

Engineering Specifications

Viega MegaPress®G Fuel Oil Piping and Storage Tanks



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Viega products are designed to be installed by licensed and trained plumbing and mechanical professionals who are familiar with Viega products and their installation. **Installation by non-professionals may void Viega LLC's warranty.**

Part 1: General

1.1 Summary

MegaPressG is a cold press mechanical joint fitting system made for use with ASTM A53 and A106 carbon steel pipe in fuel oil piping, bulk fuel oil storage and the distribution of fuel oil.

1.2 Definitions

ABS: American Bureau of Shipping Type Approval
 ANSI: American National Standards Institute
 ASME: American Society of Mechanical Engineers
 ASTM: American Society for Testing and Materials
 AST: Aboveground Storage Tank
 BV: Bureau Veritas
 CRN: Canadian Registration Number
 CSA: Canadian Standards Association
 DNV GL: Det Norske Veritas Germanischer Lloyd
 HNBR: Hydrogenated Nitrile Butadiene Rubber
 IAPMO: International Association of Plumbing and Mechanical Officials
 IAPMO: National Standard Plumbing Code (NSPC)
 IAPMO: Uniform Mechanical Code (UMC)
 IAPMO: Uniform Plumbing Code (UPC)
 ICC: International Plumbing Code (IPC)
 ICC: International Mechanical Code (IMC)
 ICC International Fuel Gas Code (IFGC)
 LR: Lloyd's Register
 MSS: Manufacturers Standardization Society
 NFPA: National Fire Protection Association
 NPCC: National Plumbing Code of Canada

UL: Underwriters Laboratory
 UST: Underground Storage Tank

1.3 References

ABS: American Bureau of Shipping Type Approval
 ASME B31: Code for Pressure Piping:
 ASME B31.1: Power Piping
 ASME B31.3: Process Piping
 ASME B31.9: Building Service Piping
 BV: Bureau Veritas Type Approval
 Canadian Registration Number (CRN): 23019.5 A/B/C
 CSA: ANSI LC 4a/CSA 6.32a: Press-Connect Metallic Fittings for Use in Fuel Gas Distribution Systems
 CAN/CSA-B149.1: Natural Gas and Propane Installation Code
 DNV GL: Det Norske Veritas Germanischer Lloyd Type Approval
 IAPMO National Standard Plumbing Code (NSPC)
 IAPMO Uniform Mechanical Code (UMC)
 IAPMO Uniform Plumbing Code (UPC)
 ICC International Fuel Gas Code (IFGC)
 ICC International Mechanical Code (IMC)
 ICC International Residential Code (IRC)
 LR: Lloyd's Register Type Approval
 National Building Code of Canada (NBCC)
 National Plumbing Code of Canada (NPCC) ICC-ES: ANSI LC 4a/CSA 6.32a: Press-Connect Metallic Fittings for Use in Fuel Gas Distribution Systems
 NFPA 54/Z223: National Fuel Gas Code
 NFPA 58: Liquefied Petroleum Gas Code
 UL 180: Standard for Combustible Liquid Tank Accessories
 UL 842: Standard for Valves for Flammable and Combustible Liquids

1.4 Quality Assurance

- A. Installer shall be qualified, licensed within the jurisdiction, and familiar with the installation of cold press mechanical joint systems.
- B. MegaPress press fittings shall be installed using the proper tool, actuator, jaws and rings as instructed by the press fitting manufacturer.

1.5 Delivery, Storage And Handling

- A. Carbon steel pipe shall be shipped to the job site in such a manner to protect the pipe. The pipe and fittings shall not be roughly handled during shipment. Pipe 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 pipe required by field measurements.

1.7 Warranty

- A. Viega LLC (Viega) warrants to end users, installers and distribution houses that its Viega metal press products (MegaPress) when properly installed shall be free from failure caused by manufacturing defects. Refer to Viega warranties for specific information.
- B. Viega LLC (Viega) manufacturer of the fittings shall not be responsible for the improper use, handling, or installation of the product.

