cartridge 12 mm black on white polyester (PLP-WHT-1/2)</li> <li>Rechargeable lithium-ion battery pack PL200-BAT</li> <li>AC Adaptor PL-ACPS</li> <li>Quick Reference Guide</li> <li>User Guide on CD</li> <li>Limited one-year warranty</li> </ul> | Lithium-ion rechargeable battery with AC adaptor (included) or optional 6 "AA" batteries |                            | 349 x 368 x 119 mm (kit)       | 2.5 kg (kit) |
| PL200   | AE010585261   | <ul style="list-style-type: none"> <li>3M Portable Labeller PL200</li> <li>User Guide on CD</li> <li>Quick Reference Guide</li> <li>Refill cartridge 19 mm black on white vinyl (PLV-WHT-3/4)</li> <li>Limited one-year warranty</li> </ul>                                                                                                                                                                                              | 6 "AA" batteries or optional lithium ion rechargeable battery (not included)             | PL150-PL200-BAT<br>PL-ACPS | 234 x 125 x 64 mm              | 0.9 kg       |

\*See page 57 for details of Accessories

### 3M™ Portable Labeller PL150

The 3M Portable Labeller PL150 features the same keyboard layout as a standard PC or device (QWERTY), along with one-touch hot keys that allow the quick creation of wire/cable wraps, flags, Code 39 and Code 128 barcodes, fixed-length labels, breaker labels and more. Print labels up to 19 mm wide in flexible nylon, permanent polyester and durable vinyl materials – plus print directly on heat shrink tubes. Save even more time with great new features like the “Favourites” and “Custom” keys which provide single-key access to commonly used labels, symbols and terms and eliminate repeated steps by saving customised settings.

**Tape Widths:** 6 mm to 19 mm  
**Tape Types:** PLFN, PLHS, PLP, PLV



| Product | 3M Order Code | Kit Includes                                                                                                                                                                                                      | Power                                                                 | Suggested Accessories*     | Product Dimensions (H x W x D) | Unit Weight |
|---------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------|--------------------------------|-------------|
| PL150   | AE010587937   | <ul style="list-style-type: none"> <li>3M Portable Labeller PL150</li> <li>Refill cartridge 12 mm black on white vinyl (PLV-WHT-1/2)</li> <li>Quick Reference Guide</li> <li>Limited one-year warranty</li> </ul> | 6 “AA” batteries (not included) or lithium ion battery (not included) | PL150-PL200-BAT<br>PL-ACPS | 178 x 117 x 57 mm              | 0.9 kg      |

\*See below for details of Accessories

### 3M™ Portable Labeller Accessories

The following accessories are available for the 3M Portable Labeller family.



| Product         | 3M Order Code | Product Name                                                   | Description               | Compatible With     |
|-----------------|---------------|----------------------------------------------------------------|---------------------------|---------------------|
| PL150-PL200-BAT | 80611456536   | 3M Portable Labeller Rechargeable Battery Pack PL150-PL200-BAT | Rechargeable Battery Pack | PL150, PL200        |
| PL300-BAT       | 80611456569   | 3M Portable Labeller Rechargeable Battery Pack PL300-BAT       | Rechargeable Battery Pack | PL300               |
| PL-ACPS         | 80611456544   | 3M Portable Labeller AC Power Supply PL-ACPS                   | AC Power Supply           | PL150, PL200, PL300 |

### 3M™ Portable Labeller Embosser PLE & Tapes

The 3M Portable Labeller Embosser PLE is tough enough to accompany you in the field and is easy to use. Since it can make labels on site that are capable of weathering harsh conditions, there's no need for time-consuming trips to an engraving shop. Simply type, cut and attach. Features front scissor cut-off for fast and easy label application, and built-in hole punches for easy label attachment using cable ties or screws or wire.



| Product      | 3M Order Code | Contents/Description                                                                                                                                                                                                                                                                                                            | Width | Length |
|--------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|
| PLE          | 80611467681   | <ul style="list-style-type: none"> <li>3M Portable Labeller Embosser PLE</li> <li>Reverse image wheel</li> <li>Roll 12 mm x 4.8 m aluminium tape without adhesive (PLE-ALNA-1/2)</li> <li>Roll 12 mm x 6.4 m stainless steel tape without adhesive (PLE-SSNA-1/2)</li> <li>Carrying case</li> <li>Instruction manual</li> </ul> | -     | -      |
| PLE-ALNA-1/2 | 80611467640   | Non-adhesive aluminium embossing tape                                                                                                                                                                                                                                                                                           | 12 mm | 4.8 m  |
| PLE-SSNA-1/2 | 80611467657   | Non-adhesive stainless steel embossing tape                                                                                                                                                                                                                                                                                     | 12 mm | 6.4 m  |



## 3M™ Portable Labeller Refill Cartridges

3M Portable Labeller Refill Cartridges are industrial grade labels for a variety of surfaces and environments. Cartridges are interchangeable and are easy to load, print and peel. There is less tape waste between labels which means more labels per cartridge. Cartridges are available in a variety of materials, including heat shrink.



The chart below shows the properties and formats available. See the next page for more details.

### High Performance Label Options for the 3M™ Portable Labeller Family

|            |                                   |  | Vinyl                 | Nylon            | Polyester                  | Heat Shrink          | Self-Laminating |
|------------|-----------------------------------|--|-----------------------|------------------|----------------------------|----------------------|-----------------|
| Labels     | Length                            |  | 5.5m                  | 3.5m             | 5.5m                       | 1.5m                 | 5.5m            |
|            | Width                             |  | 9mm, 12mm, 19mm, 24mm | 12mm, 19mm, 24mm | 6mm, 9mm, 12mm, 19mm, 24mm | 6mm, 9mm, 12mm, 19mm | 24mm            |
|            | Colour                            |  | White, Black          | White, Yellow    | White, Clear, Metallic     | White, Yellow        | White           |
|            | Outdoor                           |  | ✓                     |                  | ✓                          |                      |                 |
| Surfaces   | Flat                              |  | ✓                     | ✓                | ✓                          |                      |                 |
|            | Wiring                            |  | ✓                     | ✓                |                            | ✓                    | ✓               |
|            | Flag                              |  | ✓                     | ✓                |                            |                      |                 |
|            | Textured                          |  | ✓                     | ✓                | ✓                          |                      |                 |
| Resistance | UV                                |  | ✓                     |                  | ✓                          | ✓                    | ✓               |
|            | Water                             |  | ✓                     |                  | ✓                          | ✓                    | ✓               |
|            | Chemicals                         |  | ✓                     |                  | ✓                          | ✓                    | ✓               |
|            | Oils                              |  | ✓                     |                  | ✓                          | ✓                    | ✓               |
|            | Temperature (maximum recommended) |  | 90°C                  | 120°C            | 120°C                      | 135°C                | 90°C            |



## 3M™ Portable Labeller Refill Cartridges

3M Portable Labeller Refill Cartridges are available in a variety of materials, including heat shrink, for a variety of surfaces and environments. The label cartridges are interchangeable, easy to install, and have less waste.

