Standards
For
Plastics Piping

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STANDARDS FOR PLASTICS PIPING

Foreword

This technical report has been prepared to provide producers, users, engineers, code officials, installers and others interested in plastics piping with an up-to-date list of standards covering high quality plastic piping components. Standards for the purpose of this report include component specifications, methods of test and recommended practices for pipe, tubes, conduits, fittings and related products made of plastics. Although the Plastics Pipe Institute is concerned only with thermoplastics, standards for thermoset plastics are also included.

The only piping products and regulations listed in this publication are those of national standing. State, regional and local plumbing and other piping codes—many of which are adoptions in total, or in part, of national model codes—are not covered.

It should be noted that most of these product standards (specifications) include product quality control requirement values that usually cannot be used for engineering design criteria. Such criteria are covered in recommended practices, codes, model codes, installation procedures, separate reports and the appendices of some of these product standards. Those standards that contain information on engineering design criteria and/or the closely related installation procedures are herein identified.

Before selecting the type of plastic and the related standards for an application, the design criteria, limitations, and installation techniques must be considered to achieve satisfactory service. Also, any applicable codes must be considered. Information on these aspects may be obtained from the pertinent codes; the standards listed herein, the publications or staff of the Plastics Pipe Institute and of other organizations (identified in this report), or from the manufacturers of plastic pipe components and plastic materials.

As the plastics industry has grown, other trade organizations have been formed. Their scopes are listed at the end of this report to enable you to direct you inquiries to the appropriate organization.

The Plastics Pipe Institute, Inc., as a service to the industry has prepared this report. The information in this report is offered in good faith and believed to be accurate at the time of its preparation, but is offered without any warranty, express or implied. PPI does not endorse the proprietary products or processes of any manufacturer and assumes no responsibility for compliance with applicable laws and regulations.

This Technical Report is a living document and is updated on a regular basis. If standards need to be added, please forward the standard title to PPI.

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STANDARDS FOR PLASTICS PIPING

Introduction

This publication contains listings of standards for various types of plastics piping as promulgated by numerous standards-making organizations, such as the American Society for Testing and Materials (ASTM), the American Association of State Highway and Transportation Officials (AASHTO), various U.S. Government agencies and so on.

For the convenience of the reader, this publication has been arranged into three sections. Section I and II are devoted to ASTM standards, which are published in Volume 08.04 of the Annual Book of ASTM Standards.

Section I categorizes the ASTM standards into one of eight listings:

- Plastic Pipe Specifications
- Plastic Fittings Specifications
- Plastic Pipe Joints and Joining Materials
- Systems Specifications (both pipe and fittings)
- Methods of Test
- Recommended Practices
- Terminology
- Plastic Pipe and Fittings Materials

Section II categorizes the ASTM Standards into listings such as:

- Piping by Type of Material (PE, PVC, etc.)
- Piping Systems by Type of Application (DWV, gas, sewer, water, etc.)
- Pipe Installation and Components (fittings, joints, seals, solvent cement and primers, underground installation
- General Test Methods

Section III contains listings of standards promulgated by organizations other than ASTM (with their addresses) as well as sources of further information.

- American Association of State Highway and Transportation Officials (AASHTO)
- American National Standards Institute (ANSI)
- American Petroleum Institute (API)
- American Society of Agricultural Engineers (ASAE)
- American Water Works Association (AWWA)
- Canadian Government Standards Board (CGSB)
- Canadian Standards Association (CSA)
- U.S. Department of Agriculture – Natural Resources Conservation Service (NRCS)
- U.S. Department of Transportation

U.S. Department of Housing & Urban Development (HUD)
International Association of Plumbing & Mechanical Officials (IAPMO)
International Standards Organization (ISO)
National Electrical Manufacturer's Association (NEMA)
National Fire Protection Association (NFPA)
NSF International
Underwriters Laboratories (UL)
UniBell PVC Pipe Association (UniBell)
International Code Council (ICC)
National Association of Plumbing-Heating-Cooling Contractors (PHCC)
Plastic Pipe and Fittings Association (PPFA)
The Vinyl Institute (VI)

SECTION I

ASTM American Society for Testing and Materials
100 Barr Harbor Drive
West Conshohocken, PA 19428
(610) 832-9500
Internet: www.astm.org

Plastic Pipe Specifications

D1527 Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe, Schedules 40 and 80

D1785 Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedule 40, 80, and 120
D2104 Polyethylene (PE) Plastic Pipe, Schedule 40

D2239 Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter
D2241 Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)
D2282 Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe (SDR-PR)
D2310 Machine-Made “Fiberglass” (Glass-fiber-reinforced Thermosetting-resin) Pipe
D2447 Polyethylene (PE) Plastic Pipe, Schedules 40 and 80 Based on Outside Diameter
D2466 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
D2513 Thermoplastic Gas Pressure Pipe, Tubing and Fittings
D2737 Polyethylene (PE) Plastic Tubing
D2996 Filament-Wound “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
D2997 Centrifugally Cast “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
D3035 Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter
D3262 “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Sewer Pipe
D3517 “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pressure Pipe
F187 Specification for Folded/Formed Poly (Vinyl Chloride) Pipe Type A for Existing Sewer and Conduit Rehabilitation
F405 Corrugated Polyethylene (PE) Pipe and Fittings
F441 Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80
F442 Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)
F714 Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
F810 Smoothwall Polyethylene (PE) Pipe for Use in Drainage and Waste Disposal Absorption Fields

F876 Crosslinked Polyethylene (PEX) Tubing
F891 Coextruded Poly (Vinyl Chloride) (PVC) Plastic Pipe with a Cellular Core
F894 Polyethylene (PE) Large Diameter Profile Wall Sewer and Drain Pipe
F949 Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe with a Smooth Interior and Fittings
F1281 Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene (PEX-AL-PEX) Pressure Pipe
F1282 Polyethylene/Aluminum/Polyethylene (PE-AL-PE) Composite Pressure Pipe
F1335 Pressure-Rated Composite Pipe and Fittings for Elevated Temperature Service
F1483 Oriented Poly (Vinyl) Chloride PVCO, Pressure Pipe
F1488 Coextruded Composite Pipe
F1499 Coextruded Composite Drain, Waste and Vent Pipe (DWV)
F1533 Specification for Deformed Polyethylene (PE) Liner
F2160 Specification for Solid Wall High Density Polyethylene (HDPE) Conduit Based on Controlled Outside Diameter (OD)
F2262 Specification for Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene Tubing OD Controlled SDR9

Plastic Fittings Specifications

D2464 Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings Schedule 80
D2466 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
D2467 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
D2609 Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe
D2683 Socket-Type Polyethylene (PE) Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing
D3261 Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
D3311 Drain, Waste and Vent (DWV) Plastic Fittings Patterns
D3840 Fiberglass (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe Fittings for Non-Pressure Applications
D5685 Standard Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pressure Pipe Fittings
F409 Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings
F437 Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80
F438 Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40
F439 Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80
F1055 Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing
F1336 Poly (Vinyl Chloride) (PVC) Gasketed Sewer Fittings

F1380 Metal Insert Fittings for Polybutylene (PB) Tubing
F1733 Butt Heat Fusion Polyamide (PA) Plastic Fittings for Polyamide (PA) Plastic Pipe and Tubing
F1807 Standard Specification for Metal Insert Fittings utilizing a Copper Crimp Ring for SDR9 Cross-Linked Polyethylene (PEX) Tubing
F1924 Specification for Plastic Mechanical Fittings for Use on Outside Diameter Controlled Polyethylene Gas Distribution Pipe and Tubing
F1970 Specification for Special Engineered Fittings, Appurtenances or Valves for use in Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Systems
F1974 Specification for Metal Insert Fittings for Polyethylene/Aluminum/Polyethylene and Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene Composite Pressure Pipe
F2080 Specification for Cold-Expansion Fittings With Metal Compression-Sleeves for Cross-Linked Polyethylene (PEX) Pipe
F2135 Specification for Molded Drain, Waste, and Vent (DWV) Short-Pattern Plastic Fittings
F2159 Specification for Plastic Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing
F2434 Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Cross-linked Polyethylene/Aluminum/Cross-linked Polyethylene (PEX-AL-PEX) Tubing
F2735 Specification for Plastic Insert Fittings For SDR9 Cross-linked Polyethylene (PEX) and Polyethylene of Raised Temperature (PE-RT) Tubing

Plastic Pipe Joints and Joining Materials

D2235 Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings
D2564 Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems
D3138 Solvent Cements for Transition Joints Between Acrylonitrile-Butadiene Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Non-Pressure Piping Components
D3139 Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
D3212 Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
D4161 “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe Joints Using Flexible Elastomeric Seals
D2672 Joints for IPS PVC Pipe Using Solvent Cement
D3122 Solvent Cement for Styrene-Rubber (SR) Plastic Pipe and Fittings
F477 Elastomeric Seals (Gaskets) for Joining Plastic Pipe
F493 Solvent Cement for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe and Fittings
F656 Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings

F913 Thermoplastic Elastomeric Seals (Gaskets) for Joining Plastic Pipe
F1056 Socket Fusion Tools for Use in Socket Fusion Joining Polyethylene Pipe or Tubing and Fittings

Systems Specifications (Both Pipe and Fittings)

D2513 Standard Specification for Thermoplastic Gas Pressure Pipe, Tubing, and Fittings
D2517 Standard Specification for Reinforced Epoxy Resin Gas Pressure Pipe and Fittings
D2661 Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings
D2665 Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste and Vent Pipe and Fittings
D2680 Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Composite Sewer Piping
D2729 Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
D2751 Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings
D2846 Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems
D2852 Standard Specification for Styrene-Rubber (SR) Plastic Drain Pipe and Fittings
D2949 3.25-In. Outside Diameter Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
D3034 Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
D3754 “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Sewer and Industrial Pressure Pipe
F194 Specification for Metallic Mechanical Fittings for Use on Outside Diameter Controlled Thermoplastic Gas Distribution Pipe and Tubing
F480 Standard Specification for Thermoplastic Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR), SCH 40 and SCH 80
F512 Specification for Smooth-Wall Poly Vinyl Chloride) (PVC) Conduit and Fittings for Underground Installation
F667 Standard Specification for Large Diameter Corrugated Polyethylene Pipe and Fittings
F679 Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings
F714 Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
F771 Polyethylene (PE) Thermoplastic High-Pressure Irrigation Pipeline Systems
F794 Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter
F877 Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems
F1412 Polyolefin Pipe and Fittings for Corrosive Waste Drainage Systems

