

1 System Data Sheet

ProPress Fitting Systems



Viega ProPress may only be pressed onto copper tube in accordance with ASTM B88 or B75. When pressing onto B88 copper tube, types K, L, and M may be used. Tempers O60 and O50, known as “soft copper”, are limited to nominal sizes ½" to 1¼". Temper H58, known as “hard copper”, may be used with nominal sizes ½" to 4".



When pressing onto B75 copper tube, additional considerations apply. See [Viega ProPress Copper Tube Compatibility Tech Data](#).

ProPress fittings are available in elbows, couplings, reducers, tees, reducing tees, threaded adapters, unions, caps, and flanges.

Components

- Alloy: Copper alloy - UNS C12200, Zero Lead silicon bronze alloy - C87710 (cast) or C87700 (machined)
- Peroxidically cured EPDM sealing element
- 420 stainless steel grip ring for 2½" to 4" fittings
- PBT separator ring for 2½" to 4" fittings

Operating Parameters

- Operating Pressure: 300 psi maximum
- Test Pressure: 600 psi maximum
- Operating Temperature: 0°F to 250°F

Listings and Certificates

- | | |
|-----------------|------------------------------------|
| ■ NSF/ANSI 61 | ■ ABS |
| ■ NSF/ANSI 372 | ■ CSA Low Lead Content |
| ■ IAPMO PS 117 | ■ ASME B16.51, B31.1, B31.3, B31.9 |
| ■ UL/ANSI 213 | ■ NFPA 13, 13D, 13R |
| ■ FM Class 1920 | |
| ■ ICC-ES IC1002 | |

Compliant With

- ASME B31
- ASTM B75
- ASTM B88
- IAPMO National Standard Plumbing Code (NSPC)
- IAPMO Uniform Mechanical Code (UMC)
- IAPMO Uniform Plumbing Code (UPC)
- ICC International Mechanical Code (IMC)
- ICC International Plumbing Code (IPC)
- ICC International Residential Code (IRC)
- NFPA 13, 13D, and 13R

Contact your local Viega representative for details on local approvals.

Approved Applications

- Hot and cold potable water
- Rainwater/gray water
- Fire sprinkler (175 psi maximum)
- Chilled water
- Hydronic heating (with glycol)
- Low pressure steam (15 psi maximum) with FKM sealing element swap
- Residential steam (5 psi maximum)
- Ethanol
- Compressed Air
- Non-medical gases
- Vacuum (29.2" Hg maximum @ 68°F)

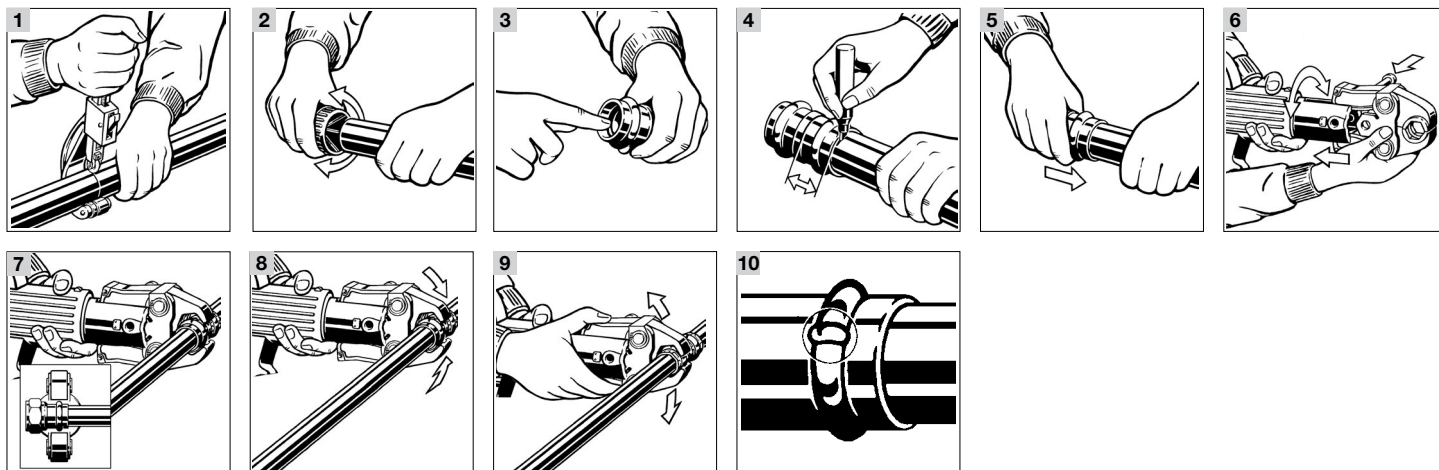
ProPress fittings are approved for installations in both above and below ground applications. Per code, local inspector approval must be obtained prior to installation below ground.

