

G

Carlton® - Conduit and fittings



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Rigid nonmetallic conduit

Carlton Schedule 40 PVC rigid — Nonmetallic conduit (heavy wall EPC)

Certified for underground applications encased in concrete or direct burial. Also for use in exposed or concealed above ground applications.

- Sunlight resistant
- Rated for use with 75 °C conductors
- Superior weathering characteristics
- Meets CSA Standard C22.2 No. 211.2
- ¾ in. – 4 in. are FT-4 rated

Schedule 40 heavy wall



| Cat. no. | Trade size (in.) | | Std. crate qty. | | Std. bundle qty. | | Wt. per 100 ft. | Dimensions (in.) | | Wall (in.) | |
|-------------|------------------|--------|-----------------|--------|------------------|--------|-----------------|------------------|-------|------------|-------|
| | 10 ft. | 20 ft. | 10 ft. | 20 ft. | 10 ft. | 20 ft. | | O.D. | I.D. | | |
| 49005CC-010 | | – | ½ | 6000 | 12000 | 100 | 200 | 17 | 0.840 | 0.622 | 0.109 |
| 49007CC-010 | 49007CC-020 | | ¾ | 4400 | 8800 | 100 | 200 | 23 | 1.050 | 0.824 | 1.113 |
| 49008CC-010 | 49008CC-020 | | 1 | 3600 | 7200 | 100 | 200 | 34 | 1.315 | 1.049 | 0.133 |
| 49009CC-010 | 49009CC-020 | | 1¼ | 3300 | 6600 | 50 | 100 | 46 | 1.660 | 1.380 | 0.140 |
| 49010CC-010 | 49010CC-020 | | 1½ | 1800 | 3600 | 50 | 100 | 55 | 1.900 | 1.610 | 0.145 |
| 49011CC-010 | 49011CC-020 | | 2 | 1400 | 2800 | 50 | 100 | 73 | 2.375 | 2.067 | 0.154 |
| 49012CC-010 | 49012CC-020 | | 2½ | 930 | 1860 | 10 | 20 | 124 | 2.875 | 2.469 | 0.203 |
| 49013CC-010 | 49013CC-020 | | 3 | 880 | 1760 | 10 | 20 | 163 | 3.500 | 3.068 | 0.216 |
| 49014CC-010 | – | | 3½ | 630 | – | 10 | 20 | 196 | 4.000 | 3.548 | 0.226 |
| 49015CC-010 | 49015CC-020 | | 4 | 570 | 1140 | 10 | 20 | 232 | 4.500 | 4.026 | 0.237 |
| 49016CC-010 | – | | 5 | 380 | 760 | 10 | 20 | 315 | 5.563 | 5.047 | 0.258 |
| 49017CC-010 | 49017CC-020 | | 6 | 260 | 520 | 10 | 20 | 409 | 6.625 | 6.065 | 0.280 |



Acceptable dimension in inches of CSA listed integral bell

| Trade size of conduit (in.) | A | | B | | C | |
|-----------------------------|-------------------|-------|-----------------|-------|--------------------|-------|
| | At entrance (in.) | | At bottom (in.) | | Socket depth (in.) | |
| | Max. | Min. | Max. | Min. | Max. | Min. |
| ½ | 0.860 | 0.844 | 0.844 | 0.828 | 1.500 | 0.652 |
| ¾ | 1.074 | 1.054 | 1.056 | 1.036 | 1.500 | 0.719 |
| 1 | 1.340 | 1.320 | 1.320 | 1.300 | 1.875 | 0.875 |
| 1¼ | 1.689 | 1.665 | 1.667 | 1.643 | 2.000 | 0.938 |
| 1½ | 1.930 | 1.906 | 1.906 | 1.882 | 2.000 | 1.062 |
| 2 | 2.405 | 2.381 | 2.381 | 2.357 | 2.000 | 1.125 |
| 2½ | 2.905 | 2.875 | 2.883 | 2.853 | 3.000 | 1.469 |
| 3 | 3.530 | 3.500 | 3.507 | 3.477 | 3.125 | 1.594 |
| 3½ | 4.065 | 3.965 | 4.007 | 3.977 | 3.250 | 1.687 |
| 4 | 4.565 | 4.465 | 4.506 | 4.476 | 3.375 | 1.750 |
| 5 | 5.653 | 5.543 | 5.583 | 5.523 | 3.625 | 1.937 |
| 6 | 6.708 | 6.608 | 6.644 | 6.584 | 3.750 | 2.125 |

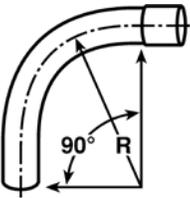


Schedule 40 elbows

Integral belled end for use with nonmetallic solvent weld fittings

90° Elbow

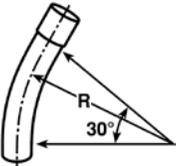


| Item | Belled end cat. no. | Trade size (in.) | Std. ctn. qty. |
|---|---------------------|------------------|----------------|
|  | UA9ADCB-CTN | 1/2 | 40 |
| | UA9AECB-CTN | 3/4 | 25 |
| | UA9AFCB-CTN | 1 | 25 |
| | UA9AGCB-UPC | 1 1/4 | 20 |
| | UA9AHCB-UPC | 1 1/2 | 25 |
| | UA9AJCB-UPC | 2 | 20 |
| | UA9AKCB-CTN | 2 1/2 | 10 |
| | UA9ALCB-UPC | 3 | 25 |
| | UA9AMCB | 3 1/2 | 1 |
| | UA9ANCB | 4 | 1 |
| | UA9APCB | 5 | 1 |
| | UA9ARCB | 6 | 1 |

Custom elbows available on request. Plain end elbows also available.

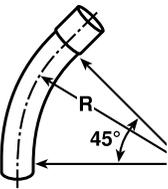
30° Elbow



| Item | Belled end cat. no. | Trade size (in.) | Std. ctn. qty. |
|---|---------------------|------------------|----------------|
|  | UA6ADB | 1/2 | 50 |
| | UA6AEB | 3/4 | 25 |
| | UA6AFB | 1 | 8 |
| | UA6AGB | 1 1/4 | 20 |
| | UA6AHB | 1 1/2 | 1 |

45° Elbow



| Item | Belled end cat. no. | Trade size (in.) | Std. ctn. qty. |
|---|---------------------|------------------|----------------|
|  | UA7ADCB-CTN | 1/2 | 25 |
| | UA7AECB-CTN | 3/4 | 20 |
| | UA7AFCB-CTN | 1 | 14 |
| | UA7AGCB | 1 1/4 | 20 |
| | UA7AHCB | 1 1/2 | 20 |
| | UA7AJCB | 2 | 20 |
| | UA7ALCB | 3 | 5 |
| | UA7AMCB | 3 1/2 | 1 |
| | UA7ANCB | 4 | 1 |
| | UA7APCB | 5 | 1 |
| | UA7ARCB | 6 | 1 |

Flexible elbows

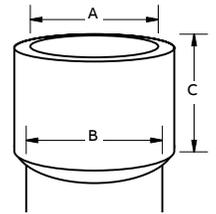


| Item | Belled end cat. no. | Trade size (in.) | Std. ctn. qty. |
|---|---------------------|------------------|----------------|
|  | UAFAD | 1/2 | 8 |
| | UAFAE | 3/4 | 6 |
| | UAFAF | 1 | 6 |

Integral belled end dimensions

| Trade size of conduit (in.) | A | | B | | C | |
|-----------------------------|-------------------|-------|-----------------|-------|--------------------|-------|
| | At entrance (in.) | | At bottom (in.) | | Socket depth (in.) | |
| | Max. | Min. | Max. | Min. | Max. | Min. |
| 1/2 | 0.860 | 0.844 | 0.844 | 0.828 | 1.500 | 0.652 |
| 3/4 | 1.074 | 1.054 | 1.056 | 1.036 | 1.500 | 0.719 |
| 1 | 1.340 | 1.320 | 1.320 | 1.300 | 1.875 | 0.875 |
| 1 1/4 | 1.689 | 1.665 | 1.667 | 1.643 | 2.000 | 0.938 |
| 1 1/2 | 1.930 | 1.906 | 1.906 | 1.882 | 2.000 | 1.062 |
| 2 | 2.405 | 2.381 | 2.381 | 2.357 | 2.000 | 1.125 |
| 2 1/2 | 2.905 | 2.875 | 2.883 | 2.853 | 3.000 | 1.469 |
| 3 | 3.530 | 3.500 | 3.507 | 3.477 | 3.125 | 1.594 |
| 3 1/2 | 4.065 | 3.965 | 4.007 | 3.977 | 3.250 | 1.687 |
| 4 | 4.565 | 4.465 | 4.506 | 4.476 | 3.375 | 1.750 |
| 5 | 5.653 | 5.543 | 5.583 | 5.523 | 3.625 | 1.937 |
| 6 | 6.708 | 6.608 | 6.644 | 6.584 | 3.750 | 2.125 |

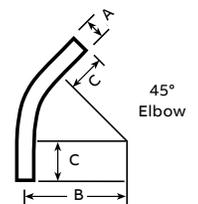
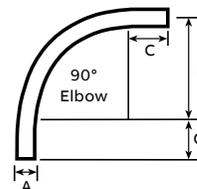
Diagram



Standard radius elbow dimensions

| Trade size (in.) | A (in.) | B (in.) | | C (in.) |
|------------------|---------|---------------|-------|---------|
| | | Min. (radius) | Min. | |
| 1/2 | 0.840 | 4 | 1 1/2 | |
| 3/4 | 1.050 | 4 1/2 | 1 1/2 | |
| 1 | 1.315 | 5 3/4 | 1 7/8 | |
| 1 1/4 | 1.660 | 7 3/4 | 2 | |
| 1 1/2 | 1.900 | 8 3/4 | 2 | |
| 2 | 2.375 | 9 1/2 | 2 | |
| 2 1/2 | 2.875 | 10 1/2 | 3 | |
| 3 | 3.500 | 13 | 3 1/8 | |
| 3 1/2 | 4.000 | 15 | 3 1/4 | |
| 4 | 4.500 | 16 | 3 3/8 | |
| 5 | 5.563 | 24 | 3 5/8 | |
| 6 | 6.625 | 30 | 3 3/4 | |

Diagrams



PVC conduit repair system



The revolutionary Carlon PVC conduit repair system significantly reduces the time and money associated with repairing broken PVC conduit "stub-ups" in concrete slabs.

The system is a line of couplings, adapters, reamers and plugs designed to allow contractors to quickly and easily repair broken PVC conduit without having to chip away and repour concrete, while still maintaining the inside diameter of the conduit. Simply cut off the broken conduit; ream the I.D. of the conduit; and insert a coupling or adapter, it's that easy.

Features

- cULus listed
- Nonmetallic couplings, adapters and plugs won't rust or corrode
- Available in sizes ½ in. through 2 in.

Benefits

- Saves time and money
- Maintains inside diameter of conduit
- Metallic reamers for extra strength, durability and longer life
- Quickly and easily repair broken PVC conduit

Couplings



| | Cat. no. | Trade size (in.) | Std. ctn. qty. |
|---|----------|------------------|----------------|
|  | E910D | ½ | 25 |
| | E910E | ¾ | 25 |
| | E910F | 1 | 15 |
| | E910G | 1¼ | 10 |
| | E910H | 1½ | 10 |
| | E910J | 2 | 10 |

Male threaded adapters



| | Cat. no. | Trade size (in.) | Std. ctn. qty. |
|---|----------|------------------|----------------|
|  | E920D | ½ | 25 |
| | E920E | ¾ | 25 |
| | E920F | 1 | 15 |
| | E920G | 1¼ | 10 |
| | E920H | 1½ | 10 |
| | E920J | 2 | 10 |

Reamers



| | Cat. no. | Trade size (in.) | Std. ctn. qty. |
|---|-------------|-----------------------------------|----------------|
|  | E910REAMD | ½ | 12 |
| | E910REAME | ¾ | 12 |
| | E910REAMF | 1 | 10 |
| | E910REAMG | 1¼ | 10 |
| | E910REAMH | 1½ | 10 |
| | E910REAMJ | 2 | 10 |
| | E910REAMKIT | All sizes – ½, ¾, 1, 1¼, 1½ and 2 | 5 |

Schedule 40 plugs



| | Cat. no. | Trade size (in.) | Std. ctn. qty. |
|---|----------|------------------|----------------|
|  | HL6X* | ½ | 1 bag of 50 |
| | HL10* | ¾ | 1 bag of 50 |
| | HL13A* | 1 | 1 bag of 50 |
| | HL16* | 1¼ | 1 bag of 50 |
| | HL18* | 1½ | 1 bag of 50 |
| | HL21* | 2 | 1 bag of 50 |

* = Suffixe (R: red, B: blue, Y: yellow)

PVC conduit repair system

Instructions



Coupling
E910 series



Male threaded adapter
E920 series



Broken conduit on jobsite



1 Cut broken conduit off flush.



2 Insert plug to keep conduit clean/dry through balance of rough-in. Once rough-in is complete, remove plug and continue with step 3.

Alternative to conduit repairs

Prior to concrete pour, measure and saw cut all conduit stub-ups to the thickness of the concrete pour. Insert plugs. Pour concrete flush to the conduit. When pour is complete, remove plugs and proceed with step 3. This alternative method saves time/money by eliminating the need for transitions or use of metal elbows.



3 With reamer tool and standard 1/2 in. drill, ream I.D. of conduit.

It is recommended to use a variable-speed drill. Use slower speed to avoid overheating the conduit.



4 The guide will direct the cutter; the stop will touch when completed.

Cementing instructions

- A. Clean socket I.D. and spigot O.D. of dirt and moisture.
- B. Apply a uniform coat of cement to spigot end and push onto socket bottom, rotating 1/4 turn.
- C. Allow time to set before disturbing. This will depend upon temperature.



Apply a uniform coat of cement.



Insert fitting.



Rotate 1/4 turn.

5 Insert the coupling and cement into place using the cement manufacturer's instructions.



Fittings and accessories



Coupling end



Male terminal adapter end

Expansion fittings*

E945 series expansion fittings are designed to compensate for length changes due to temperature variations in exposed conduit runs.

- Exclusive molded-in mid-point indicator on the piston
- Exclusive 2 in. expansion fitting with an 8 in. travel distance
- Two-piece molded design with lubricated seals for easier movement for the life of the product
- Ridges on the fitting for easier installation (sizes 2 in. through 6 in. only)
- Male terminal adapter end design (½ in. – 2 in. NPT threads and 2½ in. – 6 in. NPSC threads)
- Two O-rings to prevent leakage
- Can be installed vertically or horizontally



| Coupling end cat. no. | Male terminal adapter end cat. no. | Size (in.) | Std. ctn. qty. | Travel length (in.) |
|-----------------------|------------------------------------|------------|----------------|---------------------|
| E945D | E945DX | ½ | 20 | 4 |
| E945E | E945EX | ¾ | 15 | 4 |
| E945F | E945FX | 1 | 10 | 4 |
| E945G | E945GX | 1¼ | 5 | 4 |
| E945H | E945HX | 1½ | 5 | 4 |
| E945J | E945JX | 2 | 15 | 8 |
| E945K | E945KX | 2½ | 10 | 8 |
| E945L | E945LX | 3 | 10 | 8 |
| E945M | E945MX | 3½ | 5 | 8 |
| E945N | E945NX | 4 | 5 | 8 |
| E945P | E945PX | 5 | 1 | 8 |
| E945R | E945RX | 6 | 1 | 8 |

* Please refer to [page 30](#) for additional information.



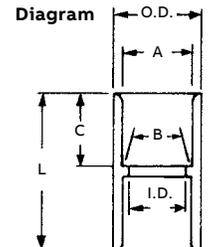
Socket type for joining nonmetallic conduit.

Standard couplings

All socket fittings should be attached using Carlon solvent cement. Using Carlon fittings with Carlon nonmetallic conduit ensures system integrity.



| Cat. no. | Size (in.) | Std. ctn. qty. | Typical (in.) | | I.D. (in.) | O.D. (in.) | Typical (in.) | |
|-------------|------------|----------------|---------------|-------|------------|---------------------------------|---------------------------------|---------------------------------|
| | | | A | B | | | C | L |
| CE940DR-CTN | ½ | 75 | 0.852 | 0.836 | 0.728 | 1 ⁷ / ₆₄ | 1 ¹¹ / ₁₆ | 1½ |
| CE940ER-CTN | ¾ | 45 | 1.064 | 1.046 | 0.840 | 1 ⁵ / ₁₆ | ¾ | 1½ |
| CE940F-UPC | 1 | 50 | 1.330 | 1.310 | 1.210 | 1 ⁵ / ₈ | 1 ¹ / ₁₆ | 2 |
| E940G | 1¼ | 30 | 1.677 | 1.655 | 1.535 | 1 ⁶³ / ₆₄ | 1 | 2½ |
| E940H | 1½ | 25 | 1.918 | 1.894 | 1.755 | 2 ¹⁵ / ₆₄ | 1 ¹ / ₈ | 2¾ |
| E940J | 2 | 30 | 2.393 | 2.369 | 2.190 | 2 ⁴⁷ / ₆₄ | 1 ³ / ₁₆ | 2½ |
| E940K | 2½ | 20 | 2.890 | 2.868 | 2.688 | 3 ⁵ / ₁₆ | 1 ³³ / ₆₄ | 3 ³ / ₁₆ |
| E940L | 3 | 25 | 3.515 | 3.492 | 3.375 | 3 ³³ / ₃₂ | 1¾ | 3 ¹³ / ₃₂ |
| E940M | 3½ | 20 | 4.015 | 3.992 | 3.780 | 4 ⁹ / ₁₆ | 1¾ | 3¾ |
| E940N | 4 | 15 | 4.515 | 4.491 | 4.265 | 5 ³ / ₃₂ | 1 ²⁵ / ₃₂ | 3¾ |
| E940P | 5 | 8 | 5.593 | 5.553 | 5.097 | 6¼ | 1 ¹⁵ / ₁₆ | 4½ |
| E940R | 6 | 5 | 6.658 | 6.614 | 6.115 | 7½ | 2 ³ / ₁₆ | 4¾ |



Short expansion couplings*

(Expands to a maximum of 2 in.)



| Cat. no. | Size (in.) | Std. ctn. qty. |
|----------|------------|----------------|
| E955D | ½ | 40 |
| E955E | ¾ | 40 |
| E955F | 1 | 25 |
| E955G | 1¼ | 15 |
| E955H | 1½ | 10 |
| E955J | 2 | 6 |

* Please refer to [page 30](#) for additional information.

Fittings and accessories



Female adapters

For adapting nonmetallic conduit to threaded fittings, metallic systems. Female threads on one end, socket end on other.

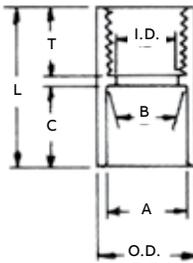


Male terminal adapters

For adapting nonmetallic conduit to boxes threaded fittings, metallic systems. Male threads on one end, socket end on other.

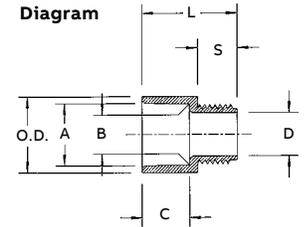
| Cat. no. | Size (in.) | Std. ctn. qty. | Typical (in.) | | Min. I.D. (in.) | Max. O.D. (in.) | Typical (in.) | | |
|----------|------------|----------------|---------------|-------|-----------------|-----------------|---------------|--------|---------|
| | | | A | B | | | C | T | L |
| E942D | 1/2 | 150 | 0.852 | 0.836 | 0.620 | 1 1/64 | 1 1/16 | 3/4 | 1 9/16 |
| E942E | 3/4 | 100 | 1.064 | 1.046 | 0.822 | 1 1/16 | 1 3/16 | 3/4 | 1 9/16 |
| E942F | 1 | 50 | 1.330 | 1.310 | 1.046 | 1 5/8 | 1 5/16 | 7/8 | 1 15/16 |
| E942G | 1 1/4 | 30 | 1.677 | 1.655 | 1.377 | 1 63/64 | 1 | 7/8 | 2 |
| E942H | 1 1/2 | 25 | 1.918 | 1.894 | 1.607 | 2 5/32 | 1 1/8 | 7/8 | 2 7/32 |
| E942J | 2 | 30 | 2.393 | 2.369 | 2.064 | 2 47/64 | 1 3/16 | 1 | 2 5/16 |
| E942K | 2 1/2 | 20 | 2.890 | 2.868 | 2.450 | 3 11/32 | 1 5/8 | 1 1/8 | 2 15/16 |
| E942L | 3 | 25 | 3.515 | 3.492 | 3.000 | 3 31/32 | 1 3/4 | 1 1/8 | 3 1/16 |
| E942M | 3 1/2 | 20 | 4.015 | 3.992 | 3.500 | 4 1/2 | 1 7/8 | 1 1/8 | 3 3/4 |
| E942N | 4 | 15 | 4.515 | 4.491 | 4.000 | 5 1/64 | 1 3/4 | 1 1/16 | 3 13/64 |
| E942P | 5 | 8 | 5.593 | 5.553 | 5.047 | 6 1/4 | 1 15/16 | 1 1/16 | 3 3/16 |
| E942R | 6 | 6 | 6.658 | 6.614 | 6.055 | 7 1/4 | 2 1/8 | 1 1/16 | 3 3/8 |

Diagram



| Cat. no. | Size (in.) | Std. ctn. qty. | Typical (in.) | | Min. D. (in.) | Max. O.D. (in.) | Typical (in.) | | |
|----------|------------|----------------|---------------|-------|---------------|-----------------|---------------|-------|-------|
| | | | A | B | | | C | S | L |
| E943D | 1/2 | 150 | 0.852 | 0.836 | 0.594 | 1.042 | 0.652 | 0.545 | 1.310 |
| E943E | 3/4 | 100 | 1.064 | 1.046 | 0.793 | 1.290 | 0.809 | 0.553 | 1.470 |
| E943F | 1 | 50 | 1.330 | 1.310 | 1.025 | 1.580 | 0.965 | 0.812 | 1.902 |
| E943G | 1 1/4 | 30 | 1.677 | 1.655 | 1.345 | 1.973 | 1.208 | 0.816 | 1.986 |
| E943H | 1 1/2 | 25 | 1.918 | 1.894 | 1.574 | 2.188 | 1.155 | 0.802 | 2.105 |
| E943J | 2 | 30 | 2.393 | 2.369 | 1.998 | 2.713 | 1.145 | 0.825 | 2.093 |
| E943K | 2 1/2 | 20 | 2.890 | 2.868 | 2.400 | 3.290 | 1.490 | 0.812 | 2.480 |
| E943L | 3 | 25 | 3.515 | 3.492 | 2.989 | 3.965 | 1.643 | 0.797 | 2.660 |
| E943M | 3 1/2 | 20 | 4.015 | 3.992 | 3.405 | 4.515 | 1.720 | 0.802 | 2.740 |
| E943N | 4 | 15 | 4.515 | 4.491 | 3.895 | 5.065 | 1.788 | 0.733 | 2.830 |
| E943P | 5 | 8 | 5.593 | 5.553 | 4.900 | 6.104 | 1.935 | 0.990 | 3.200 |
| E943R | 6 | 6 | 6.658 | 6.614 | 5.900 | 7.288 | 2.128 | 0.985 | 3.410 |

Diagram



Fittings and accessories

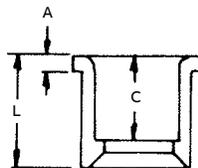


Reducer bushings

For connecting different sizes of conduit. Bell x spigot.

| Cat. no. | Size (in.) | Std. ctn. qty. | Typical (in.) | | |
|------------|------------|----------------|---------------------------------|--------------------------------|---------------------------------|
| | | | L | A | C |
| E950ED | ¾ x ½ | 100 | 1 ⁵ / ₃₂ | 1 ³ / ₆₄ | 1 ¹ / ₃₂ |
| E950FD-CAR | 1 x ½ | 25 | 1 ¹¹ / ₃₂ | 3 ¹ / ₁₆ | 5 ⁷ / ₆₄ |
| E950FE | 1 x ¾ | 100 | 1 ¹¹ / ₃₂ | 3 ¹ / ₁₆ | 1 ¹ / ₆₄ |
| E950GE-CAR | 1¼ x ¾ | 10 | 1 ¹⁵ / ₃₂ | 3 ¹ / ₁₆ | 1 ¹ / ₆₄ |
| E950GF | 1¼ x 1 | 50 | 1 ¹⁵ / ₃₂ | 3 ¹ / ₁₆ | 1 ⁹ / ₆₄ |
| E950HF-CAR | 1½ x 1 | 10 | 1 ¹⁹ / ₃₂ | 3 ¹ / ₁₆ | 1 ⁹ / ₆₄ |
| E950HG-CAR | 1½ x 1¼ | 10 | 1 ¹⁹ / ₃₂ | 3 ¹ / ₁₆ | 1 ¹⁷ / ₆₄ |
| E950JG-CAR | 2 x 1¼ | 10 | 1¾ | 7 ¹ / ₃₂ | 1 ¹⁷ / ₆₄ |
| E950JH-CAR | 2 x 1½ | 10 | 1¾ | 7 ¹ / ₃₂ | 1 ²⁵ / ₆₄ |
| E950KJ-CAR | 2½ x 2 | 10 | 2 ⁵ / ₃₂ | 3 ³ / ₈ | 1 ²⁷ / ₆₄ |
| E950LJ-CAR | 3 x 2 | 10 | 2½ | ¾ | 1 ⁷ / ₈ |
| E950LK | 3 x 2½ | 25 | 1 ¹⁵ / ₁₆ | ¾ | 1 ¹¹ / ₁₆ |
| E950NL | 4 x 3 | 25 | 2¾ | 5 ¹ / ₁₆ | 1 ¹⁵ / ₁₆ |

Diagram

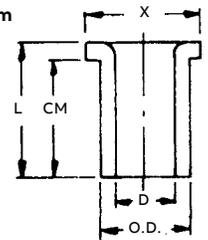


Box adapters for enclosures

Adapts nonmetallic conduit to all electrical enclosures by inserting adapter through knockout and cementing into Carlon couplings.

| Cat. no. | Size (in.) | Std. ctn. qty. | Min. D (in.) | O.D. typical (in.) | Max. X (in.) | Typical (in.) | |
|----------|------------|----------------|--------------|--------------------|---------------------------------|--------------------------------|---------------------------------|
| | | | | | | CM | L |
| E996D | ½ | 100 | 0.662 | 0.840 | 1 ⁷ / ₆₄ | 2 ³ / ₃₂ | 2 ⁷ / ₃₂ |
| E996E | ¾ | 100 | 0.824 | 1.050 | 1 ²¹ / ₆₄ | 2 ⁵ / ₃₂ | 2 ⁹ / ₃₂ |
| E996F | 1 | 100 | 1.049 | 1.315 | 1 ⁵ / ₈ | 6 ¹ / ₆₄ | 1 ³ / ₃₂ |
| E996G | 1¼ | 50 | 1.380 | 1.660 | 1 ³¹ / ₃₂ | 1 ¹ / ₁₆ | 1¼ |
| E996H | 1½ | 50 | 1.610 | 1.900 | 2 ¹³ / ₆₄ | 1 ³ / ₁₆ | 1 ³ / ₈ |
| E996J | 2 | 25 | 2.067 | 2.375 | 2 ²⁹ / ₃₂ | 1¼ | 1 ⁷ / ₁₆ |
| E996K | 2½ | 15 | 2.469 | 2.875 | 3 ⁷ / ₁₆ | 1 ⁷ / ₈ | 1 ¹⁵ / ₁₆ |
| E996L | 3 | 20 | 3.068 | 3.500 | 4 ¹ / ₈ | 2 | 2 ¹ / ₁₆ |
| E996N | 4 | 10 | 4.026 | 4.500 | 5 ¹ / ₈ | 2½ | 2¾ |

Diagram



Threaded adapters

| Cat. no. | Size (in.) | Std. ctn. qty. |
|----------|------------|----------------|
| E9842D 1 | ½ | 25 |
| E9842E 2 | ¾ | 25 |

1 Fits ¾ in. sockets

2 Fits 1 in. sockets



Plugs with pull tabs (polyethylene)

| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|------------|----------------|--------------------|
| P258JT | 2 | 60 | 3 |
| P258LT | 3 | 30 | 3 |
| P258NT | 4 | 48 | 8 |
| P258PT | 5 | 30 | 6 |
| P258RT | 6 | 30 | 9 |

Fittings and accessories

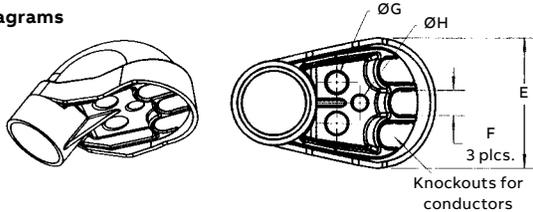
Service entrance caps



| Cat. no. | Size (in.) | Std. ctn. qty. | Dimensions (in.) | | | |
|-----------|------------|----------------|------------------|------|------|------|
| | | | E | F | G | H |
| E998D | ½ | 5 | 1.76 | 0.45 | 0.45 | - |
| E998E | ¾ | 20 | 1.76 | 0.45 | 0.45 | - |
| E998F | 1 | 15 | 2.26 | 0.59 | 0.58 | - |
| E998G | 1¼ | 20 | 3.52 | 0.74 | 0.71 | 0.50 |
| E998H | 1½ | 10 | 3.52 | 0.74 | 0.71 | 0.50 |
| E998J | 2 | 5 | 4.26 | 0.83 | 0.78 | 0.56 |
| E998K-UPC | 2½ | 2 | 7.47 | 1.70 | 1.31 | 1.00 |
| E998L | 3 | 2 | 7.47 | 1.70 | 1.31 | 1.00 |
| E998N | 4 | 2 | 10.45 | 2.25 | 1.88 | 1.31 |



Diagrams



End caps

| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|------------|----------------|--------------------|
| E958D | ½ | 100 | 3 |
| E958E | ¾ | 100 | 4 |
| E958F | 1 | 75 | 5 |
| E958G | 1¼ | 40 | 4 |
| E958H | 1½ | 30 | 4 |
| E958J | 2 | 25 | 5 |
| E958K | 2½ | 10 | 4 |
| E958L | 3 | 10 | 5 |
| E958N | 4 | 5 | 17 |
| E958P | 5 | 5 | 11 |
| E958R | 6 | 5 | 13 |



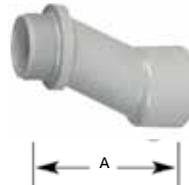
Meter hubs

| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|-----------|------------|----------------|--------------------|
| E991G | 1¼ | 20 | 3.8 |
| E991G-UPC | 1¼ | 12 | 2.3 |
| E991H | 1½ | 25 | 8.0 |
| E991J | 2 | 6 | 1.0 |
| E991J-UPC | 2 | 12 | 2.0 |



Meter offset

| Cat. no. | Size (in.) | Std. ctn. qty. | Offset (in.) | A (in.) |
|----------|------------|----------------|--------------|---------|
| E995G | 1¼ | 15 | 0.758 | 4.230 |
| E995J | 2 | 8 | 0.684 | 4.270 |



Offset

| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|------------|----------------|--------------------|
| E994D | ½ | 25 | 3 |
| E994E | ¾ | 25 | 3 |
| E994F | 1 | 50 | 12 |



End bells



| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|------------|----------------|--------------------|
| E997F | 1 | 50 | 2.6 |
| E997G | 1¼ | 35 | 2.5 |
| E997H | 1½ | 30 | 2.5 |
| E997J | 2 | 40 | 5.0 |
| E997K | 2½ | 30 | 2 |
| E997L | 3 | 50 | 10 |
| E997M | 3½ | 40 | 11 |
| E997N | 4 | 30 | 16 |
| E997P | 5 | 15 | 8 |
| E997R | 6 | 10 | 7 |
| E997T | 8 | 3 | 15 |



Fittings and accessories



Flat sealing washer

Where a waterproof termination is required into any enclosure (metallic or nonmetallic), install the neoprene washer over the threads of a terminal adapter before inserting into the enclosure. Use a standard locknut or threaded bushing to secure the assembly.

| Cat. no. | Size (in.) | Std. ctn. qty. |
|----------|------------|----------------|
| E943DW | ½ | 125 |
| E943EW | ¾ | 125 |
| E943FW | 1 | 100 |
| E943GW | 1¼ | 50 |
| E943HW | 1½ | 50 |
| E943JW | 2 | 25 |

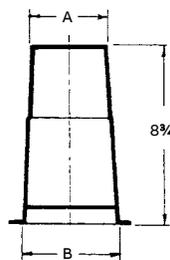


Holform™ concrete sleeves

Holform nonmetallic concrete sleeve forms are the easy way to form holes in concrete. They install in seconds with nails, screws or staples and are easily removed. Concrete will not adhere to them. Holform are adjustable to any slab thickness. (Not CSA applicable)

| Cat. no. | Min. O.D. A (in.) | B (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|-------------------|---------------------------------|----------------|--------------------|
| E92CSH | 1½ | 1¾ | 20 | 3 |
| E92CSJ | 2 | 2 ¹³ / ₃₂ | 25 | 6 |
| E92CSL | 3 | 3 ¹³ / ₃₂ | 25 | 8 |
| E92CSN | 4 | 4 ¹³ / ₃₂ | 18 | 8 |
| E92CSP | 5 | 5 ¹³ / ₃₂ | 15 | 8 |
| E92CSR | 6 | 6 ¹³ / ₃₂ | 12 | 8 |

Diagram



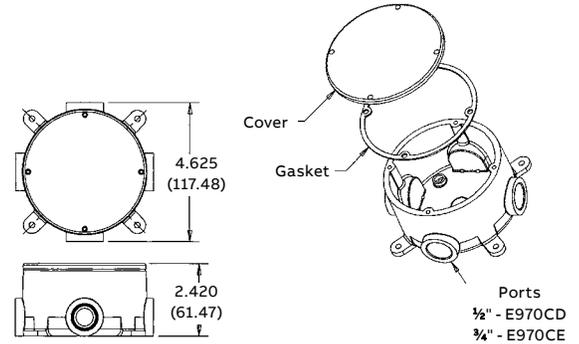
Conduit bodies type x with cover

Four knockout type socket openings, 90° spacing. Available with ½ in. or ¾ in. socket outlets. Includes cover and gasket.



| Cat. no. | Size (in.) | Vol. (cu. in.) | Std. ctn. qty. |
|----------|------------|----------------|----------------|
| CE970CDE | ½ | 15.16 | 15 |
| E970CE | ¾ | 15.16 | 15 |

Diagrams



Supplied with 4 stainless steel cover screws. Diameter 4¹/₈ in., Thickness ¼ in. Not designed for use with wiring devices or light fixtures.