**Applications:** Labelling panels, cabinets and racks  
Cable wraps and flags  
Equipment and asset labelling



| Product                | 3M Order Code | Width | Length | Print & Label Colour | Labeller Compatibility |
|------------------------|---------------|-------|--------|----------------------|------------------------|
| <b>Flexible Nylon</b>  |               |       |        |                      |                        |
| PLFN-WHT-1/2           | 80611456452   | 12 mm | 3.5 m  | Black on White       | PL150, PL200, PL300    |
| PLFN-WHT-3/4           | 80611456460   | 19 mm | 3.5 m  | Black on White       | PL150, PL200, PL300    |
| PLFN-WHT-1             | 80611456478   | 24 mm | 3.5 m  | Black on White       | PL300                  |
| PLFN-YEL-1/2           | 80611456486   | 12 mm | 3.5 m  | Black on Yellow      | PL150, PL200, PL300    |
| PLFN-YEL-3/4           | 80611456494   | 19 mm | 3.5 m  | Black on Yellow      | PL150, PL200, PL300    |
| PLFN-YEL-1             | 80611456502   | 24 mm | 3.5 m  | Black on Yellow      | PL300                  |
| <b>Heat Shrink</b>     |               |       |        |                      |                        |
| PLHS-WHT-1/4           | 80611456197   | 6 mm  | 1.5 m  | Black on White       | PL150, PL200, PL300    |
| PLHS-WHT-3/8           | 80611456114   | 9 mm  | 1.5 m  | Black on White       | PL150, PL200, PL300    |
| PLHS-WHT-1/2           | 80611456122   | 12 mm | 1.5 m  | Black on White       | PL150, PL200, PL300    |
| PLHS-WHT-3/4           | 80611456130   | 19 mm | 1.5 m  | Black on White       | PL150, PL200, PL300    |
| PLHS-YEL-1/4           | 80611456205   | 6 mm  | 1.5 m  | Black on Yellow      | PL150, PL200, PL300    |
| PLHS-YEL-3/8           | 80611456148   | 9 mm  | 1.5 m  | Black on Yellow      | PL150, PL200, PL300    |
| PLHS-YEL-1/2           | 80611456155   | 12 mm | 1.5 m  | Black on Yellow      | PL150, PL200, PL300    |
| PLHS-YEL-3/4           | 80611456163   | 19 mm | 1.5 m  | Black on Yellow      | PL150, PL200, PL300    |
| <b>Polyester</b>       |               |       |        |                      |                        |
| PLP-BLK-WHT-1/4        | 80611470420   | 6 mm  | 5.5 m  | Black on White       | PL150, PL200, PL300    |
| PLP-WHT-3/8            | 80611456213   | 9 mm  | 5.5 m  | Black on White       | PL150, PL200, PL300    |
| PLP-WHT-1/2            | 80611456221   | 12 mm | 5.5 m  | Black on White       | PL150, PL200, PL300    |
| PLP-WHT-3/4            | 80611456239   | 19 mm | 5.5 m  | Black on White       | PL150, PL200, PL300    |
| PLP-WHT-1              | 80611456247   | 24 mm | 5.5 m  | Black on White       | PL300                  |
| PLP-BLK-CLR-1/4        | 80611470412   | 6 mm  | 5.5 m  | Black on Clear       | PL150, PL200, PL300    |
| PLP-CLR-3/8            | 80611456254   | 9 mm  | 5.5 m  | Black on Clear       | PL150, PL200, PL300    |
| PLP-CLR-1/2            | 80611456429   | 12 mm | 5.5 m  | Black on Clear       | PL150, PL200, PL300    |
| PLP-CLR-3/4            | 80611456437   | 19 mm | 5.5 m  | Black on Clear       | PL150, PL200, PL300    |
| PLP-BLK-CLR-1          | 80611470453   | 24 mm | 5.5 m  | Black on Clear       | PL300                  |
| PLP-MTL-3/8            | 80611456288   | 9 mm  | 5.5 m  | Black on Metallic    | PL150, PL200, PL300    |
| PLP-MTL-1/2            | 80611456262   | 12 mm | 5.5 m  | Black on Metallic    | PL150, PL200, PL300    |
| PLP-MTL-3/4            | 80611456270   | 19 mm | 5.5 m  | Black on Metallic    | PL150, PL200, PL300    |
| PLP-BLK-MTL-1          | 80611470503   | 24 mm | 5.5 m  | Black on Metallic    | PL300                  |
| <b>Vinyl</b>           |               |       |        |                      |                        |
| PLV-WHT-3/8            | 80611455942   | 9 mm  | 5.5 m  | Black on White       | PL150, PL200, PL300    |
| PLV-WHT-1/2            | 80611455959   | 12 mm | 5.5 m  | Black on White       | PL150, PL200, PL300    |
| PLV-WHT-3/4            | 80611455967   | 19 mm | 5.5 m  | Black on White       | PL150, PL200, PL300    |
| PLV-WHT-BLK-3/8        | 80611470370   | 9 mm  | 5.5 m  | White on Black       | PL150, PL200, PL300    |
| PLV-WHT-BLK-1/2        | 80611470388   | 12 mm | 5.5 m  | White on Black       | PL150, PL200, PL300    |
| PLV-WHT-BLK-3/4        | 80611470396   | 19 mm | 5.5 m  | White on Black       | PL150, PL200, PL300    |
| PLV-WHT-BLK-1          | 80611470404   | 24 mm | 5.5 m  | White on Black       | PL300                  |
| <b>Self-Laminating</b> |               |       |        |                      |                        |
| PLSL-WHT-1             | 80611457286   | 25 mm | 5.5 m  | Black on White       | PL300                  |

### 3M™ ScotchCode™ Wire Marker Tape Dispensers STD

The 3M ScotchCode Tape Dispenser STD is a compact, carry-along dispenser with 10 refillable compartments that holds 2 metre rolls of non-smear polyester tape. Used for marking binder groups, wire or cable, the tapes' high-tack acrylic adhesive resists solvents, oil and water, and adheres firmly to insulation surfaces. An end-loop hooks the dispenser easily to a tool pouch or belt. Dispensers can be ordered empty or filled with 10 rolls of pre-printed numbers 0–9.



| Product  | 3M Order Code | Description                                                                                                                          |
|----------|---------------|--------------------------------------------------------------------------------------------------------------------------------------|
| STD-X    | 80610592554   | Compact, carry-along dispenser with 10 refillable compartments that hold 20 cm rolls of non-smear polyester tape. Dispenser only     |
| STD-0-9X | 80610733901   | Dispenser filled with 10 rolls of numbered tape (one each of 0-9)                                                                    |
| STD-CX   | 80610733760   | Dispenser filled with 10 rolls of coloured tape (one each of black, blue, brown, green, grey, orange, red, violet, white and yellow) |

### 3M™ ScotchCode™ Write-On Dispensers and Pen

This self-laminating, write-on marker dispenser is handy for identifying wire and cable as well as household, automotive, plumbing and sporting equipment. It is easy to use, refillable and comes with a SMP permanent marking pen. The dispenser's design provides convenience and protects the die-cut adhesive markers. The pen performs well on nonporous surfaces, has an extra fine point with permanent, quick drying black ink. It has excellent UV and water resistance.



