

SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS

SPECIFICATIONS FOR C-909 ORIENTED POLYVINYL CHLORIDE (PVC) Pressure Pipe, 4-Inch Through 12-Inch January 2008

1. SCOPE

This product specification covers molecularly oriented 4" through 12" diameter Polyvinyl Chloride (PVC) pressure pipe manufactured from starting stock pipe made from class 12454A or 12454B compounds as determined by ASTM Standard DI784. The starting stock materials are then oriented through circumferential expansion to provide a hydrostatic design basis of 7,100 psi. Pipe shall be homogenous throughout. It shall be free from voids, cracks, inclusions and other defects. It shall be as uniform as commercially practical in color, density and other physical properties. Pipe surfaces shall be free from nicks and scratches. Joining surfaces of spigots and joints shall be free from gouges and imperfections that could cause leakage. All pipe furnished shall be in conformance with AWWA Standard C-909-02, or latest revision thereof and meet the ANSI/NSF Standard 61 requirements.

2. GENERAL REQUIREMENTS

- a. Except as noted on the plans or procurement specifications for specific jobs, all C-909 PVC pipe shall be Class 150 having a sustained pressure requirement of 500 psi (ASTM D2241) and a minimum burst pressure of 755 psi (ASTM D1599.)
- b. Dimensions and tolerances for each nominal pipe size shall be in accordance with Section 4.3 Pipe Requirements, Table 1 of AWWA Standard C-909.
- c. Pipe shall be furnished in standard laying lengths of 20 feet (plus or minus one inch) unless otherwise noted. Each pipe shall have an integral bell formed on the pipe end, and be designed to be at least as strong as the pipe wall.

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- d. An elastomeric gasket that “locks” into the integral bell groove shall be installed at the point of manufacture. The gasket shall be in conformance with ASTM F477.
- e. Each length of pipe furnished shall bear identification markings in conformance with Section 6.1.2 Pipe of AWWA Standard C-909.
- f. Pipe shall be bundled in pallets for ease of handling and storage. Pipe bundles units shall be packaged to provide structural support to ensure that the weight of upper units shall not cause deformation to pipe in the lower units.
- g. No pipe bundles shall be accepted which show evidence of ultraviolet radiation “sunburn” on exposed pipe as may be caused from extended unprotected storage conditions.
- h. The manufacturer shall take adequate measures during pipe production to assure compliance with AWWA C-909 by performing quality-control tests and maintaining results of those tests as outlined in Section 5.2 Quality-Control Records of that Standard. Submission of product shall constitute certification of compliance with this standard.
- i. The pipe is intended for use as an underground, direct buy pressure pipe for transport of potable water. The expected life of the pipe is received and accepted by an authorized representative of the San Antonio Water System.
- j. A one-year warranty shall be provided for all materials sold and delivered or use and incorporated into the San Antonio Water System. Such warranty shall take effect on the date that the pipe is received and accepted by an authorized representative of the San Antonio Water System.
- k. User references and a claims history shall be provided for further investigation, prior to rendering a final decision on the acceptance of the product to be furnished.

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3. The San Antonio Water System may, at no cost to the manufacturer, subject random lengths of pipe testing by an independent laboratory for compliance with this specification. Any visible defect of failure to meet the quality standards herein will be grounds for rejecting the entire order.
4. The attached manufacturer product list identifies approved products.

5. REFERENCES

1. **ANSI/AWWA C-909** AWWA Standard for Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe, 4 Inch through 12 Inch for Water Distribution
2. **ASTM D 1598** Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure.
3. **ASTM D 1599** Test Method for Short-Time Hydraulic Failure Pressure of Plastic Pipe, Tubing and Fittings.
4. **ASTM D 1784** Specification for Rigid Polyvinyl Chloride (PVC) Compounds and Chlorinated Polyvinyl Chloride (CPVC) Compounds.
5. **ASTM D 2122** Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings.
6. **ASTM D 2152** Test Method for Degree of Fusion of Extruded Poly Vinyl Chloride (PVC) Pipe and Molded Fittings by Acetone Immersion.
7. **ASTM D 2241** Specification for Polyvinyl Chloride (PVC) Pressure Rated Pipe (SDR Series.)
8. **ASTM D 2412** Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading.

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| 9. ASTM D 2837 | Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading. |
| 10. ASTM D 3139 | Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals. |
| 11. ASTM F 477 | Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals. |
| 12. ANSI/NSF Standard 61 | Drinking Water System Components - Health Effects. |
| 13. PPI TR3 | Policies and Procedures for Developing Recommended Hydrostatic Design Stresses for Thermoplastic Pipe Materials. |

APPROVED MANUFACTURER LIST

JM Eagle

**Revised
March 2004
June 2000**