



**FlowGuard® Bendable**  
Composite Piping

## **PRODUCT SPECIFICATION**

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### **FlowGuard® Bendable Composite Piping**

#### **SCOPE:**

This specification covers the manufacturing requirements for composite CPVC-Al-CPVC Copper Tube Size (CTS) pipe and associated CPVC fittings. Both the pipe and fittings are manufactured in North America and meet or exceed the requirements set forth by the American Society for Testing Materials (ASTM) and ANSI/NSF Standards 14 and 61.

#### **Composite Materials:**

FlowGuard® Bendable composite pipe and associated CPVC plumbing system fittings are manufactured from CPVC compounds produced by Lubrizol. The pipe consists of an inner layer of CPVC, a middle layer of butt-welded aluminum and an outside layer of CPVC. All of the layers are bonded with an adhesive, designed to keep the layers bonded together under conditions specified by ASTM F1281. The fittings meet the requirements of ASTM D2846 for a CPVC potable water plumbing system. Both the pipe and the fitting compounds are certified by NSF International for use with potable water. The NSF Special Engineered Specification (SE listing) for CPVC-Al-CPVC composite layer pipe is NSF SE 7033.

#### **DIMENSIONS AND PROPERTIES:**

Dimensions, tolerances and physical properties meet or exceed the requirements of ASTM D2846, Section 9.3.1 as well as ASTM F1281, Sections 9.3, 9.4, 9.5 and 9.6. The coefficient of linear thermal expansion (CLTE) is  $2.2 \times 10^{-5}$  in./in.°F, which is approximately half of the CLTE of standard CPVC. The minimum bend radius for FlowGuard Bendable is six times the diameter of the pipe.

#### **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 FlowGuard Gold® CPVC fittings manufacturers.

#### **MARKING:**

The marking on the composite pipe and CPVC fittings state the nominal tubing size, the material designation (CPVC-Al-CPVC), the pressure rating and temperature, corporate name or trademark and production code, the trade designation, and the NSF mark for potable water “NSF-pw-SE”.