**Applications**     Marking communications, security and sound system components  
Marking pipes, hoses, tubes, parts, vents

| Product | 3M Order Code | Description                                          | Labels per roll | Write-on area | Marker Size | Recommended Wire Diameter |
|---------|---------------|------------------------------------------------------|-----------------|---------------|-------------|---------------------------|
| SLW     | 80610593917   | Larger sized dispenser with tape and SMP marking pen | 70              | 25 x 19 mm    | 25 x 127 mm | 5.8 to 33.5 mm            |
| SMP-B   | 80611443435   | Black marker pen                                     |                 |               |             |                           |

### 3M™ ScotchCode™ Tape Refill Rolls

This aggressive adhesive system, combined with the flexible polyester film backing, provides a thin, conformable tape that is durable, and will hold up in most industrial electrical applications.



| Product    | 3M Order Code | Printed Text Type | Printed Text    | Write-on area |
|------------|---------------|-------------------|-----------------|---------------|
| SDR-0-9    | 80611424617   | Numeric           | "0" through "9" | -             |
| SDR-0      | 80610733919   | Numeric           | "0"             | -             |
| SDR-1      | 80610733927   | Numeric           | "1"             | -             |
| SDR-2      | 80610733935   | Numeric           | "2"             | -             |
| SDR-3      | 80610733943   | Numeric           | "3"             | -             |
| SDR-4      | 80610733950   | Numeric           | "4"             | -             |
| SDR-5      | 80610733968   | Numeric           | "5"             | -             |
| SDR-6      | 80610733976   | Numeric           | "6"             | -             |
| SDR-7      | 80610733984   | Numeric           | "7"             | -             |
| SDR-8      | 80610733992   | Numeric           | "8"             | -             |
| SDR-9      | 80610734008   | Numeric           | "9"             | -             |
| SLW-REFILL | 80611428097   | Write-on          | -               | 25 x 19 mm    |

# 3M™ Dynatel Locating & Marking Systems

The full line of 3M Dynatel locators and markers helps you quickly and accurately identify underground assets. From finding the exact path and estimated depth of underground utilities, to locating buried passive markers, to reading and writing information directly to the iD version markers, to locating plastic pipes and conduits, to locating cable sheath faults, 3M offers the precision tools needed to manage your assets.

Certain 3M Dynatel locators interface with select GPS/GIS field mapping instruments. Together, these tools provide a complete locating and marking solution with the performance and reliability you trust from 3M.



## 3M National Accredited Underground Asset Location Course

This training course is intended for contractors and organisations who install or maintain underground services and need the skills and knowledge to accurately locate and/or mark those assets with 3M Dynatel equipment, and therefore avoid damage to buried underground assets.

Qualification issued on completion: RIICCM202A - Identify, locate and protect underground services, a core competency from RII30909 - Certificate III in Civil Construction.

## 3M™ Dynatel Locators

3M Dynatel Locators combine simple interfaces, large backlit high resolution graphics, excellent balance and ergonomics with precision locating capabilities to help you quickly and accurately identify underground assets.

Dynatel Locators are available in a range of configurations from fully featured pipe, cable and electronic marker locators to basic cable avoidance systems.



## 3M™ Dynatel™ Locator Features by Model

|                                           | 2220M | 7420 | 7550              | 7573       |
|-------------------------------------------|-------|------|-------------------|------------|
| Pipe and cable locate                     | ✓     |      | ✓                 | ✓          |
| Electronic marker locate/read/write       |       | ✓    | ✓                 | ✓          |
| EMS Caution Tape locate                   |       | ✓    | ✓                 | ✓          |
| GPS compatible                            |       | ✓    | ✓                 | ✓          |
| Active frequencies                        | 2     |      | 6                 | 6          |
| Passive power                             | ✓     |      | ✓                 | ✓          |
| Passive LF                                | ✓     |      | ✓                 | ✓          |
| Sonde locating                            | ✓     | ✓    | ✓                 | ✓          |
| Fault locate (A-frame)                    |       |      |                   | ✓          |
| Transmitter output                        | 3 W   |      | 12 W              | 12 W       |
| Dyna-coupler size                         | 76 mm |      | 114 mm            | 114 mm     |
| Direct connect cable (S/L Clips)          | Large |      | Large             | Large      |
| Ground rod and pouch                      | ✓     |      | ✓                 | ✓          |
| USB to Serial Adaptor Cable               | ✓     | ✓    | ✓                 | ✓          |
| 7000RB rechargeable battery (locator)     |       | ✓    | ✓                 | ✓          |
| 2200RB rechargeable battery (transmitter) |       |      | ✓                 | ✓          |
| Cigarette lighter adaptor cable           |       | ✓    | ✓                 | ✓          |
| Carry bag                                 | ✓     | ✓    | ✓                 | ✓          |
| Replaces earlier models                   |       | 1420 | 2250, 2250M, 2550 | 2273, 2573 |

## 3M™ Electronic Marker System & EMS Caution Tape 7600 Series

With 3M Full-Range, Ball and Near-Surface Markers there is a marker to meet almost every need. Markers are passive antennas with no internal power source to run. Their water resistant, polyethylene shells are impervious to minerals, chemicals and the temperature extremes normally found underground. All EMS markers are colour coded to APWA standards for visual reference and each utility has its own frequency.

Full-Range, Ball and Near-Surface Markers are available in passive and iD (programmable) format. 3M iD markers are individually serialised and may be programmed to include customer-specific information such as facility data, type of application, material type and size, placement date and other important details.

3M EMS Caution Tape 7600 Series uses a new EMS marker technology embedded into a caution tape for installation near or above the buried facility and helps provide continuous path location.