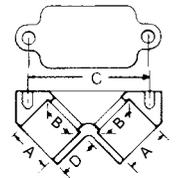


Access pull elbows



| Cat. no. | Size (in.) | Std. ctn. qty. | Typical (in.) | | | |
|------------|------------|----------------|---------------|-------|-------|-------|
| | | | A | B | C | D |
| E990D | ½ | 75 | 0.852 | 0.836 | 2.187 | 0.718 |
| E990DR-CAR | ½ | 25 | 0.852 | 0.836 | 2.187 | 0.718 |
| E990E | ¾ | 50 | 1.064 | 1.046 | 2.531 | 0.781 |

Diagram



Gasket included

Conduit bodies

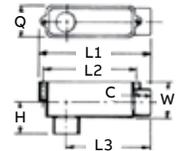


Type LB

- Hubs are not threaded
- Textured lids
- Foam-in-place gasket

| Cat. No. | Size (in.) | Std. ctn. qty. | Typical C | Max. L1 (in.) | Typical (in.) | | | Max. (in.) | | Vol. (cu. in.) |
|----------|------------|----------------|---------------------------------|----------------------------------|---------------------------------|----------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------|
| | | | | | L2 | L3 | H | Q | W | |
| E986D | ½ | 25 | 1 ¹ / ₁₆ | 4 ⁵ / ₁₆ | 3 ⁷ / ₃₂ | 3 ¹ / ₁₆ | 1 ⁵ / ₁₆ | 1 ¹¹ / ₃₂ | 1 ¹ / ₂ | 4.0 |
| E986E | ¾ | 15 | 2 ⁹ / ₃₂ | 6 ⁹ / ₃₂ | 5 ⁹ / ₃₂ | 4 ²⁵ / ₃₂ | 1 ²⁵ / ₃₂ | 1 ³ / ₄ | 2 ¹ / ₃₂ | 12.0 |
| E986F | 1 | 10 | 2 ⁹ / ₃₂ | 6 ⁹ / ₃₂ | 5 ⁹ / ₃₂ | 4 ²⁵ / ₃₂ | 1 ²⁵ / ₃₂ | 1 ³ / ₄ | 2 ¹ / ₃₂ | 12.0 |
| E986G | 1¼ | 10 | 1 ³ / ₃₂ | 7 ³¹ / ₃₂ | 6 ¹³ / ₃₂ | 6 | 2 ⁵ / ₁₆ | 2 ¹ / ₂ | 2 ³ / ₄ | 32.0 |
| E986H | 1½ | 10 | 1 ³ / ₃₂ | 7 ³¹ / ₃₂ | 6 ¹³ / ₃₂ | 6 | 2 ⁵ / ₁₆ | 2 ¹ / ₂ | 2 ³ / ₄ | 32.0 |
| E986J | 2 | 10 | 1 ⁵ / ₃₂ | 9 ³¹ / ₃₂ | 8 ¹³ / ₃₂ | 7¼ | 2 ⁹ / ₁₆ | 3 ⁵ / ₃₂ | 3 ¹⁵ / ₃₂ | 63.0 |
| E986K | 2½ | 4 | 1 ⁵ / ₈ | 14 ⁷ / ₈ | 13¼ | 11 ³¹ / ₃₂ | 3¾ | 4 ¹¹ / ₃₂ | 4 ⁵ / ₈ | 210.0 |
| E986L | 3 | 4 | 1 ⁵ / ₈ | 14 ⁷ / ₈ | 13¼ | 11 ³¹ / ₃₂ | 3¾ | 4 ¹¹ / ₃₂ | 4 ⁵ / ₈ | 210.0 |
| E986M | 3½ | 4 | 1 ²⁵ / ₃₂ | 17 ²³ / ₃₂ | 15 ⁷ / ₈ | 14 ¹⁷ / ₆₄ | 4 ⁷ / ₁₆ | 5 ¹¹ / ₃₂ | 5 ²¹ / ₃₂ | 390.0 |
| E986N | 4 | 4 | 1 ²⁵ / ₃₂ | 17 ²³ / ₃₂ | 15 ⁷ / ₈ | 14 ¹⁷ / ₆₄ | 4 ⁷ / ₁₆ | 5 ¹¹ / ₃₂ | 5 ²¹ / ₃₂ | 390.0 |

Diagram

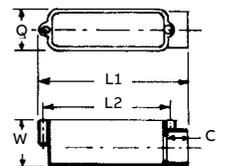


Type E

- Hubs are not threaded
- Textured lids
- Foam-in-place gasket

| Cat. no. | Size (in.) | Std. ctn. qty. | C (in.) | L1 (in.) | L2 (in.) | Q (in.) | W (in.) | Vol. (cu. in.) |
|----------|------------|----------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------|
| E988D | ½ | 25 | 1 ¹ / ₁₆ | 4 ⁵ / ₁₆ | 3½ | 1 ¹¹ / ₃₂ | 1½ | 4.0 |
| E988E | ¾ | 15 | 2 ⁹ / ₃₂ | 6 ¹¹ / ₃₂ | 5 ⁹ / ₃₂ | 1¾ | 2 ¹ / ₃₂ | 12.0 |
| E988F | 1 | 10 | 2 ⁹ / ₃₂ | 6 ¹¹ / ₃₂ | 5 ⁹ / ₃₂ | 1¾ | 2 ¹ / ₃₂ | 12.0 |
| E988G | 1¼ | 10 | 1 ³ / ₃₂ | 8 | 6 ¹³ / ₃₂ | 2½ | 2¾ | 32.0 |
| E988H | 1½ | 10 | 1 ³ / ₃₂ | 8 | 6 ¹³ / ₃₂ | 2½ | 2¾ | 32.0 |
| E988J | 2 | 10 | 1 ⁵ / ₃₂ | 9 ¹⁵ / ₃₂ | 8 ¹³ / ₃₂ | 3 ⁵ / ₃₂ | 3 ¹⁵ / ₃₂ | 63.0 |

Diagram



Conduit bodies

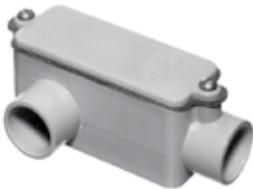
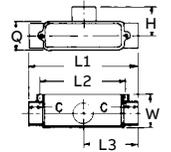


Type T

- Hubs are not threaded
- Textured lids
- Foam-in-place gasket

| Cat. no. | Size (in.) | Std. ctn. qty. | Typical C (in.) | Max. L1 (in.) | Typical (in.) | | | Max. (in.) | | Vol. (cu. in.) |
|-----------|------------|----------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------|
| | | | | | L2 | L3 | H | Q | W | |
| E983D-CAR | ½ | 10 | 1 ¹ / ₁₆ | 4 ¹¹ / ₁₆ | 3 ⁷ / ₃₂ | 2 ¹¹ / ₃₂ | 1 ⁵ / ₁₆ | 1 ¹¹ / ₃₂ | 1½ | 4.0 |
| E983E | ¾ | 15 | 2 ⁹ / ₃₂ | 6 ⁷ / ₈ | 5 ⁹ / ₃₂ | 4 ⁷ / ₁₆ | 1 ²⁵ / ₃₂ | 1¾ | 2 ¹ / ₃₂ | 12.0 |
| E983F | 1 | 20 | 2 ⁹ / ₃₂ | 6 ⁷ / ₈ | 5 ⁹ / ₃₂ | 3 ⁷ / ₁₆ | 1 ²⁵ / ₃₂ | 1¾ | 2 ¹ / ₃₂ | 12.0 |
| E983G | 1¼ | 10 | 1 ³ / ₃₂ | 8 ²¹ / ₃₂ | 6 ¹³ / ₃₂ | 4 ²¹ / ₆₄ | 2 ⁵ / ₁₆ | 2½ | 2¾ | 32.0 |
| E983H | 1½ | 4 | 1 ³ / ₃₂ | 8 ²¹ / ₃₂ | 6 ¹³ / ₃₂ | 4 ²¹ / ₆₄ | 2 ⁵ / ₁₆ | 2½ | 2¾ | 32.0 |
| E983J | 2 | 10 | 1 ⁵ / ₃₂ | 10 ⁵ / ₁₆ | 8 ¹³ / ₃₂ | 5 ⁵ / ₃₂ | 2 ⁹ / ₁₆ | 3 ⁵ / ₃₂ | 3 ¹⁵ / ₁₆ | 63.0 |

Diagram

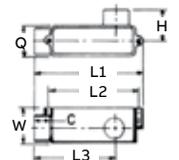


Type LR

- Hubs are not threaded
- Textured lids
- Foam-in-place gasket

| Cat. no. | Size (in.) | Std. ctn. qty. | Typical C (in.) | Max. L1 (in.) | Typical (in.) | | | Max. (in.) | | Vol. (cu. in.) |
|-----------|------------|----------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------|
| | | | | | L2 | L3 | H | Q | W | |
| E985D-CAR | ½ | 10 | 1 ¹ / ₁₆ | 4 ⁵ / ₁₆ | 3 ⁷ / ₃₂ | 3 ¹ / ₁₆ | 1 ⁵ / ₁₆ | 1 ¹¹ / ₃₂ | 1½ | 4.0 |
| E985E-CAR | ¾ | 10 | 2 ⁹ / ₃₂ | 6 ⁹ / ₃₂ | 5 ⁹ / ₃₂ | 4 ²⁵ / ₃₂ | 1 ²⁵ / ₃₂ | 1¾ | 2 ¹ / ₃₂ | 12.0 |
| E985F-CAR | 1 | 10 | 2 ⁹ / ₃₂ | 6 ⁹ / ₃₂ | 5 ⁹ / ₃₂ | 4 ²⁵ / ₃₂ | 1 ²⁵ / ₃₂ | 1¾ | 2 ¹ / ₃₂ | 12.0 |
| E985G-CAR | 1¼ | 5 | 1 ³ / ₃₂ | 7 ³¹ / ₃₂ | 6 ¹³ / ₃₂ | 6 | 2 ⁵ / ₁₆ | 2½ | 2¾ | 32.0 |
| E985H-CAR | 1½ | 5 | 1 ³ / ₃₂ | 7 ³¹ / ₃₂ | 6 ¹³ / ₃₂ | 6 | 2 ⁵ / ₁₆ | 2½ | 2¾ | 32.0 |
| E985J-CAR | 2 | 3 | 1 ⁵ / ₃₂ | 9 ⁹ / ₃₂ | 8 ¹³ / ₃₂ | 7¼ | 2 ⁹ / ₁₆ | 3 ⁵ / ₃₂ | 3 ¹⁵ / ₃₂ | 63.0 |

Diagram



Conduit bodies

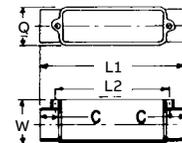


Type C

- Hubs are not threaded
- Textured lids
- Foam-in-place gasket

| Cat. no. | Size (in.) | Std. ctn. qty. | Typical C (in.) | Max. L1 (in.) | Typical (in.) | | Max. (in.) | | Vol. (cu. in.) |
|-----------|------------|----------------|-----------------|---------------|---------------|--------|------------|------|----------------|
| | | | | | L2 | H | Q | W | |
| E987D-CTN | 1/2 | 8 | 1 1/16 | 4 1/16 | 3 1/2 | 1 1/32 | 1 1/2 | 4.0 | |
| E987E-CAR | 3/4 | 10 | 2 9/32 | 6 7/8 | 5 3 2/64 | 1 3/4 | 2 1/32 | 12.0 | |
| E987F-CAR | 1 | 10 | 2 9/32 | 6 7/8 | 5 9/32 | 1 3/4 | 2 1/32 | 12.0 | |
| E987G-CAR | 1 1/4 | 5 | 1 3/32 | 8 2 1/32 | 6 1 3/32 | 2 1/2 | 2 3/4 | 32.0 | |
| E987H-CAR | 1 1/2 | 4 | 1 3/32 | 8 2 1/32 | 6 1 3/32 | 2 1/2 | 2 3/4 | 32.0 | |
| E987J | 2 | 15 | 1 5/32 | 10 5/16 | 8 1 3/32 | 3 5/32 | 3 1 5/32 | 63.0 | |

Diagram

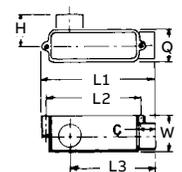


Type LL

- Hubs are not threaded
- Textured lids
- Foam-in-place gasket

| Cat. no. | Size (in.) | Std. ctn. qty. | Typical C (in.) | Max. L1 (in.) | Typical (in.) | | | Max. (in.) | | Vol. (cu. in.) |
|-----------|------------|----------------|-----------------|---------------|---------------|----------|----------|------------|----------|----------------|
| | | | | | L2 | L3 | H | Q | W | |
| E984D-CAR | 1/2 | 10 | 1 1/16 | 4 5/16 | 3 7/32 | 3 1/16 | 1 1/16 | 1 1 1/32 | 1 1/2 | 4.0 |
| E984E | 3/4 | 20 | 2 9/32 | 6 9/32 | 5 9/32 | 4 2 5/32 | 1 2 5/32 | 1 3/4 | 2 1/32 | 12.0 |
| E984F-CAR | 1 | 10 | 2 9/32 | 6 9/32 | 5 9/32 | 4 2 5/32 | 1 2 5/32 | 1 3/4 | 2 1/32 | 12.0 |
| E984G | 1 1/4 | 10 | 1 3/32 | 7 3 1/32 | 6 1 3/32 | 6 | 2 5/16 | 2 1/2 | 2 3/4 | 32.0 |
| E984H | 1 1/2 | 10 | 1 3/32 | 7 3 1/32 | 6 1 3/32 | 6 | 2 5/16 | 2 1/2 | 2 3/4 | 32.0 |
| E984J | 2 | 10 | 1 5/32 | 9 9/32 | 8 1 3/32 | 7 1/4 | 2 9/16 | 3 5/32 | 3 1 5/32 | 63.0 |

Diagram



Junction boxes

Molded nonmetallic junction boxes 6P rated



Nonmetallic junction boxes are CSA certified. Manufactured from PVC or PPO thermoplastic molding compound and featuring foam-in-place gasketed lids attached with stainless steel screws.

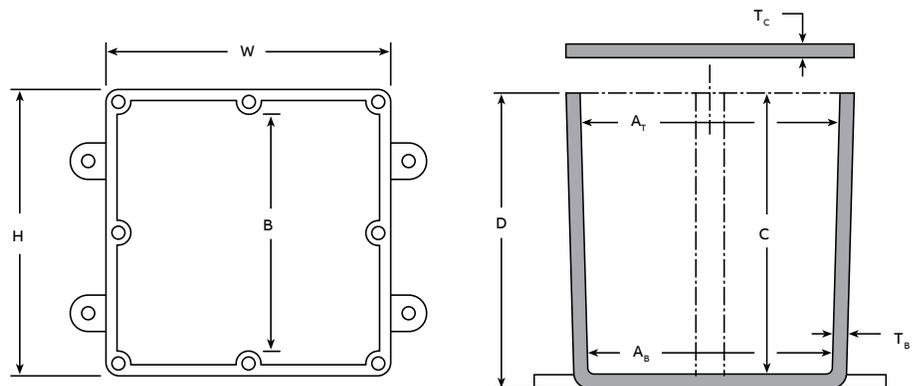
These rugged enclosures offer all the corrosion resistance and physical properties you need for direct burial applications.

These enclosures are NEMA 4-4x-6P rated.



| Cat. no. | H x W x D (in.) | Std. ctn. qty. | Min. (in.) | | | | Typical (in.) | | Material | | Std. ctn. wt. (lb) |
|-------------|--------------------|-------------------|----------------------------------|--------------------------------|---------------------------------|---|----------------|----------------|----------|---------------|-----------------------|
| | | | A _T | A _B | B | C | T _B | T _C | PVC | Thermoplastic | |
| E989NNJ | 4 x 4 x 2 | 10 | 3 ¹¹ / ₁₆ | 3 ⁵ / ₈ | – | 2 | 0.160 | 0.155 | X | | 3 |
| E989NNJ-CAR | 4 x 4 x 2 | 8 | 3 ¹¹ / ₁₆ | 3 ⁵ / ₈ | – | 2 | 0.160 | 0.155 | X | | 3 |
| E987N-CAR | 4 x 4 x 4 | 10 | 3 ¹¹ / ₁₆ | 3 ¹ / ₂ | – | 4 | 0.160 | 0.155 | | X | 4 |
| E989PPJ | 5 x 5 x 2 | 10 | 4 ¹¹ / ₁₆ | 4 ¹ / ₂ | – | 2 | 0.110 | 0.150 | | X | 3 |
| E987R | 6 x 6 x 4 | 10 | 6 | 5 ⁵ / ₈ | – | 4 | 0.190 | 0.190 | | X | 3 |
| E989RRR-UPC | 6 x 6 x 6 | 8 | 5 ⁵ / ₈ | 5 ⁵ / ₈ | – | 6 | 0.160 | 0.150 | | X | 14 |
| E989N-CAR | 8 x 8 x 4 | 1 | 8 | 8 | – | 4 | 0.185 | 0.190 | | X | 2 |
| E989SSX-UPC | 8 x 8 x 7 | 2 | 7 ²¹ / ₃₂ | 7 ⁵ / ₁₆ | – | 7 | 0.160 | 0.150 | | X | 6 |
| E989UUN | 12 x 12 x 4 | 3 | 11 ⁵ / ₈ | 11 ¹ / ₂ | 11 ¹ / ₈ | 4 | 0.160 | 0.150 | | X | 12 |
| E989R-UPC | 12 x 12 x 6 | 2 | 11 ¹⁵ / ₁₆ | 11 ⁷ / ₈ | 11 ⁷ / ₁₆ | 6 | 0.265 | 0.185 | | X | 10 |

Diagrams



Conduit sleeve couplings

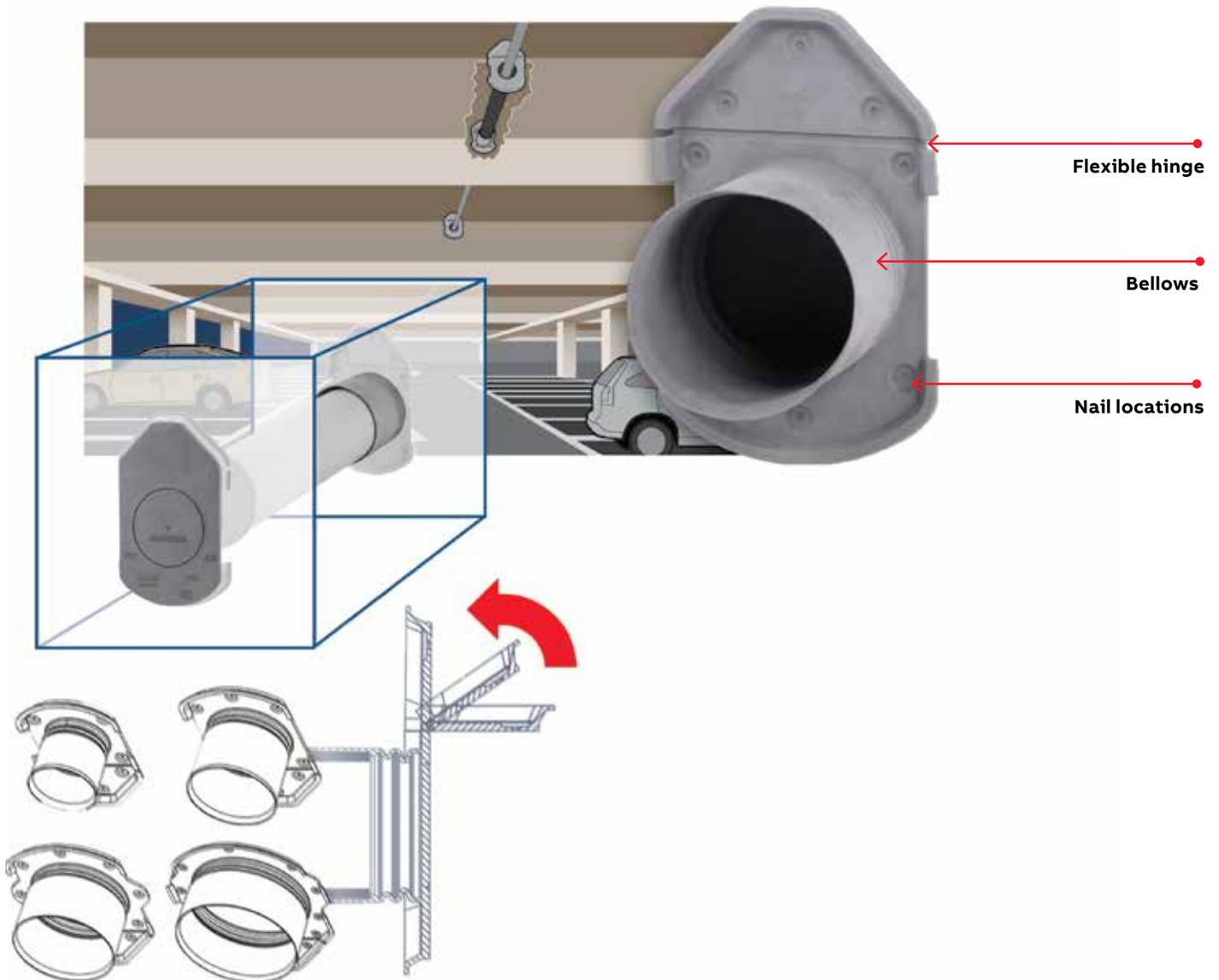
Pass-through for concrete walls, columns and posts

Carlson conduit sleeve couplings are specifically designed for pass-through applications in concrete construction. They're manufactured from thermoplastic elastomer (TPE) so they're concrete-tight and flexible enough to mount to any surface. They can be mounted in vertical wall spans or angled wall spans up to 30° per side.

Carlson conduit sleeve couplings are fast and easy to install and can be immediately accessed or left dark until needed. They eliminate the need for duct tape, clamps and special mounting means while providing superior aesthetics by blending into the concrete.

Applications

Concrete walls, columns and posts.



Conduit sleeve couplings



Features

- Exclusive
- Manufactured from TPE, concrete-tight
- Flexible hinge provides alignment of pass-through with ceiling
- Bellows – mounts to vertical walls and angled walls up to 30°
- Quick and easy installation

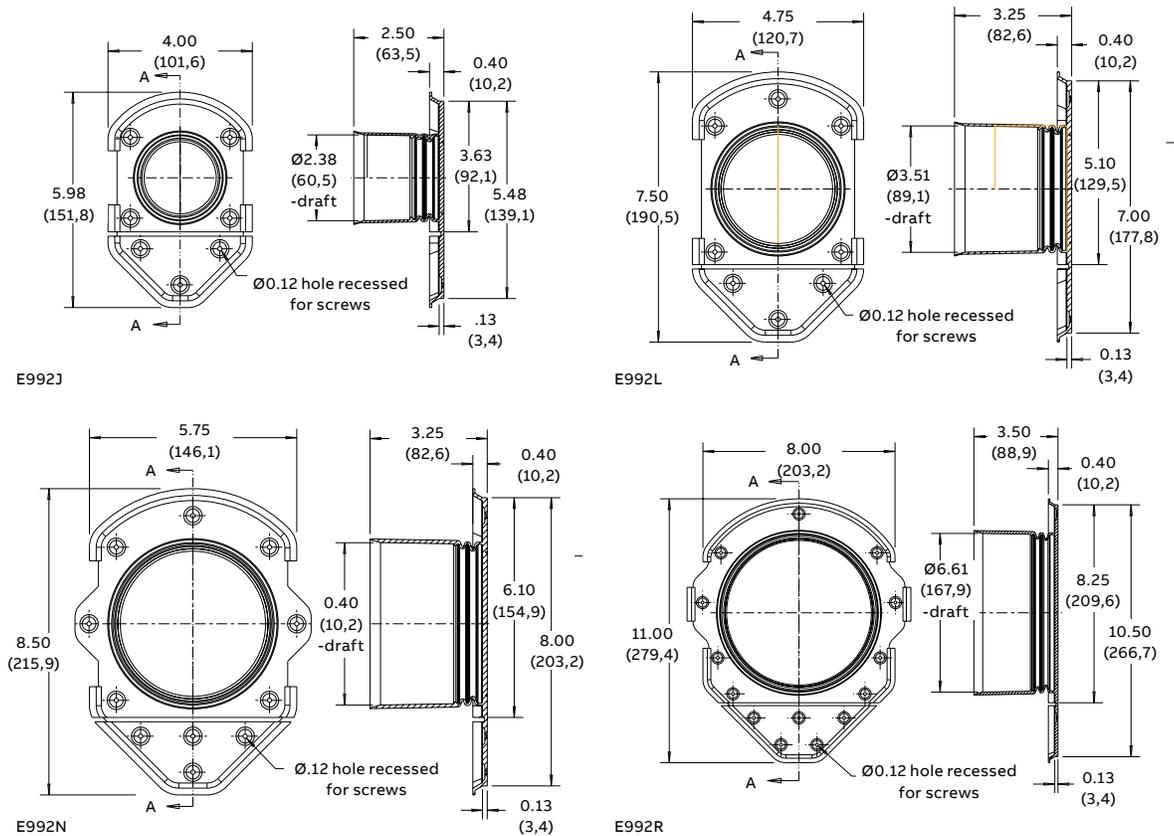
- Eliminates the use of duct tape and clamps
- Manufactured to IPS dimensions for use with most conduit types
- Superior aesthetics (blends in to the concrete)
- Trade sizes: 2 in., 3 in., 4 in. and 6 in.
- Future-proofs the structure – pass-through remains dark and protected until needed

Note: Firestop (where needed) and conduit not included

Specifications

| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|------------|----------------|--------------------|
| E992J | 2 | 84 | 13.0 |
| E992L | 3 | 30 | 8.3 |
| E992N | 4 | 22 | 8.6 |
| E992R | 6 | 18 | 13.0 |

Diagrams



Weatherproof nonmetallic boxes

Nonmetallic weatherproof boxes



Type FSE single-gang box

- For dead-end terminations
- Mounting feet included
- 18 cu. in. volume
- Grounding strap included

FSEB-050



| Cat. no. | Colour | Size (in.) | Std. ctn. |
|----------|--------|------------|-----------|
| FSEB-050 | Grey | ½ | 12 |
| FSEB-075 | Grey | ¾ | 12 |
| FSEB-100 | Grey | 1 | 8 |



Type FSS single-gang box

- For multiple dead-end terminations or where additional support is required in stub-up applications
- Mounting feet included
- 18 cu. in. volume
- Grounding strap included

FSSB-050



| Cat. no. | Colour | Size (in.) | Std. ctn. |
|----------|--------|------------|-----------|
| FSSB-050 | Grey | ½ | 12 |
| FSSB-075 | Grey | ¾ | 12 |
| FSSB-100 | Grey | 1 | 8 |



Type FSC single-gang box

- For through terminations
- Mounting feet included
- 18 cu. in. volume
- Grounding strap included

FSCB-050



| Cat. no. | Colour | Size (in.) | Std. ctn. |
|----------|--------|------------|-----------|
| FSCB-050 | Grey | ½ | 12 |
| FSCB-075 | Grey | ¾ | 12 |
| FSCB-100 | Grey | 1 | 8 |



Type FSCC single-gang box

- For multiple through terminations or where additional support is required in stub-up applications
- Mounting feet included
- 18 cu. in. volume
- Grounding strap included

C979EFN



| Cat. no. | Colour | Size (in.) | Std. ctn. |
|----------|--------|------------|-----------|
| C979EFN | Grey | ¾ | 15 |
| C979FFN | Grey | 1 | 15 |



Single-gang T box

- With three ½" threaded holes
- Mounting feet included
- Use with nonmetallic wiring systems only
- Grounding strap included
- Can be used with Red•Dot lampholder

WPB-T050-G



| Cat. no. | Colour | Size (in.) | Std. ctn. |
|------------|--------|------------|-----------|
| WPB-T050-G | Grey | ½ | 8 |
| WPB-T050-W | White | ½ | 5 |

Weatherproof nonmetallic boxes

Nonmetallic weatherproof boxes



Type FDE single-gang deep box

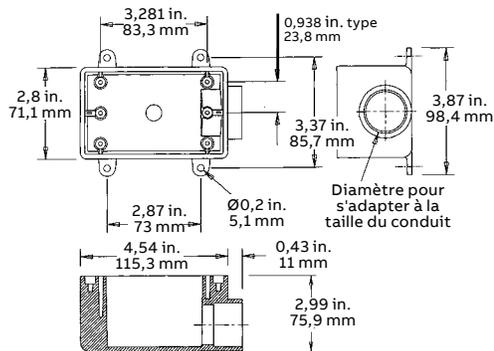
- For dead-end terminations where large device or where additional support is required
- Mounting feet included
- 25 cu. in. volume
- Grounding strap included

C9801EN



| Cat. no. | Colour | Size (in.) | Std. ctn. |
|----------|--------|------------|-----------|
| C9801DN | Grey | ½ | 10 |
| C9801EN | Grey | ¾ | 10 |