Smart Connect® Technology

ProPress fittings are manufactured with Viega’s unique Smart Connect technology. A design of the fitting, Viega Smart Connect technology allows identification of an unpressed fitting during pressure testing.

2 Product Instructions

ProPress ½" to 2" Fittings



Viega ProPress ½" to 2" Fittings For Hard Copper Tubing in ½" to 2" and Soft Copper Tubing in ½" to 1¼".

- 1 Cut the tube square using a displacement-type cutter or fine toothed saw.

Note: Cut tubing a minimum of 4" away from the contact area of the vise to prevent possible damage to the tubing in the press area.

- 2 Deburr inside and outside of the tube to the proper insertion depths to prevent cutting sealing element.
- 3 Check the sealing element for correct fit. Do not use oils or lubricants. Use only Viega sealing elements.

i For applications requiring Viega ProPress with FKM or HNBR sealing elements, remove the factory-installed EPDM sealing element and replace with an FKM or HNBR sealing element. See [Changing Sealing Elements Product Instructions](#).

- 4 Mark the proper insertion depth as indicated by the ProPress Insertion Depth Chart. Improper insertion depth may result in an improper seal.

ProPress Insertion Depth Chart	
Tube Size (in)	Insertion Depth (in)
½	¾
¾	7/8
1	7/8
1¼	1
1½	1 1/16
2	1 9/16

i Copper tubing must be free of surface imperfections, including metal stamped print lines, before a ProPress fitting is installed.

- 5 While turning slightly, slide press fitting onto tubing to the marked depth. End of tubing must contact stop.
- 6 Insert appropriate Viega ProPress jaw into the press tool and push in, holding pin until it locks in place.
- 7 Open the jaw and place at right angle on the fitting. Visually check insertion depth using mark on tubing.

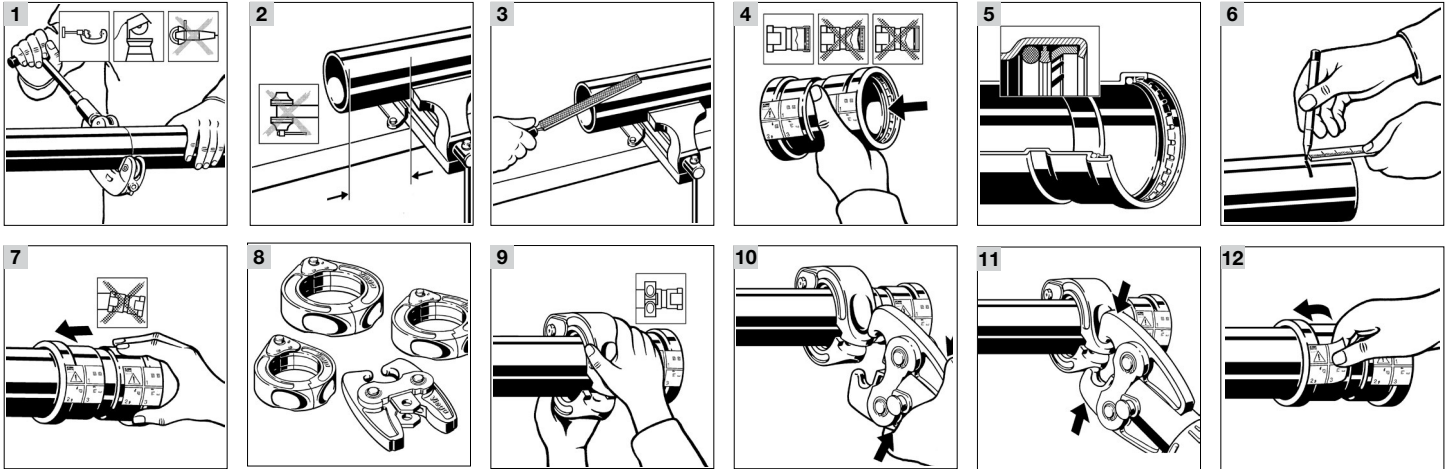
Warning!
Keep extremities and foreign objects away from press tool during pressing operation to prevent injury or incomplete press.