### 3M Electronic Marker System Specifications

| Marker Type             | Read Range |
|-------------------------|------------|
| 3M Ball Marker          | 1.5 m      |
| 3M Near-Surface Marker* | 0.9 m*     |
| 3M Full Range Marker    | 2.4 m      |
| 3M Caution Tape         | 0.6 m      |

\*0.9 m for passive near-surface markers, 0.6 m for iD (programmable) near surface markers

### 3M™ EMS Ball Markers

The 3M EMS Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how the ball is placed in the ground, making the job of precisely locating underground facilities easier.



| Product    | 3M Order Code | Programmable/<br>Passive | Application                          | Colour       | Depth | Diameter |
|------------|---------------|--------------------------|--------------------------------------|--------------|-------|----------|
| 1401-XR    | 80611161136   | Passive                  | Telephone                            | Orange       | 1.5 m | 102 mm   |
| 1402-XR    | 80611161144   | Passive                  | Power                                | Red          | 1.5 m | 102 mm   |
| 1403-XR    | 80630000323   | Passive                  | Water                                | Blue         | 1.5 m | 102 mm   |
| 1404-XR    | 80630000331   | Passive                  | Wastewater                           | Green        | 1.5 m | 102 mm   |
| 1405-XR    | 80630000257   | Passive                  | Gas                                  | Yellow       | 1.5 m | 102 mm   |
| 1407-XR    | 80611161151   | Passive                  | CATV                                 | Orange/Black | 1.5 m | 102 mm   |
| 1408-XR    | 80611168354   | Passive                  | General Purpose/<br>Recyclable Water | Purple       | 1.5 m | 102 mm   |
| 1421-XR/ID | 80611142193   | Programmable             | Telephone                            | Orange       | 1.5 m | 102 mm   |
| 1422-XR/ID | 80611142201   | Programmable             | Power                                | Red          | 1.5 m | 102 mm   |
| 1423-XR/ID | 80611143225   | Programmable             | Water                                | Blue         | 1.5 m | 102 mm   |
| 1424-XR/ID | 80611143233   | Programmable             | Wastewater                           | Green        | 1.5 m | 102 mm   |
| 1425-XR/ID | 80611143241   | Programmable             | Gas                                  | Yellow       | 1.5 m | 102 mm   |
| 1427-XR/ID | 80611142219   | Programmable             | CATV                                 | Orange/Black | 1.5 m | 102 mm   |
| 1428-XR/ID | 80611142227   | Programmable             | General Purpose/<br>Recyclable Water | Purple       | 1.5 m | 102 mm   |

### 3M™ EMS Near-Surface Markers

3M EMS Near-Surface Markers provide an accurate, long lasting method of marking underground facilities. The markers have a range of up to 1 metre from marker to locator and can be programmed to include customer specific information (iD version).



| Product    | 3M Order Code | Programmable/<br>Passive | Application                          | Colour | Depth | Height x Diameter |
|------------|---------------|--------------------------|--------------------------------------|--------|-------|-------------------|
| 1432       | 80610230312   | Passive                  | Telephone                            | Orange | 0.6 m | 76 mm x 20 mm     |
| 1433       | 80610230379   | Passive                  | Power                                | Red    | 0.6 m | 76 mm x 20 mm     |
| 1434       | 80610230387   | Passive                  | Water                                | Blue   | 0.6 m | 76 mm x 20 mm     |
| 1435       | 80610230395   | Passive                  | Wastewater                           | Green  | 0.6 m | 76 mm x 20 mm     |
| 1436       | 80610230403   | Passive                  | Gas                                  | Yellow | 0.6 m | 76 mm x 20 mm     |
| 1432-XR/ID | 80611321292   | Programmable             | Telephone                            | Orange | 0.9 m | 76 mm x 20 mm     |
| 1433-XR/ID | 80611321300   | Programmable             | Power                                | Red    | 0.9 m | 76 mm x 20 mm     |
| 1434-XR/ID | 80611321318   | Programmable             | Water                                | Blue   | 0.9 m | 76 mm x 20 mm     |
| 1435-XR/ID | 80611321326   | Programmable             | Wastewater                           | Green  | 0.9 m | 76 mm x 20 mm     |
| 1436-XR/ID | 80611321334   | Programmable             | Gas                                  | Yellow | 0.9 m | 76 mm x 20 mm     |
| 1438-XR/ID | 80611321342   | Programmable             | General Purpose/<br>Recyclable Water | Purple | 0.9 m | 76 mm x 20 mm     |



### 3M™ EMS Full-Range Markers

3M EMS Full-Range Markers provide an accurate, convenient, long lasting method of marking underground facilities. The marker has a range of up to 2.4 metres from marker to locator.



| Product    | 3M Order Code | Programmable/<br>Passive | Application                          | Colour | Depth | Diameter x Thickness |
|------------|---------------|--------------------------|--------------------------------------|--------|-------|----------------------|
| 1250       | 80610221071   | Passive                  | Telephone                            | Orange | 2.4 m | 381 mm x 17 mm       |
| 1251       | 80610221295   | Passive                  | Power                                | Red    | 2.4 m | 381 mm x 17 mm       |
| 1252       | 80610221519   | Passive                  | Water                                | Blue   | 2.4 m | 381 mm x 17 mm       |
| 1253       | 80610221501   | Passive                  | Wastewater                           | Green  | 2.4 m | 381 mm x 17 mm       |
| 1254       | 80610221550   | Passive                  | Gas                                  | Yellow | 2.4 m | 381 mm x 17 mm       |
| 1248-XR/ID | 80611321284   | Programmable             | General Purpose/<br>Recyclable Water | Purple | 2.4 m | 381 mm x 17 mm       |
| 1250-XR/ID | 80611321235   | Programmable             | Telephone                            | Orange | 2.4 m | 381 mm x 17 mm       |
| 1251-XR/ID | 80611321243   | Programmable             | Power                                | Red    | 2.4 m | 381 mm x 17 mm       |
| 1252-XR/ID | 80611321250   | Programmable             | Water                                | Blue   | 2.4 m | 381 mm x 17 mm       |
| 1253-XR/ID | 80611321268   | Programmable             | Wastewater                           | Green  | 2.4 m | 381 mm x 17 mm       |
| 1254-XR/ID | 80611321276   | Programmable             | Gas                                  | Yellow | 2.4 m | 381 mm x 17 mm       |

### 3M™ EMS Caution Tape 7600 Series

3M Electronic Marking System Caution Tape uses a new EMS marker technology embedded into a caution tape for installation near the buried facility and helps to provide continuous path location. When energised using a 3M Dynatel 7000 Series Locator the markers are activated. The markers require no batteries, and there is no need to hook up an external transmitter or search for access points.

The markers work independently, so even if a section of caution tape is cut or removed, the other markers on the tape would continue to provide accurate location.