Diagrams



Type FDC single-gang deep box

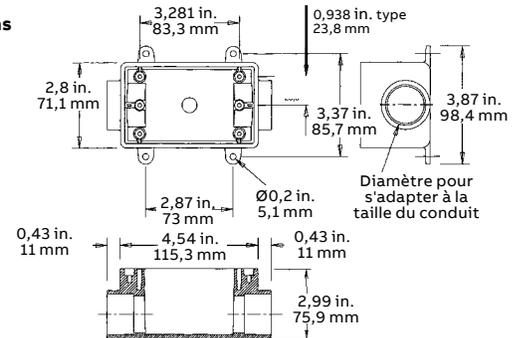
- For through terminations where large device or where additional support is required
- Mounting feet included
- 25 cu. in. volume
- Grounding strap included

C9811EN



| Cat. no. | Colour | Size (in.) | Std. ctn. |
|----------|--------|------------|-----------|
| C9811EN | Grey | ¾ | 10 |
| C9811FN | Grey | 1 | 10 |

Diagrams



FDB-BLANK

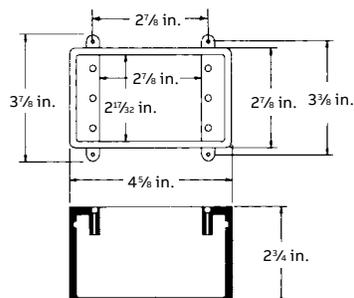
Type FD single-gang deep box

- For terminations where hub requirements vary according to application
- Hubs can be added easily with flared wood bit or hole saw
- Mounting feet included
- 18 cu. in. volume
- Grounding strap included



| Cat. no. | Colour | Size (in.) | Std. ctn. |
|-----------|--------|------------|-----------|
| FDB-BLANK | Grey | - | 6 |

Diagrams



WPRB-T050-W

Round T box

- With five ½" threaded holes
- Mounting feet included
- Use with nonmetallic wiring systems only
- Grounding strap included
- Can be used with Red•Dot lampholder



| Cat. no. | Colour | Size (in.) | Std. ctn. |
|-------------|--------|------------|-----------|
| WPRB-T050-G | Grey | ½ | 8 |
| WPRB-T050-W | White | ½ | 8 |



WPRNDCV-G

Round T box flat cover

- Gasket included



| Cat. no. | Colour | Std. ctn. |
|-----------|--------|-----------|
| WPRNDCV-G | Grey | 20 |
| WPRNDCV-W | White | 20 |

Weatherproof nonmetallic boxes

Nonmetallic weatherproof boxes



Type FSE 2-gang box

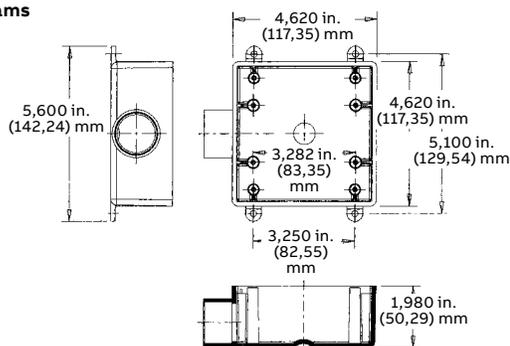
- For dead-end terminations where two devices or additional capacity is required
- Mounting feet included
- 32 cu. in. volume
- Grounding strap included

FSEB2-075



| Cat. no. | Colour | Size (in.) | Std. ctn. |
|-----------|--------|------------|-----------|
| FSEB2-050 | Grey | ½ | 5 |
| FSEB2-075 | Grey | ¾ | 10 |
| FSEB2-100 | Grey | 1 | 4 |

Diagrams



Type FSC 2-gang box

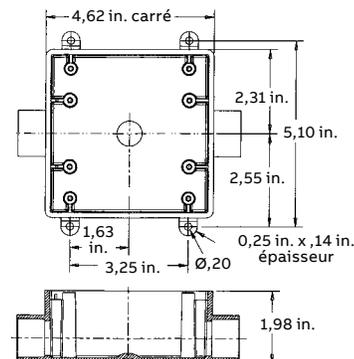
- For through terminations where two devices or additional capacity is required
- Mounting feet included
- 32 cu. in. volume
- Grounding strap included

FSCB2-050



| Cat. no. | Colour | Size (in.) | Std. ctn. |
|-----------|--------|------------|-----------|
| FSCB2-050 | Grey | ½ | 4 |
| FSCB2-075 | Grey | ¾ | 10 |
| FSCB2-100 | Grey | 1 | 10 |

Diagrams



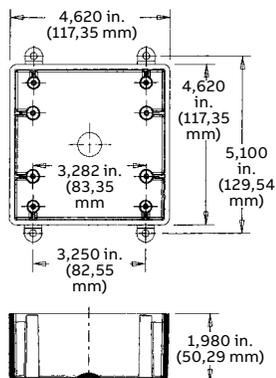
CE9802

Type FS 2-gang box

- For terminations where hub requirements vary according to application
- Hubs can be added easily with flared wood bit or hole saw
- Mounting feet included
- 32 cu. in. volume
- Grounding strap included

| Cat. no. | Colour | Size (in.) | Std. ctn. |
|----------|--------|------------|-----------|
| CE9802 | Grey | - | 10 |

Schémas



WPB2-T7550-G

2-Gang T box

- With three ½" and four ¾" threaded holes
- Mounting feet included
- Use with nonmetallic wiring systems only
- Grounding strap included
- Can be used with Red•Dot lampholder



| Cat. no. | Colour | Size (in.) | Std. ctn. |
|--------------|--------|------------|-----------|
| WPB2-T7550-G | Grey | ½-¾ | 6 |
| WPB2-T7550-W | White | ½-¾ | 6 |

Weatherproof nonmetallic covers

Single gang – Vertical mount

- For use in wet/damp locations
- Mounts to a box or device
- Nonmetallic
- Paintable
- Easy to install

Single gang – Vertical mount



| | Cat. no. | Colour | Std. ctn. |
|---|--------------|--------|-----------|
| GFCI receptacle | | | |
|  | WPCV-GFI-V-G | Grey | 10 |
| | WPCV-GFI-V-W | White | 10 |
| | WPCV-GFI-V-B | Bronze | 10 |

Duplex receptacle

| | Cat. no. | Colour | Std. ctn. |
|---|--------------|--------|-----------|
|  | WPCV-DUP-V-G | Grey | 10 |
| | WPCV-DUP-V-W | White | 10 |

20-Amp receptacle

| | Cat. no. | Colour | Std. ctn. |
|---|----------|--------|-----------|
|  | E98G20N | Grey | 20 |

For 20-amp or other single receptacle under 1.625" diameter

50-Amp receptacle

| | Cat. no. | Colour | Std. ctn. |
|---|------------|--------|-----------|
|  | WPCV-50A-G | Grey | 10 |

For 50-amp or other single receptacle under 2.25" diameter

Toggle switch

| | Cat. no. | Colour | Std. ctn. |
|---|------------|--------|-----------|
|  | WPCV-TOG-G | Grey | 5 |
| | WPCV-TOG-W | White | 5 |



| | Cat. no. | Colour | Std. ctn. |
|---|------------|--------|-----------|
| Blank cover | | | |
|  | WPCV-BLK-G | Grey | 12 |
| | WPCV-BLK-W | White | 12 |

Supplied with gasket and stainless steel mounting screw

15-Amp receptacle

| | Cat. no. | Colour | Std. ctn. |
|--|------------|--------|-----------|
|  | WPCV-15A-G | Grey | 10 |

For 15-amp or other single receptacle under 1.375" diameter

30-Amp receptacle

| | Cat. no. | Colour | Std. ctn. |
|---|-------------|--------|-----------|
|  | E98G30N-CAR | Grey | 10 |

For 30-amp or other single receptacle under 1.75" diameter

Single switch

| | Cat. no. | Colour | Std. ctn. |
|---|------------|--------|-----------|
|  | WPCV-SSW-G | Grey | 10 |

Plunger switch

| | Cat. no. | Colour | Std. ctn. |
|---|----------|--------|-----------|
|  | E98PSC | Grey | 20 |

Weatherproof nonmetallic covers

Single gang – Horizontal mount and two-gang

- For use in wet/damp locations
- Mounts to a box or device
- Nonmetallic
- Paintable
- Easy to install

Single gang – Horizontal mount



| | Cat. no. | Colour | Std. ctn. |
|---|--------------|--------|-----------|
| Duplex receptacle | | | |
|  | WPCV-DUP-H-G | Grey | 10 |
| | WPCV-DUP-H-W | White | 10 |

GFCI receptacle

| | Cat. no. | Colour | Std. ctn. |
|---|--------------|--------|-----------|
|  | WPCV-DUP-V-G | Grey | 10 |
| | WPCV-GFI-H-W | White | 10 |
| | WPCV-GFI-H-B | Bronze | 10 |

Two-gang



| | Cat. no. | Colour | Std. ctn. |
|---|-------------|--------|-----------|
| 2-gang blank cover | | | |
|  | WPCV2-BLK-G | Grey | 10 |

Supplied with gasket and stainless steel mounting screw

Combination toggle / GFCI

| | Cat. no. | Colour | Std. ctn. |
|---|--------------|--------|-----------|
|  | WPCV2-GFISWG | Grey | 3 |

Double toggle

| | Cat. no. | Colour | Std. ctn. |
|---|-------------|--------|-----------|
|  | WPCV2-TOG-G | Grey | 3 |

Double duplex receptacle

| | Cat. no. | Colour | Std. ctn. |
|---|-------------|--------|-----------|
|  | WPCV2-DUP-G | Grey | 10 |
| | WPCV2-DUP-W | White | 10 |

Combination toggle / duplex receptacle

| | Cat. no. | Colour | Std. ctn. |
|---|--------------|--------|-----------|
|  | WPCV2-DUPSWG | Grey | 10 |

Weatherproof nonmetallic covers

Cover plates for indoor use only

Single gang – Mount on box



| | Cat. no. | Colour | Std. ctn. |
|--|----------|--------|-----------|
|--|----------|--------|-----------|

Toggle switch

| | | | |
|-----------|-----------|------|---|
| FSCV-SW-G | FSCV-SW-G | Grey | 5 |
|-----------|-----------|------|---|



Duplex receptacle

| | | | |
|------------|------------|------|---|
| FSCV-DUP-G | FSCV-DUP-G | Grey | 5 |
|------------|------------|------|---|



Single gang – Mount on device

| | Cat. no. | Colour | Std. ctn. |
|--|----------|--------|-----------|
|--|----------|--------|-----------|

Toggle switch

| | | | |
|---------|---------|------|-----|
| E98STSC | E98STSC | Grey | 100 |
|---------|---------|------|-----|



2-gang – Mount on box



| | Cat. no. | Colour | Std. ctn. |
|--|----------|--------|-----------|
|--|----------|--------|-----------|

Double toggle switch

| | | | |
|------------|------------|------|---|
| FSCV2-SW-G | FSCV2-SW-G | Grey | 5 |
|------------|------------|------|---|



Double duplex receptacle

| | | | |
|-------------|-------------|------|---|
| FSCV2-DUP-G | FSCV2-DUP-G | Grey | 5 |
|-------------|-------------|------|---|



Covers



Single-gang

Fits single-gang FS boxes. Supplied with stainless steel mounting screws and gasket.



Two-gang

Fits two-gang FS boxes, other nonmetallic and metallic FS boxes. Supplied with stainless steel mounting screws and gasket.

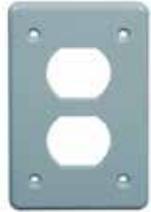
| Cat. no. | Colour | Std. ctn. qty. | Std. ctn. wt. (lb) |
|------------|--------|----------------|--------------------|
| E980CN-CAR | Grey | 12 | 1.60 |
| E980CM-CAR | White | 12 | 1.60 |

| Cat. no. | Colour | Std. ctn. qty. | Std. ctn. wt. (lb) |
|-------------|--------|----------------|--------------------|
| E9802CN-CAR | Grey | 10 | 2.17 |
| E9802CM-CAR | White | 10 | 2.17 |

Covers



FS type duplex receptacle covers
For indoor use only. Gasket not included.



FS type switch covers
For indoor use only. Gasket not included.



| Cat. no. | Gang | Std. / inner qty. | Std. ctn. wt. (lb) |
|----------|------|-------------------|--------------------|
| E98DGDR | 2 | 150 / 5 | 0.75 |
| E98SGDR | 1 | 200 / 5 | 0.45 |

| Cat. no. | Gang | Std. / inner qty. | Std. ctn. wt. (lb) |
|----------|------|-------------------|--------------------|
| E98DTSCR | 2 | 150 / 5 | 0.90 |
| E98STSCR | 1 | 200 / 5 | 0.55 |

Support straps

Snap Strap® conduit support straps



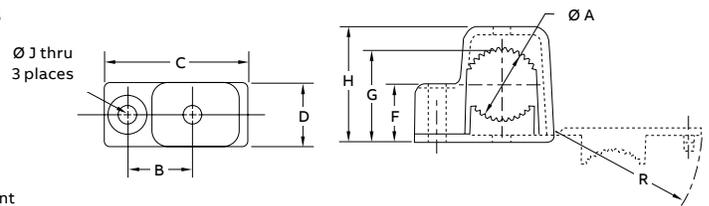
Carlson Snap Strap offers a unique support strap designed especially for the installation of PVC conduit. Also suitable for installations of rigid steel. This high strength, nonmetallic clamp allows conduit to expand and contract freely, eliminating the bowing commonly seen from the expansion and contraction of conduit caused by varying temperature changes. Finished installations have a neat, attractive appearance on exposed applications. To be used in accordance with conduit spacing requirements per Section 12-1114 of the CEC. This part is not supplied with screws.

- UV inhibited for use in direct sunlight

Single mount

| Cat. no. | Size in. (mm) | Std. ctn. qty. | Std. ctn. wt. (lb) | Dimensions in. (mm) | | | | | | | | |
|------------|------------------|-------------------|-----------------------|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | | A | B | C | D | F | G | H | J | R |
| E978DC-CAR | ½ (16) | 40 | 1 | 0.80 (20.3) | 0.75 (1.90) | 1.63 (41.4) | 0.75 (19.1) | 0.59 (14.9) | 0.99 (25.1) | 1.36 (34.5) | 0.21 (5.33) | 1.67 (42.4) |
| E978EC-CAR | ¾ (21) | 40 | 3 | 1.00 (25.4) | 0.88 (22.4) | 1.92 (48.7) | 0.75 (19.1) | 0.70 (17.8) | 1.20 (30.4) | 1.57 (39.9) | 0.21 (5.33) | 1.96 (49.8) |
| E978FC-CAR | 1 (27) | 30 | 4 | 1.20 (30.5) | 1.02 (25.9) | 2.17 (55.1) | 0.75 (19.1) | 0.83 (21.1) | 1.43 (36.3) | 1.84 (46.7) | 0.21 (5.33) | 2.22 (56.3) |

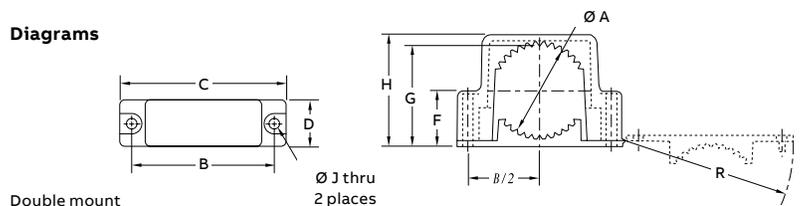
Diagrams



Double mount

| Cat. no. | Size in. (mm) | Std. ctn. qty. | Std. ctn. wt. (lb) | Dimensions in. (mm) | | | | | | | | |
|-----------|------------------|-------------------|-----------------------|---------------------|----------------|-----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|
| | | | | A | B | C | D | F | G | H | J | R |
| E978GCCAR | 1¼ (35) | 15 | 4 | 1.66 (42.16) | 2.75 (69.9) | 3.23 (82.0) | 1.00 (25.4) | 0.95 (24.1) | 1.78 (45.2) | 2.15 (54.61) | 0.218 (5.54) | 3.28 (83.3) |
| E978HCCAR | 1½ (41) | 15 | 5 | 1.92 (48.77) | 3.05 (77.5) | 3.53 (89.7) | 1.00 (25.4) | 1.08 (27.4) | 2.04 (51.8) | 2.40 (60.96) | 0.218 (5.54) | 3.58 (90.9) |
| E978JCCAR | 2 (53) | 10 | 5 | 2.34 (59.44) | 3.50 (88.9) | 4.00 (101.6) | 1.00 (25.4) | 1.31 (33.3) | 2.48 (63.0) | 2.86 (72.64) | 0.218 (5.54) | 4.06 (103.1) |

Diagrams



Clamps

2-Hole nonmetallic conduit clamps



Nylon masonry clamp

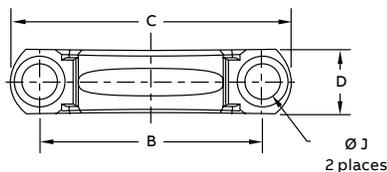
Nonmetallic clamps offer the same chemical resistance as Carlon nonmetallic conduit for a complete, corrosion-resistant system.

To be used in accordance with conduit spacing requirements per Section 12-1114 of the CEC.

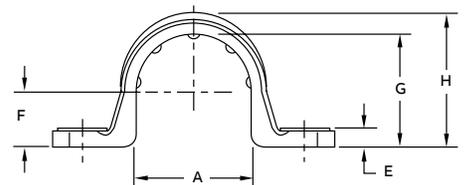
- UV inhibited for use in direct sunlight

| Cat. no. | Size in. (mm) | Std. ctn. qty. | Std. ctn. wt. (lb) | Dimensions in. (mm) | | | | | | | | |
|---------------|------------------|-------------------|-----------------------|---------------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|-----------------|----------------|
| | | | | A | B | C | D | E | F | G | H | J |
| E977DC | ½ (16) | 100 | 1.2 | 0.892 (22.6) | 1.71 (43.4) | 2.16 (54.8) | 0.50 (12.7) | 0.14 (3.5) | 0.42 (10.6) | 0.866 (21.9) | 1.04 (26.4) | 0.260 (6.6) |
| E977EC | ¾ (21) | 100 | 1.4 | 1.102 (27.9) | 1.97 (50.0) | 2.40 (60.9) | 0.50 (12.7) | 0.14 (3.5) | 0.525 (13.3) | 1.076 (27.3) | 1.255 (31.8) | 0.260 (6.6) |
| E977FC | 1 (27) | 100 | 2 | 1.39 (35.3) | 2.25 (57.1) | 2.81 (71.3) | 0.594 (15.0) | 0.14 (3.5) | 0.658 (16.7) | 1.342 (34.0) | 1.574 (39.9) | 0.260 (6.6) |
| E977GC | 1¼ (35) | 50 | 5 | 1.714 (43.5) | 2.68 (68.0) | 3.28 (83.3) | 0.64 (16.2) | 0.15 (3.8) | 0.83 (21.0) | 1.687 (42.8) | 1.89 (48.0) | 0.320 (8.1) |
| E977HC | 1½ (41) | 50 | 6 | 1.92 (48.7) | 2.82 (71.6) | 3.44 (87.3) | 0.70 (17.7) | 0.15 (3.8) | 0.97 (24.6) | 1.93 (49.0) | 2.12 (53.8) | 0.312 (7.9) |
| E977JC | 2 (53) | 25 | 4.5 | 2.54 (64.5) | 3.54 (89.9) | 4.18 (106.1) | 0.76 (19.3) | 0.16 (4.0) | 1.05 (26.6) | 2.29 (58.1) | 2.49 (63.2) | 0.315 (8.0) |
| E977K* | 2½ (63) | 50 | 10 | 2.88 (73.0) | 4.88 (123.8) | 5.81 (147.7) | 1.00 (25.4) | 0.05 (1.3) | 1.44 (36.5) | 2.88 (73.0) | 3.00 (76.1) | 0.38 (9.5) |
| E977KC-CAR | 2½ (63) | 25 | 1.4 | 2.86 (72.6) | 4.50 (114.3) | 5.46 (138.7) | 1.00 (25.4) | 0.20 (5.08) | 1.43 (36.3) | 2.86 (72.6) | 3.12 (79.2) | 0.36 (9.14) |
| E977L* | 3 (78) | 25 | 5.0 | 3.38 (85.7) | 5.72 (145.3) | 6.88 (174.6) | 1.00 (25.4) | 0.05 (1.3) | 1.66 (41.9) | 3.34 (84.9) | 3.47 (88.0) | 0.38 (9.5) |
| E977LC-CAR | 3 (78) | 20 | 1.4 | 3.47 (88.2) | 5.00 (127.0) | 6.00 (152.4) | 1.00 (25.4) | 0.20 (5.08) | 1.74 (44.3) | 3.48 (88.4) | 3.70 (94.0) | 0.36 (9.14) |
| E977N* | 4 (103) | 15 | 3.0 | 4.75 (120.7) | 7.52 (190.9) | 8.77 (222.7) | 1.25 (31.8) | 0.12 (3.0) | 1.94 (49.3) | 4.38 (111.1) | 4.50 (114.3) | 0.50 (12.7) |
| E977NC-CAR | 4 (103) | 15 | 12.2 | 4.366 (110.9) | 6.15 (156.2) | 7.20 (182.9) | 1.00 (25.4) | 0.20 (5.08) | 2.32 (58.8) | 4.50 (114.3) | 4.70 (119.4) | 0.36 (9.14) |
| E977NDC-CTN** | ½ (16) | 12 | 1.2 | - | - | - | - | - | - | - | - | - |
| E977NEC-CTN** | ¾ (21) | 12 | 1.3 | - | - | - | - | - | - | - | - | - |

Diagrams



Conduit clamps



* PVC-coated steel straps

** Nylon masonry clamp

General information

Typical properties of conduit raw material compound

| Thermal | ASTM test | Typical values |
|---|-----------|----------------|
| Coefficient of thermal expansion-inch/inch/°C (properties at 23 °C) | D696 | 3.38 x 10-5 |
| Heat distortion °C at 264 psi | D648 | 71 °C |
| Thermal conductivity BTU (hr.) (ft.) (°C/in.) | - | 1.3 |

| Electrical | ASTM test | Typical values |
|-----------------------------------|-----------|----------------|
| Dielectrical strength volts/mil | D149 | 1100 |
| Dielectric constant 60 Hz @ 30 °C | D150 | 4.00 |
| Power factor 60 Hz @ 30 °C | D150 | 1.93 |

| Mechanical | ASTM test | Typical values |
|---------------------------------|-----------|----------------|
| Specific gravity | D792 | 1.43-1.6 |
| Tensile strength (psi) @ 23 °C | D638 | 5,000-6,500 |
| Izod impact ft. lb/in. of notch | D256 | 0.65-1.5 |
| Flexural strength (psi) | D790 | 12,500 |
| Compressive strength (psi) | D695 | 9,000 |
| Hardness (Durometer D) | D2240 | 85 |

| Impedance (volts lost per ampere per 100 feet) | Ø3 90% | | Ø1 90% | |
|--|--------|--------|--------|--------|
| | P.F. | P.F. | P.F. | P.F. |
| Steel conduit | 0.0118 | 0.0123 | 0.0136 | 0.0142 |
| Schedule 40 | 0.0105 | 0.0106 | 0.0121 | 0.0122 |

Using 250 kcmil copper conductor comparable values for other conductor sizes.

Weight comparison

Carlton Schedule 40 rigid nonmetallic conduit compared to other rigid conduit in pounds per 100 feet (approx.)

| Nom. size (in.) | Carlton Schedule 40 rigid nonmetallic conduit | Carlton Schedule 80 rigid nonmetallic conduit | Aluminum | Electrical metallic tubing (EMT) | Inter-mediate metal conduit (IMC) | Rigid metal conduit (RMC) |
|-----------------|---|---|----------|----------------------------------|-----------------------------------|---------------------------|
| ½ | 18 | 22 | 27 | 30 | 57 | 79 |
| ¾ | 23 | 29 | 36 | 46 | 78 | 105 |
| 1 | 35 | 43 | 43 | 66 | 112 | 153 |
| 1¼ | 48 | 60 | 70 | 96 | 114 | 201 |
| 1½ | 57 | 72 | 86 | 112 | 176 | 246 |
| 2 | 76 | 100 | 116 | 142 | 230 | 334 |
| 2½ | 125 | 153 | 183 | 230 | 393 | 527 |
| 3 | 164 | 212 | 239 | 270 | 483 | 690 |
| 3½ | 198 | | 288 | 350 | 561 | 831 |
| 4 | 234 | 310 | 340 | 400 | 625 | 982 |
| 5 | 317 | 431 | 465 | Not Made | Not Made | 1344 |
| 6 | 412 | 592 | 612 | Not Made | Not Made | 1770 |

Wire fill

Maximum number of conductors in Schedule 40 PVC conduit (based on Table 1, Chapter 9 of the NEC)

| Type letters | Conductor size AWG, kcmil | | | | | | | | Conduit trade size (in.) | | | | | | | |
|--------------------|---------------------------|----|----|----|----|----|-----|-----|--------------------------|-----|-----|-----|-----|-----|-----|--|
| | ½ | ¾ | 1 | 1¼ | 1½ | 2 | 2½ | 3 | 3½ | 4 | 4¼ | 5 | 6 | 8 | | |
| THWN | 14 | 13 | 24 | 39 | 69 | 94 | 154 | | | | | | | | | |
| | 12 | 10 | 18 | 29 | 51 | 79 | 114 | 164 | | | | | | | | |
| THHN | 10 | 6 | 11 | 18 | 32 | 44 | 73 | 194 | 160 | | | | | | | |
| | 8 | 3 | 5 | 9 | 19 | 22 | 36 | 51 | 71 | 106 | 136 | | | | | |
| FEP (14 thru 2) | 6 | 1 | 4 | 6 | 11 | 15 | 26 | 37 | 57 | 76 | 98 | 125 | 154 | | | |
| | 4 | 1 | 2 | 4 | 7 | 9 | 16 | 22 | 35 | 47 | 60 | 75 | 94 | 137 | 236 | |
| FEPB (14 thru 4/0) | 3 | 1 | 1 | 3 | 6 | 8 | 13 | 19 | 29 | 39 | 51 | 64 | 90 | 116 | 201 | |
| | 2 | 1 | 1 | 3 | 5 | 7 | 11 | 16 | 25 | 33 | 43 | 54 | 67 | 97 | 169 | |
| PFA (14 thru 8) | 1 | | 1 | 1 | 3 | 5 | 9 | 12 | 18 | 25 | 32 | 49 | 59 | 72 | 125 | |
| | 1/0 | | 1 | 1 | 3 | 4 | 7 | 10 | 15 | 21 | 27 | 33 | 42 | 61 | 105 | |
| | 2/0 | | 1 | 1 | 2 | 3 | 6 | 8 | 13 | 17 | 22 | 29 | 35 | 51 | 88 | |
| | 3/0 | | 1 | 1 | 1 | 3 | 5 | 7 | 11 | 14 | 18 | 23 | 29 | 42 | 73 | |
| PFAH (14 thru 4/0) | 4/050 | | 1 | 1 | 1 | 2 | 4 | 6 | 9 | 12 | 15 | 19 | 24 | 35 | 61 | |
| | 250 | | | 1 | 1 | 1 | 3 | 4 | 7 | 10 | 12 | 16 | 20 | 28 | 49 | |
| | 300 | | | 1 | 1 | 1 | 3 | 4 | 6 | 8 | 11 | 13 | 17 | 24 | 42 | |
| | 350 | | | 1 | 1 | 1 | 2 | 3 | 5 | 7 | 9 | 12 | 15 | 21 | 37 | |
| Z (14 thru 4/0) | 400 | | | | 1 | 1 | 1 | 3 | 5 | 6 | 8 | 10 | 13 | 19 | 33 | |
| | 500 | | | | 1 | 1 | 1 | 2 | 4 | 5 | 7 | 9 | 11 | 16 | 27 | |
| | 600 | | | | 1 | 1 | 1 | 1 | 3 | 4 | 5 | 7 | 9 | 13 | 22 | |
| | 700 | | | | 1 | 1 | 1 | 1 | 3 | 4 | 5 | 6 | 8 | 11 | 19 | |
| XHHW (4 thru 500) | 750 | | | | 1 | 1 | 1 | 2 | 3 | 4 | 6 | 7 | 11 | 19 | | |
| | 6 | 1 | 3 | 5 | 9 | 13 | 21 | 30 | 47 | 63 | 81 | 102 | 128 | 185 | 320 | |
| | 600 | | | | 1 | 1 | 1 | 1 | 3 | 4 | 5 | 7 | 9 | 13 | 22 | |
| | 700 | | | | 1 | 1 | 1 | 1 | 3 | 4 | 5 | 6 | 7 | 11 | 19 | |
| XHHW | 750 | | | | 1 | 1 | 1 | 2 | 3 | 4 | 6 | 7 | 10 | 18 | | |

General information

Expansion and contraction

Temperature considerations for rigid nonmetallic conduit

Compensation for linear expansion

Like all construction materials, PVC will expand or contract with variations in temperatures. The coefficient of linear expansion in PVC conduit is 3.38×10^{-5} in./in./°C as compared to 1.2×10^{-5} for aluminum and $0.6-5 \times 10^{-5}$ for steel. An expansion fitting is needed whenever the change in length due to temperature variation will be $\frac{1}{4}$ in. or greater.

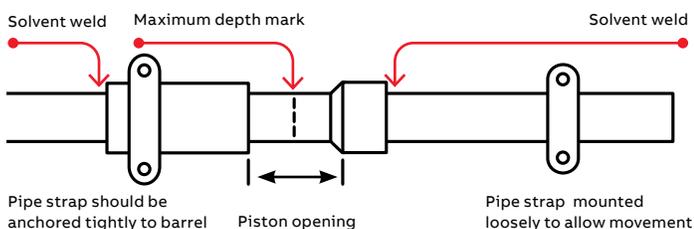
Add 1 °C to the estimated temperature range when conduit is installed in direct sunlight to allow for radiant heating. An expansion fitting consists of two sections, one telescoping inside another. When installing expansion fittings, alignment of piston and barrel is important. Be sure to mount expansion fitting level for best performance.

For a vertical run, the expansion fitting must be installed close to the top of the run with the barrel jointing down, in order that rain water does not run into the opening. The lower end of the conduit run must be secured at the bottom so that any length change due to temperature variation will result in an upward movement.

Expansion characteristics of PVC rigid nonmetallic conduit

Coefficient of thermal expansion = 3.38×10^{-5} in./in./°C

| Temp. change in °F | Length change in inches per 100 ft. of PVC conduit | Temp. change in °C | Length change in inches per 100 ft. of PVC conduit | Temp. change in °C | Length change in inches per 100 ft. of PVC conduit | Temp. change in °C | Length change in inches per 100 ft. of PVC conduit |
|--------------------|--|--------------------|--|--------------------|--|--------------------|--|
| 5 | 0.2 | 12.8 | 2.2 | 40.5 | 4.2 | 68.3 | 6.3 |
| 10 | 0.4 | 15.6 | 2.4 | 43.3 | 4.5 | 71.1 | 6.5 |
| 15 | 0.6 | 18.3 | 2.6 | 46.0 | 4.7 | 73.9 | 6.7 |
| 20 | 0.8 | 21.1 | 2.8 | 48.9 | 4.9 | 76.7 | 6.9 |
| 25 | 1.0 | 23.9 | 3.0 | 51.6 | 5.1 | 79.4 | 7.1 |
| 30 | 1.2 | 26.7 | 3.2 | 54.4 | 5.3 | 82.2 | 7.3 |
| 35 | 1.4 | 29.4 | 3.4 | 57.2 | 5.5 | 85.0 | 7.5 |
| 40 | 1.6 | 32.2 | 3.6 | 60.0 | 5.7 | 87.8 | 7.7 |
| 45 | 1.8 | 35.0 | 3.8 | 62.7 | 5.9 | 90.6 | 7.9 |
| 50 | 2.0 | 37.8 | 4.1 | 65.5 | 6.1 | 93.3 | 8.1 |



Determine the piston opening

The expansion joint must be installed to allow both expansion and contraction of the conduit run. The correct piston opening for any installation condition should use the following formula:

$$O = \left[\frac{T_{\max} - T_{\text{installed}}}{\Delta T} \right] E$$

Where:

- O = Piston opening (in.)
- T max = Maximum anticipated temperature of conduit (°C)
- T inst. = Temperature of conduit at time of installation (°C)
- ΔT = Total change in temperature of conduit (°C)
- E = Expansion allowance built into each expansion fitting (in.)