F1498 Taper Pipe Threads 60° for Thermoplastic Pipe and Fittings
F1865 Specification for Mechanical Cold Expansion Insert Fitting With Compression Sleeve for Cross-linked Polyethylene (PEX) Tubing
F1866 Specification for Poly (Vinyl Chloride) (PVC) Plastic Schedule 40 Drainage and DWV Fabricated Fittings
F1960 Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Cross-linked Polyethylene (PEX) Tubing
F1986 Specification for Multilayer Pipe Type 2, Compression Fittings, and Compression Joints for Hot and Cold Drinking-Water Systems
F2164 Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure
F2206 Specification for Fabricated Fittings of Butt-Fused Polyethylene (PE) Plastic Pipe, Fittings, Sheet Stock, Plate Stock, or Block Stock
F2307 Specification for Series 10 Poly(Vinyl Chloride) (PVC) Closed Profile Gravity Pipe and Fittings Based on Controlled Inside Diameter
F2389 Specification for Pressure-rated Polypropylene (PP) Piping Systems
F2390 Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent (DWV) Pipe and Fittings Having Post-Industrial Recycle Content
F2618 Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Chemical Waste Drainage Systems

Methods of Test

D256 Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics
D618 Practice for Conditioning Plastics for Testing
D638 Test Method for Tensile Properties of Plastics
D882 Test Method for Tensile Properties of Thin Plastic Sheeting
D883 Terminology Relating to Plastics
D1043 Test Method for Stiffness Properties of Plastics as a Function of Temperature by Means of a Torsion Test
D1045 Test Methods for Sampling and Testing Plasticizers Used in Plastics
D1525 Standard Test Method for Vicat Softening Temperature of Plastics
D1598 Time-to-Failure of Plastic Pipe Under Constant Internal Pressure
D1599 Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing, and Fittings
D1603 Test Method for Carbon Black Content in Olefin Plastics
D1693 Test Method for Environmental Stress-Cracking of Ethylene Plastics
D2105 Longitudinal Tensile Properties of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Tube
D2122 Determining Dimensions of Thermoplastic Pipe and Fittings
D2143 Cyclic Pressure Strength of Reinforced, Thermosetting Plastic Pipe
D2152 Adequacy of Fusion of Extruded Poly (Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion

D2222 Test Method for Methanol Extract of Vinyl Chloride Resins
D2290 Apparent Hoop Tensile Strength of Plastic or Reinforced Plastic Pipe by Split Disk Method
D2412 Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
D2444 Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight)
D2837 Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials, or Pressure Design Basis for Thermoplastic Pipe Products
D2924 External Pressure Resistance of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
D2925 Beam Deflection of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting Resin) Pipe Under Full Bore Flow
D2990 Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics
D2992 Obtaining Hydrostatic or Pressure Design Basis for “Fiberglass”(Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Fittings
D3681 Chemical Resistance of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe in a Deflected Condition
F243 Test Method for Determining Thermoplastic Pipe Wall Stiffness
F610 Evaluating the Quality of Molded Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings by the Heat Reversion Technique
F948 Tim-to-Failure of Plastic Piping Systems and Components under Constant Internal Pressure with Flow
F1057 Estimating the Quality of Extruded Poly (Vinyl Chloride) (PVC) Pipe by the Heat Reversion Technique
F1365 Water Infiltration Resistance of Plastic Underground Conduit Joints Which Use Flexible Elastomeric Seals
F1417 Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
F1429 Assembly Force of Plastic Underground Conduit Joints that use Flexible Elastomeric Seals Located in the Bell
F1473 Notch Tensile Test to Measure the Resistance to Slow Crack Growth of Polyethylene Pipes and Resins
F1588 Constant Tensile Load Joint Test (CTLJT)
F2018 Test Method for Time-to-Failure of Plastics Using Plane Strain Tensile Specimens
F2023 Test Method for Evaluating the Oxidative Resistance of Crosslinked Polyethylene (PEX) Tubing and Systems to Hot Chlorinated Water
F2136 Test Method for Notched, Constant Ligament-Stress (NCLS) Test to Determine Slow-Crack-Growth Resistance of HDPE Resins or HDPE Corrugated Pipe
F2231 Test Method for Charpy Impact Test on Thin Specimens of Polyethylene Used in Pressurized Pipes
F2261 Test Method for Pressure Rating Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40 and 80 Socket-Type.

F2263 Test Method for Evaluating the Oxidative Resistance of Polyethylene (PE) Pipe to Chlorinated Water
F2330 Test Method for Evaluating the Oxidative Resistance of Multilayer Polyolefin Tubing to Hot Chlorinated Water
F2634 Test Method for Laboratory Testing of Polyethylene (PE) Butt Fusion Joints using Tensile-Impact Method
F2657 Test Method for Outdoor Weathering Exposure of Crosslinked Polyethylene (PEX) Tubing

Recommended Practices

D1972 Practice for Generic Marking of Plastic Products
D2321 Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
D2488 Description and Identification of Soils (Visual-Manual Procedure)
D2657 Heat-Joining Polyolefin Pipe and Fittings
D2774 Underground Installation of Thermoplastic Pressure Piping
D2839 Practice for Use of a Melt Index Strand for Determining Density of Polyethylene
D2855 Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings
D3567 Determining Dimensions of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting Resin) Pipe and Fittings
D3839 Underground Installation of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
F402 Safe Handling of Solvent Cements, Primers, and Cleaners Used for Joining Thermoplastic Pipe and Fittings
F449 Subsurface Installation of Corrugated Polyethylene Pipe for Agricultural Drainage or Water Table Control
F481 Installation of Thermoplastic Pipe and Corrugated Pipe in Septic Tank Leach Fields
F585 Insertion of Flexible Polyethylene Pipe into Existing Sewers
F645 Selection, Design, and Installation of Thermoplastic Water-Pressure Piping Systems
F689 Determination of the Temperature of Above-Ground Plastic Gas Pressure Pipe within Metallic Casings
F690 Underground Installation of Thermoplastic Pressure Piping Irrigation Systems
F905 Qualification of Polyethylene Saddle-Fused Joints
F1025 Selection and Use of Full-Encirclement-Type Band Clamps for Reinforcement or Repair of Punctures or Holes in Polyethylene Gas Pressure Pipe
F1041 Squeeze-Off of Polyolefin Gas Pressure Pipe and Tubing
F1176 Design and Installation of Underground Thermoplastic Irrigation Systems With Maximum Working Pressure of 125 psi
F1216 Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube
F1290 Electrofusion Joining Polyolefin Pipe and Fittings

F1563 Specification for Tools to Squeeze-off Polyethylene (PE) Gas Pipe or Tubing
F1668 Construction Procedures for Buried Plastic Pipe
F1734 Qualification of a Combination of Squeeze Tool, Pipe, and Squeeze-Off Procedures to Avoid Long-Term Damage in Polyethylene (PE) Gas Pipe
F1743 Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP)
F1804 Practice for Determining Allowable Tensile Load for Polyethylene (PE) Gas Pipe During Pull-In Installation
F1867 Practice for Installation of Folded/Formed Poly (Vinyl Chloride) (PVC) Pipe Type A for Existing Sewer and Conduit Rehabilitation
F2620 Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings

Terminology

D883 Standard Terminology Relating to Plastics
D1600 Standard Terminology for Abbreviated Terms Relating to Plastics
D2749 Standard Symbols for Dimensions of Plastic Pipe Fittings
F412 Standard Terminology Relating to Plastic Piping Systems

Plastic Fittings Materials

D1784 Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds
D2581 Polybutylene (PB) Plastics Molding and Extrusion Materials
D3350 Polyethylene Plastics Pipe and Fittings Materials
D3915 Rigid Poly (Vinyl Chloride) (PVC) and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds for Plastic Pipe and Fittings Used in Pressure Applications
D3965 Rigid Acrylonitrile-Butadiene-Styrene (ABS) Materials for Pipe and Fittings
D4066 Nylon Injection and Extrusion Materials (PA)
D4396 Rigid Poly (Vinyl Chloride) (PVC) and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds for Plastic Pipe and Fittings Used in Nonpressure Applications
D4976 Standard Specification for Polyethylene Plastics Molding and Extrusion Materials
F876 Standard Specification for Crosslinked Polyethylene (PEX) Tubing

SECTION II

A. PLASTIC PIPE MATERIALS CLASSIFICATIONS

Materials

Specification for:

D1784 Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
D2581 Standard Classification System for Polybutylene (PB) Plastics Molding and Extrusion Materials
D3350 Standard Specification for Polyethylene Plastics Pipe and Fittings Materials
D3915 Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds for Plastic Pipe and Fittings Used in Pressure Applications
D3965 Standard Specification for Rigid Acrylonitrile-Butadiene-Styrene (ABS) Materials for Pipe and Fittings
D4066 Standard Classification System for Nylon Injection and Extrusion Materials (PA)
D4396 Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds for Plastic Pipe and Fittings Used in Nonpressure Applications
D4976 Standard Specification for Polyethylene Plastics Molding and Extrusion Materials

Type of Plastics Piping

Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings

Specifications for:

D1527 Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe, Schedules 40 and 80
D2235 Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings
D2661 Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings
D2680 Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Composite Sewer Piping
D2751 Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings
D3138 Standard Specification for Solvent Cements for Transition Joints Between Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Non-Pressure Piping Components

D3965 Standard Specification for Rigid Acrylonitrile-Butadiene-Styrene (ABS) Materials for Pipe and Fittings
F409 Standard Specification for Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings
F628 Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe with a Cellular Core

Test Method for:

D2444 Standard Test Method for Determination of the Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight)