- 8 Hold trigger on press tool until press jaws have fully engaged the fitting. Jaws will automatically release after a full press is made.
- 9 After pressing, open the jaw and remove the press tool.
- 10 Pressure testing with Smart Connect®: Unpressed connections are located by pressurizing the system with air or water. When testing with water the proper pressure range is 15 psi to 85 psi. When testing with compressed air the proper pressure range is ½ psi to 45 psi maximum. If testing with compressed air, use an approved leak-detect solution. Following a successful pressure test, the system may be pressure tested up to 200 psi with air or up to 600 psi with water.

i Testing for unpressed connections using Smart Connect is not a replacement for pressure testing requirements of local codes and standards.

Product Instructions

ProPress 2½" to 4" Fittings



Viega ProPress 2½" to 4" Fittings For Hard Copper Tubing.

- 1 Cut copper tubing at right angles using displacement-type cutter or fine-toothed steel saw.
- 2 Keep end of tubing a minimum of 4" away from the contact area of the vise to prevent possible damage to the tubing in the press area.
- 3 Remove burr from inside and outside of tubing to prevent cutting sealing element.
- 4 Check seal and grip ring for correct fit. Ensure sealing element is free of cuts and damage. Do not use oils or lubricants.

i For applications requiring Viega ProPress with FKM or HNBR sealing elements, remove the factory-installed EPDM sealing element and replace with an FKM or HNBR sealing element. See [Changing Sealing Elements Product Instructions](#).

- 5 Illustration demonstrates proper fit of grip ring, separation ring and sealing element.

- 6 Mark proper insertion depth as indicated by the ProPress Insertion Depth Chart. Improper insertion depth may result in an improper seal.

ProPress Insertion Depth Chart	
Tube Size (in)	Insertion Depth (in)
2½	1 11/16
3	1 15/16
4	2 3/8

- 7 While turning slightly, slide press fitting onto tubing to the marked depth. End of tubing must contact stop.
- 8 ProPress 2½" to 4" fitting connections must be performed with rings that are compatible with fittings. Do not mix actuators and rings from different manufacturers. Use of ProPress XL rings and/or actuator (for bronze fittings) will result in an improper connection. See Operator's Manual for proper tool instructions.



CAUTION!

Use only rings that are compatible with ProPress 2½" to 4" fittings.

- Use of incompatible rings will result in an improper connection.
- Do not mix actuators and rings from different manufacturers.
- Do not use rings intended for 2½" to 4" Bronze fittings.

- 9 Open XL-C ring and place at right angles on the fitting. XL-C ring must be engaged on the fitting bead. Check insertion depth.
- 10 With V2 actuator inserted into the tool, open the V2 actuator as shown and connect V2 actuator to the XL-C ring.
- 11 Place V2 actuator onto XL-C ring and start pressing process. Hold the trigger until the actuator has engaged the XL-C ring. Keep extremities and foreign objects away from XL-C ring and V2 actuator during pressing operation to prevent injury or incomplete press.
- 12 Release V2 actuator from XL-C ring and then remove the XL-C ring from the fitting on completion of press. Remove tag from fitting, indicating press has been performed.

Pressure Testing with Smart Connect®

Unpressed connections are located by pressurizing the system with air or water. When testing with water the proper pressure range is 15 psi to 85 psi. When testing with compressed air the proper pressure range is ½ psi to 45 psi maximum. If testing with compressed air, use an approved leak-detect solution. Following a successful pressure test, the system may be pressure tested up to 200 psi with air or up to 600 psi with water.



Testing for unpressed connections using Smart Connect is not a replacement for pressure testing requirements of local codes and standards.

3 Engineering Specifications

ProPress Fitting System

Part 1: General

1.1 Summary

Copper tubing and fitting system for hot and cold water distribution systems, sprinkler and standpipe systems, and hydronic piping systems.