Each version of 3M EMS Caution Tape is tuned to a frequency specific to the path of that utility.



| Product     | 3M Order Code | Programmable/<br>Passive | Application                          | Colour* | Depth | Width x Roll Length |
|-------------|---------------|--------------------------|--------------------------------------|---------|-------|---------------------|
| 7645-CT-GAS | 80630003111   | Passive                  | Gas                                  | Yellow  | 0.6 m | 150 mm x 300 m      |
| 7655-CT-GAS | 80630003236   | Passive                  | Gas                                  | Yellow  | 0.6 m | 150 mm x 500 m      |
| 7642-CT-PWR | 80630003103   | Passive                  | Power                                | Orange  | 0.6 m | 150 mm x 300 m      |
| 7652-CT-PWR | 80630003210   | Passive                  | Power                                | Orange  | 0.6 m | 150 mm x 500 m      |
| 7644-CT-RW  | 80630003129   | Passive                  | General Purpose/<br>Recyclable Water | Purple  | 0.6 m | 150 mm x 300 m      |
| 7654-CT-RW  | 80630003228   | Passive                  | General Purpose/<br>Recyclable Water | Purple  | 0.6 m | 150 mm x 500 m      |
| 7641-CT-TEL | 80630003095   | Passive                  | Telephone                            | White   | 0.6 m | 150 mm x 300 m      |
| 7645-CT-TEL | 80630003202   | Passive                  | Telephone                            | White   | 0.6 m | 150 mm x 500 m      |

\*Compliant to AS/NZS Standards

### 3M™ Dynatel™ Pipe/Cable Locators 2220M Series

The 3M Dynatel Locator 2220M Series is designed to find the path and estimated depth of buried pipes and cables.

Features include:

- Two active frequencies (8 kHz, 82 kHz)
- Passive frequencies for power, cathodic protection systems
- Detects frequencies from sondes and remote transmitters (512 Hz, 640 Hz, 33 kHz)
- Direct readout of active duct probe (sonde)
- Cable/pair identification
- Receivers incorporate an “expander” function to make peaks and nulls more pronounced
- Receiver and transmitter self-test each time the unit is turned on

**Cable/Pipe Locate:** Yes

**Ball and Marker Locate:** No

**Caution Tape Locate:** No

**Earth Return Fault Locate:** No

**GPS Adaptable:** No



| Product         | 3M Order Code | Transmitter | Direct Connect Cable | Coupler Size | 2200RB Rechargeable Battery | Carrying Bag Included |
|-----------------|---------------|-------------|----------------------|--------------|-----------------------------|-----------------------|
| 2220M-U3W3-CPLR | 80611326812   | 3 watt      | Large clips          | 76 mm        | No                          | Yes                   |

### 3M™ Dynatel™ Marker/Tape Locator 7420

The new 7420 locators will allow the user to locate EMS Caution Tape and electronic markers (balls, near-surface and full range). The locator will read/write to 3M iD markers.

**Cable/Pipe Locate:** No

**Ball and Marker Locate:** Yes

**Caution Tape Locate:** Yes

**Earth Return Fault Locate:** No

**GPS Adaptable:** Yes



| Product | 3M Order Code | 7000RB Rechargeable Battery | Carrying Bag Included |
|---------|---------------|-----------------------------|-----------------------|
| 7420    | 80611611400   | Yes                         | Yes                   |

### 3M™ Dynatel™ Pipe/Cable/EMS Locators 7550-iD

3M Dynatel Locators 7500 series offer a broad feature set with advanced digital processing and simple interfaces with precision locating capabilities. The new 7500 series locators will allow the user to locate EMS Caution Tape and electronic markers (balls, near-surface, full range). In addition, all 7500 series locators will read/write to 3M iD markers. All 7500 series locators offer six active frequencies.

The 7500 series provides accurate pipe, cable or sonde depth measurements. They are compatible with GPS/GIS field mapping instruments for real time mapping of electronic markers or pipe and cable facilities.

|                                   |     |
|-----------------------------------|-----|
| <b>Cable/Pipe Locate:</b>         | Yes |
| <b>Ball and Marker Locate:</b>    | Yes |
| <b>Caution Tape Locate:</b>       | Yes |
| <b>Earth Return Fault Locate:</b> | No  |
| <b>GPS Adaptable:</b>             | Yes |



| Product     | 3M Order Code | Transmitter | Direct Connect Cable | Coupler Size | 7000RB Rechargeable Battery | 2200RB Rechargeable Battery | Carrying Bag Included |
|-------------|---------------|-------------|----------------------|--------------|-----------------------------|-----------------------------|-----------------------|
| 7550-ID/U12 | 80611611478   | 12 watt     | Large clips          | 114 mm       | Yes                         | Yes                         | Yes                   |

### 3M™ Dynatel™ Pipe/Cable/Fault/EMS Locator 7573-iD

3M Dynatel Locators 7500 series offer a broad feature set with advanced digital processing and simple interfaces with precision locating capabilities. The new 7500 series locators will allow the user to locate EMS Caution Tape and electronic markers (balls, near-surface, full range). In addition, all 7500 series locators will read/write to 3M iD markers. All 7500 series locators offer six active frequencies.

The 7500 series provides accurate pipe, cable or sonde depth measurements. They are compatible with GPS/GIS field mapping instruments for real time mapping of electronic markers or pipe and cable facilities. The 7573-iD includes earth return fault locate.

|                                   |     |
|-----------------------------------|-----|
| <b>Cable/Pipe Locate:</b>         | Yes |
| <b>Ball and Marker Locate:</b>    | Yes |
| <b>Caution Tape Locate:</b>       | Yes |
| <b>Earth Return Fault Locate:</b> | Yes |
| <b>GPS Adaptable:</b>             | Yes |



| Product     | 3M Order Code | Transmitter | Direct Connect Cable | Coupler Size | 7000RB Rechargeable Battery | 2200RB Rechargeable Battery | Carrying Bag Included |
|-------------|---------------|-------------|----------------------|--------------|-----------------------------|-----------------------------|-----------------------|
| 7573-ID/U12 | 80611611486   | 12 watt     | Large clips          | 114 mm       | Yes                         | Yes                         | Yes                   |

## 3M™ Direct Connect Accessories

| Product                | 2876                                                                               | 2892                                                                              | 8006                                                                                | 9043                                                                                |
|------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                        |   |  |  |  |
| <b>3M Order Code</b>   | 80610598130                                                                        | 80610598668                                                                       | 80610126841                                                                         | 80610126833                                                                         |
| <b>Product Name</b>    | 3M™ Large Clip Direct-Connect Transmitter Cable for Most Cable/Fault Locators 2876 | 3M™ Small Clip Direct-Connect Transmitter Cable for All Cable/Fault Locators 2892 | 3M™ Ground Rod 8006                                                                 | 3M™ Ground Extension Cable 9043                                                     |
| <b>Description</b>     | Two lead, 3 m cables used for direct connection to cable and ground                | Two lead, 3 m cables used for direct connection to cable and ground               | For applying ground capability. Stainless steel                                     | Extends ground capability to 3.6 m                                                  |
| <b>Compatible with</b> | 2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573                               | 2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573                              | 2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573                                | 2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573                                |
|                        |                                                                                    | Not in NZ                                                                         |                                                                                     |                                                                                     |