Part 2: Products

2.1 Manufacturer

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

2.2 Pipe and Fittings

A. Approved Piping:

- Fuel gas applications shall conform to ASTM A53 and A106 Schedule 10 to 40 carbon steel pipe.
- Non-fuel gas application shall conform to ASTM A53, A106, A135, and A795 Schedule 5 to Schedule 40 carbon steel pipe. Schedule 80 pipe may be used but operating pressures are limited to the Viega Approved Applications guide.
- Steel pipe shall conform to ASTM A 53/A 53M, black steel, Schedule 40, Type E or S, Grade B. Pipe schedule (pipe wall thickness) shall conform to the standard referenced dimensions for Schedule 40. Adopted code versions, standards compliance, and local approvals should be considered.



Adopted code version, standards compliance, and local approvals should be considered for selecting pipe schedule and type.

B. Fittings:

- Cold Press Mechanical Joint Fitting shall conform to material requirements of ASTM A420 or ASME B16.3 and performance criteria ANSI LC-4/CSA 6.32.
- Sealing elements for press fittings shall be HNBR. Sealing elements shall be factory installed or an alternative supplied by fitting manufacturer.
- Press ends shall have SC (Smart Connect®) technology design (leakage path). MegaPressG fittings with Smart Connect technology assure leakage of liquids and/or gases from inside the system past the sealing element of an unpressed connection. The function of this feature is to provide the installer quick and easy identification of connections which have not been pressed prior to putting the system into operation.

C. Malleable-Iron Threaded Fittings: ASME B16.3, Class 150, standard pattern.

D. Wrought-Steel Welding Fittings: ASTM A 234/A 234M, for butt and socket welding.

E. Unions: ASME B16.39, Class 150, malleable iron with brass-to-iron seat, ground joint, and threaded ends.

F. Forged-Steel Flanges and Flanged Fittings: ASME B16.5, minimum Class 150.

2.3 Source Quality Control

Fittings shall be listed and approved for their intended application

2.4 Specialty Valves

Shall comply with UL 180 and 842.

2.5 AST and UST

A. Tanks shall be fabricated and tested in accordance with NFPA and UL labeled.

B. INSTALLATION: Per manufacturer's specifications in accordance with NFPA and UL listings.

C. Pressure test and inspect fuel-oil storage tanks, after fabrication and before shipment, according to ASME.

D. Affix standards organization's code stamp.

Part 3: Execution

3.1 Examination

- A. Examine roughing-in for fuel-oil piping system to verify actual locations of piping connections before equipment installation.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 Preparation

- A. Close equipment shutoff valves before turning off fuel oil to premises or piping section.
- B. Comply with NFPA 30 and NFPA 31 requirements for prevention of accidental ignition.

3.3 Piping Installation

- A. Piping shall conform to NFPA 30.
- B. Install metal pipes and tubes, fittings, valves, and flexible connectors at piping connections to AST and UST.
- C. Install system components with pressure rating equal to or greater than system operating pressure.
- D. Install piping free of sags and bends.
- E. Install fittings for changes in direction and branch connections.

3.4 Valve Installation

- A. Install manual fuel-oil shutoff valves on branch connections to fuel-oil appliance.
- B. Install valves in accessible locations.
- C. Protect valves from physical damage.
- D. Install metal tag attached with metal chain indicating fuel-oil piping systems.
- E. Install emergency shutoff valves at dispensers.

3.5 Piping Joint Construction

- A. Ream ends of pipes and tubes and remove burrs.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.

3.6 Hanger And Support Installation

- A. Pipe hanger and support and equipment support materials and installation shall comply with NFPA 30.
- B. Maximum spans shall be in accordance with MSS SP-58.
- C. Install hangers for horizontal steel piping with the following maximum spacing and minimum rod sizes:

3.7 Labeling And Identifying

- A. Equipment Nameplates and Signs: Install engraved plastic-laminate equipment nameplates and signs on or near each service regulator, service meter, and earthquake valve.
- B. Text: In addition to identifying unit, distinguish between multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations.
- C. Coordinate dimensions with depth of bury for fuel-oil piping.
- D. Install detectable warning tape directly above fuel-oil piping, identify as “tracer wire” for future use with plastic-laminate sign.

3.8 Field Quality Control

- A. Contractor to perform tests and inspections as required by NFPA-30.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- C. Fuel-oil piping and equipment will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.