Example

380 ft. of conduit is to be installed on the outside of a building exposed to the sun in a single straight run. It is expected that the conduit will vary in temperature from -17 °C in the winter to 60 °C in the summer (this includes the -1 °C for radiant heating from the sun). The installation is to be made at a conduit temperature of 32 °C. From the table, a 60 °C temperature change will cause a 5.7 in. length change in 100 ft. of conduit. The total change for this example is $5.7 \text{ in.} \times 3.8 = 21.67 \text{ in.}$ which should be rounded to 22 in. The number of expansion fittings will be 22 in. x fitting range (4 in. for Carlon trade sizes $\frac{1}{2}$ in. through $1\frac{1}{2}$ in. and 8 in. for sizes 2 in. through 6 in.). If the E945D fitting is used, the number will be 22 in. x 4 = 5.50 which should be rounded to 6. The fitting should be placed at 62 ft. intervals (380 x 6). The proper piston setting at the time of installation is calculated as explained above.

$$O = \left[\frac{60 \text{ °C} - 32 \text{ °C}}{60 \text{ °C}} \right] 4.0 = 1.4 \text{ in.}$$

Insert the piston into the barrel to the maximum depth. Place a mark on the piston at the end of the barrel. To properly set the piston, pull the piston out of the barrel to correspond to the 2.1 in. calculated above. See drawing at lower left.

Summary

1. Anticipate expansion and contraction of PVC conduit in above ground, exposed installation.
2. Use an expansion fitting when length change due to temperature variation will be $\frac{1}{4}$ in. or greater.
3. PVC conduit expands 4.1 in. for each 100 feet of run and a 37.8 °C temperature change.
4. Align expansion fitting with the conduit run to prevent binding.
5. Follow the instructions to set the piston opening.
6. Rigidly fix the outer barrel of the expansion fitting so it cannot move. Mount the conduit connected to the piston loosely enough to allow the conduit to move as the temperature changes.

General information

Corrosion resistance of carlon schedule 40 PVC conduit and fittings

Carlton Schedule 40 is generally acceptable for use in environments containing the chemicals below. These environmental resistance ratings are based upon tests where the specimens were placed in complete submergence in the reagent listed. Schedule 40 can be used in many process areas where chemicals not on this list are manufactured or used

| | | | | | |
|------------------------------|-----------------------------------|--------------------------------------|-------------------------------------|-------------------------------|-------------------------------|
| Acetic acid 0–20% | Bismuth carbonate | Copper sulfate | Hydrogen phosphide | Phenylhydrazine hydrochloride | Sodium chloride |
| Acetic acid 20–30% | Black liquor (paper industry) | Cottonseed oil | Hydrogen sulfide – dry | Phosgene, gas | Sodium cyanide |
| Acetic acid 30–60% | Bleach – 12.5% active Cl_2 | Cresylic acid 50% | Hydrogen sulfide – aqueous solution | Phosphoric acid – 0–25% | Sodium dichromate |
| Acetic acid 80% | Borax | Crude oil – sour | Hydroquinone | Phosphoric acid – 25–50% | Sodium ferricyanide |
| Acetic acid – glacial | Boric acid | Crude oil – sweet | Hydroxylamine sulfate | Phosphoric acid – 50–85% | Sodium ferrocyanide |
| Acetic acid vapors | Brine | Demineralized water | Iodine | Photographic chemicals | Sodium fluoride |
| Acetylene | Bromic acid | Dextrin | Kerosene | Plating solutions | Sodium hydroxide |
| Adipic acid | Bromine – water | Dextrose | Lactic acid 28% | Potassium bicarbonate | Sodium hypochlorite |
| Alum | Butadiene | Diglycolic acid | Lauric acid | Potassium bichromate | Sodium nitrate |
| Aluminum chloride | Butane | Disodium phosphate | Lauryl chloride | Potassium bromide | Sodium nitrite |
| Aluminum fluoride | Butyl alcohol | Ethyl alcohol | Lauryl sulfate | Potassium carbonate | Sodium sulfate |
| Aluminum hydroxide | Butyl phenol | Ethylene glycol | Lead acetate | Potassium chromate | Sodium sulfide |
| Aluminum oxychloride | Butylene | Fatty acids | Lime sulfur | Potassium cyanide | Sodium sulfite |
| Aluminum nitrate | Butyric acid | Ferric chloride | Linoleic acid | Potassium dichromate | Sodium thiosulfate (hypo) |
| Aluminum sulfate | Calcium bisulfite | Ferric nitrate | Linseed oil | Potassium borate | Stannic chloride |
| Ammonia-dry gas | Calcium carbonate | Ferric sulfate | Lubricating oils | Potassium bromide | Stannous chloride |
| Ammonium bifluoride | Calcium chlorate | Ferrous chloride | Magnesium carbonate | Potassium chloride | Stearic acid |
| Ammonium carbonate | Calcium chloride | Ferrous sulfate | Magnesium chloride | Potassium chromate | Sulfur |
| Ammonium chloride | Calcium hydroxide | Fluorine gas – wet | Magnesium hydroxide | Potassium cyanide | Sulfur dioxide – gas dry |
| Ammonium hydroxide 28% | Calcium hypochlorite | Fluorine gas – dry | Magnesium nitrate | Potassium dichromate | Sulfur trioxide |
| Ammonium metaphosphate | Calcium nitrate | Fluoroboric acid | Magnesium sulfate | Potassium ferricyanide | Sulfuric acid – 0–10% |
| Ammonium nitrate | Calcium sulfate | Fluorosilicic acid | Maleic acid | Potassium ferrocyanide | Sulfuric acid – 10–75% |
| Ammonium persulfate | Carbonic acid | Formaldehyde | Malic acid | Potassium fluoride | Sulfuric acid – 75–90% |
| Ammonium phosphate – neutral | Carbon dioxide gas – wet | Formic acid | Mercuric chloride | Potassium hydroxide | Sulfurous acid |
| Ammonium sulfate | Carbon dioxide – aqueous solution | Fructose | Mercurous cyanide | Potassium nitrate | Tannic acid |
| Ammonium sulfide | Carbon monoxide | Gallic acid | Mercurous nitrate | Potassium perborate | Tanning liquors |
| Ammonium thiocyanate | Caustic potash | Gas – coke oven | Mercury | Potassium perchlorate | Tartaric acid |
| Amyl alcohol | Caustic soda | Gas – natural (dry) | Methyl sulfate | Potassium permanganate 10% | Titanium tetrachloride |
| Antraquinone | Chloroacetic acid | Gas – natural (wet) | Methylene chloride | Potassium persulfate | Triethanolamine |
| Antraquinonesulfonic acid | Chloral hydrate | Gasoline – sour | Mineral oils | Potassium sulfate | Trimethyl propane |
| Antimony trichloride | Chlorine gas (dry) | Gasoline – refined | Naphthalene | Propene | Trisodium phosphate |
| Aqua regia | Chlorine gas (moist) | Glucose | Nickel chloride | Propyl alcohol | Turpentine |
| Arsenic acid 80% | Chlorine water | Glycerine (glycerol) | Nickel nitrate | Silicic acid | Urea |
| Arylsulfonic acid | Chlorosulfonic acid | Glycol | Nitric acid, anhydrous | Silver cyanide | Vinegar |
| Barium carbonate | Chrome alum | Glycolic acid | Nitric acid 20% | Silver nitrate | Whiskey |
| Barium chloride | Chromic acid 10% | Green liquor (paper industry) | Nitric acid 40% | Silver plating solutions | White liquor (paper industry) |
| Barium hydroxide | Chromic acid 30% | Heptane | Nitric acid 60% | Sodium acetate | Wines |
| Barium sulfate | Chromic acid 40% | Hexanol, tertiary | Nitrobenzene | Sodium arsenite | Zinc chloride |
| Barium sulfide | Chromic acid 50% | Hydrobromic acid 20% | Nitrous oxide | Sodium benzoate | Zinc chromate |
| Beet – sugar liquor | Citric acid | Hydrochloric acid 0%–25% | Oils and fats | Sodium bicarbonate | Zinc cyanide |
| Benzene sulfonic acid 10% | Copper chloride | Hydrochloric acid 25%–40% | Oils – petroleum – (see type) | Sodium bisulfate | Zinc nitrate |
| Benzoic acid | Copper cyanide | Hydrocyanic acid or hydrogen cyanide | Oleic acid | Sodium bisulfite | Zinc sulfate |
| | Copper fluoride | Hydrofluoric acid 10% | Oxalic acid | Sodium bromide | |
| | Copper nitrate | Hydrofluorosilicic acid | Palmitic acid 10% | Sodium chlorate | |
| | | | Perchloric acid 10% | | |

because worker safety requirements dictate that any air presence or splashing be at a very low level.

If there are any questions for specific suitability in a given environment, prototype samples should be tested under actual conditions.

DB/2 PVC conduit

Rigid type DB/2 PVC conduit



Physical properties by ASTM test methods

Carlton Type DB/2 PVC conduit is designed for use in concrete encased or masonry and direct burial applications. Type DB/2 PVC is CSA certified, tested to CSA Standard C22.2 No. 211.1

| Properties | ASTM No. | Typical values type DB/2 conduit |
|--|----------|----------------------------------|
| Tensile strength, psi | D638 | 4,800 |
| Modulus of elasticity in tension, psi | D638 | 500,000 |
| Flexural strength, psi | D790 | 11,000 |
| Deflection temp under load at 265 psi deg. C | D648 | 72 °C |
| Coefficient of thermal expansion in./in./°C | D696 | 3.30 x 10 ⁻⁵ |
| Maximum coefficient of static friction | | 0.20 |

Performance properties of type DB/2 conduit

as indicated under CSA Standard C22.2 No. 211.1

Pipe Stiffness kPA

| Conduit series | Min. pipe stiffness (FΔy), all sizes |
|----------------|--------------------------------------|
| DB/2 | 200 |

Minimum impact resistance (J)

| Conduit series | -18 °C | 23 °C |
|----------------|--------|-------|
| DB/2 | 34 | 61 |

| Cat. no. 10' | Cat. no. 20' | Nom. size (in.) | Std. crate only | | Approx. wt. Per 100 ft. | | Average outside diameter | | Average wall thickness | |
|-----------------|-----------------|--------------------|-----------------|--------|----------------------------|------|--------------------------|--------|------------------------|------|
| | | | 10 ft. | 20 ft. | (lb) | (kg) | (in.) | (mm) | (in.) | (mm) |
| 48811CPD-010 | 48811CPD-020 | 2 | 2,460 | 4,920 | 35 | 15.9 | 2.25 | 57.15 | 0.070 | 1.78 |
| 48813CPD-010 | 48813CPD-020 | 3 | 1,120 | 2,240 | 58 | 26.3 | 3.25 | 82.55 | 0.080 | 2.03 |
| 48815CPD-010 | 48815CPD-020 | 4 | 630 | 1,260 | 100 | 45.4 | 4.22 | 107.08 | 0.106 | 2.69 |
| 48816CPD-010 | 48816CPD-020 | 5 | 430 | 860 | 180 | 81.6 | 5.30 | 134.60 | 0.150 | 3.81 |
| 48817CPD-010 | 48817CPD-020 | 6 | 280 | 560 | 220 | 99.8 | 6.27 | 159.38 | 0.155 | 3.94 |

Also available in orange, add OG after CPD to the cat. no.

Also available in red. Add RD after CPD in the cat. no.



DB/2 duct fittings

PE coupling – Push fit



| | Cat. no. | Size (in.) | Std. ctn. qty. |
|---|----------|------------|----------------|
|  | CE242J | 2 | 24 |
| | CE242L | 3 | 100 |
| | CE242N | 4 | 25 |
| | CE242P | 5 | 12 |
| | CE242R | 6 | 6 |

PVC 5° coupling BxB – Solvent weld



| | Cat. no. | Size (in.) | Std. ctn. qty. |
|---|----------|------------|----------------|
|  | CE245J | 2 | 30 |
| | CE245L | 3 | 15 |
| | CE245N | 4 | 15 |
| | CE245P | 5 | 20 |
| | CE245R | 6 | 1 |

PVC 5° coupling – Push fit



| | Cat. no. | Size (in.) | Std. ctn. qty. |
|---|----------|------------|----------------|
|  | CE2440L | 3 | 100 |
| | CE2440N | 4 | 100 |
| | CE2440P | 5 | 45 |

Plugs with pull tab



| | Cat. no. | Size (in.) | Std. ctn. qty. |
|---|----------|------------|----------------|
|  | P258JT | 2 | 60 |
| | P258LT | 3 | 30 |
| | P258NT | 4 | 48 |
| | P258PT | 5 | 30 |
| | P258RT | 6 | 30 |

End bells (for use with DB/2 duct only)



| | Cat. no. | Size (in.) | Std. ctn. qty. |
|---|----------|------------|----------------|
|  | CE297J | 2 | 40 |
| | CE297L | 3 | 30 |
| | CE297N | 4 | 20 |
| | CE297P | 5 | 15 |
| | CE297R | 6 | 1 |

PVC coupling – Solvent weld



| | Cat. no. | Size (in.) | Std. ctn. qty. |
|---|----------|------------|----------------|
|  | CE240J | 2 | 50 |
| | CE240L | 3 | 20 |
| | CE240N | 4 | 25 |
| | CE240P | 5 | 20 |
| | CE240R | 6 | 6 |

PVC female adapter – IPS solvent weld duct



| | Cat. no. | Size (in.) | Std. ctn. qty. |
|--|----------|------------|----------------|
|  | CE942DJ | 2 | 25 |
| | CE942DL | 3 | 30 |
| | CE942DN | 4 | 50 |
| | CE942DP | 5 | 15 |
| | CE942DR | 6 | 6 |

PVC conduit to DB/2 duct adapter



| | Cat. no. | Size (in.) | Std. ctn. qty. |
|---|----------|------------|----------------|
|  | CE942RJ | 2 | 100 |
| | CE942RL | 3 | 30 |
| | CE942RN | 4 | 20 |
| | CE942RP | 5 | 20 |

Cap – Solvent weld



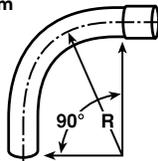
| | Cat. no. | Size (in.) | Std. ctn. qty. |
|---|----------|------------|----------------|
|  | CE935J | 2 | 25 |
| | CE935L | 3 | 25 |
| | CE935N | 4 | 50 |
| | CE935P | 5 | 25 |
| | CE935R | 6 | 25 |

DB/2 sweeps



| Cat. no. | Size (in.) | Radius (in.) | Std. ctn. qty. |
|------------|------------|--------------|----------------|
| CPF9DJ-PD | 2 | 24 | 1 |
| CPF9DL-PD | 3 | 24 | 1 |
| CPF9DN-PD | 4 | 24 | 1 |
| CPF9DP-PD | 5 | 24 | 1 |
| CPF9FJ-PD | 2 | 36 | 1 |
| CPF9FL-PD | 3 | 36 | 1 |
| CPF9FN-PD | 4 | 36 | 1 |
| CPF9FP-PD | 5 | 36 | 1 |
| CPF9FR-PD | 6 | 36 | 1 |
| CPF9GP-PD | 5 | 42 | 1 |
| CPF9IJ-PD | 2 | 60 | 1 |
| CPF9IL-PD | 3 | 60 | 1 |
| CPF9IN-PD | 4 | 60 | 1 |
| CPF9IP-PD | 5 | 60 | 1 |
| CPF9IR-PD | 6 | 60 | 1 |
| CPF9BJO-PD | 2 | 12 | 1 |
| CPF9FJO-PD | 2 | 36 | 1 |
| CPF9FLO-PD | 3 | 36 | 1 |
| CPF9FNO-PD | 4 | 36 | 1 |

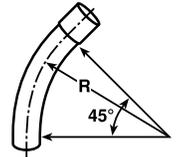
Diagram



90° sweep

| Cat. no. | Size (in.) | Radius (in.) | Std. ctn. qty. |
|-----------|------------|--------------|----------------|
| CPF7DJ-PD | 2 | 24 | 1 |
| CPF7DL-PD | 3 | 24 | 1 |
| CPF7DN-PD | 4 | 24 | 1 |
| CPF7FJ-PD | 2 | 36 | 1 |
| CPF7FL-PD | 3 | 36 | 1 |
| CPF7FN-PD | 4 | 36 | 1 |
| CPF7FR-PD | 6 | 36 | 1 |
| CPF7GP-PD | 5 | 42 | 1 |
| CPF7IN-PD | 4 | 60 | 1 |
| CPF7IP-PD | 5 | 60 | 1 |
| CPF7IR-PD | 6 | 60 | 1 |

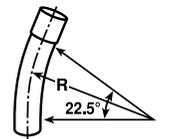
Diagram



45° sweep

| Cat. no. | Size (in.) | Radius (in.) | Std. ctn. qty. |
|-----------|------------|--------------|----------------|
| CPF5DJ-PD | 2 | 24 | 1 |
| CPF5DL-PD | 3 | 24 | 1 |
| CPF5DN-PD | 4 | 24 | 1 |
| CPF5FL-PD | 3 | 36 | 1 |
| CPF5FN-PD | 4 | 36 | 1 |
| CPF5GP-PD | 5 | 42 | 1 |
| CPF5IN-PD | 4 | 60 | 1 |

Diagram



22-1/2° sweep

Bore-Gard

PVC trenchless raceway

The unique design incorporates a proprietary water-tight seal and locking ring that enables fast, cement-free assembly, strong enough for 1000 foot bores.

Benefits

- Lower overall installed cost – simpler handling, faster assembly, lower labour cost
- Lower freight cost
- Greater internal fill capacity – Bore-Gard does not distort into an oval during spooling
- No wasted product
- Easier to transport, especially over rough terrain – one length of Bore-Gard can be carried by one person
- Strong and flexible for directional drilling

applications

- Use standard PVC fittings – Bore-Gard is made using standard Schedule 40 dimensions – can be cemented
- No reel handling equipment required – Bore-Gard can be unloaded by hand
- No fusion splicing equipment required to join two pipe sections – Bore-Gard is joined together by one person
- No costly reels to return – with Bore-Gard, there are no reels to handle

—
01 Trim spigot end before attaching pulling eye.

—
02 Tighten pulling eye so that it expands against interior of the conduit.

—
03 Attach the next piece of Bore-Gard.



—
01



—
02



—
03

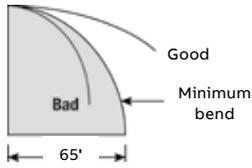
Assembly

1. Position Bore-Gard with the print line facing up.
2. Remove plastic locking strap and set it aside.
3. Remove end caps. On first stick only, trim spigot end of Bore-Gard at the groove before attaching the pulling eye/gripping attachment.
4. Insert pulling eye into spigot end of Bore-Gard.
5. Tighten pulling eye so that it expands against the interior of the conduit. Use of sleeve over O.D. of conduit is recommended.
6. The installer should use appropriate instrumentation to ensure that maximum pull rating is not exceeded.
7. Take next piece of Bore-Gard (10' or 20') and insert spigot end into belled end of the first piece until the insertion line is no longer visible.
8. Slide the plastic locking strap into slot on the side of the bell. Push the strap in completely. It is not necessary to remove or cover the handle on the strap.
9. Repeat with remaining sections as space allows.
10. Bore-Gard is now ready for installation.

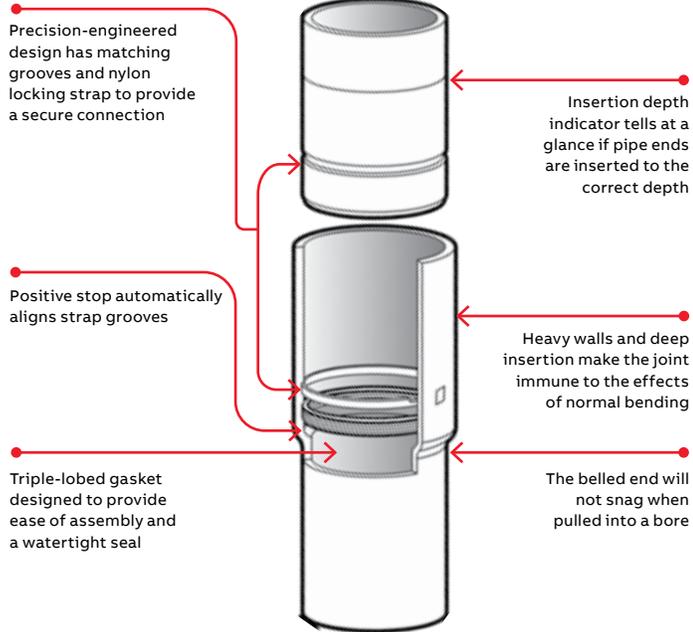
Bore-Gard

PVC trenchless raceway

01 Minimum bend radius: Turns in a bore path should be made gradually. Bore-Gard and boreable Multi-Gard have a minimum bend radius of 65'. Bending more than this recommended limit will stress the joint. The drawing on the left illustrates the 65' bend radius. To obtain a 90° turn, you will require 65' of forward distance in any directional plane.



01



Technical information

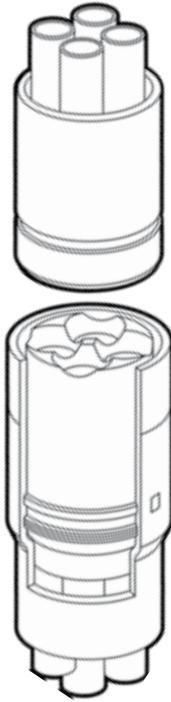
| | |
|--------------------------|--|
| Axial tensile rating | 3 in. - 7,000 pull-apart rating 4 in. - 8,700 pull-apart rating 5 in. - 11,300 pull-apart rating 6 in. - 14,000 pull-apart rating |
| Minimum bend radius | 65 feet – assembly force 20 lb |
| Seal pressure rating | 75 psi |
| Stiffness rating | 600 lb/in. @ 5% defl. |
| Lengths | 10 ft. and 20 ft. |
| Restrained joint in bell | Locking ring/ groove design |



| Cat. no. | Description | Overall length (ft.) | Lay length | O.D. (in.) | I.D. (in.) | Pkg. qty (ft./bundle) | Bundles per truckload | Feet per truckload | Wt. per 100 ft. (lb) | Min. bend radius (ft.) | Insertion force (lb) | Seal pressure rating (psi) | Joint pull rating (lb) | Typical crush rating (lb) (@ 30% deflection) | NEMA TC2 min. crush (lb) |
|-------------|---------------|----------------------|------------|------------|------------|-----------------------|-----------------------|--------------------|----------------------|------------------------|----------------------|----------------------------|------------------------|--|--------------------------|
| BG340SP-010 | 3 in. Sch. 40 | 10 | 9'6" | 3.50 | 3.0 | 350 | 56 | 19,600 | 164 | 65 | 20 | 75 | 7,000 | 1,225 | 1,000 |
| BG340SP-020 | 3 in. Sch. 40 | 20 | 19'6" | 3.50 | 3.0 | 700 | 28 | 19,600 | 164 | 65 | 20 | 75 | 7,000 | 1,225 | 1,000 |
| BG440SP-010 | 4 in. Sch. 40 | 10 | 9'6" | 4.50 | 4.0 | 260 | 56 | 14,560 | 234 | 65 | 40 | 75 | 8,700 | 1,075 | 900 |
| BG440SP-020 | 4 in. Sch. 40 | 20 | 19'6" | 4.50 | 4.0 | 520 | 28 | 14,560 | 234 | 65 | 40 | 75 | 8,700 | 1,075 | 900 |
| BG540SP-010 | 5 in. Sch. 40 | 10 | 9'6" | 5.56 | 5.0 | 230 | 40 | 9,200 | 317 | 65 | 60 | 75 | 11,300 | 950 | 900 |
| BG540SP-020 | 5 in. Sch. 40 | 20 | 19'6" | 5.56 | 5.0 | 460 | 20 | 9,200 | 317 | 65 | 60 | 75 | 11,300 | 950 | 900 |
| BG640SP-010 | 6 in. Sch. 40 | 10 | 9'6" | 6.625 | 6.0 | 200 | 40 | 8,000 | 418 | 65 | 80 | 75 | 14,000 | 950 | 900 |
| BG640SP-020 | 6 in. Sch. 40 | 20 | 19'6" | 6.625 | 6.0 | 400 | 20 | 8,000 | 418 | 65 | 80 | 75 | 14,000 | 950 | 900 |

Multi-Gard

PVC boreable conduit



Benefits

- Withstands pulling and bending forces of directional drilling
- Fast assembly
- Eliminates labor related to gluing and screwing joints together
- For bores up to 500 feet
- Innerducts: 3-way or 4-way
- Easy to handle 20-foot lengths
- Type: Type 40 PVC outerduct
- Size: 4 in.
- Prelubricated innerducts
- Strong water-tight joints without cement
- Fits standard Schedule 40 fittings
- Compatible with Multi-Gard Type 40 PVC products

| Cat. no. | Description | Length (ft.) | O.D. (in.) | Innerduct I.D. (in.) | Pkg. qty (ft./ bundle) | Bundles per truckload | Feet per truckload | Wt. per 100 ft. (lb) | Min. bend radius (ft.) | Seal pressure rating (psi) | Max. pull rating (lb) |
|------------|---------------------------|--------------|------------|----------------------|------------------------|-----------------------|--------------------|----------------------|------------------------|----------------------------|-----------------------|
| MFSS3B-020 | 3-way Boreable Multi-Gard | 20 | 4.50 | 1.50 | 520 | 28 | 14,560 | 561 | 65 | 75 | 5,000 |
| MFSS4B-020 | 4-way Boreable Multi-Gard | 20 | 4.50 | 1.19 | 520 | 28 | 14,560 | 565 | 65 | 75 | 5,000 |

Split duct

Product overview

01 The fast and easy method of installing duct around existing cable for repair and temporary installations.



01

Split duct is the fast and easy way to repair broken ductwork without the costly cutting and resplicing of your conductors.

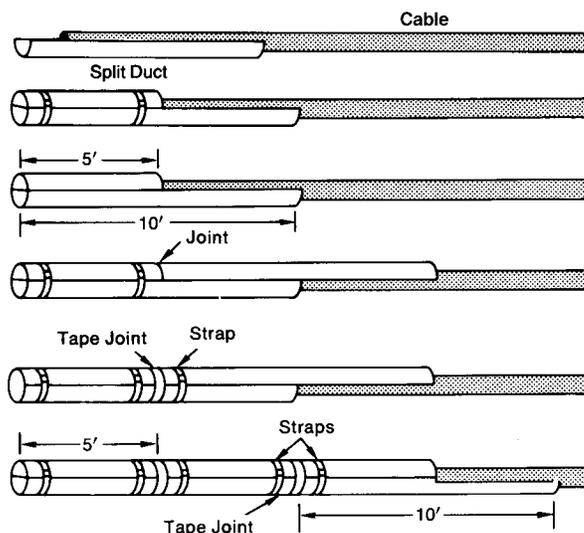
Our unique tongue-and-groove design leads the industry in providing a strong, rigid solution for duct repair situations.

The interlocking design allows the split duct sections to be staggered and butted together. Joints may be sealed with tape and reinforced with plastic or metallic straps to produce a rigid, stable unit.

Manufactured from a compound designed specifically for power and telecommunications applications, split duct exhibits superior impact strength.

Available in 2 in. through 6 in. diameters, this product line also contains couplings and sweeps necessary to complete the system.

Verify with local inspection authorities before using.



Recommended installation procedure

1. Place one 10-foot split duct section under cable.
2. In order to stagger joints, saw another section in half (about 5 feet long).
3. Place 5-foot section over cable and snap the two sections together.
4. Place strap about one foot from the end and another strap about a foot from the joint where the ends of the top sections will butt.
5. Place another 10-foot split duct section over the open half of the bottom section, butt the ends tightly together and snap the sections together.
6. Place a length of tape around both sections of the split duct to cover the butted joint.
7. Place a strap about one foot beyond the taped joint.
8. Lay another length of split duct underneath cable, butt together, tape the butted joint and strap one foot on each side of the joint.
9. Repeat procedure.

Split duct

Split duct



| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) | O.D. (in.) |
|--------------------|------------|----------------|--------------------|------------|
| Schedule 40 | | | | |
| 49011SD-010 | 2 | 700 | 523 | 2.375 |
| 49012SD-010 | 2½ | 460 | 562 | 2.875 |
| 49013SD-010 | 3 | 500 | 802 | 3.500 |
| 49014SD-010 | 3½ | 290 | 560 | 4.000 |
| 49015SD-010 | 4 | 290 | 662 | 4.500 |
| 49016SD-010 | 5 | 130 | 718 | 5.563 |
| 49017SD-010 | 6 | 130 | 523 | 6.625 |
| Schedule 80 | | | | |
| 49411SD-010 | 2 | 700 | 702 | 2.375 |
| 49415SD-010 | 4 | 290 | 890 | 4.500 |
| C duct | | | | |
| 68515SD-010 | 4 | 320 | 614 | 4.350 |

Split sleeve coupling



| Cat. no. | Size (in.) | Length (in.) | Split | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---------------------------|------------|--------------|-------|----------------|--------------------|
| Schedule 40 and 80 | | | | | |
| E200JS6 | 2 | 6 | 1 | 25 | 6.1 |
| E200KS7 | 2½ | 7 | 1 | 25 | 21 |
| E200LS7 | 3 | 7 | 1 | 25 | 15.5 |
| E200LSS | 3 | 6½ | 1 | 25 | 10 |
| E200MS8 | 3½ | 8 | 1 | 25 | 41.2 |
| E200NS8 | 4 | 8 | 1 | 15 | 16 |
| E200NSS | 4 | 6 | 1 | 25 | 17 |
| E200PS8 | 5 | 8 | 1 | 15 | 25 |
| E200PS9 | 5 | 9 | 1 | 8 | 16.4 |
| E200RS1 | 6 | 10 | 1 | 6 | 24.2 |
| C duct | | | | | |
| E900NS8 (white) | 4 | 8 | 1 | 15 | 19 |
| E900NSW (white) | 4 | 6 | 1 | 25 | 22 |

Split sleeve sweeps



| Cat. no. | Nom. size (in.) | Radius (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|-------------------|-----------------|--------------|----------------|--------------------|
| 45° Sweep | | | | |
| UA7DJSD | 2 | 24 | 1 | 1.4 |
| UA7FJSD | 2 | 36 | 1 | 2.1 |
| UA7FLSD | 3 | 36 | 1 | 4.7 |
| UA7HJSD | 2 | 48 | 1 | 2.7 |
| UA7HLSD | 3 | 48 | 1 | 6.1 |
| UA7IJSD | 2 | 60 | 1 | 3.2 |
| UA7ILSD | 3 | 60 | 1 | 7.2 |
| UA7INSD | 4 | 60 | 1 | 10.2 |
| 22½° Sweep | | | | |
| UA5INSD | 4 | 60 | 1 | 6.1 |
| 11¼° Sweep | | | | |
| UA3IJSD | 2 | 60 | 1 | 1.0 |
| UA3ILSD | 3 | 60 | 1 | 3.6 |
| UA3INSD | 4 | 60 | 1 | 5.1 |

Two 45° elbows may be segmented for 90°.

