



**FlowGuard™ CPVC Hot and Cold Water
Distribution Pipe and Fittings**

PART 1 - GENERAL

1.0 PRODUCT DESCRIPTION

Pipe and fittings are extruded/molded from CPVC compounds. The pipe and fitting compounds shall meet cell class 23447 as defined by ASTM D1784. The pipe compound shall meet a 4120-06 material designation as defined by ASTM F441. Both the pipe and the fitting compounds shall be certified by NSF International to the requirements of NSF 14 and NSF 61 for use with potable water.

1.1 PIPE AND FITTINGS

- A.** Copper Tube Size (CTS) pipe and fittings, ½" to 2", shall meet or exceed the requirements of ASTM D2846 or NSF SE 8225.
- B.** Iron Pipe Size (IPS) pipe, 2½" to 12", shall meet or exceed the requirements of ASTM F441.
- C.** Iron Pipe Size (IPS) fittings, 2 ½" to 12", shall meet or exceed the requirements of ASTM 437, ASTM F438 or ASTM F439.
- D.** The CPVC compounds used for pipe shall have a Hydrostatic Design Basis at 73°F [23°C] of 4000 psi [28 MPa], and a Hydrostatic Design Basis at 180°F [82°C] of 1250 psi [8.6 MPa] when evaluated in accordance with Test Method D2837.
- E.** To ensure that a complete system is installed, the CPVC compounds used to manufacture pipe and fittings shall be produced by the same compound manufacturer.
- F.** CPVC Pipes and Fittings manufacturer shall be produced by an ISO certified manufacturer.
- G.** CTS Pipes and Fittings shall be rated at working pressure of 100 PSI at 82°C as defined by ASTM D2846 and NSF SE 8225.
- H.** IPS Pipes shall be rated at working pressures as defined by ASTM F441, varies with scheduled pipe size and temperature.

1.2 SOLVENT CEMENT

All socket type joints shall be assembled employing solvent cements that meet or exceed the requirements of ASTM F493. The standard practice for safe handling of solvent cements shall be in accordance with ASTM F402. Solvent cement shall be listed by NSF International for use with potable water and approved by the pipe and fittings manufacturers.

1.3 BASIC USE

- A.** FlowGuard™ CPVC CTS ½"-2" and IPS SCH40 & SCH80 2-1/2"-12"

Pipe and fittings are intended for use in hot and cold potable water distribution systems in single and multi-family homes, apartments, high-rises, hotel/motels, and commercial installations.

B. Water filled FlowGuard™ CPVC

CTS pipe and fittings (1/2" through 2") tested in general accordance with UL 723/ASTM E 84 (NFPA 255 and UBC 8-1) shall meet the 25/50 flame and smoke requirement and shall be permitted to be installed in return air plenums.

PART 2 – EXECUTION

2.0 SYSTEM DESIGN

- A.** System design shall be in accordance with standard industry practice for water distribution systems and the manufacturers' instructions. The design shall take into consideration such factors as pressure and flow requirements, friction loss, operating temperatures, support spacing, joining methods, and thermal expansion and contraction.
- B.** A Hazen-Williams C Factor of 150 shall be used in all hydraulic calculations.
- C.** The maximum design temperature/pressure rating shall not exceed the temperature/pressure ratings defined in Section 1.1 F and Section 1.1 G of this specification.

2.1 INSTALLATION PROCEDURES

Installation practices such as pipe support spacing, bracing, allowance for thermal expansion/contraction, solvent cementing and handling and storage shall be in accordance with the manufacturer's instructions and this specification.

2.2 TECHNICAL DATA

APPLICABLE STANDARDS

- A. ASTM D1784** Specification for Rigid Poly (Vinyl Chloride)(PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
- B. ASTM D2846** Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot and Cold-Water Distribution Systems
- C. ASTM F437** Specification for Threaded Chlorinated Poly(Vinyl Chloride)(CPVC) Plastic Pipe Fittings, Schedule 80
- D. ASTM F438** Standard Specification for Socket-Type Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40
- E. ASTM F439** Specification for Socket-Type Chlorinated Poly(Vinyl Chloride)(CPVC) Plastic Pipe Fittings, Schedule 80
- F. ASTM F441** Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe, Schedule 40 and 80

G. ASTM F493 Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) CPVC Plastic Pipe and Fittings

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2.4 TESTING

After the system is installed and any solvent cement is cured, the system shall be hydrostatically tested per the manufacturer's installation instructions and the requirements of the applicable plumbing or mechanical code.

3.5 QUALITY ASSURANCE

Installer's Qualifications:

Contractor training Certificates for chlorinated Polyvinyl Chloride (cPVC) Plumbing systems. Plumbing Contractors must submit to the Contracting officer documentation that lists personnel assigned to this project prior to beginning construction who have successfully completed formal FlowGuard™ CPVC plumbing system training conducted by an authorized CPVC manufacturer's representative. The Contractor Training Certificates shall be specific to the manufacturer of the pipe and fittings. Personnel's training certificates must be current and have been updated within the past two (2) years.

3.6 WARRANTY

Consult the manufacturer for specific Warranty information.

*Not intended to be a stand alone specification. The above specification is intended to be added within your company's standard plumbing specifications to specify the use of **Flowguard™ CPVC CTS & IPS pipe and fittings.**