Polyamide (PA) Plastic Pipe and Fittings

Specifications for:

F1733 Standard Specification for Butt Heat Fusion Polyamide(PA) Plastic Fitting for Polyamide(PA) Plastic Pipe and Tubing

Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Tubing, and Fittings

Specifications for:

D2846 Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems
F437 Standard Specification for Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80
F438 Standard Specification for Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40
F439 Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80
F441 Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80
F442 Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)
F493 Standard Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings
F1336 Standard Specification for Poly (Vinyl Chloride) (PVC) Gasketed Sewer Fittings

Polyethylene (PE) Plastic Pipe, Tubing, and Fittings

Specifications for:

D2104 Standard Specification for Polyethylene (PE) Plastic Pipe, Schedule 40
D2239 Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter
D2447 Standard Specification for Polyethylene (PE) Plastic Pipe, Schedules 40 and 80, Based on Outside Diameter
D2609 Standard Specification for Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe
D2683 Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing
D2737 Standard Specification for Polyethylene) (PE) Plastic Tubing
F2306 Standard Specification for 12 to 60 in. [300 to 1500 mm] Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications
F2619 Standard Specification for High-Density Polyethylene (PE) Line Pipe
F2623 Standard Specification for Polyethylene of Raised Temperature (PE-RT) SDR 9 Tubing
F2769 Standard Specification for Polyethylene of Raised Temperature (PE-RT) Plastic Hot and Cold-Water Tubing and Distribution Systems

Specifications for:

D3035 Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter
D3261 Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
D3350 Standard Specification for Polyethylene Plastics Pipe and Fittings Materials
F405 Standard Specification for Corrugated Polyethylene (PE) Pipe and Fittings
F667 Standard Specification for Large Diameter Corrugated Polyethylene Pipe and Fittings
F2648 Standard Specification for 2 to 60 inch [50 to 1500 mm] Annular Corrugated Profile Wall Polyethylene (PE) Pipe and Fittings for Land Drainage Applications

Specifications for:

F714 Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
F771 Standard Specification for Polyethylene (PE) Thermoplastic High-Pressure Irrigation Pipeline Systems

F810 Standard Specification for Smoothwall Polyethylene (PE) Pipe for Use in Drainage and Waste Disposal Absorption Fields
F876 Standard Specification for Crosslinked Polyethylene (PEX) Tubing
F877 Standard Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems
F894 Standard Specification for Polyethylene (PE) Large Diameter Profile Wall Sewer and Drain Pipe
F1055 Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing
F1533 Standard Specification for Deformed Polyethylene (PE) Liner
F2788 Standard Specification for Crosslinked Polyethylene (PEX) Pipe

Practice for:

F905 Standard Practice for Qualification of Polyethylene Saddle-Fused Joints

Poly (Vinyl Chloride) (PVC) Plastic Pipe, Tubing, and Fittings

Specifications for:

D1785 Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
D2464 Standard Specification for Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
D2466 Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
D2467 Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
D2564 Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems
D2665 Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
D2672 Standard Specification for Joints for IPS PVC Pipe Using Solvent Cement
D2729 Standard Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
D2949 Standard Specification for 3.25-in. Outside Diameter Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
D3034 Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
D3138 Standard Specification for Solvent Cements for Transition Joints Between Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Non-Pressure Piping Components
D3915 Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds for Plastic Pipe and Fittings Used in Pressure Applications

D4396	Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds for Plastic Pipe and Fittings Used in Nonpressure Applications
F409	Standard Specification for Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings
F512	Standard Specification for Smooth-Wall Poly (Vinyl Chloride) (PVC) Conduit and Fittings for Underground Installation
F656	Standard Specification for Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings
F679	Standard Specification for Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings
F758	Standard Specification for Smooth-Wall Poly (Vinyl Chloride) (PVC) Plastics Underdrain Systems for Highway, Airport, and Similar Drainage
F794	Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter
F891	Standard Specification for Coextruded Poly (Vinyl Chloride) (PVC) Plastic Pipe with a Cellular Core
F949	Standard Specification for Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe with a Smooth Interior and Fittings
F1483	Standard Specification for Oriented Poly (Vinyl Chloride), PVCO, Pressure Pipe
F1504	Standard Specification for Folded Poly (Vinyl Chloride) (PVC) Pipe for Existing Sewer and Conduit Rehabilitation
F1697	Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Strip for Machine Spiral-Wound Liner Pipe Rehabilitation of Existing Sewers and Conduits
F1732	Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer and Drain Pipe Containing Recycled PVC Material
F1760	Standard Specification for Coextruded Poly(Vinyl Chloride) (PVC)
F1803	Standard Specification for Poly (Vinyl Chloride)(PVC) Closed Profile Gravity Pipe and Fittings Based on Controlled Inside Diameter
F2307	Standard Specification for Series 10 Poly(Vinyl Chloride) (PVC) Closed Profile Gravity Pipe and Fittings Based on Controlled Inside Diameter
F2390	Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent (DWV) Pipe and Fittings Having Post-Industrial Recycle Content
F2618	Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Chemical Waste Drainage Systems
F2658	Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) SDR 51 and SDR 64 Sewer Pipe and Fittings

Test Method for:

D2152 Standard Test Method for Adequacy of Fusion of Extruded Poly (Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion
D2444 Standard Test Method for Determination of the Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight)
F610 Standard Test Method for Evaluating the Quality of Molded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings by the Heat Reversion Technique
F1674 Standard Test Method for Joint Restraint Products for Use with PVC Pipe

Practice for:

D2855 Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings
F1741 Standard Practice for Installation of Machine Spiral Wound Poly (Vinyl Chloride) (PVC) Liner Pipe for Rehabilitation of Existing Sewers and Conduits

Polybutylene (PB) Plastic Pipe and Tubing

Specification for:

Practice for:

Fiberglass Pipe and Fittings

Specification for:

D2517 Standard Specification for Reinforced Epoxy Resin Gas Pressure Pipe and Fittings
D2996 Standard Specification for Filament-Wound “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
D2997 Standard Specification for Centrifugally Cast “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
D3262 Standard Specification for “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Sewer Pipe
D3517 Standard Specification for “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pressure Pipe
D3754 Standard Specification for “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Sewer and Industrial Pressure Pipe
D3840 Standard Specification for “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe Fittings for Nonpressure Applications

D4161 Standard Specification for “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe Joints Using Flexible Elastomeric Seals
F2720 Standard Specification for Glass Fiber Reinforced Polyethylene (PE-GF) Spiral Wound Large Diameter Pipe

Test Methods for:

D2105 Standard Test Method for Longitudinal Tensile Properties of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Tube
D2143 Standard Test Method for Cyclic Pressure Strength of Reinforced, Thermosetting Plastic Pipe
D2924 Standard Test Method for External Pressure Resistance of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
D2925 Standard Test Method for Beam Deflection of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe Under Full Bore Flow
D3681 Standard Test Method for Chemical Resistance of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe in a Deflected Condition

Practice for:

D2992 Standard Practice for Obtaining Hydrostatic or Pressure Design Basis for “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Fittings
D3567 Standard Practice for Determining Dimensions of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Fittings
D3839 Standard Guide for Underground Installation of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe

Classification for:

D2310 Standard Classification for Machine-Made “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe

Styrene-Rubber Plastic Pipe and Fittings

Specifications for:

D2852 Standard Specification for Styrene-Rubber (SR) Plastic Drain Pipe and Fittings
D3122 Standard Specification for Solvent Cements for Styrene-Rubber (SR) Plastic Pipe and Fittings

Plastic Lined Metal Pipe and Fittings

Specifications for:

F1545 Standard Specification for Plastic-Lined Ferrous Metal Pipe, Fittings, and Flanges

B. PLASTICS PIPE SYSTEM CLASSIFICATIONS

Conduit and Fittings

Specifications for:

C875 Standard Specification for Asbestos-Cement Conduit
D2466 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
D2467 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
D2661 Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe
D2665 Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
D2683 Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing
D2750 Acrylonitrile-Butadiene-Styrene (ABS) Plastic Utilities Conduit and Fittings
D2949 3.25-In. Outside Diameter Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
D3261 Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
D3311 Drain, Waste and Vent (DWV) Plastic Fittings Patterns
F409 Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings
F437 Standard Specification for Threaded Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80
F438 Standard Specification for Socket-Type Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40
F628 Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe with a Cellular Core
F1335 Standard Specification for Pressure-Rated Composite Pipe and Fittings for Elevated Temperature Service
F1412 Standard Specification for Polyolefin Pipe and Fittings for Corrosive Waste Drainage Systems
F1429 Standard Test Method for Assembly Force of Plastic Underground Conduit Joints That Use Flexible Elastomeric Seals Located in the Bell
F1499 Coextruded Composite Drain, Waste, and Vent Pipe (DWV)
F1673 Polyvinylidene Fluoride (PVDF) Corrosive Waste Drainage Systems

F1807 Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing

F1866 Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Schedule 40 Drainage and DWV Fabricated Fittings

F1867 Standard Practice for Installation of Folded/Formed Poly (Vinyl Chloride) (PVC) Pipe Type A for Existing Sewer and Conduit Rehabilitation

F1871 Standard Specification for Folded/Formed Poly (Vinyl Chloride) Pipe Type A for Existing Sewer and Conduit Rehabilitation

F1901 Standard Specification for Polyethylene (PE) Pipe and Fittings for Roof Drain Systems

F1924 Standard Specification for Plastic Mechanical Fittings for Use on Outside Diameter Controlled Polyethylene Gas Distribution Pipe and Tubing

F1947 Standard Practice for Installation of Folded Poly (Vinyl Chloride) (PVC) Pipe into Existing Sewers and Conduits

F1948 Standard Specification for Metallic Mechanical Fittings for Use on Outside Diameter Controlled Thermoplastic Gas Distribution Pipe and Tubing

F1960 Standard Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Cross-linked Polyethylene (PEX) Tubing

F1961 Standard Specification for Metal Mechanical Cold Flare Compression Fittings with Disc Spring for Crosslinked Polyethylene (PEX) Tubing