## 3M™ Couplers

| Product                | 1196                                                                                                                                                                                             | 4001                                                                               | 4519                                                                                                                                    | 9011                                                                                 |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                        |                                                                                                                |  |                                                      |  |
| <b>3M Order Code</b>   | 80610411185                                                                                                                                                                                      | 80611325830                                                                        | 80611335201                                                                                                                             | 80610074843                                                                          |
| <b>Product Name</b>    | 3M™ 152 mm Dyna-Coupler with Pouch 1196                                                                                                                                                          | 3M™ 114 mm Dyna-Coupler 4001                                                       | 3M™ Dynatel™ Locator Coupler Accessory Kit 4519                                                                                         | 3M™ Coupler Cable 9011                                                               |
| <b>Description</b>     | Permits coupling of RF trace tone to large diameter cables, bundle cables, and cables enclosed in accessible non-metallic ducts. For use on cables and conduits with a maximum diameter of 2.1 m | Permits coupling of RF trace tone to cables with a maximum diameter of 1.3 m       | The 4519 Accessory Kit contains a 4001 114 mm Dyna-coupler and a 9011 Coupler Cable with a case that can be attached to the transmitter | For use with any Dynatel Transmitter, Receiver, or Coupler: length of 3.6 m          |
| <b>Compatible with</b> | 2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573                                                                                                                                             | 2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573                               | 2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573                                                                                    | 2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573                                 |

## 3M™ Fault Finding Accessories

| Product         | 3014                                                                                                                                                      | 9026                                                                                                |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
|                 |                                                                          |                  |
| 3M Order Code   | 80610074777                                                                                                                                               | 80610074942                                                                                         |
| Product name    | 3M™ Earth Contact Frame 3014                                                                                                                              | 3M™ Earth Contact Frame Cable 9026                                                                  |
| Description     | Used only when locating sheath (earth return) faults. It indicates direction to the fault and is colour coded to correspond with the receiver's indicator | For use with the 3014 Earth Contact Frame for sheath (earth return) fault location; length of 1.2 m |
| Compatible with | 2273, 2273M, 2573, 7550, 7573                                                                                                                             | 2273, 2273M, 2573, 7550, 7573                                                                       |

## 3M™ Dynatel™ Transmitters

| Product         | 5 Watt Transmitter                                                                | 12 Watt Transmitter                                                                 |
|-----------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                 |  |  |
| 3M Order Code   | 78900002755                                                                       | 80611331085                                                                         |
| Product Name    | 3M™ Dynatel™ 5 Watt Transmitter                                                   | 3M™ Dynatel™ 12 Watt Transmitter                                                    |
| Description     | Includes 5 watt transmitter, ground rod, and rechargeable battery                 | Includes 12 watt transmitter, ground rod, and rechargeable battery                  |
| Compatible with | 2250, 2250M, 2273M, 7550                                                          | 2550, 2573, 7573                                                                    |

## 3M™ Locator Carrying Bags and Batteries

| Product         | 2200M                                                                               | 2200RB                                                                               | 7000RB                                                                                |
|-----------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                 |  |  |  |
| 3M Order Code   | 80611146715                                                                         | 80611306517                                                                          | 80630002535                                                                           |
| Product Name    | 3M™ Soft Carrying Bag                                                               | 3M™ Rechargeable Battery 2200RB                                                      | 3M™ Rechargeable Battery 7000RB                                                       |
| Description     | Soft carrying bag for the 1420, 2200M, 2500M, 2273M and 7000 series locators        | Rechargeable battery for 5 watt and 12 watt transmitter units                        | Rechargeable battery for 7000 series locators                                         |
| Compatible with | 1420, 2200M, 2250M/2273M, 7420, 7550, 7573                                          | 2273, 2250, 7550, 7573                                                               | 7420, 7550, 7573                                                                      |

## 3M™ Sondes

| Product         | 3229                                                                                                                                                                                                            |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |                                                                                                                              |
| 3M Order Code   | 80610757785                                                                                                                                                                                                     |
| Product Name    | 3M™ ADP 33KHZ Sonde 3229 for use with Dynatel Series Locators                                                                                                                                                   |
| Description     | The 3200 Series Active Duct Probe is an active mini-transmitter (sonde) which allows the user to trace the path of conduit. The ADP can help the user pinpoint key points, such as J-boxes, handholes and stubs |
| Compatible with | 2250/2273, 2220M, 2250M/2273M, 2550/2573, 7550, 7573                                                                                                                                                            |



# 3M™ Personal Safety Products

3M provides solutions for work situations requiring basic Personal Protective Equipment (PPE) through to environments that call for the most sophisticated and comprehensive protection. From an individual tradesperson to medium sized businesses to organisations employing thousands of workers, 3M has a workplace safety solution to meet your needs.

## The 3M range of solutions for worker safety includes:

- Respiratory Protection
- Hearing Protection
- Communications
- Head, Eye and Face Protection
- Spill Management
- Worker Visibility
- Detection & Monitoring
- Body Protection



## Training and Support

3M's team of Specialist Representatives are available nationally to provide support and training that meets the needs of our customers. Furthermore, our qualified and highly experienced team are able to assist customers by:

- Conducting initial and ongoing assessments of the workplace
- Recommending appropriate respiratory, hearing, eye protection, communication and spill management solutions required to maintain a safe work environment
- Providing technical advice about the correct use and maintenance of the solution that has been selected
- Facilitating on-site fit testing for both respiratory and hearing protection solutions as required

## Technical Assistance

3M TechAssist is the ideal point of contact for your questions, especially when you require a prompt answer. Customers can contact TechAssist to obtain answers to questions on product information, technical advice, guidance with product selection, Australia/New Zealand Standards advice and other important information they need to know on a day-to-day basis.

3M Tech Assist Helpline  
1800 024 464 (AU)  
0800 364 357 (NZ)



## 3M Safety brands you can trust:

**3M**

**E-A-R**

**PELTOR**

**Speedglas**

**3M Scotchlite**  
Reflective Material

### 3M™ Passive Hearing Protection

The 3M™, E-A-R™ and Peltor™ brands offer a hearing protection solution for anyone who spends time in noisy environments. The comprehensive range of 3M and E-A-R earplugs includes disposable, reusable, no-roll down and banded models. They are available in multiple shapes and sizes to comfortably accommodate different wearer and workplace needs. Many 3M and Peltor earmuffs are available in headband, neckband, helmet attachable and folded models to meet virtually every application need and wearer preference.

