

DELAWARE MATERIAL SPECIFICATION

PLASTIC PIPE MS 211

1. **SCOPE**

This specification covers the quality of plastic (PVC, PE, ABS) pipe, fittings, and joint materials.

2. **MATERIALS**

a. **Pipe**

The pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions, or other defects. The pipe shall be uniform as commercially practicable in color, opaqueness, density, and other specified physical properties. The dimensions of the pipe shall be measured as prescribed in ASTM D-2122.

Pipe shall conform to the requirements of the applicable specification listed in TABLE 211-1.

b. **Fittings and Joints**

Fittings and joints shall be of a schedule, SDR, pressure class, or pipe stiffness that equals or exceeds that of the plastic pipe. The dimensions of fittings and joints shall be measured in accordance with ASTM D-2122. Joint and fittings shall be compatible with the pipe to which they attach.

Fittings for use with nonpressure systems shall conform to the requirements of the same ASTM designation as the pipe used.

Pressure pipe fittings shall conform to the requirements of the applicable specification listed in TABLE 211-2.

c. **Solvents**

Solvents for solvent welded pipe joints shall conform to the requirements of the applicable specification listed in TABLE 211-3.

d. **Gaskets**

Rubber gaskets for pipe joints shall conform to the requirements of ASTM Specification F-477, Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

3. **PERFORATIONS**

When perforated pipe is specified, the water inlet area shall be at least 1 in 2/ft of pipe length. Round perforation shall not exceed 3/16 inch diameter except where filters, envelopes, or other protection is provided or for organic soils, where a maximum hole diameter of 1/2 inch may be used. Slotted perforations shall not exceed 1/8 inch in width.

TABLE 211-1
PIPE SPECIFICATIONS

Kind of Pipe	ASTM Specification
Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, 120	D 1785
Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)	D 2241
Poly (Vinyl Chloride) (PVC) Plastic Drain Waste, and Vent Pipe and Fittings	D 2665
Joints for IPS PVC Pipe using Solvent Cement	D 2672
Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings	D 2729
3.25-in. Outside Diameter Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	D 2949
Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings	D 3034
Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings	F 679
Smooth-Wall Poly (Vinyl Chloride) (PVC) Plastic Underdrain Systems for Highway, Airport, and Similar Drainage	F 758
Type PS-46 Poly (Vinyl Chloride) (PVC) Plastic Gravity Flow Sewer Pipe and Fittings	F789
Polyethylene (PE) Plastic Pipe and Schedule	D 2104
Polyethylene (PE) Plastic Pipe, (SIDR-PR) Based on Controlled Inside Diameter	D 2239
Polyethylene (PE) Plastic Pipe and Schedules 40 and 80 Based on Outside Diameter	D 2447
Polyethylene (PE) Plastic Pipe, (SIDR-PR) Based on Controlled Outside Diameter	D 3035
Polyethylene (PE) Plastic Pipe, (SIDR-PR) Based on Outside Diameter	F 714
Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe, Schedules 40,80	D 1527
Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe (SDR-PR)	D 2282
Acrylonitrile-Butadiene-Styrene (ABS) Plastic 40 Plastic Drain, Waste and Vent Pipe	D 2661

Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings	D 2751
Kind of Pipe	AWWA Standard

Polyvinyl Chloride (PVC) Pressure Pipe 4-in. through 12-in., for Water	C 900
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Polyvinyl Chloride (PVC) Water Transmission Pipe, Nominal Diameters 14-in. through 36-in.	C 905
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TABLE 211-2
FITTINGS SPECIFICATIONS

Kind of Fitting	ASTM Specification
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Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	D 2464
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Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40	D 2466
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Socket-Type Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	D 2467
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Socket-Type Polyethylene Fittings for Outside Diameter- Controlled Polyethylene Pipe and Tubing	D 2683
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Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing	D 3261
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Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe Fittings, Schedule 40	D 2468
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Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals	D 3139
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"Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe Joints Using Flexible Elastomeric Seals	D 4161
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Polyvinyl Chloride (VPC) Pressure Pipe, 4-in. Through 12-in., for Water	C 900
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Polyvinyl Chloride (VPC) Water Transmission Pipe, Nominal Diameters 14-in. Through 36-in.	C 950
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Ductile-Iron and Grey-Iron Fittings, 3-in. Through 48-in.,
for Water and Other Liquids

C 110

TABLE 260-3
SOLVENT SPECIFICATIONS

<u>Kind of Fitting</u>	<u>ASTM Specification</u>
Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings	F 656
Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings	D 2564
Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings	D 2235
Solvent Cement for Transition Joints Between Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Non-Pressure Piping Components.	D 3138