F1962 Standard Guide for Use of Maxi-Horizontal Directional Drilling for Placement of Polyethylene Pipe or Conduit Under Obstacles, Including River Crossings

F1970 Standard Specification for Special Engineered Fittings, Appurtenances or Valves for use in Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Systems

F1973 Standard Specification for Factory Assembled Anodeless Risers and Transition Fittings in Polyethylene (PE) and Polyamide 11 (PA11) and Polyamide 12 (PA12) Fuel Gas Distribution Systems

F1974 Standard Specification for Metal Insert Fittings for Polyethylene/Aluminum/Polyethylene and Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene Composite Pressure Pipe

F1986 Standard Specification for Multilayer Pipe Type 2, Compression Fittings, and Compression Joints for Hot and Cold Drinking-Water Systems

F1987 Standard Specification for Multilayer Pipe Type 2, Compression Fittings, and Compression Joints for Hydronic Heating Systems

F2018 Standard Test Method for Time-to-Failure of Plastics Using Plane Strain Tensile Specimens

F2019 Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP)

F2021 Standard Guide for Design and Installation of Plastic Siphonic Roof Drainage Systems

F2023 Standard Test Method for Evaluating the Oxidative Resistance of Crosslinked Polyethylene (PEX) Tubing and Systems to Hot Chlorinated Water

F2080 Standard Specification for Cold-Expansion Fittings With Metal Compression-Sleeves for Cross-Linked Polyethylene (PEX) Pipe

F2098 Standard Specification for Stainless Steel Clamps for Securing SDR9 Cross-linked Polyethylene (PEX) Tubing to Metal Insert and Plastic Insert Fittings

F2135 Standard Specification for Molded Drain, Waste, and Vent (DWV) Short-Pattern Plastic Fittings

F2136 Standard Test Method for Notched, Constant Ligament-Stress (NCLS) Test to Determine Slow-Crack-Growth Resistance of HDPE Resins or HDPE Corrugated Pipe

F2138 Standard Specification for Excess Flow Valves for Natural Gas Service

F2145 Standard Specification for Polyamide 11 (PA 11) and Polyamide 12 (PA12) Mechanical Fittings for Use on Outside Diameter Controlled Polyamide 11 and Polyamide 12 Pipe and Tubing

F2158 Standard Specification for Residential Central-Vacuum Tube and Fittings

F2159 Standard Specification for Plastic Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing

F2160 Standard Specification for Solid Wall High Density Polyethylene (HDPE) Conduit Based on Controlled Outside Diameter (OD)

F2164 Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure

F2165 Standard Specification for Flexible Pre-Insulated Piping

F2176 Standard Specification for Mechanical Couplings Used on Polyethylene Conduit, Duct and Innerduct

F2206 Standard Specification for Fabricated Fittings of Butt-Fused Polyethylene (PE) Plastic Pipe, Fittings, Sheet Stock, Plate Stock, or Block Stock

F2207 Standard Specification for Cured-in-Place Pipe Lining System for Rehabilitation of Metallic Gas Pipe

F2231 Standard Test Method for Charpy Impact Test on Thin Specimens of Polyethylene Used in Pressurized Pipes

F2261 Standard Test Method for Pressure Rating Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40 and 80 Socket-Type

F2262 Standard Specification for Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene Tubing OD Controlled SDR9

F2263 Standard Test Method for Evaluating the Oxidative Resistance of Polyethylene (PE) Pipe to Chlorinated Water

F2306 Standard Specification for 12 to 60 in. [300 to 1500 mm] Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications

F2307 Standard Specification for Series 10 Poly(Vinyl Chloride) (PVC) Closed Profile Gravity Pipe and Fittings Based on Controlled Inside Diameter

F2331 Standard Test Method for Determining Chemical Compatibility of Thread Sealants with Thermoplastic Threaded Pipe and Fittings Materials

F2389 Standard Specification for Pressure-rated Polypropylene (PP) Piping Systems

F2390 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent (DWV) Pipe and Fittings Having Post-Industrial Recycle Content

F2418 Standard Specification for Polypropylene (PP) Corrugated Wall Stormwater Collection Chambers

F2433 Standard Test Method for Determining Thermoplastic Pipe Wall Stiffness

F2434 Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Cross-linked Polyethylene/Aluminum/Cross-linked Polyethylene (PEX-AL-PEX) Tubing

F2435 Standard Specification for Steel Reinforced Polyethylene (PE) Corrugated Pipe

F2487 Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Corrugated High Density Polyethylene Pipelines

F2509 Standard Specification for Field-assembled Anodeless Riser Kits for Use on Outside Diameter Controlled Polyethylene Gas Distribution Pipe and Tubing

F2510 Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures and Corrugated High Density Polyethylene Drainage Pipes

F2536 Standard Guide for Installing Plastic DWV Piping Suspended from On-Grade Slabs

F2561 Standard Practice for Rehabilitation of a Sewer Service Lateral and Its Connection to the Main Using a One Piece Main and Lateral Cured-in-Place Liner

F2562 Specification for Steel Reinforced Thermoplastic Ribbed Pipe and Fittings for Non-Pressure Drainage and Sewerage

F2599 Standard Practice for The Sectional Repair of Damaged Pipe By Means of An Inverted Cured-In-Place Liner

F2600 Standard Specification for Electrofusion Type Polyamide-11 Fittings for Outside Diameter Controlled Polyamide-11 Pipe and Tubing

F2618 Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Chemical Waste Drainage Systems

F2619/F2619M-Standard Specification for High-Density Polyethylene (PE) Line Pipe

F2620 Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings

F2623 Standard Specification for Polyethylene of Raised Temperature (PE-RT) SDR 9 Tubing

F2634 Standard Test Method for Laboratory Testing of Polyethylene (PE) Butt Fusion Joints using Tensile-Impact Method
F2648 Standard Specification for 2 to 60 inch [50 to 1500 mm] Annular Corrugated Profile Wall Polyethylene (PE) Pipe and Fittings for Land Drainage Applications
F2649 Standard Specification for Corrugated High Density Polyethylene (HDPE) Grease Interceptor Tanks
F2657 Standard Test Method for Outdoor Weathering Exposure of Crosslinked Polyethylene (PEX) Tubing
F2658 Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) SDR 51 and SDR 64 Sewer Pipe and Fittings
F2718 Standard Specification for Polyethylene (PE) and Cement Materials for an Encapsulated Cement Mortar Formed in Place Liner System (FIPLS) for the Rehabilitation of Water Pipelines
F2719 Standard Practice for Installation of Polyethylene (PE) and Encapsulated Cement Mortar Formed in Place Lining System (FIPLS) for the Rehabilitation of Water Pipelines
F2720 Standard Specification for Glass Fiber Reinforced Polyethylene (PE-GF) Spiral Wound Large Diameter Pipe
F2735 Standard Specification for Plastic Insert Fittings For SDR9 Cross-linked Polyethylene (PEX) and Polyethylene of Raised Temperature (PE-RT) Tubing
F2736 Standard Specification for 6 to 30 in. (152 To 762 mm) Polypropylene (PP) Corrugated Single Wall Pipe and Double Wall Pipe
F2737 Standard Specification for Corrugated High Density Polyethylene (HDPE) Water Quality Units
F2767 Standard Specification for Electrofusion Type Polyamide-12 Fittings for Outside Diameter Controlled Polyamide-12 Pipe and Tubing for Gas Distribution
F2768 Standard Specification for Modified Stub ACME Thread Joint with Elastomeric Seal in Plastic Piping Components
F2769 Standard Specification for Polyethylene of Raised Temperature (PE-RT) Plastic Hot and Cold-Water Tubing and Distribution Systems
F2785 Standard Specification for Polyamide 12 Gas Pressure Pipe, Tubing, and Fittings
F2786 Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Gaseous Media Under Pressure (Pneumatic Leak Testing)
F2787 Standard Practice for Structural Design of Thermoplastic Corrugated Wall Storm water Collection Chambers
F2788 Standard Specification for Crosslinked Polyethylene (PEX) Pipe
F2805 Standard Specification for Multilayer Thermoplastic And Flexible Steel Pipe And Connections
F2817 Standard Specification for Poly (Vinyl Chloride) (PVC) Gas Pressure Pipe and Fittings For Maintenance or Repair

Gas Pipe, Tubing, and Fittings

Specifications for:

D2235	Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings
D2321	Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
D2513	Thermoplastic Gas Pressure Pipe, Tubing, and Fittings
D 2517	Reinforced Epoxy Resin Gas Pressure Pipe and Fittings
D2680	Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Composite Sewer Piping
D3138	Standard Specification for Solvent Cements for Transition Joints Between Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Non-Pressure Piping Components
D3212	Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
D3262	Standard Specification for “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Sewer Pipe
F405	Standard Specification for Corrugated Polyethylene (PE) Pipe and Fittings
F481	Standard Practice for Installation of Thermoplastic Pipe and Corrugated Pipe in Septic Tank Leach Fields
F794	Standard Specification for Poly(Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter
F891	Standard Specification for Coextruded Poly(Vinyl Chloride) (PVC) Plastic Pipe With a Cellular Core
F894	Standard Specification for Polyethylene (PE) Large Diameter Profile Wall Sewer and Drain Pipe
F1336	Standard Specification for Poly(Vinyl Chloride) (PVC) Gasketed Sewer Fittings
F1504	Standard Specification for Folded Poly(Vinyl Chloride) (PVC) Pipe for Existing Sewer and Conduit Rehabilitation
F1675	Standard Practice for Life-Cycle Cost Analysis of Plastic Pipe Used for Culverts, Storm Sewers, and Other Buried Conduits
F1803	Standard Specification for Poly (Vinyl Chloride)(PVC) Closed Profile Gravity Pipe and Fittings Based on Controlled Inside Diameter
F1867	Chloride) (PVC) Pipe Type A for Existing Sewer and Conduit Rehabilitation
F1871	Standard Specification for Folded/Formed Poly (Vinyl Chloride) Pipe Type A for Existing Sewer and Conduit Rehabilitation
F1947	Standard Practice for Installation of Folded Poly (Vinyl Chloride) (PVC) Pipe into Existing Sewers and Conduits
F2145	Standard Specification for Polyamide 11 (PA 11) and Polyamide 12 (PA12) Mechanical Fittings for Use on Outside Diameter Controlled Polyamide 11 and Polyamide 12 Pipe and Tubing