#### 3M™ E-A-R™ Classic™ Earplugs

- The original PVC plug that still stands up to the competition
- PVC foam provides a comfortable seal with high protection levels
- SLC80: 21 dB (Class 3 Corded)
- SLC80 23 dB (Class 4)



| Product Code | 3M Order Code | Corded   | Colour | Pack        | Protection Rating |
|--------------|---------------|----------|--------|-------------|-------------------|
| 310-1001     | 70071514916   | Uncorded | Yellow | Pillow Pack | Class 4           |
| 312-1201     | 70071514932   | Uncorded | Yellow | Poly Bag    | Class 4           |

#### 3M™ Peltor™ Earmuffs H7 Series

- Versatile high quality earmuffs meet the protection needs of almost any working environment
- Available in headband, neckband and helmet attachment formats
- High visibility option available
- Liquid and foam filled cushions provide a quality noise seal with low pressure for all day wearer comfort
- Stainless steel headband wires with four point suspension helps distribute cushion pressure evenly and earcups pivot for consistent fit
- SLC80 30 dB (Class 5).



| Product Code | 3M Order Code | Description     | Colour      | Protection Rating |
|--------------|---------------|-----------------|-------------|-------------------|
| H7A          | 70071516226   | Headband        | Olive Green | Class 5           |
| H7B          | 70071516317   | Neckband        | Olive Green | Class 5           |
| H7P3E        | 70071516283   | Helmet Attached | Olive Green | Class 5           |
| H7F          | 70071516309   | Folding         | Olive Green | Class 5           |

### 3M™ Eye Protection

3M safety eyewear combines superior technologies and design to provide a range of solutions that span the function and price spectrum, providing high performance eyewear for most work situations as well as a variety of outdoor recreational activities. 3M safety glasses and goggles provide high quality optics and reliable UV protection.

#### 3M™ 3M™ Virtua AP Series

The Virtua AP series of 3M Eyewear offers sleek unisex styling and is lightweight, comfortable and represents exceptional value. The wrap around polycarbonate lenses and integral side shields provide comfortable fit and ultimate protection.

- All lenses deliver greater than 99% UV protection



| Product Code      | 3M Order Code | Lense Colour | Coating            | Impact Rating | Standard      |
|-------------------|---------------|--------------|--------------------|---------------|---------------|
| 11818-00000-100AS | 70071649464   | Clear        | Anti Fog/Hard Coat | Medium Impact | AS/NZS 1337.1 |
| 11815-00000-100AS | 70071649449   | Grey         | Hard Coat          | Medium Impact | AS/NZS 1337.1 |
| 11817-00000-100AS | 70071649456   | Amber        | Hard Coat          | Medium Impact | AS/NZS 1337.1 |
| 11847-00000-100AS | 70071649472   | Mirror       | Hard Coat          | Medium Impact | AS/NZS 1337.1 |

#### 3M™ Light Vision II Series

Light Vision II provides workers with hands-free direct lighting. It is ideal for intricate work where extra lighting and both hands are required to complete a job. The Light Vision II's dual LED lights are adjustable so light is directed where needed. Wrap around design provides high wearer protection levels and the LED lights have a long battery life of up to 50 hours.

- Light Vision II products come with a microfibre bag & lanyard



| Product Code | 3M Order Code | Lense Colour | Coating  | Impact Rating | Standard      | Battery Life |
|--------------|---------------|--------------|----------|---------------|---------------|--------------|
| 10425-00000  | 70071561875   | Clear        | Anti Fog | Medium Impact | AS/NZS 1337.1 | 50 hours     |

### 3M™ Disposable Respiratory Protection

3M offers respirators that fit well, are comfortable and provide the protection you need. 3M disposable respirators are compatible with eyewear and hearing protection products from 3M. Additionally, 3M disposable respirators meet the performance requirements of AS/NZS 1716:2012 'Respiratory protective devices'. To achieve the assigned protection of a tight fitting face-piece there must be a good seal between the edges of the respirator and your face. Conducting a fit test to AS/NZS 1715:2009 is considered best practice as part of a general respiratory protection program.

#### 3M™ Flat Fold Particulate Respirators 9300 Series

- Unique 3-panel design fits a wide range of face sizes
- Low profile provides good field of vision
- Proprietary 3M Cool Flow™ exhalation valve reduces heat and moisture build-up, making breathing easier (9322 & 9312)
- Individually packaged for portability in the workplace
- Applications eg P2: light welding, infection control, shipbuilding



| Product Code | 3M Order Code | Description | Valve    | Weight | Nose Clip | Staples | Standard         |
|--------------|---------------|-------------|----------|--------|-----------|---------|------------------|
| 9322         | XA010001874   | P2          | Valved   | 15 g   | Aluminium | Steel   | AS/NZS 1716:2012 |
| 9320         | XA010002005   | P2          | Unvalved | 10 g   | Aluminium | Steel   | AS/NZS 1716:2012 |
| 9312         | XA010001908   | P1          | Valved   | 15 g   | Aluminium | Steel   | AS/NZS 1716:2012 |
| 9310         | XA010001999   | P1          | Unvalved | 10 g   | Aluminium | Steel   | AS/NZS 1716:2012 |

#### 3M™ Cupped Particulate Respirators 8000 Series

- Lightweight construction for added comfort and increased wearer time
- Galvanised steel nose clip for use in intrinsically safe environment (8812 & 8710)
- Adjustable nose clip helps reduce eyewear fogging
- Applications eg P1: sawing, drilling. P2: composting, handling infected animals



| Product Code | 3M Order Code AU | 3M Order Code NZ | Protection Type | Valve    | Weight | Nose Clip        | Staples    | Standard         |
|--------------|------------------|------------------|-----------------|----------|--------|------------------|------------|------------------|
| 8210         | WX700900011      | WX700900011      | P2              | Unvalved | 8 g    | Aluminium        | No staples | AS/NZS 1716:2012 |
| 8710         | WX700900029      | WX700900029      | P1              | Unvalved | 8 g    | Galvanised Steel | No staples | AS/NZS 1716:2012 |
| 8822         | AT010561051      | WX700900359      | P2              | Valved   | 13 g   | Galvanised Steel | Steel      | AS/NZS 1716:2012 |
| 8812         | AT010561036      | WX700900243      | P1              | Valved   | 13 g   | Galvanised Steel | Steel      | AS/NZS 1716:2012 |

### 3M™ Reusable Respiratory Protection

With the ability to reuse the facepiece, the 3M range of reusable half and full face respirators offer value and versatility for a wide variety of environments and hazards, while giving you the confidence in protection you deserve. 3M gas and vapour cartridges and particulate filters are lightweight, well balanced and provide excellent field of vision when fitted to a respirator.

#### 3M™ Respirator Starter Kits

3M Respirator Starter Kits are convenient and easy to use providing an ideal solution to get you started. All kits include a pair of 3M™ Earplugs, 3M™ Respirator Cleaning Wipes and a 3M Respiratory Protection Guide. To avoid moisture and contaminant exposure, store the respirator in the handy, sealable storage container.