1.2 Definitions

ASME: American Society of Mechanical Engineers
 ASTM: American Society for Testing and Materials
 AWWA: American Water Works Association
 EPDM: Ethylene Propylene Diene Monomer
 FM: Factory Mutual
 IAPMO: International Association of Plumbing & Mechanical Officials
 ICC: International Code Council
 MSS: Manufacturers Standardization Society
 NFPA: National Fire Protection Association
 NSF: National Sanitation Foundation
 UL: Underwriters Laboratory

1.3 References

ASME A13.1: Scheme for the Identification of Piping Systems
 ASME B1.20.1: Pipe Threads, General Purpose (inch)
 ASME B16.18: Cast Copper Alloy Solder Joint Pressure Fittings
 ASME B16.22: Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings
 ASME B16.26: Cast Copper Alloy Fittings for Flared Copper Tube
 ASME B16.51: Copper and Copper Alloy Press-Connect Pressure Fittings
 ASME B31.9: Building Services Piping
 ASTM B75: Standard Specification for Seamless Copper Tube
 ASTM B88: Standard Specification for Seamless Copper Water Tube
 ASTM B813: Standard Specification for Liquid and Paste Fluxes for Soldering Applications of Copper and Copper Alloy Tube
 ASTM B828: Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings
 AWWA C651: Standard for Disinfecting Water Mains
 IAPMO: Uniform Mechanical Code
 IAPMO: Uniform Plumbing Code
 IAPMO PS-117: Press and Nail Connections
 ICC: International Plumbing Code
 ICC: International Mechanical Code
 MSS-SP-58 Pipe Hangers and Supports Materials, Design and Manufacturer
 NFPA 13 Standard for the Installation of Sprinkler Systems
 NFPA 13D Standard for the Installation of Sprinkler Systems in One/Two Family Dwellings and Mobile Homes
 NFPA 13R Standard for the Installation of Sprinkler Systems for Residential Occupancies up to and including Four Stories in Height
 NFPA 14 Standard for the Installation of Standpipe and Hose Systems
 NFPA 54 National Fuel Gas Code
 NSF/ANSI 61 Drinking Water System Components - Health Effects
 NSF/ANSI 372 Drinking Water System Components - Lead Content

1.4 Quality Assurance

- A. Installer shall be a qualified installer, licensed within the jurisdiction, and familiar with the installation of ProPress copper press joint systems.
- B. ProPress copper press fittings shall be installed using the proper tool, actuator, jaws and rings as instructed by the press fitting manufacturer.
- C. The installation of copper tubing for hot and cold water distribution systems shall conform to the requirements of the ICC International Plumbing Code or IAPMO Uniform Plumbing Code.
- D. The installation of copper tubing in sprinkler or standpipe systems shall conform to NFPA 13, 13D, 13R, and 14.
- E. The installation of copper tubing in hydronic systems shall conform to the requirements of the ICC International Mechanical Code or the IAPMO Uniform Mechanical Code.
- F. ASME Compliance: ASME B31.9 for building services piping valves.

1.5 Delivery, Storage, and Handling

- A. Copper tubing shall be shipped to the job site on truck or in such a manner to protect the tubing. The tubing and fittings shall not be roughly handled during shipment. Tubing and fittings shall be unloaded with reasonable care.
- B. Protect the stored product from moisture and dirt. Elevate above grade. When stored inside, do not exceed the structural capacity of the floor.
- C. Protect fittings and piping specialties from moisture and dirt.

1.6 Project Conditions

Verify length of tubing required by field measurements.

1.7 Warranty

- A. The tubing and fittings manufacturer shall warrant that the tubing and fittings are free from defects and conform to the designated standard. The warranty shall only be applicable to tubing and fittings installed in accordance with the manufacturer's installation instructions.
- B. The manufacturer of the fittings shall not be responsible for the improper use, handling, or installation of the product.

Part 2: Products

2.1 Manufactures

Viega LLC
585 Interlocken Blvd.
Broomfield CO, 80021
Phone: (800) 976-9819
www.viega.us

2.2 Material

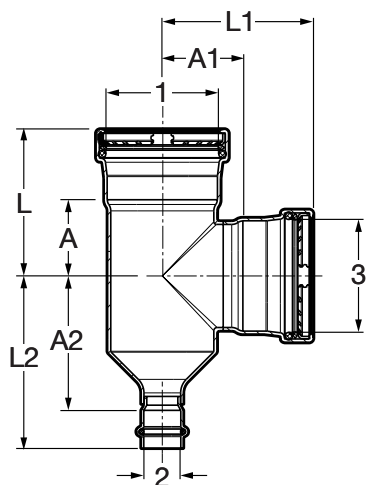
- A. Tubing standard: copper tubing shall conform to ASTM B75 within Viega specifications or ASTM B88.



When pressing onto B75 copper tube, additional considerations apply. See [Viega ProPress Copper Tube Compatibility Tech Data](#).

- B. Fitting standard: copper fittings shall conform to ASME B16.18, ASME B16.22, or ASME B16.26.