Split kits

Product overview



Split kits are specifically designed to make Schedule 40 and Type C conduit repairs faster and easier. Damaged conduit can be repaired without disturbing the installed wire/cable system. Split kits come in handy 2 feet lengths with 7 inch split couplings on each end. UV-resistant for outdoor use, split kits feature the same durable tongue-and-groove design as our split duct product.

Split kits are manufactured from extra-rugged PVC material. The unique design maintains the same physical performance and dimensional characteristics as the PVC pipe it is repairing. No other repair product can make this offer.

The reason is in the interlocking/tongue-and-groove design that holds the true dimensions of the product, both I.D. and O.D., while maintaining the pipe's physical performance characteristics too.

Verify with local inspection authorities before using.

Split kits...

Conduit repairs made faster and easier.



Features

- Interlocking/tongue-and-groove design to assure dimensional pipe characteristics
- Convenient and handy for easy handling, transport and storage
- 2 ft. lengths for fast/easy conduit repairs eliminates the need for cutting standard 10 ft. lengths to size – get off the jobsite faster.
- Two 7 in. split couplings for a secure fit allows the product to be coupled together for longer repairs; solvent cementable = water-resistant
- Available in two wall types – Schedule 40 (sizes 2 in. through 6 in.), and Type C (4 in.)
- Manufactured from extra-rugged PVC – lightweight, solvent cementable and compatible with all standard pipe fittings

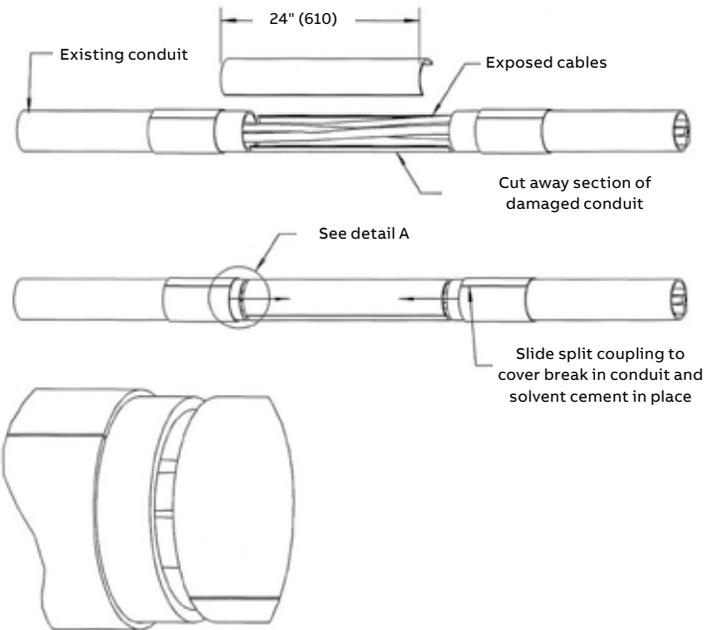
Split kits



Specifications

| Cat. no. | Size (in.) | Wall type | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|------------|-------------|----------------|--------------------|
| SK4020 | 2 | Schedule 40 | 10 | 24.3 |
| SK4025 | 2½ | Schedule 40 | 10 | 49.2 |
| SK4030 | 3 | Schedule 40 | 8 | 43.6 |
| SK4040 | 4 | Schedule 40 | 5 | 40.5 |
| SK4050 | 5 | Schedule 40 | 3 | 34.6 |
| SK4060 | 6 | Schedule 40 | 2 | 36.4 |
| SKC40 | 4 | Type C | 5 | 36.2 |

Diagrams



Detail A
scale 0.500

Snap-Loc spacers

Product overview

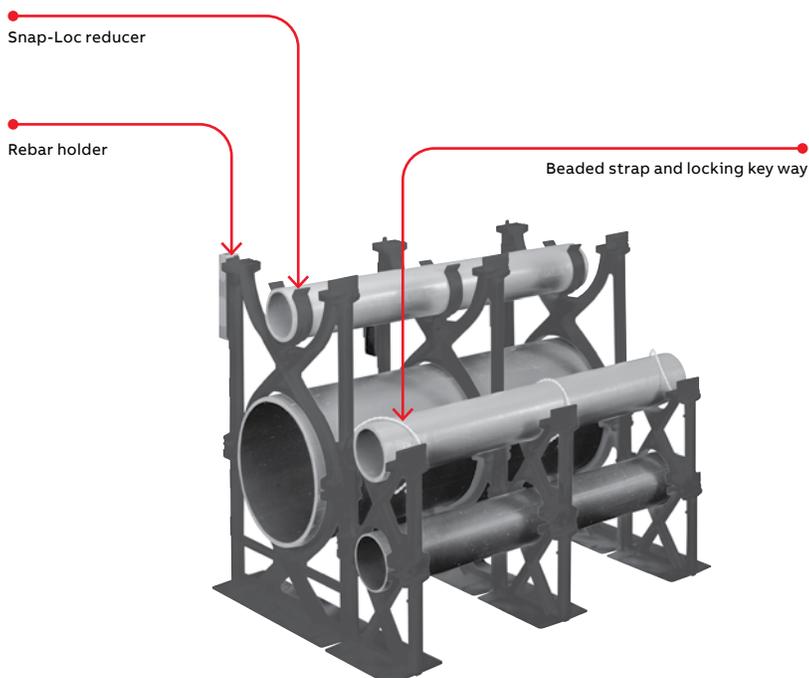


Carlton Snap-Loc duct spacers provide stability, consistent separation and relieve direct stress for duct materials encased in concrete and direct burial applications.

Carlton Snap-Loc spacers provide:

- A side dovetail rail-and-groove design allowing for side-by-side interchangeability of conduit spacer sizes while maintaining horizontal stability.
- Locking key ways incorporated into intermediate spacers eliminate the need for costly top spacers in each size. The locking key ways provide for the use of a beaded strap that secures the top section of conduit.
- 1 in. and 2 in. Snap-Loc reducers allow fixturing of 1 in. or 2 in. conduit inside larger spacers.
- The Snap-Loc rebar holder provides stabilization on large banks of spacers.

Nonmetallic Snap-Loc spacers are designed specifically for use with nonmetallic duct, with maximum O.D. dimensions as specified in NEMA TC-2, TC-6 and 8, TC-10 and ASTM F512. The innovative vertical and horizontal interlocking Snap-Loc design has tapered joining slots with maximum tolerances for easy job site assembly.



Important

1. The use of duct spacers for direct burial may result in excessive point deflections unless proper design engineering is applied, such as the proper compaction of the appropriate backfill material.
2. ABB is not responsible for Snap-Loc spacers used in direct burial applications; design engineers and contractors are responsible for the design of the installation.

Snap-Loc spacers

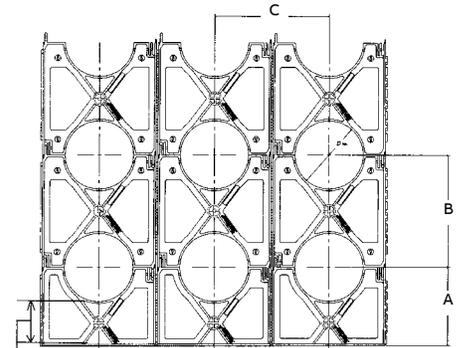
Dimensions – Base spacers

| Cat. no. | Size* (in.) | A (in.) | C (in.) | Dia. (in.) | D | Std. ctn. qty. |
|----------|-------------|---------|---------|------------|---|----------------|
| S288JHN | 2 x 1½ | 4.25 | 4.12 | 2.50 | | 100 |
| S288JJN | 2 x 2 | 4.25 | 4.62 | 2.50 | | 100 |
| S288JLN | 2 x 3 | 4.25 | 5.62 | 2.50 | | 100 |
| S288LHN | 3 x 1½ | 4.81 | 5.25 | 3.63 | | 90 |
| S288LJN | 3 x 2 | 4.81 | 5.75 | 3.63 | | 80 |
| S288LLN | 3 x 3 | 4.81 | 6.75 | 4.63 | | 60 |
| S288NFN | 4 x 1 | 4.50 | 6.75 | 4.63 | | 70 |
| S288NHN | 4 x 1½ | 5.31 | 6.25 | 4.63 | | 50 |
| S288NJN | 4 x 2 | 5.31 | 6.75 | 4.63 | | 50 |
| S288NLN | 4 x 3 | 5.31 | 7.75 | 5.69 | | 60 |
| S288PHN | 5 x 1½ | 5.84 | 7.31 | 5.69 | | 50 |
| S288PJN | 5 x 2 | 5.84 | 7.81 | 5.69 | | 60 |
| S288PLN | 5 x 3 | 5.84 | 8.81 | 6.75 | | 50 |
| S288RHN | 6 x 1½ | 6.38 | 8.38 | 6.75 | | 50 |
| S288RJN | 6 x 2 | 6.38 | 8.88 | 6.75 | | 50 |
| S288RLN | 6 x 3 | 6.38 | 9.88 | 6.75 | | 40 |
| S288SHN | 8 x 1½ | 7.38 | 10.30 | 8.75 | | 30 |
| S288SJN | 8 x 2 | 7.38 | 10.76 | 8.75 | | 30 |

Dimensions – Intermediate spacers

| Cat. no. | Size* (in.) | A (in.) | C (in.) | Dia. (in.) | D | Std. ctn. qty. |
|----------|-------------|---------|---------|------------|---|----------------|
| S289JHN | 2 X 1½ | 3.88 | 4.12 | 2.50 | | 100 |
| S289JJN | 2 x 2 | 4.38 | 4.62 | 2.50 | | 100 |
| S289JLN | 2 x 3 | 5.38 | 5.62 | 2.50 | | 100 |
| S289LHN | 3 x 1½ | 5.01 | 5.25 | 3.63 | | 90 |
| S289LJN | 3 x 2 | 5.51 | 5.75 | 3.63 | | 80 |
| S289LLN | 3 x 3 | 6.51 | 6.75 | 4.63 | | 60 |
| S289NFN | 4 x 1 | 5.51 | 6.75 | 4.63 | | 70 |
| S289NHN | 4 x 1½ | 6.01 | 6.25 | 4.63 | | 50 |
| S289NJN | 4 x 2 | 6.51 | 6.75 | 4.63 | | 50 |
| S289NLN | 4 x 3 | 7.51 | 7.75 | 5.69 | | 60 |
| S289PHN | 5 x 1½ | 7.07 | 7.31 | 5.69 | | 50 |
| S289PJN | 5 x 2 | 7.57 | 7.81 | 5.69 | | 60 |
| S289PLN | 5 x 3 | 8.57 | 8.81 | 6.75 | | 50 |
| S289RHN | 6 x 1½ | 8.14 | 8.38 | 6.75 | | 50 |
| S289RJN | 6 x 2 | 8.64 | 8.88 | 6.75 | | 50 |
| S289RLN | 6 x 3 | 9.64 | 9.88 | 6.75 | | 40 |
| S289SHN | 8 x 1½ | 10.14 | 10.30 | 8.75 | | 30 |
| S289SJN | 8 x 2 | 10.64 | 10.76 | 8.75 | | 30 |

Diagram



3 in. standard for all base spacers (with the exception of the 4X1-S288NFN)

*First number indicates trade size of duct, second number indicates separation between conduit or ducts.

Snap-Loc spacers

Accessories

Snap-Loc reducer

| Cat. no. | Size (in.) | Std. ctn. qty. |
|----------|------------|----------------|
| S287F | 1 | 100 |
| S287J | 2 | 100 |

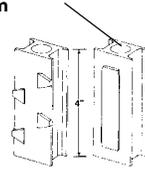
Diagram



Rebar holder

| Cat. no. | Std. ctn. qty. |
|----------|----------------|
| S258RH | 100 |

Diagram

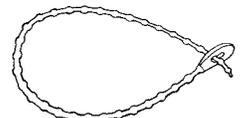


Hole dia. 0.688" min.
and 0.750" max.

Beaded strap

| Cat. no. | Std. ctn. qty. |
|----------|----------------|
| S28612 | 1 Bag of 250 |

Diagram



15 in. in length

Specifications

Suggested specification

(Duct) (Conduit) bank shall be encased in concrete with at least three inches of concrete at the top and bottom and two inches on each side. A horizontal and vertical separation between the ducts of * inches shall be maintained by installing Carlon high impact spacers with horizontal and vertical locking intervals of **feet.

*Standard separations of 1 in., 1½ in., 2 in. and 3 in. are available.

**Preferred interval between spacer assemblies is 8 to 10 feet.

Installation note

The spacers and rebar holder are designed with a dovetail tongue-and-groove feature for easy installation. If required to permanently fix the position of a group of spacers and/or rebar holder, the following are recommended procedures:

1. Use Carlon quick-set cement glue during assembly or spot glue after assembly to secure.
2. During assembly, deform the edge of the tongue or groove portion of the dovetail slide with a pair of pliers or similar tool. This deformation will create an interference, restricting movement.
3. An assembled system may be wired together for additional support.

Important

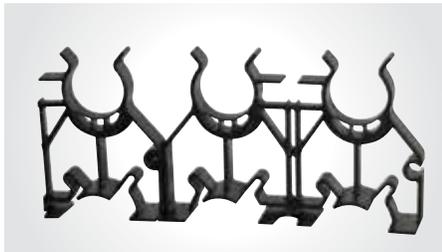
1. The use of duct spacers for direct burial may result in excessive point deflections unless proper design engineering is applied, such as the proper compaction of the appropriate backfill material.
2. ABB is not responsible for Snap-Loc spacers used in direct burial application; design engineers and contractors are responsible for the design of the installation.

Snap-N-Stac combo spacers

Product overview



One-way



Three-way

Installations



Horizontal locking



Vertical interlocking



With reducer

Carlson Snap-N-Stac combo duct spacers are specifically designed to replace the two-piece base and intermediate spacer system, by combining the conventional base and intermediate spacer into a single unit.

Manufactured out of highly engineered thermoplastic material, Snap-N-Stac spacers are strong, durable and able to withstand the rigors of concrete construction. They feature an innovative horizontal and exclusive vertical locking system and can be used as either a base or intermediate spacer.

Snap-N-Stac spacers are available in one-way, two-way and three-way configurations (one-way and three-way only available in sizes 2 in. and 4 in.). They accept 2 in., 3 in., 4 in., 5 in., and 6 in. pipe and can be installed horizontally, vertically or turned upright for unique duct bank configurations.

This one-piece design makes underground duct bank installations faster and easier than the conventional two-piece system – saving material and labor costs.

Carlson Snap-N-Stac combo spacers...The ideal solution for underground duct bank installations.

Features

- Conventional base and intermediate spacer in a single unit
- Less inventory required
- Exclusive vertical locking system
- Horizontal locking system
- Installs horizontally or turned upright
- Molded-in rebar holder on two-way and three-way
- One-, two- and three-way configurations (one-way and three-way only available in sizes 2 in. and 4 in.)
- 5 sizes: 2 in., 3 in., 4 in., 5 in. and 6 in.
- Reducer to accommodate smaller duct sizes
- Can be used as either an intermediate or base spacer
- Spacers interlock horizontally regardless of size
- Nonmetallic, non-corrosive, non-conductive
- Strong and durable
- Easy to handle
- Fast installation

Snap-N-Stack combo spacers

Installation instructions

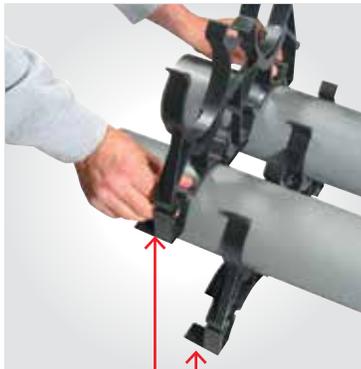
Important

1. Snap-N-Stack Spacers are recommended for concrete-encased applications only.
2. The use of duct spacers for direct burial may result in excessive point deflections unless proper design engineering is applied, such as the proper compaction of the appropriate backfill material.
3. ABB is NOT responsible for Snap-N-Stack spacers used in direct burial applications; design engineers and contractors are responsible for the design of the installation.

Vertical interlocking slide spacers together "feet facing feet."



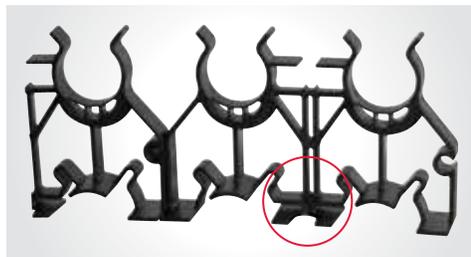
Feet facing



Feet opposite



Molded-in rebar holder



Snap-N-Stac combo spacers

Installation instructions

Vertical free-standing

If spacers are installed using free-standing method, it is recommended to install the spacer on the upper row mid-way between the two spacers on the bottom row.



Reducer

1 in. and 2 in. Snap-Loc reducers allow fixturing of 1 in. and 2 in. conduit inside of larger spacers.



Transition to various duct sizes

Install spacers side-by-side by inserting the male adapter into the female adapter.

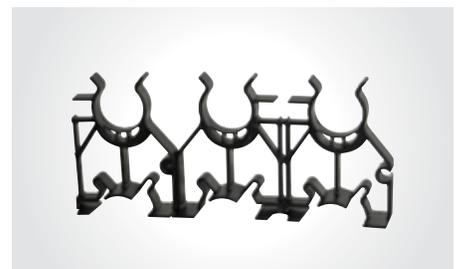
Note: All Snap-N-Stac spacers are designed to interlock horizontally, regardless of size.



Odd number of ducts

Two-way spacers, size 2 in. and 4 in. only, can easily be cut apart to produce two one-way spacers. Create three-way and five-way spacers using the

one-way spacer. Install spacers side-by-side by inserting the male adapter into the female adapter.



Snap-N-Stack combo spacers

Specifications

| Cat. no. | Description | Size (in.) | Separation (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|-----------|---------------|------------|------------------|----------------|--------------------|
| SP2W20-1 | 1-Way spacers | 2 | 2 | 56 | 15.0 |
| SP2W30-1 | 1-Way spacers | 2 | 3 | 40 | 13.0 |
| SP4W15-1 | 1-Way spacers | 4 | 1½ | 26 | 9.6 |
| SP4W20-1 | 1-Way spacers | 4 | 2 | 20 | 10.0 |
| SP4W30-1 | 1-Way spacers | 4 | 3 | 20 | 9.4 |
| SP2W20-2 | 2-Way spacers | 2 | 2 | 56 | 28.5 |
| SP2W30-2 | 2-Way spacers | 2 | 3 | 40 | 23.8 |
| SP3W20-2 | 2-Way spacers | 3 | 2 | 40 | 24.0 |
| SP3W30-2 | 2-Way spacers | 3 | 3 | 24 | 17.9 |
| SP4W15-2* | 2-Way spacers | 4 | 1½ | 26 | 18.3 |
| SP4W20-2* | 2-Way spacers | 4 | 2 | 24 | 18.8 |
| SP4W30-2* | 2-Way spacers | 4 | 3 | 20 | 17.6 |
| SP5W20-2* | 2-Way spacers | 5 | 2 | 20 | 17.2 |
| SP5W30-2* | 2-Way spacers | 5 | 3 | 14 | 15.5 |
| SP6W20-2* | 2-Way spacers | 6 | 2 | 12 | 12.8 |
| SP6W30-2* | 2-Way spacers | 6 | 3 | 12 | 14.1 |
| SP2W20-3 | 3-Way spacers | 2 | 2 | 36 | 28.5 |
| SP2W30-3 | 3-Way spacers | 2 | 3 | 18 | 17.8 |
| SP4W15-3 | 3-Way spacers | 4 | 1½ | 18 | 19.4 |
| SP4W20-3 | 3-Way spacers | 4 | 2 | 16 | 19.3 |
| SP4W30-3 | 3-Way spacers | 4 | 3 | 14 | 19.1 |

*Can be cut apart to make (2) one-way spacers

Technical information

| Cat. no. | Duct size (in.) | Duct O.D. (in.) | Horizontal duct positions | Duct-to-duct spacing | | Center-to-center spacing | | Bottom of trench to bottom of duct (in.) | Bottom of trench to center of bottom duct (in.) | Overall length (in.) |
|----------|-----------------|-----------------|---------------------------|----------------------|------------------|--------------------------|------------------|--|---|----------------------|
| | | | | Vertical (in.) | Horizontal (in.) | Vertical (in.) | Horizontal (in.) | | | |
| SP2W20-1 | 2 | 2.375 | 1 | 2 | 2 | 2.19 | 2.19 | 3.13 | 4.25 | 4.38 |
| SP2W30-1 | 2 | 2.375 | 1 | 3 | 3 | 2.69 | 2.69 | 4.13 | 5.25 | 5.38 |
| SP4W15-1 | 4 | 4.500 | 1 | 1.5 | 1.5 | 3.00 | 3.00 | 3.38 | 5.56 | 6.00 |
| SP4W20-1 | 4 | 4.500 | 1 | 2 | 2 | 3.25 | 3.25 | 3.88 | 6.06 | 6.50 |
| SP4W30-1 | 4 | 4.500 | 1 | 3 | 3 | 3.75 | 3.75 | 4.88 | 7.06 | 7.50 |
| SP2W20-2 | 2 | 2.375 | 2 | 2 | 2 | 4.38 | 4.38 | 3.13 | 4.25 | 8.75 |
| SP2W30-2 | 2 | 2.375 | 2 | 3 | 3 | 5.38 | 5.38 | 4.13 | 5.25 | 10.75 |
| SP3W20-2 | 3 | 3.500 | 2 | 2 | 2 | 5.50 | 5.50 | 3.63 | 5.38 | 11.00 |
| SP3W30-2 | 3 | 3.500 | 2 | 3 | 3 | 6.50 | 6.50 | 4.63 | 6.38 | 13.00 |
| SP4W15-2 | 4 | 4.500 | 2 | 1.5 | 1.5 | 6.00 | 6.00 | 3.38 | 5.56 | 12.00 |
| SP4W20-2 | 4 | 4.500 | 2 | 2 | 2 | 6.50 | 6.50 | 3.88 | 6.06 | 13.00 |
| SP4W30-2 | 4 | 4.500 | 2 | 3 | 3 | 7.50 | 7.50 | 4.88 | 7.06 | 15.00 |
| SP5W20-2 | 5 | 5.500 | 2 | 2 | 2 | 7.56 | 7.56 | 4.38 | 7.25 | 15.12 |
| SP5W30-2 | 5 | 5.500 | 2 | 3 | 3 | 8.56 | 8.56 | 5.38 | 8.25 | 17.14 |
| SP6W20-2 | 6 | 6.625 | 2 | 2 | 2 | 8.62 | 8.62 | 4.13 | 7.38 | 17.25 |
| SP6W30-2 | 6 | 6.625 | 2 | 3 | 3 | 9.62 | 9.62 | 5.13 | 8.38 | 19.25 |
| SP2W20-3 | 2 | 2.375 | 3 | 2 | 2 | 6.57 | 6.57 | 3.13 | 4.25 | 13.13 |
| SP2W30-3 | 2 | 2.375 | 3 | 3 | 3 | 8.07 | 8.07 | 4.13 | 5.25 | 16.13 |
| SP4W15-3 | 4 | 4.500 | 3 | 1.5 | 1.5 | 9.00 | 9.00 | 3.38 | 5.56 | 18.00 |
| SP4W20-3 | 4 | 4.500 | 3 | 2 | 2 | 9.75 | 9.75 | 3.88 | 6.06 | 19.50 |
| SP4W30-3 | 4 | 4.500 | 3 | 3 | 3 | 11.25 | 11.25 | 4.88 | 7.06 | 22.50 |

How to interpret the catalogue number

| Position 1 | Position 2 | Position 3 | Position 4 |
|-----------------------------|------------------|--------------------------------|----------------------------------|
| Duct-to-duct spacing | | | |
| Product type | Duct size | Horizontal and vertical | Horizontal duct positions |
| | | | |
| SP = Spacer | 2W = 2 in. Width | 15 = 1½ in. | -1 = One-way |
| | 3W = 3 in. Width | 20 = 2 in. | -2 = Two-way |
| | 4W = 4 in. Width | 30 = 3 in. | -3 = Three-way |
| | 5W = 5 in. Width | | |
| | 6W = 6 in. Width | | |

Carflex liquidtight flexible conduit

Product overview



Liquidtight flexible nonmetallic conduit provides superior wire protection in harsh, damp environments. Carflex conduit is non-conductive, non-corrosive and resistant to oil, acid, ozone and alkaline. Carflex conduit is strong and lightweight, and because it weighs 50% less than metallic systems, it's easy to handle, transport and install. Carflex is ideal for industrial, air conditioning, heating and outdoor lighting applications.

Features

- Non-conductive and non-corrosive
- Lightweight for easy handling, transportation and installation
- Crush, abrasion and strain resistant
- Provides superior wire protection
- Smooth interior ideal for pulling cable
- No jagged edges
- Maintains internal I.D. even in tight radius bends
- Type LFNC-B
- Resistant to oil, acid, ozone and alkaline
- CSA certified as per Section 12-1300 of the Canadian Electrical Code, Part 1
- Sequentially marked footage
- Suitable for use at conduit temperatures of 80 °C dry, 60 °C wet and 60 °C oil

Note: Liquidtight flexible conduit, metallic and nonmetallic, in contrast to rigid PVC conduit and electrical nonmetallic tubing, do not have wire temperature limitations. Any temperature rated wire (for example, 90 °C wire) can be used as long as the temperature conditions marked on the conduit are not exceeded.

Applications

- Control and motor
- Air conditioning and heating
- Computer power distribution
- Machine tools
- Console wiring
- Transformer connections
- Outdoor lighting

Coils



| Cat. no. | Nom. size (in.) | Avg. O.D. (in.) | Avg. I.D. (in.) | Length reel (ft.) | Std. reel wt. (lb) |
|------------|-----------------|-----------------|-----------------|-------------------|--------------------|
| 15004-100 | 3/8 | 0.700 | 0.4890 | 100 | 11.70 |
| 15005C-025 | 1/2 | 0.830 | 0.6270 | 25 | 3.25 |
| 15007-100 | 3/4 | 1.040 | 0.8250 | 100 | 18.00 |
| 15007C-025 | 3/4 | 1.040 | 0.8250 | 25 | 4.25 |
| 15008-100 | 1 | 1.302 | 1.046 | 100 | 28.00 |
| 15009-100 | 1 1/4 | 1.645 | 1.385 | 100 | 37.60 |
| 15010-050 | 1 1/2 | 1.882 | 1.580 | 50 | 22.55 |
| 15010-100 | 1 1/2 | 1.882 | 1.580 | 100 | 47.80 |
| 15011-050 | 2 | 2.357 | 2.025 | 50 | 34.10 |

Standard colour Grey

Reels



| Cat. no. | Nom. size (in.) | Avg. O.D. (in.) | Avg. I.D. (in.) | Length reel (ft.) | Std. reel wt. (lb) |
|-----------|-----------------|-----------------|-----------------|-------------------|--------------------|
| 15004-001 | 3/8 | 0.700 | 0.4890 | 1000 | 145.0 |
| 15005-001 | 1/2 | 0.830 | 0.6270 | 1000 | 157.0 |
| 15007-001 | 3/4 | 1.040 | 0.8250 | 1000 | 212.0 |
| 15008-500 | 1 | 1.302 | 1.046 | 500 | 155.0 |
| 15009-200 | 1 1/4 | 1.645 | 1.385 | 200 | 100.0 |
| 15010-150 | 1 1/2 | 1.882 | 1.580 | 150 | 95.7 |
| 15011-100 | 2 | 2.357 | 2.025 | 100 | 94.6 |

Carflex X-Flex liquidtight flexible tubing

Product overview



Extra flexible nonmetallic mechanical protection tubing is ideal for applications requiring extra strength and flexibility such as robotics and repetitive flexing arms. Carflex X-Flex is non-conductive, non-corrosive and resistant to oil, acid, ozone and alkaline. It's designed for use with standard Carflex fittings providing a complete nonmetallic system. Carflex X-Flex is lightweight for easier handling, transportation and installation.