F2306 Standard Specification for 12 to 60 in. [300 to 1500 mm] Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications
F2307 Standard Specification for Series 10 Poly(Vinyl Chloride) (PVC) Closed Profile Gravity Pipe and Fittings Based on Controlled Inside Diameter
F2562 Specification for Steel Reinforced Thermoplastic Ribbed Pipe and Fittings for Non-Pressure Drainage and Sewerage
F2620 Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings
F2648 Standard Specification for 2 to 60 inch [50 to 1500 mm] Annular Corrugated Profile Wall Polyethylene (PE) Pipe and Fittings for Land Drainage Applications
F2658 Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) SDR 51 and SDR 64 Sewer Pipe and Fittings
F2736 Standard Specification for 6 to 30 in. (152 To 762 mm) Polypropylene (PP) Corrugated Single Wall Pipe And Double Wall Pipe
F2785 Standard Specification for Polyamide 12 Gas Pressure Pipe, Tubing, and Fittings

Practice for:

F689 Determination of the Temperature of Above-Ground Plastic Gas Pressure Pipe within Metallic Casings

Guide for:

F1025 Selection and Use of Full-Encirclement-Type Band Clamps for Reinforcement or Repair of Punctures or Holes in Polyethylene Gas Pressure Pipe
F1041 Squeeze-Off of Polyolefin Gas Pressure Pipe and Tubing

Sewer Pipe and Fittings

Specification for:

D256 Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics
D494 Standard Test Method for Acetone Extraction of Phenolic Molded or Laminated Products
D542 Standard Test Method for Index of Refraction of Transparent Organic Plastics
D543 Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents
D570 Standard Test Method for Water Absorption of Plastics
D618 Standard Practice for Conditioning Plastics for Testing

D635 Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position
D638 Standard Test Method for Tensile Properties of Plastics
D648 Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
D695 Standard Test Method for Compressive Properties of Rigid Plastics
D696 Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30°C and 30°C With a Vitreous Silica Dilatometer
D704 Standard Specification for Melamine-Formaldehyde Molding Compounds
D705 Standard Specification for Urea-Formaldehyde Molding Compounds
D706 Standard Classification System and Basis for Specifications for Cellulose Acetate Molding and Extrusion Compounds
D707 Standard Classification System and Basis for Specification for Cellulose Acetate Butyrate Molding and Extrusion Compounds
D731 Standard Test Method for Molding Index of Thermosetting Molding Powder
D732 Standard Test Method for Shear Strength of Plastics by Punch Tool
D746 Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact
D747 Standard Test Method for Apparent Bending Modulus of Plastics by Means of a Cantilever Beam
D785 Standard Test Method for Rockwell Hardness of Plastics and Electrical Insulating Materials
D787 Standard Specification for Ethyl Cellulose Molding and Extrusion Compounds
D788 Standard Classification System for Poly(Methyl Methacrylate) (PMMA) Molding and Extrusion Compounds
D789 Standard Test Methods for Determination of Solution Viscosities of Polyamide (PA)
D790 Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
D792 Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
D882 Standard Test Method for Tensile Properties of Thin Plastic Sheeting
D883 Standard Terminology Relating to Plastics
D952 Standard Test Method for Bond or Cohesive Strength of Sheet Plastics and Electrical Insulating Materials
D953 Standard Test Method for Bearing Strength of Plastics
D955 Standard Test Method of Measuring Shrinkage from Mold Dimensions of Thermoplastics
D957 Standard Practice for Determining Surface Temperature of Molds for Plastics
D1003 Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics

D1004 Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting
D1042 Standard Test Method for Linear Dimensional Changes of Plastics Under Accelerated Service Conditions
D1043 Standard Test Method for Stiffness Properties of Plastics as a Function of Temperature by Means of a Torsion Test
D1044 Standard Test Method for Resistance of Transparent Plastics to Surface Abrasion
D1045 Standard Test Methods for Sampling and Testing Plasticizers Used in Plastics
D1055 Standard Specifications for Flexible Cellular Materials-Latex Foam
D1056 Standard Specification for Flexible Cellular Materials—Sponge or Expanded Rubber
D1201 Standard Specification for Thermosetting Polyester Molding Compounds
D1203 Standard Test Methods for Volatile Loss From Plastics Using Activated Carbon Methods
D1204 Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature
D1238 Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer
D1239 Standard Test Method for Resistance of Plastic Films to Extraction by Chemicals
D1243 Standard Test Method for Dilute Solution Viscosity of Vinyl Chloride Polymers
D1248 Standard Specification for Polyethylene Plastics Extrusion Materials For Wire and Cable
D1430 Standard Classification System for Polychlorotrifluoroethylene (PCTFE) Plastics
D1435 Standard Practice for Outdoor Weathering of Plastics
D1494 Standard Test Method for Diffuse Light Transmission Factor of Reinforced Plastics Panels
D1499 Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Plastics
D1505 Standard Test Method for Density of Plastics by the Density-Gradient Technique
D2680 Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Composite Sewer Piping
D2729 Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
D2751 Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings
D2852 Styrene-Rubber (SR) Plastic Drain Pipe and Fittings
D 3034 Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
D3262 “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Sewer Pipe
D3754 “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Sewer and Industrial Pressure Pipe
D3840 “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe Fittings for Non-Pressure Applications

F679 Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings
F949 Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe with a Smooth Interior and Fittings
F1417 Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
F1504 Folded Poly (Vinyl Chloride) (PVC) Pipe for Existing Sewer and Conduit Rehabilitation
F1697 Poly (Vinyl Chloride) (PVC) Profile Strip for Machine Spiral Wound Liner Pipe Rehabilitation of Existing Sewers and Conduits
F1698 Installation of Poly (Vinyl Chloride) (PVC) Profile Strip Liner and Cementitious Grout for rehabilitation of Existing Man-Entry Sewers and Conduits

Practice for:

D2321 Underground Installation of Thermoplastic Sewer Pipe for Sewers and Other Gravity-Flow Applications
F1606 Rehabilitation of Existing Sewers and Conduits with Deformed Polyethylene (PE) Liner
F1675 Life-Cycle Cost Analysis of Plastic Pipe used for Culverts, Storm Sewers and Other Buried Conduits
F1759 Practice for Design of High Density Polyethylene (HDPE) Manholes for Subsurface Applications

Hot and Cold Water Distribution Pipe and Fittings

Specification for:

D2846 Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems
F877 Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems

C. PLASTICS PIPE INSTALLATION AND COMPONENTS

Fittings

Specification for:

D2464 Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
D2466 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
D2467 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
D2609 Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe
D2683 Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing

D3261 Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
F437 Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80
F438 Socket-Type Chlorinated Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
F439 Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80
F1055 Electrofusion-Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing

Practice for:

F725 Drafting Impact Test Requirements in Thermoplastic Pipe and Fittings Standards

Joints, Seals, Solvent Cements and Primers

Specification for:

D2235 Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings
D2564 Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems.
D3122 Solvent Cements for Styrene-Rubber (SR) Plastic Pipe and Fittings
D3138 Solvent Cements for Transition Joints Between Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Non-Pressure Piping Components
D3139 Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
D3212 Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
D4161 “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe Joints Using Flexible Elastomeric Seals
F477 Elastomeric Seals (Gaskets) for Joining Plastic Pipe
F493 Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings
F656 Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings
F913 Thermoplastic Elastomeric Seals (Gaskets) for Joining Plastic Pipe
F1056 Socket Fusion Tools for Use in Socket Fusion Joining Polyethylene Pipe or Tubing and Fittings

Practice for:

D2657 Heat Fusion Joining of Polyolefin Pipe and Fittings
D2855 Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings
F402 Safe Handling of Solvent Cements, Primers, and Cleaners Used for Joining Thermoplastic Pipe and Fittings

Underground Installation

Practice for:

D2321 Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
D2774 Underground Installation of Thermoplastic Pressure Piping
D3839 Underground Installation of “Fiberglass” (Glass-FiberReinforced Thermosetting-Resin) Pipe
F449 Subsurface Installation of Corrugated of Corrugated Polyethylene Pipe for Agricultural Drainage or Water Table Control
F481 Installation of Thermoplastic Pipe and Corrugated Pipe in Septic Tank Leach Fields
F585 Insertion of Flexible Polyethylene Pipe into Existing Sewers
F690 Underground Installation of Thermoplastic Pressure Piping Irrigation Systems
F1176 Design and Installation of UndergroundThermoplastic Irrigation Systems with Maximum Working Pressure of 125 psi
F1216 Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin Impregnated Tube
F1668 Construction Procedures for Buried Plastic Pipe

D. GENERAL TEST METHODS

Test Method for:

D1598 Time-to-Failure of Plastic Pipe Under Constant Internal Pressure
D1599 Short-Time hydraulic Failure Pressure of Plastic Pipe, Tubing, and Fittings
D2105 Longitudinal Tensile Properties of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Tube
D2122 Determining Dimensions of Thermoplastic Pipe and Fittings
D2143 Cyclic Pressure Strength of Reinforced, Thermosetting Plastic Pipe
D2152 Adequacy of Fusion of Extruded Poly (Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion
D2290 Apparent Hoop Tensile Strength of Plastic or Reinforced Plastic Pipe by Split Disk Method
D2412 Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
D2444 Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight)
D2837 Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products
D2924 External Pressure Resistance of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting Resin Pipe

D2925 Beam Deflection of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe Under Full Bore Flow
D3681 Chemical Resistance of “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe in a Deflected Condition
F948 Time-to-Failure of Plastic Piping Systems and Components Under Constant Internal Pressure with Flow

Practice for:

