

Engineering Specifications

Viega MegaPress®G Natural Fuel Gas Systems



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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 natural gas applications.

1.2 Definitions

ANSI: American National Standards Institute
ASME: American Society of Mechanical Engineers
ASTM: American Society for Testing and Materials
CSA: Canadian Standards Association
FM: Factory Mutual
HNBR: Hydrogenated Nitrile Butadiene Rubber
IACS: International Association of Classification Societies
IAPMO: International Association of Plumbing and Mechanical Officials
ICC: International Code Council
MSS: Manufacturers Standardization Society
NACE International: National Association of Corrosion Engineers
NFPA: National Fire Protection Association
UL: Underwriters Laboratory

1.3 References

ANSI LC-4/CSA 6.32 Press-connect Metallic Fittings for use in Fuel Gas Distribution Systems
ASME A13.1 Scheme for the Identification of Piping Systems
ASME B1.20.1 Pipe Threads, General Purpose (inch)
ASME B16.3 Malleable Iron Threaded Fittings
ASME B16.9 Factory Made Wrought Steel Butt-welding Fittings
ASME B31.1 Power Piping
ASME B31.3 Process Piping

ASME B31.9 Building Piping Systems
 ASME B36.10 Welded and Seamless Wrought Steel Pipe
 ASTM A135 Specification for Electric-Resistance-Welded Steel Pipe
 ASTM A420 Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low Temperature Service
 ASTM A53 Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless Pipe
 ASTM D2000 Classification System for Rubber Products in Automotive Applications
 ASTM F1476 Performance of Gasketed Mechanical Couplings for Use in Piping Applications
 ASTM F3226 Standard Specification for Metallic Press-Connect Fittings for Piping and Tubing Systems
 IAPMO: Uniform Mechanical Code (UMC)
 IAPMO: Uniform Plumbing Code (UPC)
 ICC: International Plumbing Code (IPC)
 MSS-SP58 Pipe Hangers and Supports Materials, Design and Manufacturer
 NACE RP 0169 Control of External Corrosion on Underground or Submerged Metallic Piping Systems
 NFPA 54 National Fuel Gas Code
 UL 180: Standard for Combustible Liquid Tank Accessories

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. MegaPressG press fittings shall be installed using the proper tool, actuator, jaws and rings as instructed by the press fitting manufacturer.
- C. The installation of carbon steel pipe in natural gas systems shall conform to the requirements of the IAPMO Uniform Plumbing Code or National Fuel Gas Code.
- D. Compliance to ASME B31.9 for building services piping valves.

1.5 Delivery, Storage and Handling

- A. Carbon steel pipe shall be shipped to the jobsite 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 (MegaPressG) 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.
- Carbon steel pipe shall conform to ASTM A53. Pipe schedule (pipe wall thickness) shall conform to the standard referenced dimensions for Schedule 10 or 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. Verify pipe and fittings with applicable codes.

D. Piping and fittings shall comply with ANSI LC-4/CSA 6.32 and the latest edition of NFPA-54.

E. Fittings shall comply to the requirements of ASTM F3226.

2.3 Valves

A. Valves shall conform to the performance criteria ANSI LC-4/CSA 6.32.

B. Metallic Valves, shall comply with ASME B16.33.

2.4 Gas Safety Shut-Off Valves

Gas safety shut-off valves shall be FM and UL listed, with a visual indicator to note the position of the valve whether “OPEN” or “SHUT”

2.5 Pressure Regulators

A. Pressure regulators shall be FM and UL listed for gas service and the gas system pressure rating.

B. Service Pressure Regulators shall comply with ANSI Z21.80.

C. Pressure regulators shall be equipped with an approved elevation compensator.

2.6 Cathodic Protection

Provide a complete electrically isolated, cathodic protection system for entire length of underground gas line, including all components, suitable for temperatures and pressures involved.