Features

- Extra strong and flexible to withstand repetitive motions
- Non-conductive and non-corrosive
- Resistant to oil, acid, ozone and alkaline
- Lightweight for easy handling, transportation and installation
- Crush, abrasion and strain resistant
- Provides superior wire protection
- Smooth interior ideal for pulling cable
- No jagged edges
- Rated for continuous use at 60 °C ambient
- Type NMPT-B

Applications

- Repetitive flexing arms
- Robotics
- Machine tools
- Automatic/moving machinery
- Control and motor

Specifications

Coils (available in black only)



| Cat. no. | Nom. size (in.) | Avg. O.D. (in.) | Avg. I.D. (in.) | Length coils (ft.) | Std. coil wt. (lb) |
|-------------|-----------------|-----------------|-----------------|--------------------|--------------------|
| 15104-100 ♦ | 3/8 | 0.700 | 0.489 | 100 | 9.09 |
| 15105-100 ♦ | 1/2 | 0.830 | 0.627 | 100 | 10.01 |
| 15107-100 ♦ | 3/4 | 1.040 | 0.825 | 100 | 13.91 |
| 15108-100 | 1 | 1.302 | 1.046 | 100 | 18.25 |
| 15109-100 | 1 1/4 | 1.645 | 1.385 | 100 | 27.65 |
| 15110-100 | 1 1/2 | 1.882 | 1.580 | 100 | 38.00 |
| 15111-050 | 2 | 2.357 | 2.025 | 50 | 24.22 |

Carflex liquidtight fittings

Straight fittings

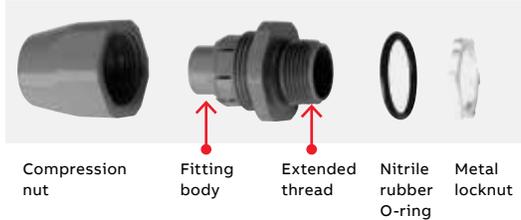
For use with Carflex conduit and Carflex X-Flex conduit

Image 1



Assembly

Image 2



Compression nut

Fitting body

Extended thread

Nitrile rubber O-ring

Metal locknut

Image 3



Assembly

Image 4



Compression nut

Sealing ring

Ferrule

Fitting body

O-ring

Plastic locknut

Features

- Non-conductive and non-corrosive
- Easy to install
- Resistant to oil, acid, ozone and alkaline
- Approved for indoor and outdoor locations
- Listed for “wet locations”
- Nitrile rubber O-ring for a liquidtight termination
- Temperatures up to 107 °C

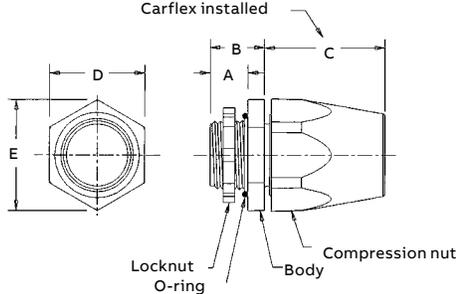
Specifications



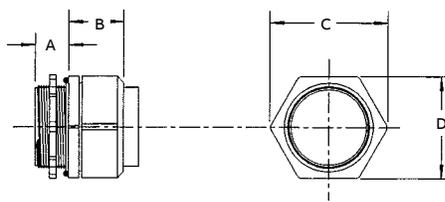
| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) | Dimensions (in.) | | | | | | Refer to Image |
|-----------|------------|----------------|--------------------|------------------|------|------|------|------|-----|----------------|
| | | | | A | B | C | D | E | | |
| LT43C | 3/8 | 50 | 3.6 | 0.55 | 0.75 | 1.60 | 1.30 | 1.40 | 1-2 | |
| LT43D-NEW | 1/2 | 50 | 4.2 | 0.56 | 0.91 | 1.62 | 1.30 | 1.40 | 1-2 | |
| LT43E-NEW | 3/4 | 50 | 6.6 | 0.56 | 0.91 | 1.88 | 1.61 | 1.71 | 1-2 | |
| LT43F-NEW | 1 | 25 | 5.5 | 0.70 | 1.00 | 2.20 | 1.90 | 2.04 | 1-2 | |
| LT43G | 1 1/4 | 5 | 1.5 | 0.71 | 1.16 | 2.50 | 2.17 | - | 3-4 | |
| LT43H | 1 1/2 | 5 | 2.0 | 0.75 | 1.36 | 2.78 | 2.43 | - | 3-4 | |
| LT43J | 2 | 5 | 2.5 | 1.00 | 1.45 | 3.33 | - | - | 3-4 | |

Diagrams

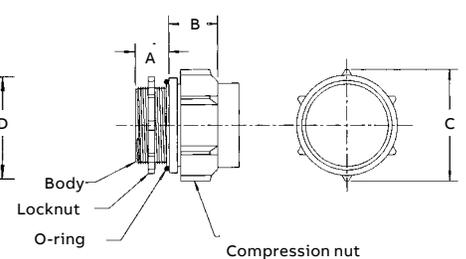
Typ. dimension with Carflex installed



LT43C-CAR, LT43D-NEW, LT43E-NEW, LT43F



LT43G, LT43H



LT43J

Carflex liquidtight fittings

90° Fittings

For use with Carflex conduit and Carflex X-Flex conduit

Image 1



Assembly

Image 2



Compression nut Fitting body Extended thread Nitrile rubber O-ring Metal locknut

Image 3



Assembly

Image 4



Compression nut Sealing ring Ferrule Fitting body O-ring Plastic locknut

Features

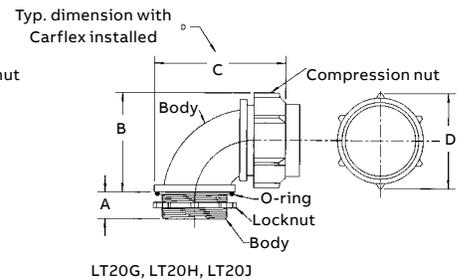
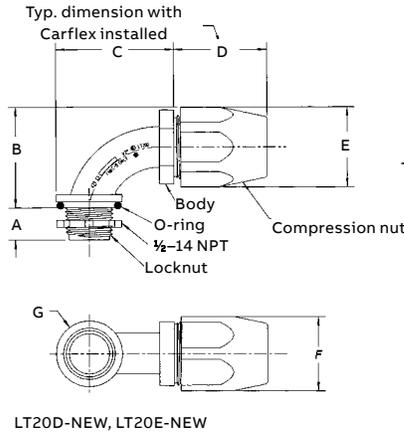
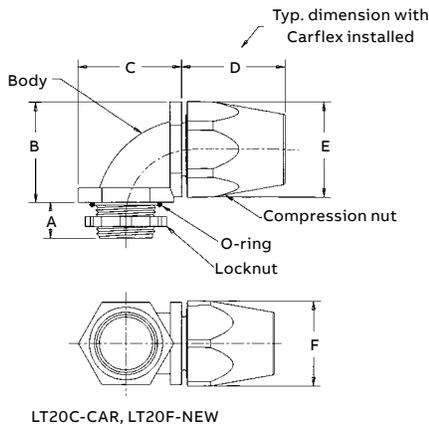
- Non-conductive and non-corrosive
- Easy to install
- Resistant to oil, acid, ozone and alkaline
- Approved for indoor and outdoor locations
- Listed for “wet locations”
- Nitrile rubber O-ring for a liquidtight termination
- Temperatures up to 107 °C

Specifications



| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) | Dimensions (in.) | | | | | | | | Refer to Image |
|-----------|------------|----------------|--------------------|------------------|------|------|------|------|------|------|-----|----------------|
| | | | | A | B | C | D | E | F | G | | |
| LT20C | 3/8 | 50 | 3.6 | 0.56 | 1.44 | 1.44 | 1.56 | 1.39 | 1.26 | - | 1-2 | |
| LT20D-NEW | 1/2 | 50 | 4.2 | 0.56 | 1.76 | 2.05 | 1.62 | 1.40 | 1.30 | 1.15 | 1-2 | |
| LT20E-NEW | 3/4 | 50 | 6.6 | 0.56 | 2.04 | 2.35 | 1.88 | 1.71 | 1.61 | 1.50 | 1-2 | |
| LT20F-NEW | 1 | 25 | 5.5 | 0.70 | 2.01 | 2.01 | 2.26 | 2.04 | 1.90 | - | 1-2 | |
| LT20G | 1 1/4 | 5 | 1.5 | 0.75 | 2.50 | 3.55 | 2.48 | - | - | - | 3-4 | |
| LT20H | 1 1/2 | 5 | 2.0 | 0.75 | 2.80 | 3.98 | 2.77 | - | - | - | 3-4 | |
| LT20J | 2 | 5 | 2.5 | 0.94 | 3.48 | 4.56 | 3.33 | - | - | - | 3-4 | |

Diagrams



Carflex one-piece liquidtight fittings

Product overview



Unique design

The simple, one-piece body design of the Carflex one-piece liquidtight nonmetallic fitting requires no disassembly of components for installation. The system is so strong that there is no need for a compression nut.

PVC construction

PVC construction of the fitting and locknut provides unparalleled protection from water, oil and dust. Totally nonmetallic, the system is non-conductive and will not corrode or rust. Temperatures up to 60 °C

Features

- Approved for indoor and outdoor locations
- Listed for “wet locations”

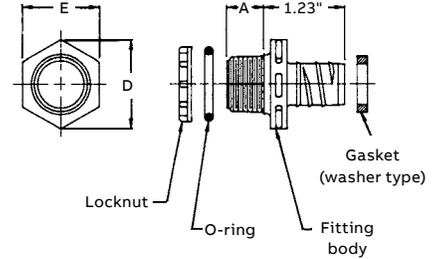
Straight fittings



| Cat. no. | Trade size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) | Thread size (NPT) | Dimensions (in.) | | |
|----------|------------------|----------------|--------------------|-------------------|------------------|------|------|
| | | | | | A | D | E |
| LN43DA | ½ | 100 | 2.8 | 14 | 0.56 | 1.34 | 1.19 |
| LN43EA | ¾ | 50 | 2.2 | 14 | 0.56 | 1.63 | 1.44 |
| LN43FA | 1 | 25 | 3 | 11-½ | 0.69 | 1.99 | 1.75 |



Diagrams



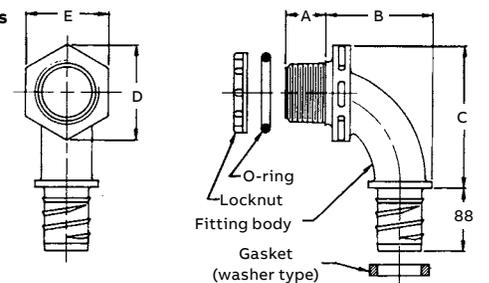
90° Fittings



| Cat. no. | Trade size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) | Thread size (NPT) | Dimensions (in.) | | | | |
|----------|------------------|----------------|--------------------|-------------------|------------------|------|------|------|------|
| | | | | | A | B | C | D | E |
| LN20DA | ½ | 100 | 4.3 | 14 | 0.56 | 1.50 | 1.99 | 1.34 | 1.19 |
| LN20EA | ¾ | 50 | 3.1 | 14 | 0.56 | 1.73 | 2.25 | 1.63 | 1.44 |
| LN20FA | 1 | 25 | 3.2 | 11-½ | 0.69 | 1.86 | 2.58 | 1.99 | 1.75 |



Diagrams



Carflex one-piece liquidtight fittings

Installation instructions

LT43C-CAR, LT43F thru J, LT20C-CAR, LT20F thru J

1. Cut the end of the Carflex conduit or Carflex X-Flex tubing square.
2. Install compression nut and sealing gland ring over the end of the conduit or tubing.
3. Insert the ferrule end of the fitting into the conduit using a clockwise twisting action.
4. Screw fitting body into compression nut.
5. When installation is completed, use a wrench, tighten compression nut one-quarter ($\frac{1}{4}$) turn past hand-tight. Do not over tighten fitting.

To prevent damage to conductors, conduit and fittings, do not twist Carflex during installation.

1. There shall be no more than the equivalent of four (4) quarter (90°) bends (360° total) between pull points, conduit bodies and boxes.
2. The radius of the curve of the center of the conduit or tubing shall not be less than that shown in the table below:

LT43D-NEW, LT43E-NEW, LT20D-NEW, LT20E-NEW

1. Cut the end of the Carflex conduit or Carflex X-Flex tubing square.
2. Install compression nut over the end of the conduit or tubing.
3. Insert the ferrule end of the fitting into the conduit using a clockwise twisting action. (Be sure conduit is fully inserted to the bottom of the fitting shoulder).
4. Screw compression nut onto fitting body.
5. Use a wrench, and tighten compression nut one (1) full turn past hand-tight. Do not over tighten fitting.

To prevent damage to conductors, conduit and fittings, do not twist Carflex during installation.

Liquidtight conduit technical information

| Size of conduit or tubing | | Radius to center of conduit or tubing | |
|---------------------------|----|---------------------------------------|-------|
| Inches | mm | Inches | mm |
| $\frac{3}{8}$ | 14 | 4 | 101.6 |
| $\frac{1}{2}$ | 16 | 4 | 101.6 |
| $\frac{3}{4}$ | 21 | 4 $\frac{1}{2}$ | 114.3 |
| 1 | 27 | 5 $\frac{3}{4}$ | 146.0 |
| 1 $\frac{1}{4}$ | 35 | 7 $\frac{1}{4}$ | 184.1 |
| 1 $\frac{1}{2}$ | 41 | 8 $\frac{1}{4}$ | 209.5 |
| 2 | 53 | 9 $\frac{1}{2}$ | 241.3 |

Plenum-Gard

Product overview



Technical information

| UL Standard 2024 | Value |
|------------------------------------|-------|
| Maximum flame propagation | 5 ft. |
| Max. peak optical smoke density | 0.5 |
| Max. average optical smoke density | 0.15 |

Standard stock – Reels

| Cat. no. | Size (in.) | Colour | Pull tape | Reel size (F x W) (in.) | Reel type | Length (ft.) | Reel wt. (lb) | Product wt. per 100 ft. (lb) |
|-------------|------------|--------|-----------|-------------------------|-----------|--------------|---------------|------------------------------|
| CD4X1C-1500 | ½ | Orange | 200 lb | 34 x 23 | Wood | 1,500 | 30 | 7 |
| CE4X1-1000 | ¾ | Orange | Empty | 34 x 23 | Wood | 1,000 | 30 | 8 |
| CE4X1-1000S | ¾ | Orange | Empty | 34 x 23 | Wood | 1,000 | 30 | 8 |
| CF4X1C-500 | 1 | Orange | 900 lb | 34 x 23 | Wood | 500 | 30 | 10 |
| CF4X1C-1000 | 1 | Orange | 900 lb | 48 x 28 | Wood | 1,000 | 79 | 10 |
| CF4X1C-1500 | 1 | Orange | 900 lb | 48 x 28 | Wood | 1,500 | 79 | 10 |
| CF4X1C-5200 | 1 | Orange | 900 lb | 66 x 41 | Wood | 5,200 | 250 | 10 |
| CF4X1C-6500 | 1 | Orange | 900 lb | 72 x 41 | Wood | 6,500 | 310 | 10 |
| CF4X1C-8000 | 1 | Orange | 900 lb | 82 x 41 | Wood | 8,000 | 365 | 10 |
| CG4X1C-500 | 1¼ | Orange | 900 lb | 48 x 28 | Wood | 500 | 79 | 14 |
| CG4X1C-900 | 1¼ | Orange | 900 lb | 48 x 45 | Wood | 900 | 96 | 14 |
| CG4X1C-1600 | 1¼ | Orange | 900 lb | 48 x 45 | Wood | 1,600 | 96 | 14 |
| CG4X1C-3200 | 1¼ | Orange | 900 lb | 66 x 41 | Wood | 3,200 | 250 | 14 |
| CG4X1C-6500 | 1¼ | Orange | 900 lb | 96 x 41 | Wood | 6,500 | 700 | 14 |
| CG4X1C-900S | 1¼ | Orange | Empty | 48 x 28 | Wood | 900 | 79 | 14 |
| CH4X1C-350 | 1½ | Orange | 900 lb | 48 x 28 | Wood | 350 | 79 | 16 |
| CH4X1C-1200 | 1½ | Orange | 900 lb | 48 x 45 | Wood | 1,200 | 96 | 16 |
| CH4X1C-4000 | 1½ | Orange | 900 lb | 82 x 41 | Wood | 4,000 | 365 | 16 |
| CJ4X1C-225 | 2 | Orange | 900 lb | 48 x 28 | Wood | 225 | 79 | 21 |
| CJ4X1C-700 | 2 | Orange | 900 lb | 48 x 45 | Wood | 700 | 96 | 21 |
| CJ4X1C-2000 | 2 | Orange | 900 lb | 82 x 41 | Wood | 2,000 | 365 | 21 |
| CJ4X1C-2800 | 2 | Orange | 900 lb | 82 x 41 | Wood | 2,800 | 365 | 21 |
| CL4X1C-150 | 3 | Orange | 900 lb | 48 x 45 | Wood | 150 | 96 | 41 |

Plenum-Gard is a nonmetallic corrugated flexible conduit for use in plenum, riser and general purpose applications.

Plenum-Gard is manufactured from PVDF resin, which is extremely durable and resistant to abrasion and mechanical damage before/after installation.

Plenum-Gard is listed for plenum, riser, general purpose and other cabling optical fiber/telecommunication applications.

Applications:

Plenum, riser and general purpose.

Important:

Installed cables must be plenum rated.

- Storage: -20 °C to 70 °C (-4 °F to 158 °F)
- Handling: -20 °C to 40 °C (-4 °F to 104 °F)
- No UV protection (not suitable for outdoor use)
- Do NOT store outside



Plenum-Gard

Features

- Sizes ½ in. through 3 in.
- Pre-installed pull tape available in sizes ½ in. through 3 in.
- Outside diameters meet IPS dimensions
- Footage sequentially marked

Standard stock – Coils

| Cat. no. | Size (in.) | Colour | Pull tape | Coil length (ft.) | Product wt. per 100 ft. (lb) |
|------------|------------|--------|-------------|-------------------|------------------------------|
| CD4X1C-500 | ½ | Orange | 900 lb | 500 | 7 |
| CE4X1-350 | ¾ | Orange | Empty | 350 | 8 |
| CE4X1-350S | ¾ | Orange | Empty/split | 350 | 8 |
| CF4X1C-100 | 1 | Orange | 900 lb | 100 | 10 |
| CF4X1-100S | 1 | Orange | Empty/split | 100 | 10 |
| CF4X1C-250 | 1 | Orange | 900 lb | 250 | 10 |
| CF4X1-250 | 1 | Orange | Empty | 250 | 10 |
| CF4X1-250S | 1 | Orange | Empty/split | 250 | 10 |
| CG4X1C-200 | 1¼ | Orange | 900 lb | 200 | 14 |
| CG4X1-200S | 1¼ | Orange | Empty/split | 200 | 14 |
| CH4X1C-150 | 1½ | Orange | 900 lb | 150 | 16 |
| CH4X1-150S | 1½ | Orange | Empty/split | 150 | 16 |
| CJ4X1C-100 | 2 | Orange | 900 lb | 100 | 21 |
| CJ4X1-100S | 2 | Orange | Empty/split | 100 | 21 |
| CL4X1C-150 | 3 | Orange | 920 lb | 150 | 24 |

Specifications

| Size (in.) | I.D. min. ref. (in.) | Min. O.D. (in.) | Max. O.D. (in.) | Min. bend radius (in.) |
|------------|----------------------|-----------------|-----------------|------------------------|
| ½ | 0.60 | 0.815 | 0.835 | 2 |
| ¾ | 0.74 | 1.025 | 1.045 | 2 |
| 1 | 1.00 | 1.292 | 1.312 | 3 |
| 1¼ | 1.35 | 1.630 | 1.650 | 3 |
| 1½ | 1.50 | 1.868 | 1.888 | 4 |
| 2 | 2.00 | 2.329 | 2.439 | 4 |
| 3 | 3.00 | 3.422 | 3.452 | 4 |

How to build a catalogue number:

| Position 1 product | Position 2 size (in.) | Position 3 type | Position 4 wall | Position 5 colour | Position 6 pull line | Position 7 length |
|--------------------|---|-----------------|-----------------|---|----------------------|---|
| C = Plenum-Gard | D = ½ E = ¾ F = 1 G = 1¼ H = 1½ J = 2 L = 3 | 4 = Corrugated | X = Standard | 1 = Orange 2 = Black 3 = Grey 4 = White 5 = Blue 7 = Yellow 8 = Red | C = 900 lb Tape | Example -1000 = Feet -1000S = 1000 feet split |

- Custom orders are not returnable
- Custom lengths are available in minimum order quantities of 1,000 ft.
- Custom colour runs are available in minimum order quantities of 10,000 ft.

Options:

- Colour: Black, blue, grey, red, white and yellow
- Two, three or four way parallel
- Split duct
- Custom print line

Riser-Gard

Product overview



Riser-Gard is a nonmetallic flexible raceway for use in riser and general purpose applications. Riser-Gard is available with tape pre-installed.

Riser-Gard is listed for riser, general purpose and other cabling optical fiber/telecommunication applications. Riser-Gard is suitable for use in vertical runs in shaft or between floors, as well as areas other than the plenum.

Applications:

Riser and general purpose.

Important:

Installed cables must be of suitable rating for the application.

- For use in riser and general purpose areas
- Riser-Gard is also suitable for poured concrete
- Not approved for exposed applications
- Available in sizes ¾ in. through 3 in.
- Pull tape can be factory pre-installed in 1 in. through 3 in.
- Outside diameters meet IPS dimensions
- Footage sequentially marked

Technical information

| UL Standard 2024 | Max. value |
|-----------------------------------|-----------------|
| Maximum flame propagation | 6.0 ft. |
| Maximum air temperature at 12 ft. | 189 °C (372 °F) |

- Storage: -20 °C to 70 °C (-4 °F to 158 °F)
- Handling: -20 °C to 40 °C (-4 °F to 104 °F)
- No UV protection (not suitable for outdoor use)
- Do not store outside

Standard stock – Reels



| Cat. no. | Size (in.) | Colour | Pull tape | Reel size (F x W) (in.) | Reel type | Length (ft.) | Reel wt. (lb) | Product wt. per 100 ft. (lb) |
|-------------|------------|--------|-----------|-------------------------|-----------|--------------|---------------|------------------------------|
| DE4X1-1000 | ¾ | Orange | Empty | 34 x 23 | Wood | 1,000 | 30 | 12 |
| DF4X1C-500R | 1 | Orange | 900 lb | 43 x 23 | Wood | 500 | 56 | 15 |
| DF4X1C-1000 | 1 | Orange | 900 lb | 48 x 28 | Wood | 1,000 | 79 | 15 |
| DF4X1C-1500 | 1 | Orange | 900 lb | 48 x 28 | Wood | 1,500 | 79 | 15 |
| DF4X1C-2700 | 1 | Orange | 900 lb | 48 x 45 | Wood | 2,700 | 96 | 15 |
| DF4X1C-5200 | 1 | Orange | 900 lb | 66 x 41 | Wood | 5,200 | 250 | 15 |
| DF4X1C-6500 | 1 | Orange | 900 lb | 72 x 41 | Wood | 6,500 | 310 | 15 |
| DF4X1C-7000 | 1 | Orange | 900 lb | 72 x 45 | Steel | 7,000 | 148 | 15 |
| DF4X1C-9400 | 1 | Orange | 900 lb | 84 x 45 | Steel | 9,400 | 199 | 15 |
| DG4X1C-900 | 1¼ | Orange | 900 lb | 48 x 28 | Wood | 900 | 79 | 17 |
| DG4X1C-500R | 1¼ | Orange | 900 lb | 48 x 23 | Wood | 500 | 56 | 17 |
| DG4X1C-1500 | 1¼ | Orange | 900 lb | 48 x 45 | Wood | 1,500 | 96 | 17 |
| DG4X1C-1600 | 1¼ | Orange | 900 lb | 48 x 45 | Wood | 1,600 | 96 | 17 |
| DG4X1C-3200 | 1¼ | Orange | 900 lb | 66 x 41 | Wood | 3,200 | 250 | 17 |
| DG4X1C-4500 | 1¼ | Orange | 900 lb | 72 x 45 | Steel | 4,500 | 148 | 17 |
| DG4X1C-5600 | 1¼ | Orange | 900 lb | 82 x 41 | Wood | 5,600 | 365 | 17 |
| DG4X1C-6500 | 1¼ | Orange | 900 lb | 96 x 41 | Steel | 6,500 | 700 | 17 |
| DH4X1C-1200 | 1½ | Orange | 900 lb | 48 x 45 | Wood | 1,200 | 96 | 22 |
| DH4X1C-4000 | 1½ | Orange | 900 lb | 82 x 45 | Steel | 4,000 | 193 | 22 |
| DH4X1C-4500 | 1½ | Orange | 900 lb | 84 x 45 | Steel | 4,500 | 199 | 22 |
| DJ4X1C-700 | 2 | Orange | 900 lb | 48 x 45 | Wood | 700 | 96 | 27 |
| DJ4X1C-2000 | 2 | Orange | 900 lb | 82 x 41 | Wood | 2,000 | 265 | 27 |
| DJ4X1C-2800 | 2 | Orange | 900 lb | 84 x 45 | Steel | 2,800 | 199 | 27 |
| DL4X1C-750 | 3 | Orange | 900 lb | 72 x 41 | Wood | 750 | 310 | 27 |

Riser-Gard

Features

- Riser-Gard is also suitable for direct burial. Not approved for exposed applications.
- Available in sizes $\frac{3}{4}$ in. through 3 in.
- Pull tape can be factory pre-installed

in 1 in. through 3 in.

- Outside diameters meet IPS dimensions.
- Footage sequentially marked.

Standard stock – Coils

| Cat. no. | Size (in.) | Colour | Pull tape | Coil length (ft.) | Product wt. per 100 ft. (lb) |
|------------|----------------|--------|-------------|-------------------|------------------------------|
| DE4X1-350 | $\frac{3}{4}$ | Orange | Empty | 350 | 12 |
| DF4X1C-125 | 1 | Orange | 900 lb | 125 | 15 |
| DF4X1C-250 | 1 | Orange | 900 lb | 250 | 15 |
| DF4X1-250 | 1 | Orange | Empty | 250 | 15 |
| DF4X1C-500 | 1 | Orange | 900 lb | 500 | 15 |
| DF4X1-250S | 1 | Orange | Empty/split | 250 | 15 |
| DG4X1-200 | $1\frac{1}{4}$ | Orange | Empty | 200 | 17 |
| DG4X1-200S | $1\frac{1}{4}$ | Orange | Empty/split | 200 | 17 |
| DG4X1C-200 | $1\frac{1}{4}$ | Orange | 900 lb | 200 | 17 |
| DG4X1C-500 | $1\frac{1}{4}$ | Orange | 900 lb | 500 | 17 |
| DH4X1-150S | $1\frac{1}{2}$ | Orange | Empty/split | 150 | 22 |
| DH4X1C-150 | $1\frac{1}{2}$ | Orange | 900 lb | 150 | 22 |
| DJ4X1-100S | 2 | Orange | Empty/split | 100 | 27 |
| DJ4X1C-100 | 2 | Orange | 900 lb | 100 | 27 |
| DL4X1C-250 | 3 | Orange | 900 lb | 250 | 27 |

Specifications

| Size (in.) | I.D. min. ref. (in.) | Min. O.D. (in.) | Max. O.D. (in.) | Min. bend radius (in.) |
|----------------|----------------------|-----------------|-----------------|------------------------|
| $\frac{3}{4}$ | 0.74 | 1.025 | 1.075 | 5 |
| 1 | 0.98 | 1.290 | 1.340 | 6 |
| $1\frac{1}{4}$ | 1.31 | 1.640 | 1.690 | 8 |
| $1\frac{1}{2}$ | 1.54 | 1.880 | 1.930 | 10 |
| 2 | 2.00 | 2.350 | 2.400 | 12 |
| 3 | 3.00 | 3.422 | 3.452 | 18 |

Custom orders

How to build a catalogue number:

| Position 1 product | Position 2 size (in.) | Position 3 configuration | Position 4 wall | Position 5 colour | Position 6 pull line | Position 7 length |
|--------------------|--|--------------------------|-----------------|---|----------------------|--|
| D = Riser-Gard | E = $\frac{3}{4}$ F = 1 G = $1\frac{1}{4}$ H = $1\frac{1}{2}$ J = 2 L = 3 | 4 = Corrugated | X = Standard | 1 = Orange 2 = Black 3 = Grey 4 = White 5 = Blue 7 = Yellow 8 = Red | C = 900 lb Tape | Example -1000 = Feet -1000S = 1,000 feet split |

- Custom Orders are not returnable
- Custom lengths are available in minimum order quantities of 1,000 ft.
- Custom colour runs are available in minimum order quantities of 10,000 ft.

Options:

- Colour: Black, blue, grey, red, white and yellow
- Two, three or four way parallel
- Split duct
- Custom print line

Riser-Gard

Flexible raceway accessories (approved for low voltage use only)

Low voltage add-on bracket

| | Cat. no. | Description | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|-------------|----------------|--------------------|
|  | SC100SC | 1 gang | 24 | 2.3 |

Low voltage adjustable brackets

| | Cat. no. | Size | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|-----------|--------|----------------|--------------------|
|  | SC100ADJC | 1 gang | 24 | 7.5 |
| | SC200ADJC | 2 gang | 20 | 6.9 |

Low voltage brackets

| | Cat. no. | Description | Resi-Rings (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|-------------|------------------|----------------|--------------------|
|  | SC100A | 1 gang | ¾, 1, 1¼ | 24 | 5.3 |
|  | SC200A | 2 gang | ¾, 1, 1¼ | 24 | 7.7 |
|  | SC300A | 3 gang | - | 5 | 1.6 |



Conduit clamps

| | Cat. no. | Size (in.) | Std. order qty. | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|------------------------------------|----------------|--------------------|
|  | SCE977EC | ¾ | 1 ea. (Equals one bag of 5 clamps) | 20 bags of 5 | 1.5 |
| | SCE977FC | 1 | | 12 bags of 5 | 1.3 |
| | SCE977GC | 1¼ | | 8 bags of 5 | 1.1 |
| | SCE977HC | 1½ | | 6 bags of 5 | 1.0 |
| | SCE977JC | 2 | | 6 bags of 5 | 1.5 |

Note: Each clamp requires 2 screws, 2 nuts and/or 2 bolts.

Carlson's orange conduit clamps are designed specifically for the installation of Resi-Gard.

Cable clips

| | Cat. no. | Size (in.) | Std. order qty. | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|-------------------------------------|----------------|--------------------|
|  | SC14CC | ¾ | 1 ea. (equals one bag of 100 clips) | 10 bags of 100 | 2.23 |
|  | SC12CC | ½ | 1 ea. (equals one bag of 25 clips) | 10 bags of 25 | 2.31 |
|  | SC34CC | ¾ | 1 ea. (equals one bag of 10 clips) | 20 bags of 10 | 2.96 |

Carlson's cable clips with pre-installed nails provide fast and easy installation for either a single cable, 2-3 cables or 1 bundled cable.

Hal-Free Riser-Gard

Product overview



Hal-Free Riser-Gard is a halogen-free nonmetallic flexible raceway for use in riser and general purpose applications. In the event of a fire, this product will not release halogen elements into the air, which makes it ideal for applications in tunnels, laboratories and high-tech environments.

Custom lengths and split ducts are available upon request.

Hal-free Riser-Gard is available in white only.

- Storage and handling: -20 °C to 66 °C (-4 °F to 150 °F)
- No UV protection (not suitable for outdoor use)
- Do not store outside
- Free from halogen elements
- Available in sizes 1 in. through 2 in.
- Available in white only
- Sequentially marked footage

Applications:

Riser and general purpose

Technical information:

| UL Standard 2024 | Max. value |
|---------------------------|-----------------|
| Maximum flame propagation | 3 ft. 6 in. |
| Maximum air temperature | 197 °C (387 °F) |

Standard stock – Reels



| Cat. no. | Size (in.) | Colour | Nom. I.D. (in.) | Nom. O.D. (in.) | Pull tape | Reel size (F x W) (in.) | Reel type | Reel length (ft.) | Reel wt. (lb) | Product wt. per 100 ft. (lb) |
|-------------|------------|--------|-----------------|-----------------|-----------|-------------------------|-----------|-------------------|---------------|------------------------------|
| HF4X4C-5000 | 1 | White | 1.049 | 1.365 | 900 lb | 72 x 41 | Wood | 5,000 | 310 | 7.5 |
| HG4X4C-4000 | 1¼ | White | 1.250 | 1.550 | 900 lb | 72 x 41 | Wood | 4,000 | 310 | 7.5 |
| HH4X4C-2000 | 1½ | White | 1.500 | 1.850 | 900 lb | 66 x 41 | Wood | 2,000 | 250 | 12 |
| HJ4X4C-2000 | 2 | White | 2.000 | 2.425 | 900 lb | 82 x 41 | Wood | 2,000 | 365 | 21 |

Resi-Gard

Nonmetallic adapters and couplings

For use with Riser-Gard and general purpose

Couplings

| | Cat. no. | Size (in.) | Colour | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|--------|----------------|--------------------|
|  | SCA240E | 3/4 | Orange | 25 | 0.783 |
| | SCA240F | 1 | Orange | 20 | 0.972 |

Threaded adapters

| | Cat. no. | Size (in.) | Colour | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|--------|----------------|--------------------|
|  | SCA243E | 3/4 | Orange | 100 | 2.30 |
| | SCA243F | 1 | Orange | 50 | 2.00 |

Snap-in adapters

| | Cat. no. | Size (in.) | Colour | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|--------|----------------|--------------------|
|  | SCA253E | 3/4 | Orange | 100 | 2.90 |
| | SCA253F | 1 | Orange | 50 | 2.30 |

For use with Plenum-Gard

Coupling

| | Cat. no. | Size (in.) | Colour | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|--------|----------------|--------------------|
|  | A340F | 1 | Orange | 50 | 2.50 |

Threaded adapter

| | Cat. no. | Size (in.) | Colour | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|--------|----------------|--------------------|
|  | A343F | 1 | Orange | 50 | 1.55 |

Snap-in adapter

| | Cat. no. | Size (in.) | Colour | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|--------|----------------|--------------------|
|  | A353F | 1 | Orange | 50 | 3.00 |

Resi-Gard

Flexible raceway (approved for low voltage use only)



Standard length reels

| Cat. no. | Size (in.) | Pull tape length (ft.) | Reel length (ft.) | Prod. wt. (lb) |
|--------------|------------|------------------------|-------------------|----------------|
| SCE4X1-1000 | ¾ | Empty | 1,000 | 115.0 |
| SCF4X1C-1500 | 1 | 900 lb | 1,500 | 268.5 |
| SCJ4X1C-500 | 2 | 900 lb | 500 | 133.5 |

Resi-Gard fittings

A complete line of Carlon one-piece quick connect couplings, threaded adapters and snap-in terminator adapters are available for quick, easy professional installation of Resi-Gard flexible raceway.

Quick connect couplings

| | Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|----------------|--------------------|
|  | SCA240E | ¾ | 25 | 0.783 |
| | SCA240F | 1 | 20 | 0.972 |

Quick connect threaded adapters

| | Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|----------------|--------------------|
|  | SCA243E | ¾ | 25 | 0.633 |
| | SCA243F | 1 | 20 | 0.778 |

Ideal for providing a main chase from the main distribution panel to a secondary hub in the attic or basement. Resi-Gard nonmetallic flexible raceway is available in ¾ in. to 2 in. diameter sizes with factory installed pull tape in sizes 1 in. to 2 in. The raceway is hand bendable, lightweight and easily cut to length to reduce scrap. Bright orange colour clearly signifies a low voltage installation.