D2487 Classification of Soils for Engineering Purposes (Unified Soil Classification System)
D2488 Description and Identification of Soils (Visual-Manual Procedure)
D2992 Obtaining Hydrostatic or Pressure Design Basis for “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and fittings
D3567 Determining Dimensions of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe and Fittings
F1057 Estimating the Quality of Extruded Poly (Vinyl Chloride) (PVC) Pipe by the Heat Reversion Technique

SECTION III

AASHTO

American Association of State Highway and Transportation Officials
444 North Capitol St., NW, Suite 249
Washington, DC 20001
(202) 624-5800
Internet Address: www.transportation.org

M 252 Standard Specification for Corrugated Polyethylene Drainage Pipe
M 264 Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Composite Sewer Piping
M 278 Standard Specification for Class PS46 Poly(Vinyl Chloride) (PVC) Pipe
M 294 Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm Diameter
M 297 Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Bridges
M 304 Standard Specification for Poly(Vinyl Chloride) (PVC) Profile Wall Drain Pipe and Fittings Based on Controlled Inside Diameter

ANSI

American National Standards Institute, Inc.
25 West 43rd Street, 4th floor
New York, NY 10036
(212) 642-4900
Internet Address: www.ansi.org

Z223.1 National Fuel Gas Code Handbook
ANSI/SPI B151.1-2007 Plastics Machinery -Horizontal Injection Molding Machines -Safety Requirements for Manufacture, Care, and Use
ANSI/SPI B151.15-2003 Extrusion Blowmolding Machines - Safety Requirements for the Manufacture Care and Use
ANSI/SPI B151.20-1999 American National Standard for Plastic Sheet Production Machinery - Manufacture, Care and Use
ANSI/SPI B151.21-2003 Injection Blowmolding Machinery - Safety Requirements for Manufacture, Care and Use
ANSI/SPI B151.2-1999 Film Casting Machines - Construction, Care, and Use (revision and redesignation of ANSI B151.2-1982 (R1988))
ANSI/SPI B151.29-2002 Safety Requirements for the Manufacture, Care and Use of Vertical Clamp Injection Molding Machines
ANSI/SPI B151.5-2000 Plastic Film and Sheet Winding Machinery - Manufacture, Care, and Use

API American Petroleum Institute
Publications and Distribution Section
1220 L St., NW
Washington, DC 20005
(202) 682-8000
Internet Address: www.api.org

15LE Specification for Polyethylene Line Pipe (PE), Fourth Edition
15HR Specification for High Pressure Fiberglass Line Pipe

15LR Specification For Low Pressure Fiberglass Line Pipe and Fittings
15LT Specification for PVC Lined Steel Tubular Goods
RP5L2 Internal Coating of Line Pipe for Non-Corrosive Gas Transmission Service, Fourth Edition

ASABE American Society of Agricultural and Biological Engineers
2950 Niles Road
St. Joseph, MI 49085-9659
(269) 429-0300
Internet Address: www.asabe.org

S376.2 Design, Installation and Performance of Underground Thermoplastic Irrigation Pipelines
S435 Polyethylene Pipe used for Microirrigation Laterals
ANSI/ASAE S261.7 OCT96 Design and Installation of Nonreinforced Concrete Irrigation Pipe Systems

ASME United Engineering Center
345 East 47th Street
New York, NY 10017
(212) 705-7722

ASME Guide for Gas Transportation and Distribution Piping Systems

B16.40 Manually Operated Thermoplastic Gas Shutoffs and Valves in Gas Distribution Systems
B31.3 Process Piping
B31.4 Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids
B31.8 Gas Transmission and Distribution Piping Systems
B31.9 Building Services Piping
B31.11 Slurry Transportation Piping Systems

AWWA American Water Works Association
6666 West Quincy Ave.
Denver, CO 80235
Internet Address: www.awwa.org

C105 American National Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems

C215 Extruded Polyolefin Coatings for the Exterior of Steel Water Pipelines

C216 Heat-Shrinkable Cross-Linked Polyolefin Coatings for the Exterior of Special Sections, Connections, and Fittings for Steel Water Pipelines

C303 Concrete Pressure Pipe, Bar-Wrapped, Steel-Cylinder Type

C605 Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water

C900 Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In.-12In. (100 mm-300 mm), for Water Transmission and Distribution

C901 Polyethylene (PE) Pressure Pipe and Tubing, 1/2 In. (13 mm) Through 3 In. (76 mm), for Water Service

C904 ANSI/AWWA C904-06, AWWA Standard for Cross-Linked Polyethylene (PEX) Pressure Pipes, Â½ In. (12 mm) Through 3 In. (76 mm) for Water Service

C906 AWWA Standard for Polyethylene (PE) Pressure Pipe and Fittings, 4 In. (100 mm) Through 63 In. (1,575 mm), for Water Distribution and Transmission

C907 Polyvinyl Chloride (PVC) Pressure Fittings for Water-4IN. through 8 In. (100 mm through 200 mm)

C908 PVC Self-Tapping Saddle Tees for Use on PVC Pipe

C909 ANSI/AWWA C909-09, AWWA Standard for Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe, 4 In. Through 24 In. (100 mm Through 600 mm), for Water, Wastewater, and Reclaimed Water Service

C950 Fiberglass Pressure Pipe

Bell Communication Research Inc.
445 South Street
Morristown, NY 07960
Internet Address: www.telcordia.com

GR356 Generic Requirements for Optical Cable Innerduct, Associated Conduit, and Accessories

CGSB Public Works and Government Services Canada
11 Laurier Street, PDP III
Gatineau, Quebec
K1A 0S5
Canada
ATTN: General Enquiry

(800) 622-6232
Internet Address: www.pwgsc.gc.ca

41-GP-25M Pipe, Polyethylene for the Transport of Liquids, October, 1977

CSA Canadian Standards Association
178 Rexdale Blvd.
Toronto, Ontario
Canada M9W 1R3
(416) 747-4000
Internet Address: www.csa-international.org

B 125.1 Plumbing Supply Fittings
B 125.2 Plumbing Waste Fittings
B 125.3 Plumbing Fittings
B 137.0 Definitions, General Requirements and Methods of Testing for Thermoplastic Pressure Piping
B 137.1 Polyethylene (PE) Pipe, Tubing, and Fittings for Cold-Water Pressure Services
B 137.2 Polyvinylchloride (PVC) Injection-Moulded Gasketed Fittings for Pressure Applications
B 137.3 Rigid Polyvinylchloride (PVC) Pipe and Fittings for Pressure Applications
B 137.4 Polyethylene (PE) Piping Systems for Gas Services
B 137.4.1 Electrofusion-Type Polyethylene (PE) Fittings for Gas Services
B 137.5 Crosslinked Polyethylene (PEX) Tubing Systems for Pressure Applications
B 137.6 Chlorinated polyvinylchloride (CPVC) Pipe, Tubing, and Fittings for Hot- and Cold- Water Distribution Systems
B 137.8 Polybutylene (PB) Piping Systems for Pressure Applications
B 137.9 Polyethylene/Aluminum/Polyethylene (PE-AL-PE) Composite Pressure-Pipe Systems
B 137.10 Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene (PEX-AL-PEX) Composite Pressure-Pipe Systems
B 137.11 Polypropylene (PP-R) Pipe and Fittings for Pressure Applications
B 137.12 Polyamide (PA) Piping Systems for Gas Services
B 180.0 Definitions, General Requirements, and Methods of testing for Thermoplastic Nonpressure Piping
B 181.1 Acrylonitrile-butadiene-styrene (ABS) Drain, Waste and Vent Pipe and Pipe Fittings
B 181.2 Polyvinylchloride (PVC) and Chlorinated Polyvinylchloride (CPVC) Drain, Waste and Vent Pipe and Pipe Fittings

B 181.3 Polyolefin and Polyvinylidene (PVDF) Laboratory Drainage Systems
B 181.5 Coextruded Acrylonitrile-butadienestyrene/polyvinylchloride (ABS/PVC) Drain, Waste and Vent Pipe
B 182.1 Plastic Drain and Sewer Pipe and Pipe Fittings
B 182.2 PSM Type Polyvinylchloride (PVC) Sewer Pipe and Fittings
B 182.4 Profile Polyvinylchloride (PVC) Sewer Pipe and Fittings
B 182.6 Profile Polyethylene (PE) Sewer Pipe and Fittings for Leak-Proof Sewer Applications
B 182.7 PSM Type Multilayer Polyvinylchloride (PVC) Sewer Pipe Having Reprocessed-Recycled Content
B 181.8 Profile Polyethylene (PE) Storm Sewer and Drainage Pipe and Fittings
B 181.11 Standard Practice for the Installation of Thermoplastic Drain, Storm, and Sewer Pipe and Fittings
B 196.3 PVC Underground Telecommunication Cable Ducting and Fittings
B 602 Mechanical Couplings for Drain, Waste and Vent Pipe and Sewer Pipe
C 22.2 General Requirements and Methods of Testing for NonMetallic Conduit (No. 211.0)
C 22.2 Rigid Types EB1and DB2/ES2 PVC Conduit (No. 211.1)
C 22.2 Rigid PVC (Unplasticized) Conduit (No. 211.2)

Department of Agriculture

U.S. Department of Agriculture
Natural Resources Conservation Service
P.O. Box 2890
Washington, DC 20013
Internet Address: www.nrcs.usda.gov

NHCP National Handbook of Conservation Practices
NHCP 378 Pond, July 2002
NHCP 410 Grade Stabilization Structure, October 1985
NHCP 430-DD Irrigation Water Conveyance, High-Pressure, Underground, Plastic Pipeline, December 1988
NHCP 430-EE Irrigation Water Conveyance, Low Pressure, Underground, Plastic Pipeline, December 1988
NHCP 430-GG Irrigation Water Conveyance, Reinforced Plastic Mortar, Pipeline, April 1982
NCHP 431 Above Ground, Multi-Outlet Pipeline, August 2006
NHCP 441 Irrigation System, Microirrigation, August 2006
NHCP 442 Irrigation System, Sprinkler, December 2003
NHCP 443 Irrigation System, Surface and Subsurface, March 2003
NHCP 447 Irrigation System, Tailwater Recovery, June 2007
NHCP 516 Pipeline, August 2000
NCHP 587 Structure for Water Control, December 2003
NHCP 606 Subsurface Drain, September 2003
NHCP 614 Watering Facility, August 2006
NHCP 620 Underground Outlet, September 2008