Viega ProPress Tee P x P x P - Model 0918XL



Part No.	Size	A (in)	A1 (in)	A2 (in)	L (in)	L1 (in)	L2 (in)
	1 2 3						
20684	2½ x ¾ x 2½	1.83	1.91	3.23	3.52	3.60	4.13
20689	2½ x 1 x 2½	1.83	1.91	3.25	3.52	3.60	4.15
20694	2½ x 1¼ x 2½	1.83	1.91	3.20	3.52	3.60	4.23
20699	2½ x 1½ x 2½	1.83	1.91	3.14	3.52	3.60	4.57
20704	2½ x 2 x ¾	1.04	1.61	1.59	2.74	2.52	3.17
20709	2½ x 2 x 1	1.04	1.77	1.65	2.74	2.67	3.24
22283	2½ x 2 x 1½	1.30	1.78	2.07	2.99	3.20	3.66
22278	2½ x 2 x 2	1.50	1.78	2.25	3.19	3.36	3.83
20714	2½ x 2 x 2½	1.83	1.91	2.41	3.52	3.60	4.00
22303	2½ x 2½ x ½	0.91	1.52	0.91	2.60	2.27	2.60
22298	2½ x 2½ x ¾	0.91	1.58	0.91	2.60	2.48	2.60
22293	2½ x 2½ x 1	1.04	1.77	1.04	2.74	2.68	2.74
22288	2½ x 2½ x 1¼	1.16	1.76	1.16	2.85	2.79	2.85
20803	2½ x 2½ x 1½	1.30	1.78	1.30	2.99	3.21	2.99
20688	2½ x 2½ x 2	1.54	1.75	1.54	3.23	3.34	3.23
20683	2½ x 2½ x 2½	1.83	1.94	1.83	3.52	3.63	3.52
20719	3 x ¾ x 3	2.07	2.15	3.82	4.04	4.11	4.72
20724	3 x 1 x 3	2.07	2.15	3.96	4.04	4.11	4.86
20729	3 x 1¼ x 3	2.07	2.15	3.83	4.04	4.11	4.86
20727	3 x 1½ x 3	2.07	2.15	3.71	4.04	4.11	5.14
20732	3 x 2 x 2	1.56	2.03	2.33	3.52	3.61	3.92
20734	3 x 2 x 2½	1.85	2.15	2.63	3.82	3.85	4.21
20739	3 x 2 x 3	2.07	2.15	2.84	4.04	4.11	4.43
20744	3 x 2½ x 2	1.56	2.03	2.07	3.52	3.61	3.76
20749	3 x 2½ x 2½	1.85	2.15	2.56	3.82	3.85	4.25
20754	3 x 2½ x 3	2.07	2.15	2.78	4.04	4.11	4.47
20759	3 x 3 x ½	0.93	1.76	0.93	2.89	2.50	2.89
22323	3 x 3 x ¾	0.93	1.80	0.93	2.89	2.71	2.89
22308	3 x 3 x 1	1.06	2.02	1.06	3.03	2.92	3.03
22313	3 x 3 x 1¼	1.18	2.01	1.18	3.15	3.04	3.15
20798	3 x 3 x 1½	1.32	2.03	1.32	3.29	3.45	3.29
20698	3 x 3 x 2	1.56	2.00	1.56	3.52	3.59	3.52
20703	3 x 3 x 2½	1.85	2.15	1.85	3.82	3.85	3.82
20693	3 x 3 x 3	2.07	2.21	2.07	4.04	4.18	4.04
20774	4 x 3 x 2	1.59	2.57	3.33	3.96	4.15	5.22
20784	4 x 3 x 3	2.11	2.66	3.84	4.47	4.63	5.81
20788	4 x 4" x ½	1.08	2.24	1.08	3.45	2.99	3.45
20793	4 x 4 x ¾	1.08	2.32	1.08	3.45	3.22	3.45
20794	4 x 4 x 1	1.36	2.52	1.36	3.72	3.42	3.72
20795	4 x 4 x 1¼	1.36	2.50	1.36	3.72	3.54	3.72
20808	4 x 4 x 1½	1.36	2.52	1.36	3.72	3.95	3.72
20713	4 x 4 x 2	1.59	2.53	1.59	3.96	4.11	3.96
20718	4 x 4 x 2½	1.89	2.65	1.89	4.25	4.35	4.25
20723	4 x 4 x 3	2.11	2.69	2.11	4.47	4.65	4.47
20708	4 x 4 x 4	2.60	2.72	2.60	4.96	5.09	4.96