Standard length coils

| Cat. no. | Size (in.) | Pull tape length (ft.) | Coil length (ft.) | Prod. wt. (lb) |
|-------------|------------|------------------------|-------------------|----------------|
| SCE4X1-100 | ¾ | Empty | 100 | 11.5 |
| SCF4X1C-100 | 1 | 900 lb | 100 | 17.9 |
| SCG4X1C-100 | 1¼ | 900 lb | 100 | 21.5 |
| SCH4X1C-50 | 1½ | 900 lb | 50 | 11.2 |
| SCJ4X1C-50 | 2 | 900 lb | 50 | 13.4 |

Quick connect snap-in adapters

| | Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|----------------|--------------------|
|  | SCA253E | ¾ | 25 | 0.783 |
| | SCA253F | 1 | 20 | 0.918 |

Male terminal adapters*

| | Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|----------------|--------------------|
|  | SCE943G | 1¼ | 50 | 3.0 |
| | SCE943H | 1½ | 25 | 2.5 |
| | SCE943J | 2 | 50 | 6.8 |

Standard couplings*

| | Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|----------------|--------------------|
|  | SCE940G | 1¼ | 30 | 3.5 |
| | SCE940H | 1½ | 25 | 3.9 |
| | SCE940J | 2 | 30 | 5.2 |

*Must be cemented to Resi-Gard flexible raceway using only Resi-Gard solvent cement.

Micro-Gard

Plenum and riser

Carlton Micro-Gard plenum and Micro-Gard riser are specifically designed to provide fiber pathways in plenum and riser applications in multi-dwelling units (MDUs) and other premise structures.

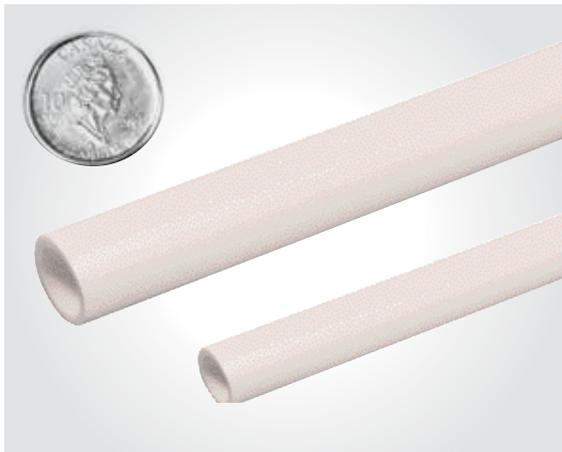
The 8/6 and 12/10 mm size conduit can be installed individually or used to optimize space in existing duct structures. And the small size significantly reduces the structural damage caused during pass-throughs.

Micro-Gard plenum and riser are listed for plenum and riser applications. They're easy to handle, easy to install and easy to conceal, thus making them the ideal MDU cable management system.

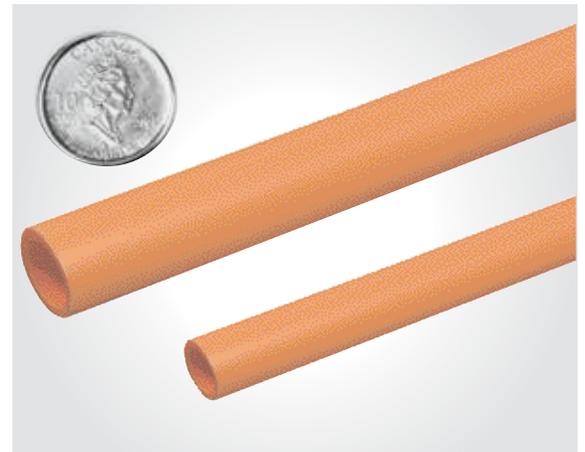
Carlton Micro-Gard plenum and Micro-Gard riser. Small. Slick. Speedy. Ideal for telecom installs.

Features

- cUL listed for plenum and riser applications
- Two sizes: 8/6 mm and 12/10 mm – the smaller sizes accommodate the size constraints of multi-dwelling units and make installations faster and easier
- Smooth interior wall eliminates snag points and provides low coefficient of friction regardless of whether jetting or pull-tape is used
- Superior burn-through resistance for longer cable pulls
- Pre-installed pull-tape makes installing cable faster and easier (option available for empty duct)
- Sequentially marked footage to easily identify lengths and reduce waste
- Reel sizes from 1,000 to 5,000 feet for easy handling on the jobsite
- Future-proofing raceway system for fast, easy wire/cable upgrades, changes and moves
- Used in cable bundles



Micro-Gard plenum



Micro-Gard riser

Micro-Gard

Plenum and riser



| Cat. no. | Size (mm) | Type | Colour | Pre-installed tape | Min. bend radius (in.)* | Reel length (ft.) | Reel wt. (lb) |
|--------------|-----------|--------|--------|--------------------|-------------------------|-------------------|---------------|
| MGP08MT-1000 | 8/6 | Plenum | White | 200 lb | 2 | 1,000 | 24 |
| MGP08MT-2500 | 8/6 | Plenum | White | 200 lb | 2 | 2,500 | 24 |
| MGP08MT-5000 | 8/6 | Plenum | White | 200 lb | 2 | 5,000 | 36 |
| MGP12MT-1000 | 12/10 | Plenum | White | 200 lb | 4 | 1,000 | 24 |
| MGP12MT-2500 | 12/10 | Plenum | White | 200 lb | 4 | 2,500 | 24 |
| MGR08JT-1000 | 8/6 | Riser | Orange | 200 lb | 2 | 1,000 | 24 |
| MGR08JT-2500 | 8/6 | Riser | Orange | 200 lb | 2 | 2,500 | 24 |
| MGR08JT-5000 | 8/6 | Riser | Orange | 200 lb | 2 | 5,000 | 36 |
| MGR12JT-1000 | 12/10 | Riser | Orange | 200 lb | 4 | 1,000 | 24 |
| MGR12JT-2500 | 12/10 | Riser | Orange | 200 lb | 4 | 2,500 | 24 |
| MGR12JT-5000 | 12/10 | Riser | Orange | 200 lb | 4 | 5,000 | 36 |

* Important: Do not exceed the minimum bend radius during installation of the product.

How to interpret a catalogue number

| Position 1 product | Position 2 type | Position 3 size | Position 4 colour | Position 5 pull line | Position 6 length |
|--------------------|-------------------------|------------------------------|-------------------------|----------------------|---------------------------|
| MG = Micro-Gard | P = Plenum R = Riser | 08 = 8/6 mm 12 = 12/10 mm | J = Orange M = White | T = 200 lb tape | Example-1000 = 1,000 feet |

Flex-Plus Blue ENT



Flex-Plus Blue ENT is a nonmetallic flexible raceway for use in walls, floors and non-plenum ceilings. It's lightweight, hand bendable and free from sharp edges, which reduces installation time and saves money.

- Ideal storage conditions down to -20 °C (See [page 73](#) for technical information.)

Options

- Sizes ½ in. through 2 in.
- Colours can designate different voltages
- Yellow colour for communication circuits and signaling cable
- Red colour for fire alarm circuits
- Blue colour for power circuits

Standard stock – Reels



| Cat. no. | Size (in.) | Colour | Nom. I.D. (in.) | Nom. O.D. (in.) | Pull tape | Min. bend radius | Reel type (W=Wood) | Reel length (ft.) | Reel wt. (lb) | Wt. per 100 ft. (lb) |
|-------------|------------|--------|-----------------|-----------------|-----------|------------------|--------------------|-------------------|---------------|----------------------|
| 1205AKC-001 | ½ | Blue | 0.56 | 0.84 | Empty | 36 x 24 | W | 1,500 | 40 | 10 |
| 1207AAC-001 | ¾ | Blue | 0.76 | 1.05 | Empty | 36 x 24 | W | 1,000 | 40 | 14 |
| 12008C-750 | 1 | Blue | 1.00 | 1.315 | Empty | 36 x 24 | W | 750 | 40 | 20 |
| 12009C-750 | 1¼ | Blue | 1.402 | 1.66 | Empty | 48 x 32 | W | 750 | 90 | 19 |
| 12009C-500 | 1¼ | Blue | 1.402 | 1.66 | Empty | 48 x 32 | W | 500 | 90 | 19 |
| 12010C-750 | 1½ | Blue | 1.554 | 1.90 | Empty | 48 x 32 | W | 750 | 90 | 39 |
| 12011C-500 | 2 | Blue | 2.030 | 2.375 | Empty | 48 x 32 | W | 500 | 90 | 32 |
| 12011C-225 | 2 | Blue | 2.030 | 2.375 | Empty | 48 x 32 | W | 225 | 90 | 32 |

1¼ in. – 2 in. available in yellow and red, made to order; contact your regional sales office.

Standard stock – Coils

| Cat. no. | Size (in.) | Colour | Nom. I.D. (in.) | Nom. O.D. (in.) | Pull Tape | Min. bend radius | Coil length (ft.) | Wt. per 100 ft. (lb) |
|-------------|------------|--------|-----------------|-----------------|-----------|------------------|-------------------|----------------------|
| 12005C-200 | ½ | Blue | 0.56 | 0.84 | Empty | 6 | 200 | 10 |
| 12005C-370 | ½ | Blue | 0.56 | 0.84 | Empty | 6 | 370 | 10 |
| 12007C-100 | ¾ | Blue | 0.76 | 1.05 | Empty | 6 | 100 | 14 |
| 12007C-240 | ¾ | Blue | 0.76 | 1.05 | Empty | 6 | 240 | 14 |
| 12008C-160 | 1 | Blue | 1.00 | 1.315 | Empty | 6 | 160 | 22 |
| 12009C-500C | 1¼ | Blue | 1.402 | 1.66 | Empty | 7 | 500 | 19 |
| 12010C-300C | 1½ | Blue | 1.554 | 1.90 | Empty | 8¼ | 300 | 39 |
| 12011C-225C | 2 | Blue | 2.030 | 2.375 | Empty | 9½ | 225 | 32 |

NOTE: The solid blue colour of ENT conduit is a registered trademark of Carlon.

ENT may show colour deterioration in direct sunlight when stored outdoors over an extended period of time. It is suggested that all ENT products not be stored outside.

ENT stub-downs

Vertical stub-down

Carlton vertical stub-downs are designed to provide a quick, easy connection to a wood deck or transition from slab-to-slab using Carlton's "quick connect" snap-in design... simply snap the ENT in place. The integral snaps provide a secure mount – preventing the ENT from pulling out while maintaining the ability for easy removal of the fitting once the deck is removed. All in a concrete-tight application. The underside of this fitting provides ample room to attach a Carlton coupling to the ENT to continue the run. Carlton vertical stub-downs are manufactured out of a highly engineered thermoplastic material to provide extra strength and durability and are available in sizes ½ in., ¾ in. and 1 in.

| | Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|--|----------|------------|----------------|--------------------|
|  | A210D | ½ | 50 | 3.8 |
| | A210E | ¾ | 50 | 3.7 |
| | A210F | 1 | 50 | 4.8 |

45° Stub-down

Carlton 45° stub-downs are designed to allow a smooth transition from cross deck ENT runs to vertical applications. The integral snaps provide a secure mount – preventing the ENT from slipping or pulling out – but also allow the stub to easily be removed. The underside of this fitting provides ample room to attach a Carlton coupling to the ENT to continue the run. Carlton 45° stub-downs are manufactured out of a highly engineered thermoplastic material to provide extra strength and durability. They're concrete-tight and available in sizes ½ in., ¾ in. and 1 in.

| | Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|----------------|--------------------|
|  | A220D | ½ | 25 | 1.8 |
| | A220E | ¾ | 25 | 2.0 |
| | A220F | 1 | 25 | 2.6 |
| | A220G | 1¼ | 25 | 2.8 |
| | A220H | 1½ | 25 | 3.3 |
| | A220J | 2 | 25 | 4.1 |

Vertical stub-down transition adapter

Carlton nonmetallic exclusive... Carlton vertical stub-down transition adapters like our vertical stub-downs, provide a means to transition from ENT to another wire management product where code requires other wire management means. The integral snaps provide a secure mount – preventing the ENT from slipping or pulling out, while the deck mount flange has a threaded port allowing connection to other conduit system using terminal adapter. Carlton vertical stub-down transition adapters are manufactured out of polycarbonate material to provide extra strength and durability. They're concrete-tight and available in sizes ½ in., ¾ in. and 1 in.

| | Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|----------------|--------------------|
|  | A200D | ½ | 50 | 3.8 |
| | A200E | ¾ | 50 | 3.7 |
| | A200F | 1 | 50 | 4.8 |

90° Stub-down transition adapter

Carlton nonmetallic exclusive... Carlton 90° stub-downs are designed to allow a smooth transition from cross deck ENT runs to vertical applications where code requires other wire management means. The integral snaps provide a secure mount – preventing the ENT from slipping or pulling out, while the deck mount flange has a threaded port allowing connection to any conduit system using a terminal adapter. Carlton 90° stub-downs are manufactured out of polycarbonate material to provide extra strength and durability. They're concrete-tight and available in sizes ½ in., ¾ in. and 1 in.

| | Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|--|----------------------------------|------------|----------------|--------------------|
|  | Female ENT to Female NPSC | | | |
| | A230D | ½ | 25 | 2.0 |
| | A230E | ¾ | 25 | 2.4 |
| | A230F | 1 | 25 | 3.3 |



ENT accessories

Transition adapters



Male ENT to Schedule 40 PVC conduit

Carlson exclusive...Carlson male ENT to Schedule 40 PVC conduit transition adapters are designed to connect Schedule 40 conduit to Carlson Flex-Plus Blue ENT boxes and fittings. Simply solvent cement the PVC adapter to the Schedule 40 conduit

and snap the adapter into the Carlson’s “quick connect” snap-in connector on the box or fitting. Carlson male ENT to Schedule 40 adapters are concrete-tight and available in sizes ½ in., ¾ in. and 1 in.



| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|--------------------|----------------|--------------------|
| A263D | ½ ENT to ½ Sch. 40 | 100 | 2.4 |
| A263E | ¾ ENT to ¾ Sch. 40 | 100 | 3.2 |
| A263F | 1 ENT to 1 Sch. 40 | 100 | 4.5 |



ENT to EMT

Carlson ENT to EMT transition adapters are designed to easily transition from Carlson Flex-Plus Blue ENT to EMT using Carlson’s “quick connect” snap-in design. The EMT is held securely in place using the small screw provided. This helps prevent

the EMT from slipping/shifting out of the adapter. All ENT to EMT adapters are manufactured out of polycarbonate material to provide extra strength and durability. They’re concrete-tight and available in sizes ½ in., ¾ in. and 1 in.



| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|----------------|----------------|--------------------|
| A245D | ½ ENT to ½ EMT | 100 | 3.4 |
| A245E | ¾ ENT to ¾ EMT | 100 | 4.1 |
| A245F | 1 ENT to 1 EMT | 100 | 5.4 |



Reducer

Carlson exclusive...Carlson ENT reducers are designed to provide an easy transition from 1 in. Carlson ENT to ¾ in. ENT or from ¾ in. Carlson ENT to ½ in. ENT. They’re concrete-tight and manufactured out of polycarbonate material to provide extra

strength and durability. Carlson ENT reducers provide flexibility while on the jobsite by minimizing the need to carry size-specific boxes and fittings. Carlson ENT reducers provide the versatility to convert Carlson fittings and boxes to many different sizes and configurations.



| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|------------|----------------|--------------------|
| A273DE | ¾ to ½ | 100 | 3.2 |
| A273EF | 1 to ¾ | 100 | 2.4 |

ENT accessories

Quick connect adapters and couplings

- Carlon one-piece ENT quick connect couplings, threaded adapters and snap-in terminator adapters are suitable for damp locations. Quick connect couplings and threaded adapters are concrete-tight when used with Carlon ENT.
- All sizes of rigid nonmetallic conduit fittings are compatible with ENT when using ENT cement.
- Rigid nonmetallic conduit fittings are recommended for use with Carlon 1¼ in. – 2 in. Flex-Plus Blue ENT.
- Use of ENT Blue quick-set cement is required. See [page 79](#) for details.
- When one-piece quick connect snap-in terminator adapters are installed in a concrete application, Carlon's flat sealing washers must be used on the box connection ends.

Couplings

| | Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|--|----------|------------|----------------|--------------------|
|  | A240D | ½ | 150 | 2.90 |
| | A240E | ¾ | 100 | 3.00 |
| | A240F | 1 | 50 | 2.30 |

Threaded adapters

| | Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|----------------|--------------------|
|  | A243DC | ½ | 150 | 2.55 |
| | A243EC | ¾ | 100 | 2.30 |
| | A243FC | 1 | 50 | 2.00 |

| | Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|---|----------|------------|----------------|--------------------|
|  | A253D | ½ | 150 | 2.70 |
| | A253E | ¾ | 100 | 2.90 |
| | A253F | 1 | 50 | 2.30 |

ENT accessories

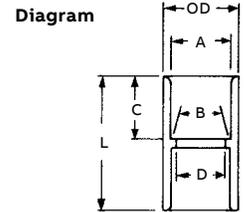
Rigid nonmetallic conduit adapters and couplings

All socket fittings should be attached using Carlon solvent cement. Using Carlon fittings with Carlon nonmetallic conduit ensures system integrity. Socket type for joining nonmetallic conduit.

Standard couplings



| Cat. no. | Size (in.) | Std. ctn. qty. | Typical (in.) | | Min. D (in.) | Max. O.D. (in.) | Typical (in.) | | Std. ctn. wt. (lb) |
|-------------|------------|----------------|---------------|-------|--------------|---------------------------------|--------------------------------|-------------------------------|--------------------|
| | | | A | B | | | C | L | |
| CE940DR-CTN | ½ | 150 | 0.852 | 0.836 | 0.728 | 1 ⁷ / ₆₄ | 1 ¹ / ₁₆ | 1½ | 4.1 |
| CE940ER-CTN | ¾ | 100 | 1.064 | 1.046 | 0.840 | 1 ⁵ / ₁₆ | ¾ | 1 ⁵ / ₈ | 4.4 |
| CE940F-UPC | 1 | 50 | 1.330 | 1.310 | 1.210 | 1 ⁵ / ₈ | 1 ⁵ / ₁₆ | 2 | 3.5 |
| E940G | 1¼ | 30 | 1.677 | 1.655 | 1.535 | 1 ⁶³ / ₆₄ | 1 | 2 ³ / ₈ | 3.5 |
| E940H | 1½ | 25 | 1.918 | 1.894 | 1.755 | 2 ¹⁵ / ₆₄ | 1 ¹ / ₈ | 2 ³ / ₈ | 3.9 |
| E940J | 2 | 30 | 2.393 | 2.369 | 2.190 | 2 ⁴⁷ / ₆₄ | 1 ³ / ₁₆ | 2½ | 5.3 |

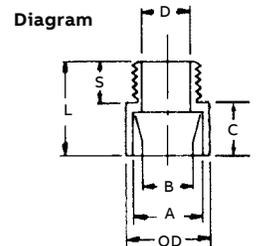


For adapting nonmetallic conduit to boxes threaded fittings, metallic systems. Male threads on one end, socket end on other.

Male terminal adapter



| Cat. no. | Size (in.) | Std. ctn. qty. | Typical (in.) | | Min. D (in.) | Max. O.D. (in.) | C | Typical (in.) | | Std. ctn. wt. (lb) |
|----------|------------|----------------|---------------|-------|--------------|---------------------------------|--------------------------------|--------------------------------|---------------------------------|--------------------|
| | | | A | B | | | | S | L | |
| E943D | ½ | 150 | 0.852 | 0.836 | 0.597 | 1 ¹ / ₈ | ¾ | 9 ¹ / ₁₆ | 1 ⁷ / ₁₆ | 2.8 |
| E943E | ¾ | 100 | 1.064 | 1.046 | 0.800 | 1 ¹¹ / ₃₂ | ¾ | 9 ¹ / ₁₆ | 1 ³ / ₈ | 3.5 |
| E943F | 1 | 50 | 1.330 | 1.310 | 1.018 | 1 ¹ / ₈ | 1 | 1 ¹ / ₁₆ | 1 ²⁵ / ₃₂ | 3 |
| E943G | 1¼ | 30 | 1.677 | 1.655 | 1.332 | 2 ¹ / ₃₂ | 1 | ¾ | 1 ¹⁵ / ₁₆ | 4 |
| E943H | 1½ | 25 | 1.918 | 1.894 | 1.566 | 2 ⁵ / ₃₂ | 1 ³ / ₁₆ | ¾ | 2 ¹ / ₁₆ | 2.5 |
| E943J | 2 | 30 | 2.393 | 2.369 | 2.000 | 2 ²¹ / ₃₂ | 1 ³ / ₁₆ | ¾ | 2½ | 7 |



Mud box assemblies

Cement caps included

Carlton mud box assemblies are available in five unique styles... blank, ceiling ring, one-gang, two-gang and 4-inch square. All mud box assemblies are manufactured out of polycarbonate material to provide extra strength and durability, are

concrete-tight and have 12 integral connectors... two 1 in., six ¾ in. and four ½ in. Using our ENT reducers (see [page 67](#)), this product will meet any jobsite application.



Mud box with ceiling ring

- Threaded brass inserts for fan (#10-32 screws) and fixture (#8-32 screws) mountings
- Listed for fixture support up to 50 lb
- Listed for ceiling fans up to 35 lb



| Cat. no. | Description | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|--|----------------|--------------------|
| A863CFG | Mud box with ceiling ring and ground lug | 24 | 16.1 |



Mud box with one-gang ring



| Cat. no. | Description | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|---|----------------|--------------------|
| A863SG | Mud box with one-gang ring and ground lug | 24 | 16.2 |

Mud box assemblies



Mud box with two-gang ring

| Cat. no. | Description | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|---|----------------|--------------------|
| A863DG | Mud box with two-gang ring and ground lug | 24 | 16.6 |

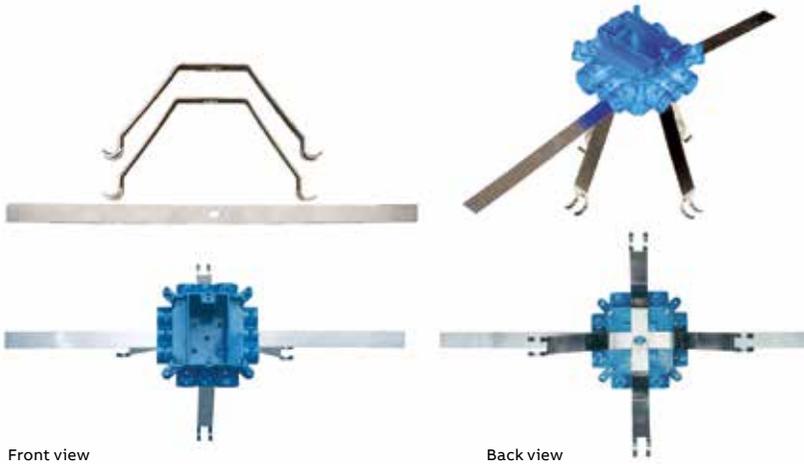


Mud box assemblies with mounting feet

Carlson mud box assemblies with mounting feet are specifically engineered and designed for use in tunnel form applications. The mounting feet are located on all four corners and allow the box to attach directly to the wall of the form using pop rivets. The pop rivets help keep the box in position during the pour and provide a safe, secure and rust-resistant mount.

| Cat. no. | Description | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|-----------------------------|----------------|--------------------|
| A863CFGF | Ceiling ring and ground lug | 24 | 17.46 |
| A863DGF | Double gang and ground lug | 24 | 17.99 |
| A863SGF | Single gang and ground lug | 24 | 17.44 |

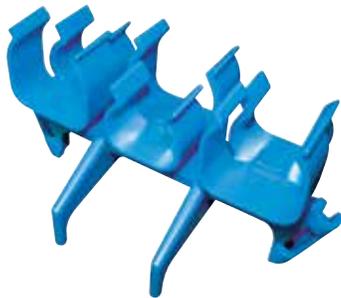
Mounting brackets and ENT bridge



Mounting brackets

Carlton exclusive...the Carlton ENT mounting bracket is specifically designed for use with Carlton ENT mud box assemblies in vertical concrete walls where one- or two-gang boxes are needed. The stainless steel spring-loaded mechanism provides a secure outlet box between concrete forms while the soft steel strap allows for the outlet box to be secured to rebar. The bracket combination assures a straight box opening and a concrete-tight fit. Mud box not included.

| Cat. no. | Description | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|----------------------|----------------|--------------------|
| A863MB | Mud box mounting kit | 1 | 0.98 |



ENT bridge

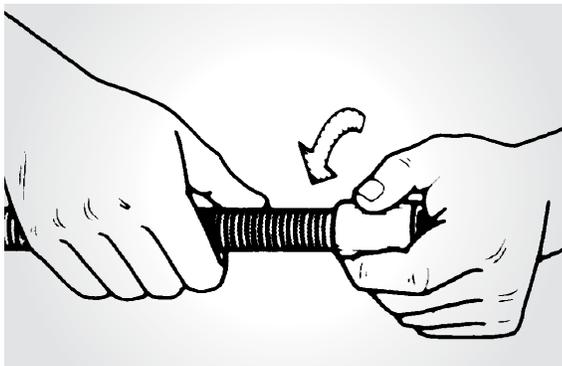
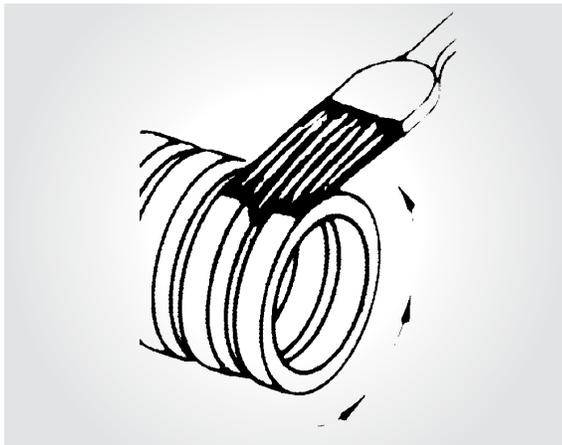
Carlton exclusive...The Carlton ENT bridge is designed to support long ENT runs in concrete pour applications. This makes pulling wire/cable a snap. Installation is easy. Simply mount the ENT bridge, using nails or screws, to the wood deck mounting and snap the ENT into place. The bridge is designed to hold the conduit in place while minimizing dips in the conduit over long runs. The Carlton ENT bridge is manufactured out of a highly engineered thermoplastic material to provide extra strength and durability and can accommodate ENT sizes ½ in., ¾ in. and 1 in. (The Carlton ENT bridge can be used with rigid nonmetallic conduit too.)

| Cat. no. | Description | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|-------------|----------------|--------------------|
| A293DEF | ENT bridge | 50 | 9.0 |

ENT technical information

Concrete encasement guidelines

1. Cut ENT square and cleanly.
2. Insert end into fitting, making sure two (2) full corrugations are snapped into fitting beyond flexible tabs (2 clicks).
3. ENT should be tied to rebar at 2–3 foot intervals to prevent flotation. Keep ENT straight. Small deflections over a long run may accumulate significant degrees of bend, which will affect conductor installation. Suitable materials include wire, cable ties and tape.
4. When using rigid nonmetallic conduit fittings for concrete-tight performance:
 - A. Do not use chemical primer or cleaner.
 - B. Apply a light, uniform coat of cement labeled for use with ENT on the coupling and ENT.
 - C. Do not use a dauber.
 - D. Brush excess cement out of ENT grooves.
 - E. Promptly insert ENT into fitting while cement is wet, until the stop is reached, and give a quarter turn.
 - F. Do not disturb until joint is set.



Features

- ENT rated for 75 °C Canada (90 °C conductors US and 75 °C Canada)
- Recognized for use with PVC rigid nonmetallic conduit fittings with all sizes of ENT
- One-piece ENT coupling, threaded terminator and RNC transition fitting are rated concrete-tight without tape
- Recognized for use in 2-hour fire resistive nonload bearing and load bearing wall assemblies
- Recognized for use in 1-hour fire resistive nonload bearing wall assemblies
- Recognized for use in a fire resistive ceiling assembly (up to 3 hours)
- Conductors easily push through the raceway (up to approximately 50 feet)
- For use in buildings in accordance with CEC Section 12-1500
- Outside diameters meet IPS dimensions
- Storage: -20 °C to 70 °C
- Handling: -20 °C to 40 °C

Typical applications

- Residential: Low or high rise – multi or single family
- Commercial: Low or high rise – office, retail, hotel/motel, restaurant, etc.
- Schools, classrooms, dormitories, offices
- Fire alarm systems
- Recreational vehicles and parks
- Solar photovoltaic systems
- Marinas and boatyards
- Other uses per the current CEC

Low voltage brackets and kits

Low voltage kit



The Carlon low voltage adjustable floor bracket is specifically designed for the low voltage, structured cabling market. The floor box is industry-standard orange to identify low voltage applications, the open design provides the space needed for low voltage bend radius requirements and the Leviton QuickPort® Quad 106® insert provides up to four low voltage outlets ports. The Carlon low voltage adjustable floor bracket is ideal for any residential or commercial low voltage application.

The floor bracket also features a patented screw design allowing it to be adjusted to most finished floor heights by simply turning the screw clockwise or counterclockwise and adjusting flush to the floor.

The floor bracket kit comes complete with a nonmetallic (white or ivory) or brass cover, a Leviton QuickPort Quad 106 insert, new work and old work metal mounting brackets and mounting screws.

- White, ivory or brass cover
- Orange – identifies low voltage installations
- Open design floor bracket – accommodates low voltage bend radius requirements
- Bracket adjusts to most finished floor depths
- Leviton QuickPort Quad 106 Insert – install up to 4 low voltage inserts
- Two-door design

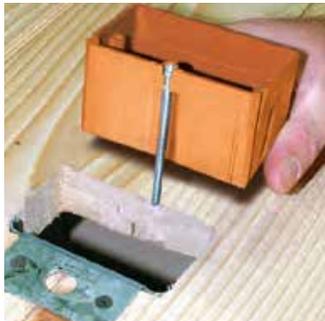
| Cat. no. | Cover | Std. ctn. qty. | Std. ctn. wt. (lb) |
|-----------|---------------------|----------------|--------------------|
| SC100FBWC | Nonmetallic – white | 8 | 5.62 |
| SC100FBVC | Nonmetallic – ivory | 8 | 5.62 |
| SC100FBBC | Brass | 8 | 13.78 |

Installation

01 Install clip over subfloor.

02 Screw in to adjust to height of flooring or carpet.

03 Beautiful flush fit every time.



01



02



03

Low voltage brackets

One-gang and two-gang – Low voltage

| Cat. no. | Description | Size W x H (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|-----------|--------------------------------------|---|----------------|--------------------|
| SC100ADJC | One-gang adjustable backless bracket | 3 ⁷ / ₈ x 3 ³ / ₄ | 24 | 7.5 |
| SC200ADJC | Two-gang adjustable Backless bracket | 5 ⁵ / ₈ x 3 ³ / ₄ | 20 | 6.9 |



Old work backless brackets – One-gang

| Cat. no. | Description | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|--|---|----------------|--------------------|
| SC100RR | One-gang backless old work bracket with swing clamps | 2 ¹ / ₄ x 3 ³ / ₄ | 12 | 1.4 |



One-gang

| Cat. no. | Description | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|-----------|--|-----------------------------------|----------------|--------------------|
| B100R-CRD | One-gang backless old work bracket with swing clamps | 2 ¹ / ₄ x 3 | 12 | 1.4 |



Two-gang

| Cat. no. | Description | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|--|-------------|----------------|--------------------|
| SC200RR | Two-gang backless old work bracket with swing clamps | 3.92 x 4.00 | 6 | 0.9 |



Low voltage backless bracket

Open-backed to easily accommodate the bend radiuses required for low voltage cabling and deep devices such as volume controls and is designed to fit a standard one-gang faceplate. It also features an easy nail-on mounting or screw-in bracket, while the hard shell provides increased durability and no racking. Resi-Rings accept ³/₄ in., 1 in. and 1¹/₄ in. Resi-Gard.

| Cat. no. | Description | Size W x H (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|-----------------------------|------------------|----------------|--------------------|
| SC100A | One-gang backless bracket | 2.32 x 3.73 | 24 | 7.5 |
| SC200A | Two-gang backless bracket | 5.35 x 3.81 | 24 | 7.7 |
| SC300A | Three-gang backless bracket | 8.69 x 7.20 | 5 | 1.6 |



Low voltage add-on bracket

This low voltage bracket provides a low voltage outlet next to a previously installed high voltage outlet. Great for both new construction and rework, it attaches easily to most electrical boxes and is designed to fit a standard two-gang faceplate. Resi-Rings accept ³/₄ in. Resi-Gard only

| Cat. no. | Description | Size W x L (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|-------------------------|------------------|----------------|--------------------|
| SC100SC | One-gang add-on bracket | 1.80 x 3.68 | 24 | 2.3 |



3-Gang recessed plate

The Carlon RDV 3-gang old work plate, cat. no. CSC300PR, has been developed to simplify today's in-home entertainment/networking needs. The box is designed to accommodate the wires, cables and cords used with flat panel display installations.