NHCP 630	Vertical Drain, May 2004
NHCP 634	Waste Transfer, November 2008
NHCP 636	Water Harvesting Catchment, September 2003
NHCP 638	Water and Sediment Control Basin, September 2008
NHCP 640	Waterspreading, July 2002
NHCP 642	Well, February 2005

U.S. Department of Transportation (DOT)
Pipeline and Hazardous Materials Safety Administration

1200 New Jersey Ave, SE
East Building, 2nd Floor
Washington, D.C. 20590
202-366-0656

Pipeline Safety, Title 49, CFR Part 192. Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards. (Included in 49 CFR Parts 190 to 199). Available at http://ecfr.gpoaccess.gov

HUD

U.S. Department of Housing & Urban Development
451 7th Street S.W.
Washington, DC 20410
(202) 708-1122
http://portal.hud.gov

UM-76	CPVC and PB Hot and Cold Water Distribution Piping
UM-78	PE, ABS, PVC, and PB Plastic Piping for Domestic Cold Water Service
UM-79	ABS and PVC Plastic Drain, Waste and Vent Pipe and Fittings

The following are former FHA standards that have been superseded by those listed above:

UM-31e	Polyethylene Plastic Pipe and Fittings for Domestic Water Service (September 1, 1966)
UM-41	PVC Plastic Pipe and Fittings for Domestic Water service (August 1, 1996)
UM-43	Acrylonitrile-Butadiene-Styrene Plastic Pipe and Fittings for Domestic Water Service (November 1, 1966)
UM-49	ABS and PVC Plastic Drainage and Vent Pipe and Fittings, FHA 4550.49 (May 1, 1968)
UM-53a	Polyvinyl Chloride Plastic Drainage, Waste and Vent Pipe and Fittings (February 22. 1971)
UM-54	ABS (Acrylonitrile-Butadiene-Styrene) Plastic Drainage, Water and Vent Pipe and Fittings (March 2, 1970)

UM-61	(CPVC) - -Hot and Cold Water Distribution Systems - - Chlorinated Polyvinyl Chloride (April 9, 1971)
MR-562	Rigid Chlorinated Polyvinyl Chloride (CPVC) Hi/Temp Water Pipe and Fittings (November 3, 1967)
MR-563	PVC Plastic Drainage and Vent Pipe and Fittings (November 6, 1967)

IAPMO International Association of Plumbing and Mechanical Officials
5001 E. Philadelphia St.
Ontario, CA 91761
(909) 472-4100
Internet Address: www.iapmo.org

IS 01-2006	Non-Metallic Building Sewers
IS 05-2006	ABS Building Drain, Waste and Vent Pipe and Fittings
IS 07-2008	Polyethylene (PE) Cold Water Building Supply and Yard Piping
IS 08-2006	PVC Cold Water Building Supply and Yard Piping
IS 09-2006	PVC Building Drain, Waste and Vent Pipe and Fittings
IS 11-2006	ABS Sewer Pipe and Fittings
IS 12-2006	Polyethylene (PE) for Gas Yard Piping
IS 20-2006	CPVC Solvent Cemented Hot and Cold Water Distribution Systems
IS 26-2006	Trenchless Insertion of Polyethylene (PE) Pipe for Sewer Laterals
IS 28-2005	Composite PEX-AL-PEX Hot and Cold PE-AL-PE Water Distribution Systems
PS 25-2002	Metallic Fittings for Joining Polyethylene Pipe for Water Service and Yard Piping
PS 34-2003	Polyethylene Encasement Sleeve for Potable Water Pipe and Tubing
PS 53-2008	Grooved Mechanical Pipe Couplings and Grooved End Fittings
PS 64-2007a	Pipe Flashings
IGC 109-2009c	Water Distribution Manifolds for Use with SDR 9 PEX Tubing, PE-AL-PE, & PEX-AL-PEX Composite Piping
IGC 116-99	Metal Insert Fittings for Polyethylene/Aluminum/Polyethylene and Crosslinked Polyethylene/Aluminum/Polyethylene Composite Pressure Pipe
IGC 121-98a	PVC Plastic Valves for Cold Water Distribution Systems Outside a Building and CPVC Plastic Valves for Hot and Cold Water Distribution Systems
IGC 122-2005a	Test Caps and Test Gates with ABS (Acrylonitrile-Butadiene-Styrene) or PVC (Poly Vinyl Chloride) Housings
IGC 157-2009a	Ball Valves

IGC 166-2001e1 Plastic DWV to Sewer Adapter Fittings
IGC 176-2002 Compression Fittings for PEX-AL-PEX Tubing
IGC 188-2009 Removable and Non-Removable Push Fit Fittings (Recognized in Canada)
IGC 192-2004 Plastic Acrylontrile-Butadiene Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Drain, Waste and Vent (DWV) Pressure Test Fittings for Use in ABS, PVC or Cast Iron DWV Piping Systems
IGC 212-2009a Factory Applied Aluminum and Polyethylene or Crosslinked Polyethylene Coated SDR 9 PEX Tubing
IGC 223-2007 Polypropylene-Aluminum-Polypropylene Multilayer Piping Systems for Hot and Cold Water
IGC 224-2009 ABS, PVC and Cast Iron DWV Test Fitting with Integral Cleanout
IGC 228-2006 Polyethylene of Raised Temperature (PE-RT) Tubing
IGC 232-2006 PVC Valve with Integral Ball and Spring-Check or Swing-Check Features
IGC 239-2007 Aluminum-Polypropylene Multilayer Piping Systems for Hot- and Cold- Water
IGC 243-2007 Chlorinated Poly (Vinyl Chloride)-Aluminum-Chlorinated Poly (Vinyl Chloride) (CPVC-AL-CPVC) Tubing and Fittings
IGC 251-2008 Structural Adhesive Fitting Systems for Joining PVC, CPVC, ABS, PP, PE, PEX, and Copper Tubing
IGC 265-2008 PVC Reinforcement Ring for PVC DWV Joints
IGC 266-2010 Polyethylene of Raised Temperature (PE-RT) Multilayer Piping Systems for Hot- and Cold- Water
IGC 269-2009 PVC or ABS Cover for Use with Unshielded Flexible Transition Couplings for Underground Piping Systems

ISO

International Organization for Standardization (ISO)
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+41-22-749-01-1
Internet Address: www.iso.ch

USA Secretariat:

American National Standards Institute
1430 Broadway
New York, NY 10019
(212) 354-3300

Plastics Pipes

161-1:1996	Thermoplastics Pipes for the Conveyance of Fluids – Nominal Outside Diameters and Nominal Pressures – Part 1: Metric Series
161-2:1996	Thermoplastic Pipes for the Conveyance of Fluids – Nominal Outside Diameters and Nominal Pressures – Part 2: Inch Series
1167-1:2006	Plastics Pipes, Fittings, and Assemblies for the Conveyance of Fluids – Determination of the Resistance to Internal Pressure – Part 1: General Method
1167-2:2006	Plastics Pipes, Fittings, and Assemblies for the Conveyance of Fluids – Determination of the Resistance to Internal Pressure – Part 2: Preparation of Pipe Test Pieces
1167-3:2006	Plastics Pipes, Fittings, and Assemblies for the Conveyance of Fluids – Determination of the Resistance to Internal Pressure – Part 3: Preparation of Components
1167-4:2006	Plastics Pipes, Fittings, and Assemblies for the Conveyance of Fluids – Determination of the Resistance to Internal Pressure – Part 4: Preparation of Assemblies
2505:2005	Thermoplastics Pipes – Longitudinal Reversion – Test Method and Parameters
2507-1:1995	Thermoplastics Pipes and Fittings – Vicat Softening Temperature – Part 1: General Test Method
2507-2:1995	Thermoplastics Pipes and Fittings – Vicat Softening Temperature – Part 2: Test Conditions for Unplasticized Poly (Vinyl Chloride) (PVC-U) or Chlorinated Poly (vinyl chloride) Pipes and Fittings and for High Impact Resistance Poly (vinyl chloride) (PVC-HI) Pipes
2507–3:1995	Thermoplastics Pipes and Fittings – Vicat Softening Temperature – Part 3: Test Conditions for Acrylonitrile/Butadiene/Styrene (ABS) and Acrylonitrile/Styrene/Acrylic Ester (ASA) Pipes and Fittings
3126:2005	Plastics Piping Systems – Plastics Components – Determination of Dimensions
3127:1994	Thermoplastics Pipes – Determination of Resistance to External Blow – Round-the-Clock Method
3213:1996	Polypropylene (PP) Pipes – Effect of Time and Temperature on Expected Strength
3514:1976	Chlorinated Polyvinyl Chloride (CPVC) Pipes and Fittings – Specification and Determination of Density
4059:1978	Polyethylene (PE) Pipes – Pressure Drop in Mechanical Pipe-Joining Systems – Method of Test and Requirements
4065:1996	Thermoplastic Pipes – Universal Wall Thickness Table
4433-1:1997	Thermoplastic Pipes – Resistance to Liquid Chemicals – Classification – Part 1: Immersion Test Method
4433-2:1997	Thermoplastic Pipes – Resistance to Liquid Chemicals – Classification – Part 2: Polyolefin Pipes