Part 3: Execution

3.1 Examination

A. Examine roughing-in for natural-gas 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 natural gas to premises or piping section.
- B. Inspect natural-gas piping according to NFPA 54 Fuel Gas Code to determine that natural-gas utilization devices are turned off in piping section affected.
- C. Comply with NFPA 54 Fuel Gas Code requirements for prevention of accidental ignition.

3.3 Installation

- A. Install piping free from traps and with drain pocket consisting of nipple and cap at low points for inside building and drip pot for underground piping.
- B. Install shut-off valves at connection to each piece of equipment. Provide union of equipment side of individual shut-off valve.
- C. Install gas meter in a well ventilated and accessible location. Gas meter room (3 hr. rated enclosure) with explosion-proof fixtures.

3.4 Outdoor Piping Installation

- A. Comply with NFPA 54 Fuel Gas Code for installation and purging of natural-gas piping.
- B. Install underground, natural-gas piping to comply with NFPA-54 and local codes.
- C. Install fittings for changes in direction and branch connections.

3.5 Piping Installation

- A. Comply with NFPA 54 Fuel Gas Code for installation and purging of natural-gas piping.
- B. Locate valves for easy access.
- C. Install piping free of sags and bends.
- D. Install fittings for changes in direction and branch connections.

3.6 Fire-Barrier Penetrations:

Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with approved fire-stop materials.

3.7 Drips and Sediment Traps:

- A. Install drips at points where condensate may collect, including service-meter outlets. Locate where accessible to permit cleaning and emptying. Do not install where condensate is subject to freezing.
- B. Construct drips and sediment traps using tee fitting with bottom outlet plugged or capped.
- C. Do not use natural-gas piping as grounding electrode.
- D. Install strainer on inlet of each line-pressure regulator and automatic or electrically operated valve.

3.8 Service-Meter Assembly Installation

- A. Install service-meter assemblies above ground.
- B. Install metal shutoff valves upstream from service regulators.
- C. Install strainer on inlet of service-pressure regulator and meter set.
- D. Install service regulators mounted outside with vent outlet horizontal or facing down. Install screen in vent outlet if not integral with service regulator.
- E. Install metal shutoff valves upstream from service meters. Install dielectric fittings downstream from service meters.
- F. Install service meters downstream from pressure regulators.

3.9 Valve Installation

- A. Install manual gas shutoff valve for each gas appliance as required by local codes.
- B. Install underground valves with valve boxes.
- C. Install regulators and overpressure protection devices with maintenance access space adequate for servicing and testing.
- D. Install earthquake valves above ground outside buildings according to local codes.

3.10 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.

3.11 Hanger and Support Installation

- A. Hangers and hanger spacing shall conform to MSS-SP58: Pipe Hangers and Supports Materials, Design and Manufacturer
- B. Install seismic restraints on piping as required by local codes.

3.12 Connections

- A. Connect to utility's gas main according to utility's procedures and requirements.
- B. Install natural-gas piping electrically continuous, and bonded to gas appliance equipment grounding conductor of the circuit powering the appliance according to NFPA 70.
- C. Install piping adjacent to appliances to allow service and maintenance of appliances.
- D. Connect piping to appliances using manual gas shutoff valves and unions. Install union between valve and appliances or equipment as required by local codes.
- E. Sediment Traps: Install tee fitting with capped nipple in bottom to form drip, as close as practical to inlet of each appliance.

3.13 Labeling and Identifying

- A. Comply with requirements of NFPA-54 and ASME A13.1 for piping and valve identification.
- B. Underground piping shall have detectable warning tape directly above gas piping, including under pavements and slabs and protected from corrosion in accordance with NACE RP 0169.

3.14 Painting

- A. Comply with requirements for painting interior and exterior natural-gas piping.
- B. Paint exposed, exterior metal piping, valves, service regulators, service meters and meter bars, earthquake valves, and piping specialties, except components, with factory-applied paint or protective coating.

3.15 Field Quality Control

Tests and Inspections:

- A. Test, inspect, and purge natural gas according to NFPA 54 and authorities having jurisdiction.
- B. Purge all piping after pressure test and all appliances after piping has been purged.
- C. Prepare test and inspection reports.