It features a two-gang low voltage opening and a one-gang opening complete with device box (devices and plates not included).

The high-gloss, recessed design eliminates unsightly wires, cables and cords and blends with any décor. The RDV old work plate makes installing flat panel displays faster and easier.



3-Gang recessed plate

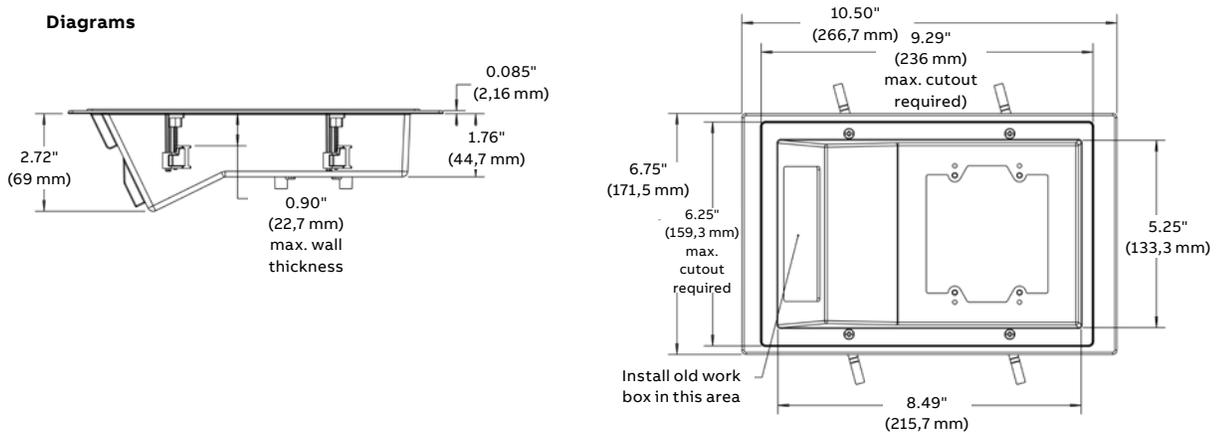
Features

- 3-Gang dual service capability: Accommodates (1) high and (2) low voltage services using one plate (boxes, devices and plates not included)
- Recessed low profile design: Eliminates unsightly wires and plug heads
- Universal 1-gang outlet / switch opening: Including the box you need
- Pre-assembled box and frame: Reduces labor time and saves money
- Shallow design: Provides ample room behind the dry wall and between the studs and accommodates cable bend requirements
- 4 Swing-out clamps: Locks the plate securely to the wall – horizontal or vertical mount
- Superior high-gloss, paintable finish: Professional appearance, blends with any décor
- Nonmetallic, ABS material: Lightweight and easy to handle

Specifications

| Cat. no. | Description | Std. carton qty. | Std. carton wt. (lb) |
|----------|---|------------------|----------------------|
| CSC300PR | RDV 3-gang old work plate with outlet box | 6 | 4.84 |

Diagrams



Installed



Top view showing ample room between drywall and studs.

Cements



Medium – Clear

| Recommended pipe application and sizes | Set-up time (evaporation rate) | Recommended installation temp. | Lap shear @ 23 °C | Viscosity at 24 °C as manufactured (cps) |
|---|---|--------------------------------|--|--|
| Recommended for all grades and types of Carlon PVC conduit, duct, wireway and fittings, except Flex-Plus Blue ENT (electrical nonmetallic tubing.) Up through 6 in. diameter. | Under -12 °C: not recommended -1 to 10 °C: 5–6 minutes 10 to 21 °C: 3–4 minutes 21 to 32 °C: 1–2 minutes | 5 °C to 37.7 °C | 2 hrs. 350 psi 16 hrs. 800 psi 72 hrs. 1,500 psi | 500–900 |

| Cat. no. | Size (ml) | Applicator | Description | Ctn. qty. | Ctn. wt. (lb) |
|----------|-----------|------------|------------------|-----------|---------------|
| VC9963C | 473 | Dauber | PVC medium clear | 24 | 29.0 |



Regular – Clear

| Recommended pipe application and sizes | Set-up time (evaporation rate) | Recommended installation temp. | Lap shear @ 23 °C | Viscosity at 24 °C as manufactured (cps) |
|---|---|--------------------------------|--|--|
| Recommended for all grades and types of Carlon PVC conduit, duct, wireway and fittings, except Flex-Plus Blue ENT (electrical nonmetallic tubing.) Up through 6 in. diameter. | Under -12 °C: not recommended -1 to 10 °C: 5–6 minutes 10 to 21 °C: 3–4 minutes 21 to 32 °C: 1–2 minutes | 5 °C to 37.7 °C | 2 hrs. 350 psi 16 hrs. 800 psi 72 hrs. 1,500 psi | 500–900 |

| Cat. no. | Size (ml) | Applicator | Description | Ctn. qty. | Ctn. wt. (lb) |
|----------|-----------|------------|-------------------|-----------|---------------|
| VC9965C | 118 | Dauber | PVC regular clear | 24 | 8.4 |

Cements



All weather – “Quick-set” cement

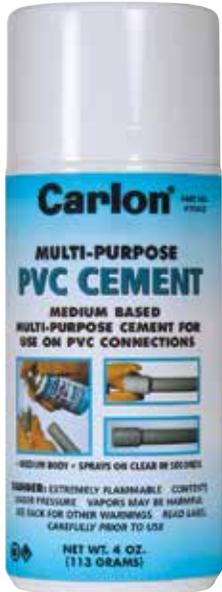
| Recommended pipe application and sizes | Set-up time (evaporation rate) | Recommended installation temperature | Lap shear @ 23 °C | Viscosity at 24 °C as manufactured (cps) |
|--|--------------------------------|--------------------------------------|--|--|
| Recommended for all grades and types of Carlon PVC conduit, duct, wireway and fittings, except Flex-Plus Blue ENT (electrical nonmetallic tubing.) Up through 6 in. diameter. | -20 to -12 °C: 6–8 minutes | -20 °C to 37.7 °C | 2 hrs. 350 psi 16 hrs. 800 psi 72 hrs. 1,500 psi | 400–700 |
| | -12 to -1 °C: 4–5 minutes | | | |
| | -1 to 10 °C: 3–4 minutes | | | |
| | 10 to 21 °C: 1–2 minutes | | | |
| | 21 to 32 °C: ½–1½ minutes | | | |

| Cat. no. | Size (ml) | Applicator | Ctn. qty. | Ctn. wt. (lb) |
|----------|-----------|------------|-----------|---------------|
| VC9983C | 473 | Dauber | 24 | 30.0 |
| VC9985C | 118 | Dauber | 24 | 7.5 |

Meets ASTM D-2564

Primers

Multi-purpose spray-on PVC cement



No waste • sprays on in seconds • fast setting

- Equivalent to a medium-bodied low-VOC, quick setting clear cement
- No more spills
- Reuse can until empty
- Installation: 10 °C to 26 °C
Storage: 1 °C to 48 °C
- Meets ASTM D-2564
- 3-year shelf life
- One 120 ml can is equivalent to 120 ml of non-aerosol PVC cement*

*Equivalence is subject to usage and will vary

Applications

- For use with up to 4 in. dia. Schedule 40 PVC electrical conduit.
- For use with PVC raceways only. Not recommended for use on water, sewer, natural gas, compressed gas or air connections.

| Temperature range | Recommended set time | | |
|-------------------|-------------------------------|-------------------------------|-------------------------------|
| | Pipe sizes ½ in. to 1¼ in. | Pipe sizes 1½ in. to 2 in. | Pipe sizes 2½ in. to 4 in. |
| 15 to 37.7 °C | 2 min. | 5 min. | 30 min. |
| 4 to 15 °C | 5 min. | 10 min. | 2 hrs. |
| -17 to 4 °C | 10 min. | 15 min. | 12 hrs. |

Recommended set time may vary depending on humidity

| Cat. no. | Size (ml) | Ctn. qty. | Ctn. wt. (lb) |
|----------|-----------|-----------|---------------|
| VC9AC5C | 120 | 12 | 5.6 |

Sealers

Multi-purpose Weather-Gard™ spray-on rubber film



No waste • sprays on in seconds • fast setting

- Weatherproof
- Forms a protective weatherproof seal on electrical connections
- Dries in minutes to crystal-clear rubber film
- Prevents corrosion on electrical connections
- Recommended installation temperatures 10 to 26 °C
- Can be used on wood and plastic
- 2-year shelf life

Applications

- Electrical connections
- Outdoor lighting
- Panel boxes
- Pool motors and timers
- Water valves and connections
- Sprinkler connections and control box
- Marine applications

| Cat. no. | Size (ml) | Ctn. qty. | Ctn. wt. (lb) |
|----------|-----------|-----------|---------------|
| VC9WG5C | 120 | 12 | 5.6 |

Multi-purpose spray-on rubber thread gasket



No waste • sprays on in seconds • fast setting

- Dries to rubber gasket to seal pipe threads
- Seals out leaks
- Protects against rust and corrosion
- UV resistant
- Weatherproof
- 2-year shelf life

Applications

- PVC
- Copper
- Iron
- Brass

| Cat. no. | Size (ml) | Ctn. qty. | Ctn. wt. (lb) |
|----------|-----------|-----------|---------------|
| VC9TS5C | 120 | 12 | 5.6 |

Installation instructions

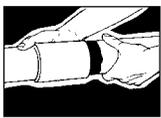
Cement joints



Carlton nonmetallic products are joined by means of solvent cement joints. Sizes ½ in. through 1½ in. should be cut square (using a fine tooth handsaw) and deburred.



For sizes 2 in. through 6 in. a miter box or similar saw guide should be utilized to keep the material steady. After cutting and deburring, wipe ends clean of dust, dirt and shavings.



Joining process as follows: Be sure that conduit end is clean and dry. Apply coat of Carlton solvent cement (use dauber) to end of conduit, the length of the socket to be attached. Push conduit firmly into fitting while rotating conduit slightly about one-quarter turn to spread cement evenly. Allow joint to set approximately 10 minutes.

Carlton recommends the use of Carlton cement for proper solvent cement joints. Since this cement is prepared particularly for our product compounds and tolerances, we cannot guarantee joints assembled with cement materials supplied by other manufacturers. Regular-grade grey solvent cement will accommodate most application situations, being of a general purpose nature. In situations requiring an extremely fast-setting joint (low temperature or difficult installation conditions), Carlton all weather quick-set cement is recommended. Standard-grade clear cement is recommended for non-critical utility applications where gap filling and leak testing are not required.

Average number of joints per can

| Trade size (in.) | 237 ml | 473 ml | 946 ml | 3.78 L | 120 ml | 480 ml |
|------------------|--------|--------|--------|--------|--------|--------|
| ½ | 140 | 275 | 550 | 2,200 | 70 | 275 |
| ¾ | 90 | 180 | 360 | 1,440 | 45 | 180 |
| 1 | 70 | 140 | 280 | 1,120 | 35 | 140 |
| 1¼ | 50 | 100 | 200 | 800 | 25 | 100 |
| 1½ | 37 | 75 | 150 | 600 | 18.5 | 75 |
| 2 | 20 | 40 | 80 | 320 | 10 | 40 |
| 2½ | 17 | 35 | 70 | 280 | 8.5 | 35 |
| 3 | 15 | 30 | 60 | 240 | 7.5 | 30 |
| 3½ | 13 | 27 | 54 | 216 | 6.5 | 27 |
| 4 | 12 | 25 | 50 | 200 | 6 | 25 |
| 5 | 9 | 19 | 38 | 150 | N/A | N/A |
| 6 | 6 | 12 | 24 | 95 | N/A | N/A |

Can: Average shelf-life of all Carlton cement is 24 months (unopened cans stored below 26° C.)

Spray: Average shelf-life of all Carlton spray PVC cement is 3 years.

All Carlton cements are specially formulated to be used with Carlton PVC products, and do not require primers when parts are clean of dirt and moisture.



Cementing PVC conduit

1. Make square saw cut with fine tooth saw.
2. Deburr and round inside edge of the cut end.
3. Clean socket ID and spigot OD of dirt and moisture.
4. Apply a uniform coat of cement to spigot end and push onto socket bottom, rotating ¼ turn.
5. Allow time to set before disturbing. This will depend upon temperature.

Cementing PVC conduit for submerged areas requiring air or water tightness

1. Follow the procedure outlined above for cementing conduit.
2. Test workmanship by conducting a low pressure air (3.0–5.0 psi) test after system is installed and cemented joints are set.
3. Plug and block ends to prevent movement prior to pressurization.
4. Check for leaks with soap solution.
5. Even low pressure air can cause high thrust loads, and caution must be observed.

Cementing ENT for concrete-tight applications

1. Use Carlton socket tight fittings or couplings.
2. Do not use chemical primer or cleaner.
3. Apply a light uniform coat of cement, labeled for use with ENT.
4. A brush shall be used to apply the cement.
5. Brush excess cement out of ENT grooves.
6. Promptly insert ENT into fitting while cement is wet, until the fitting stop is reached, and give ¼ turn.
7. Do not disturb until the joint is set.

Conduit cutters



Kwikcut cutter

For fast, smooth field cuts of ½ in. through 1 in. innerduct.

| Cat. no. | Length (in.) | Std. ctn. qty. |
|----------|--------------|----------------|
| CC120B | 8 | 10 |



Medium cutter

Hand-held cutter makes fast, square, smooth field cuts on innerduct sizes ½ in. through 1¼ in.

| Cat. no. | Length (in.) | Std. ctn. qty. |
|----------|--------------|----------------|
| CC125 | 9 | 1 |



Large cutter

For clean cuts of innerduct sizes ½ in. through 2 in.

| Cat. no. | Length (in.) | Std. ctn. qty. |
|----------|--------------|----------------|
| CC122 | 17½ | 1 |

EZ BEND conduit bending equipment

01 For field bending of small and large diameter nonmetallic conduit, the easy answer is Carlon EZ BEND conduit bending equipment.



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01



EZ BEND Conduit Bender, Jr.

A practical, convenient, portable conduit bender for ½ in. through 2 in. diameter nonmetallic conduit allows bends up to 14 in. radius and to 90° elbows. The EZ BEND Conduit Bender, Jr. is a time-saving, easy-to-carry unit featuring a bracket to store the power cord, a carrying handle and a clasped cover. The unit operates on a standard 20 amp, 120 V circuit.

- Dimensions: 7½ in. x 8½ in. x 31 in.
- Operating temperature: 82 °C to 93 °C

Carlon's EZ BEND conduit bending equipment is designed with the electrical contractor in mind. The completely portable and fully encased EZ BEND benders and plug kits can be transported from job to job without damage or harm to the equipment. Additionally, the heavy-duty construction and integrity of Carlon's EZ BEND conduit bending equipment ensures that it will last for years to come.

- Lightweight
- Fast, simple and safe
- Includes complete instructions and a convenient bending chart
- Portable
- Less expensive than factory bends

| Cat. no. | Std. ctn. qty. | Std. ctn. wt. (lb) |
|----------|----------------|--------------------|
| G280J | 1 | 10 |

EZ BEND is a registered trademark of Bradshaw Manufacturing, Inc.

EZ BEND conduit bending equipment

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02 Minimum practice is required to master the three steps in bending nonmetallic conduit and ducts.



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02

Field bending rigid nonmetallic conduit

1. Heating

Conduit section to be bent must be heated evenly over the entire length of the curve. Carlon offers EZ BEND electric heaters designed specifically for the purpose, in sizes to accommodate all conduit diameters. These devices employ infrared heat energy, which is most quickly absorbed by the conduit. Small sizes are ready to bend after a few seconds, while larger diameters require two or three minutes, or more depending on conditions. The use of torches or other flame-type devices is not recommended. PVC conduit exposed to excessively high temperatures may take on a brownish colour. Sections showing evidence of such scorching should be discarded.

2. Forming the bend

$\frac{1}{2}$ in. through 1½ in. diameters – When properly heated the conduit is very flexible and can be shaped to almost any configuration. The conduit is then cooled by sponging with water, and the bend is ready to install.

2 in. and larger diameters – Larger sizes of conduit and ducts require internal support to prevent “crimping” or deforming during the bending process. Bending plugs are inserted in each end of the conduit section before heating. The plugs expand to provide an airtight seal. (Note: Carlon does not offer bending plugs.)

3. Cooling

As the conduit is heated, the retained air expands, and the increased internal pressure allows the conduit to be bent without deforming. The conduit must be cooled before the plugs are removed. For an immediate cool and set, sponge with cold water.

Special bends

For “blind” bends or for compound turns in a conduit run, the heated conduit may be solvent cemented in place while still flexible.

PV-Mold

Nonmetallic pole riser system



RUS accepted



Carlson PV-Mold is a non-metallic pole riser system designed to protect communications or power cable installed on poles.

Features

- Meets or exceeds requirements outlined in the National Electric Safety Code (NESC)
- Designed in accordance with NEMA TC-19 specifications
- Ultraviolet, cold temperature and corrosive atmosphere resistant
- No grounding required
- Belled end fits over each added section or conduit
- Requires no maintenance
- PV-Mold acts as an insulator against electrical shock
- Interchangeable parts and accessories to match the needs of specific requirements

01 Slots are 1/2 in. from side to side to allow for expansion and contraction. Slot dimensions for sizes 2 in. through 6 in. are 3/16 in. wide, 3/4 in. long. Slot dimensions for 1 in. and 1 1/2 in. are 1/8 in. wide, 3/4 in. long. Slot spacing: 18 in. from center, beginning 6 in. from end.

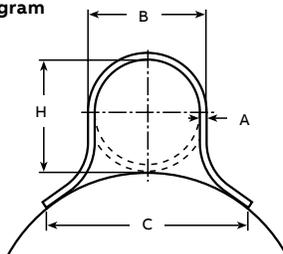


01

| Size (in.) | Depth of bell (in.) |
|------------|---------------------|
| 1 | 2-2 1/4 |
| 1 1/2 | 2-2 1/4 |
| 2 | 2-2 1/4 |
| 3 | 3-2 1/4 |
| 4 | 4-2 1/4 |
| 5 | 4-2 1/4 |
| 6 | 5 - 2 1/4 |

| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) | Dimensions (in.) | | | | Actual impact @ 0 °C 20 lb tup |
|----------------------|------------|----------------|--------------------|------------------|-------|-------|-------|-----------------------------------|
| | | | | A | B | C | H | |
| Standard duty | | | | | | | | |
| 59208N | 1 | 294 | 1,059 | 0.100 | 1 5/8 | 2 3/8 | 1 5/8 | 40 ft.-lb |
| 59211N | 2 | 136 | 726 | 0.100 | 2 3/8 | 4 1/2 | 2 3/8 | 100 ft.-lb |
| 59213N | 3 | 66 | 761 | 0.150 | 3 1/2 | 6 | 3 1/2 | 110 ft.-lb |
| 59215N | 4 | 65 | 910 | 0.150 | 4 1/2 | 6 1/2 | 4 1/2 | 110 ft.-lb |
| 59216N | 5 | 30 | 515 | 0.150 | 5 1/2 | 7 1/2 | 5 1/2 | 110 ft.-lb |

Diagram



Flanged overall length 10 feet, including bell

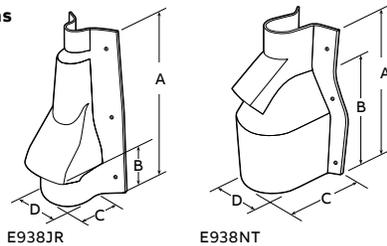
| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) | Dimensions (in.) | | | | Actual impact @ 0 °C 20 lb tup |
|-------------------------------|------------|----------------|--------------------|------------------|----------|-------|----------|-----------------------------------|
| | | | | A | B | C | H | |
| Heavy duty schedule 40 | | | | | | | | |
| 59010N | 1 1/2 | 200 | 1,142 | 0.145 | 1 2 9/32 | 3 1/2 | 1 2 9/32 | 100 ft.-lb |
| 59011N | 2 | 136 | 1,214 | 0.154 | 2 3/8 | 4 1/2 | 2 3/8 | 150 ft.-lb |
| 59013N | 3 | 66 | 934 | 0.216 | 3 1/2 | 6 | 3 9/32 | 150 ft.-lb |
| 59015N | 4 | 65 | 1,621 | 0.237 | 4 1/2 | 6 1/2 | 4 1/2 | 260 ft.-lb |
| 59016N | 5 | 30 | 870 | 0.258 | 5 1/2 | 7 1/2 | 5 1/2 | 260 ft.-lb |
| 59017N | 6 | 30 | 1,160 | 0.280 | 6 5/8 | 8 3/4 | 6 5/8 | 260 ft.-lb |

PV-Mold

Polyethylene vented boots and adapters

| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) | Dimensions (in.) | | | |
|---------------------|------------|----------------|--------------------|------------------|-------|-------|------|
| | | | | A | B | C | D |
| Vented boots | | | | | | | |
| E938JR | 2 x 6 | 4 | 13.5 | 20.50 | 4.80 | 6.13 | 6.20 |
| E938NT | 4 x 8 | 4 | 21.0 | 21.00 | 15.00 | 11.34 | 9.76 |

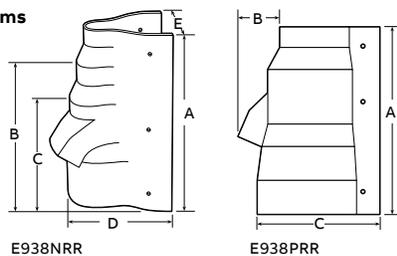
Diagrams



1. A field cut may be needed to accommodate different boot or adapter to Carlon U-Mold size combinations.
2. Recommendation: 2 sets of mounting holes per boot/ fitting. To add mounting holes, use a 3/8 in. drill bit and drill out where needed.
3. When 3 in. or smaller conduit is being used, it's recommended that the bottom (largest section) of the boot or adapter section be buried 2 in. to 3 in. below ground surface.

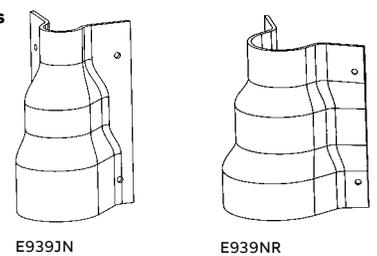
| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) | Dimensions (in.) | | | | |
|---------------------|------------|----------------|--------------------|------------------|-------|-------|-------|-------|
| | | | | A | B | C | D | E |
| Vented boots | | | | | | | | |
| E938NRR | 4 x 6 | 6 | 26.4 | 20.87 | 16.57 | 12.87 | 11.68 | 11.43 |
| E938PRR | 5 x 6 | 6 | 23.2 | 16.74 | 3.65 | 10.84 | 11.43 | - |

Diagrams



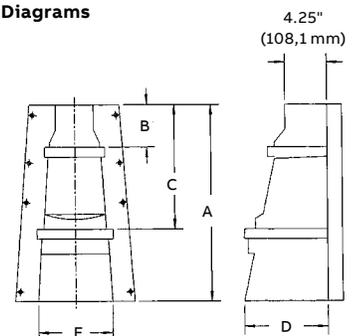
| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) | Dimensions (in.) | | | |
|-----------------|------------|----------------|--------------------|------------------|------|------|------|
| | | | | A | B | C | D |
| Adapters | | | | | | | |
| E939JN | 2 x 4 | 8 | 10.0 | 11.00 | 6.75 | 5.88 | 5.07 |
| E939NR | 4 x 6 | 6 | 11.7 | 11.00 | 6.75 | 7.08 | 7.13 |

Diagrams



| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) | Dimensions (in.) | | | | |
|-----------------|------------|----------------|--------------------|------------------|------|-------|------|------|
| | | | | A | B | C | D | E |
| Adapters | | | | | | | | |
| E939NRT | 4 x 6 | 3 | 14.0 | 19.75 | 4.25 | 12.50 | 8.50 | 7.40 |

Diagrams



| Cat. no. | Size (in.) | Std. ctn. qty. | Std. ctn. wt. (lb) |
|------------------------------|------------|----------------|--------------------|
| Duct to riser fitting | | | |
| E939NL | 4 x 3 | 15 | 5.6 |
| E939N | 4 x 4 | 15 | 5.3 |

PV-Mold

Installation instructions

Installation is easy with PV-Mold pole risers

1. Install ventilator or duct to riser fittings at the base of the pole.
2. Nail backing plate sections to the surface of the pole. Three nail holes are provided in each section. Place the "U" sections over the cable and backing plate, with belled end at the bottom and attach using $\frac{1}{4}$ in. lag bolts.

Field installation instructions for Carlon PV-Mold adapters

For adapters E939JN, E939NR, E939NRT

E939JN

To transition from 4 in. conduit to 2 in. PV-Mold, place adapter over conduit, attach to pole using the top and bottom mounting holes, place PV-Mold over top section of adapter and secure PV-Mold to pole.

To transition from 4 in. conduit to 3 in. PV-Mold, measure 6.3 in. up from bottom (large end) of adapter and cut. Assemble to pole as described above.

To transition from 3 in. conduit to 2 in. PV-Mold*, measure 4.75 in. up from bottom (large end) of adapter and cut. Assemble to pole as described above.

E939NR

To transition from 5 in. conduit to 4 in. PV-Mold, place adapter over conduit, attach to pole using the top and bottom mounting holes, place PV-Mold over top section of adapter and secure PV-Mold to pole.

To transition from 6 in. conduit to 5 in. PV-Mold, measure 7.25 in. up from bottom (large end) of adapter and cut. Assemble to pole as described above.

To transition from 5 in. conduit to 5 in. PV-Mold*, measure 4.5 in. down from the top of adapter and cut. Assemble to pole as described above.

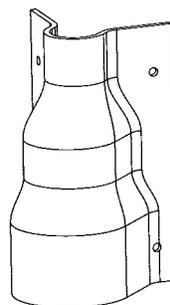
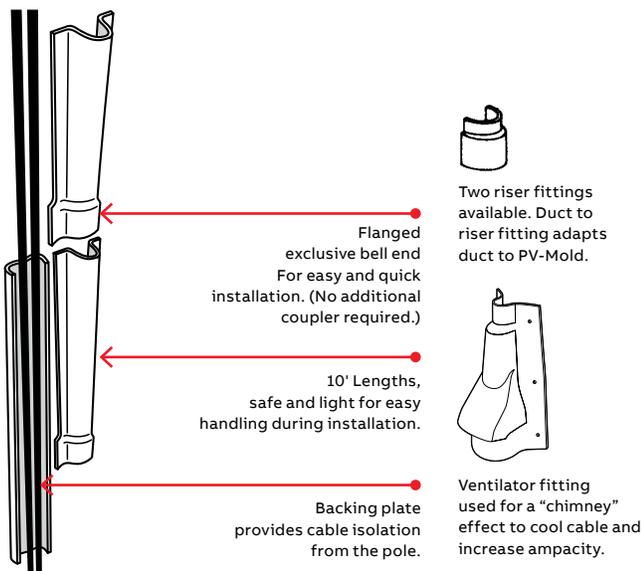
*For these transitions, it is not necessary to cut the adapter. If the adapter is not modified, it is recommended that the bottom 3 in. of the adapter be buried below grade.

E939NRT

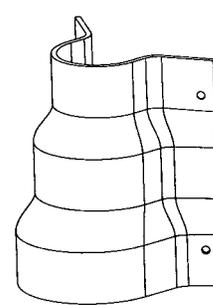
To transition from 6 in. conduit to 4 in. PV-Mold, place adapter over conduit and attach to pole using the top and bottom mounting holes, place PV-Mold over top section of adapter and secure PV-Mold to pole.

To transition from 6 in. conduit to 5 in. PV-Mold, measure 5.25 in. down from the top of the adapter and cut. Assemble to pole as described above.

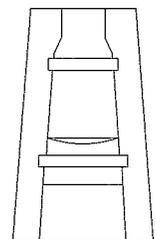
To transition from 6 in. conduit to 6 in. PV-Mold, measure 9.5 in. up from the bottom of the adapter and cut. Assemble to pole as described above.



E939JN



E939NR



E939NRT

PV-Mold

Installation instructions

Field installation instructions for Carlon PV-Mold vented boots

For vented boots E938JR, E938NT, E938NRR, E938PRR

E938JR

To transition from 5 in. or smaller conduit to 2 in. PV-Mold, place vented boot over conduit, attach to pole using the top and bottom mounting holes, place PV-Mold over top section of vented boot and secure PV-Mold to pole.

To transition from 5 in. or smaller conduit to 3 in. and larger PV-Mold:

- For 3 in. PV-Mold: Measure 3.75 in. from the top of the boot and cut. Place the boot over the conduit and attach to the pole. Place belled end of PV-Mold over the top end of the boot and secure.
- For 4 in. and 5 in. PV-Mold: Measure 12 in. up from the bottom of the boot and cut. Place the boot over the conduit and attach to the pole. Place the belled end of the PV-Mold against the top edge of the vent protrusion and secure to the pole.

E938NT

To transition from 6 in. to 8 in. conduit to 4 in. PV-Mold, place boot over conduit and attach to the pole using the mounting holes.

Place PV-Mold over top section of vented boot and secure to the pole.

It is recommended that for conduit sizes smaller than 8 in., the bottom 3 in. of the boot be buried below grade. The E938NT can also be used to transition multiple smaller conduit to PV-Mold.

E938NRR

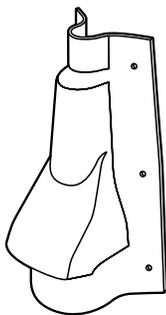
To transition from 6 in. or smaller conduit to 4 in. PV-Mold, place vented boot over conduit and attach to pole using the top and bottom mounting holes. Place PV-Mold over top section of vented boot and secure PV-Mold to pole.

To transition from 6 in. or smaller conduit to 5 in. PV-Mold, measure 4.125 in. down from the top of the vented boot and cut. Assemble to pole as described above.

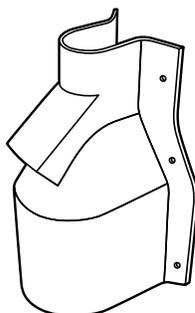
To transition from 6 in. or smaller conduit to 6 in. PV-Mold, measure 8.25 in. down from the top of the vented boot and cut. Assemble to pole as described above.

E938PRR

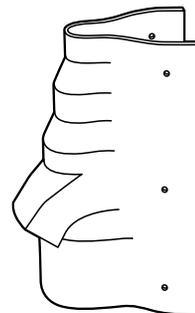
To transition from 6 in. or smaller conduit to 5 in. PV-Mold, assemble to pole as described above.



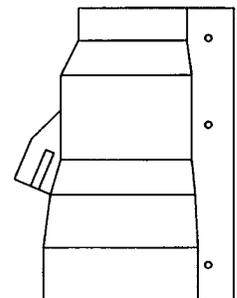
E938JR



E938NT



E938NRR



E938PRR