#### 3M™ Dust/Particle Respirator Kit 6225 Components:

- 1 x 3M™ Half Face Respirator 6000 Series - Medium
- 1 x pair of 3M™ Particulate Filters 2125, P2
- 1 x 3M™ No-Touch™ Foam Earplugs P2000, Class 4
- 4 x 3M™ Respirator Cleaning Wipes 504
- 1 x 3M Respiratory Protection Guide
- 1 x Storage Container



#### 3M™ Dust/Particle Respirator Kit 6225 Applications:

Sanding/Sawing - Wood/plaster dust; Lead Paint Removal - Metal fume and/or particles; Food Manufacturing - Fine food powders; Insulation - Fibreglass particles; Drilling/Cutting - Metal/wood/plastic particles; Masonry - Stone particles; Grinding - Metal dust and particles; Powder Coating - Dust

| Product Code | 3M Order Code AU | 3M Order Code NZ | Protection Type | Standards        | Respirator Size |
|--------------|------------------|------------------|-----------------|------------------|-----------------|
| 6225         | AT010590613      | XH000789525      | P2              | AS/NZS 1716:2012 | Medium          |
| 2125         | 70071486180      | 70071486180      | P2              | AS/NZS 1716:2012 |                 |



## 3M™ Body Protection

3M offers a comprehensive range of disposable coveralls that provide protection for a variety of applications. Harmful dust, light liquid splashes, and biological contaminants are just some of the dangers in today's industrial workplace. The 3M line of quality disposable coveralls help protect at-risk workers and offers quality and reliability, helping workers to manoeuvre freely and operate efficiently.

### 3M™ Protective Coverall 4515

The 4515 coverall is made from a breathable material and is ideal for a wide range of applications, particularly those requiring protection from hazardous dusts. A two-way zipper provides on-off convenience and elasticated hood, cuffs, waist and ankles allow for a comfortable fit.

| Product Code | 3M Order Code AU | 3M Order Code NZ | Colour | Size | Type Rating                              |
|--------------|------------------|------------------|--------|------|------------------------------------------|
| 4515         | GT700004127      | GT700004127      | White  | M    | Type 5/6 - for hazardous dust and splash |
| 4515         | AT010588898      | GT700004135      | White  | L    | Type 5/6 - for hazardous dust and splash |
| 4515         | AT010588906      | GT700004143      | White  | XL   | Type 5/6 - for hazardous dust and splash |
| 4515         | AT010588914      | GT700004150      | White  | XXL  | Type 5/6 - for hazardous dust and splash |
| 4515         | GT700000265      | GT700000265      | White  | 3XL  | Type 5/6 - for hazardous dust and splash |



### 3M™ Protective Coverall 4510

The 4510 coverall is constructed of high quality, ultra low-linting, laminated microporous material and is designed to offer cost effective protection against hazardous dusts and light liquid chemical splashes. The 4510 also has a two-way zipper with storm flap for added convenience and extra protection. Elasticated hood, cuffs, waist and ankles provide for a comfortable fit.

| Product Code | 3M Order Code AU | 3M Order Code NZ | Colour | Size | Type Rating                              | Treatment                     |
|--------------|------------------|------------------|--------|------|------------------------------------------|-------------------------------|
| 4510         | XL451000050      | XL451000050      | White  | M    | Type 5/6 - for hazardous dust and splash | Anti-static - EN 1149- 5:2008 |
| 4510         | AT010588864      | XL451000068      | White  | L    | Type 5/6 - for hazardous dust and splash | Anti-static - EN 1149- 5:2008 |
| 4510         | AT010588872      | XL451000076      | White  | XL   | Type 5/6 - for hazardous dust and splash | Anti-static - EN 1149- 5:2008 |
| 4510         | AT010588880      | XL451000084      | White  | XXL  | Type 5/6 - for hazardous dust and splash | Anti-static - EN 1149- 5:2008 |
| 4510         | GT700000893      | GT700000893      | White  | 3XL  | Type 5/6 - for hazardous dust and splash | Anti-static - EN 1149- 5:2008 |



### 3M™ Active Hearing Protection

3M's Peltor brand is a world leader in communication equipment. The extensive range provides hearing protection and enables wearers to communicate effectively within their immediate environment as well as with people further away.

#### 3M™ Peltor™ Worktunes™ Plus

The Worktunes Plus provides hearing protection and music while you work via an AM/FM radio. The level dependent function allows you to hear sounds, warning signals, machinery and conversations. Sudden impulse noise at harmful levels is immediately attenuated. There are easy-to-handle volume control knobs for the radio and level dependent functions. The Worktunes Plus also switches automatically from stereo to mono for the best reception in the event of a weak signal.



| Product Code | 3M Order Code | Description | Colour | Weight | Protection Rating | Frequency |
|--------------|---------------|-------------|--------|--------|-------------------|-----------|
| M2RX7A 290   | XH001650072   | Headband    | Red    | 400 g  | Class 5           | AM/FM     |

### 3M™ Head & Face Protection

3M is the trusted leader in the head and face protection market providing robust, comfortable and easy-to-use products to a wide spectrum of industries. These products are designed for strength, all day comfort, enhanced visibility, and sometimes serve as a "carrier" to other personal protective equipment (PPE) products.

#### 3M™ Peltor™ G2000 Hard Hat

Attractive design and excellent protection is the best way to summarise the Peltor G2000 Hard Hat. The hard hat goes well beyond the requirements for formal testing and is comfortable with its low back and relatively low profile. It was designed to accommodate additional accessories, visor and hearing protection. The G2000 also incorporates the 3M™ Peltor™ Uvicator™ which provides a visible indication of the damage caused by UV-radiation from the sun. The Uvicator gradually turns from Red to White to show when it is time to replace your hard hat.



| Product Code | 3M Order Code | Colour | Material          | Weight | Size       | Standards   |
|--------------|---------------|--------|-------------------|--------|------------|-------------|
| G2000CUV-GU  | GT600000498   | Yellow | UV-stabilised ABS | 340 g  | 54 - 62 cm | AS/NZS 1801 |
| G2000CUV-OR  | XH001650122   | Orange | UV-stabilised ABS | 340 g  | 54 - 62 cm | AS/NZS 1801 |

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**3M Australia & New Zealand**  
Electrical Markets Division

Building A, 1 Rivett Rd  
North Ryde NSW 2113  
Phone: 136 136  
Email: 3MsafetyAUCS@mmm.com

[www.3M.com.au/electrical](http://www.3M.com.au/electrical)

94 Apollo Drive, Albany  
Auckland, New Zealand  
Phone: 0800 474 787  
Fax: 0800 508 980  
Email: 3MNZITB@mmm.com

[www.3M.co.nz/electrical](http://www.3M.co.nz/electrical)