4433-3:1997	Thermoplastics Pipes – Resistance to Liquid Chemicals – Classification – Part 3: Unplasticized Poly(vinyl chloride) (PVC-U), High-impact Poly(vinyl chloride) (PVC-HI) and Chlorinated Poy(vinyl chloride) (PVC-C) Pipes
4433-4:1997	Thermoplastics Pipes – Resistance to Liquid Chemicals – Classification – Part 4: Poly(vinylidene fluoride) (PVDF) pipes
4439:1979	Unplasticized Polyvinyl Chloride (PVC) Pipes and Fittings – Determination of Specification of Density
6964:1986	Polyolefin Pipes and Fittings – Determination of Carbon Black Content by Calcination and Pyrolysis – Test Method and Basic Specification
7245:1984	Pipes and Fittings of Acrylonitrile/Butadiene/Styrene (ABS) – General Specification for Moulding and Extrusion Materials
7246:1984	Pipes and Fittings of Acrylonitrile/Styrene/Acrylester (ASA) –
7686:2005	Plastics Pipes and Fittings – Determination of Opacity
8361-1:1991	Thermoplastics Pipes and Fittings – Water Absorption – Part 1: General Test Method
8361-2:1991	Thermoplastics Pipes and Fittings – Water Absorption – Part 2: Test Conditions for Unplasticized Poly (vinyl chloride) (PVC-U) Pipes and Fittings
8361-3:1991	Thermoplastics Pipes and Fittings – Water Absorption – Part 3: Test Conditions for Acrylonitrile/Butadiene/Styrene (ABS) Pipes and Fittings
9852:2007	Unplasticized Poly (vinyl chloride) (PVC-U) Pipes – Dichloromethane Resistance at Specified Temperature (DCMT) – Test Method
9854-1:1994	Thermoplastics Pipes for the Transport of Fluids – Determination of Pendulum Impact Strength by the Charpy Method – Part 1: General Test Method
9854-2:1994	Thermoplastics Pipes for the Transport of Fluids – Determination of Pendulum Impact Strength by the Charpy Method – Part 2: Test Conditions for Pipes of Various Materials
9967:2007	Thermoplastics Pipes – Determination of Creep Ratio
9969:2007	Thermoplastics Pipes – Determination of Ring Stiffness
10146:2007	Crosslinked Polyethylene (PE-X) Pipes - Effect of Time and Temperature on the Expected Strength
10147:2004	Pipes and Fittings Made of Crosslinked Polyethylene (PE-X) – Estimation of the Degree of Crosslinking by Determination of the Gel Content
TR 10358:1993	Plastics Pipes and Fittings – Combined Chemical-Resistance Classification Table
TR 10501:1993	Thermoplastics Pipes for the Transport of Liquids Under Pressure – Calculation of Head Losses
11173:1994	Thermoplastics Pipes – Determination of Resistance to External Blows – Staircase Method
12091:1995	Structured-Wall Thermoplastics Pipes – Oven Test

12162:1995 Thermoplastics Materials for Pipes and Fittings for Pressure Applications – Classification and Designation – Overall Service (Design) Coefficient

12230.1996 Polybutene (PB) Pipes - Effect of Time and Temperature on the Expected Strength

13760.1998 Plastics Pipes for the Conveyance of Fluids under Pressure – Miner's Rule Calculation Method for Cumulative Damage

11295:2010 Classification and information on design of plastics piping systems used for renovation

11296-1:2009 Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks -- Part 1: General

11296-3:2009 Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks -- Part 3: Lining with close-fit pipes

11296-4:2009 Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks -- Part 4: Lining with cured-in-place pipes

ISO/DIS 11296-7 Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks -- Part 7: Lining with spirally-wound pipes

ISO 11298-1:2010 Plastics piping systems for renovation of underground water supply networks -- Part 1: General

ISO 11298-3:2010 Plastics piping systems for renovation of underground water supply networks -- Part 3: Lining with close-fit pipes

ISO/DIS 11299-1 Plastics piping systems for renovation of underground gas supply networks -- Part 1: General

ISO/DIS 11299-3 Plastics piping systems for renovation of underground gas supply networks -- Part 3: Lining with close-fit pipes

ISO 11922-1:1997 Thermoplastics pipes for the conveyance of fluids -- Dimensions and tolerances -- Part 1: Metric series

ISO 11922-2:1997 Thermoplastics pipes for the conveyance of fluids -- Dimensions and tolerances -- Part 2: Inch-based series

ISO 13966:1998 Thermoplastics pipes and fittings -- Nominal ring stiffnesses

Water Piping

ISO 4427-1:2007	Plastics piping systems -- Polyethylene (PE) pipes and fittings for water supply -- Part 1: General
ISO 4427-2:2007	Plastics piping systems -- Polyethylene (PE) pipes and fittings for water supply -- Part 2: Pipes
ISO 4427-3:2007	Plastics piping systems -- Polyethylene (PE) pipes and fittings for water supply -- Part 3: Fittings
ISO 4427-5:2007	Plastics piping systems -- Polyethylene (PE) pipes and fittings for water supply -- Part 5: Fitness for purpose of the system
ISO 10508:2006	Plastics piping systems for hot and cold water installations -- Guidance for classification and design
ISO 15875-1:2003	Plastics piping systems for hot and cold water installations -- Crosslinked polyethylene (PE-X) -- Part 1: General
ISO 15875-2:2003	Plastics piping systems for hot and cold water installations -- Crosslinked polyethylene (PE-X) -- Part 2: Pipes
ISO 15875-3:2003	Plastics piping systems for hot and cold water installations -- Crosslinked polyethylene (PE-X) -- Part 3: Fittings
ISO 15875-5:2003	Plastics piping systems for hot and cold water installations -- Crosslinked polyethylene (PE-X) -- Part 5: Fitness for purpose of the system
ISO/TS 15875-7:2003	Plastics piping systems for hot and cold water installations -- Crosslinked polyethylene (PE-X) -- Part 7: Guidance for the assessment of conformity
ISO 21003-1:2008	Multilayer piping systems for hot and cold water installations inside buildings -- Part 1: General
ISO 21003-2:2008	Multilayer piping systems for hot and cold water installations inside buildings -- Part 2: Pipes
ISO 21003-3:2008	Multilayer piping systems for hot and cold water installations inside buildings -- Part 3: Fittings
ISO 21003-5:2008	Multilayer piping systems for hot and cold water installations inside buildings -- Part 5: Fitness for purpose of the system
ISO/TS 21003-7:2008	Multilayer piping systems for hot and cold water installations inside buildings -- Part 7: Guidance for the assessment of conformity
ISO 21004:2006	Plastics piping systems -- Multilayer pipes and their joints, based on thermoplastics, for water supply
ISO 22391-1:2009	Plastics piping systems for hot and cold water installations -- Polyethylene of raised temperature resistance (PE-RT) -- Part 1: General
ISO 22391-2:2009	Plastics piping systems for hot and cold water installations -- Polyethylene of raised temperature resistance (PE-RT) -- Part 2: Pipes
ISO 22391-3:2009	Plastics piping systems for hot and cold water installations -- Polyethylene of raised temperature resistance (PE-RT) --

	Part 3: Fittings
ISO 22391-5:2009	Plastics piping systems for hot and cold water installations -- Polyethylene of raised temperature resistance (PE-RT) -- Part 5: Fitness for purpose of the system
ISO/PRF TR 22391-7	Plastics piping systems for hot and cold water installations -- Polyethylene of raised temperature resistance (PE-RT) -- Part 7: Guidance for the assessment of conformity

Gas Piping

ISO 4437:2007	Buried polyethylene (PE) pipes for the supply of gaseous fuels -- Metric series -- Specifications
ISO 8085-1:2001	Polyethylene fittings for use with polyethylene pipes for the supply of gaseous fuels -- Metric series -- Specifications -- Part 1: Fittings for socket fusion using heated tools
ISO 8085-2:2001	Polyethylene fittings for use with polyethylene pipes for the supply of gaseous fuels -- Metric series -- Specifications -- Part 2: Spigot fittings for butt fusion, for socket fusion using heated tools and for use with electrofusion fittings
ISO 8085-3:2001	Polyethylene fittings for use with polyethylene pipes for the supply of gaseous fuels -- Metric series -- Specifications -- Part 3: Electrofusion fittings
ISO 10838-1:2000	Mechanical fittings for polyethylene piping systems for the supply of gaseous fuels -- Part 1: Metal fittings for pipes of nominal outside diameter less than or equal to 63 mm
ISO 10838-2:2000	Mechanical fittings for polyethylene piping systems for the supply of gaseous fuels -- Part 2: Metal fittings for pipes of nominal outside diameter greater than 63 mm
ISO 10838-3:2001	Mechanical fittings for polyethylene piping systems for the supply of gaseous fuels -- Part 3: Thermoplastics fittings for pipes of nominal outside diameter less than or equal to 63 mm
ISO/TS 10839:2000	Polyethylene pipes and fittings for the supply of gaseous fuels -- Code of practice for design, handling and installation
ISO 12176-1:2006	Plastics pipes and fittings -- Equipment for fusion jointing polyethylene systems -- Part 1: Butt fusion
ISO 12176-2:2008	Plastics pipes and fittings -- Equipment for fusion jointing polyethylene systems -- Part 2: Electrofusion
ISO 12176-3:2006	Plastics pipes and fittings -- Equipment for fusion jointing polyethylene systems -- Part 3: Operator's badge
ISO 12176-4:2003	Plastics pipes and fittings -- Equipment for fusion jointing polyethylene systems -- Part 4: Traceability coding
ISO 13950:2007	Plastics pipes and fittings -- Automatic recognition systems for electrofusion joints
ISO 14531-1:2002	Plastics pipes and fittings -- Crosslinked polyethylene (PE-X) pipe systems for the conveyance of gaseous fuels -- Metric

	series -- Specifications -- Part 1: Pipes
ISO 14531-2:2004	Plastics pipes and fittings -- Crosslinked polyethylene (PE-X) pipe systems for the conveyance of gaseous fuels -- Metric series -- Specifications -- Part 2: Fittings for heat-fusion jointing
ISO 14531-3:2006	Plastics pipes and fittings -- Crosslinked polyethylene (PE-X) pipe systems for the conveyance of gaseous fuels -- Metric series -- Specifications -- Part 3: Fittings for mechanical jointing (including PE-X/metal transitions)
ISO 14531-4:2006	Plastics pipes and fittings -- Crosslinked polyethylene (PE-X) pipe systems for the conveyance of gaseous fuels -- Metric series -- Specifications -- Part 4: System design and installation guidelines
ISO 15439-1:2007	Plastics piping systems for the supply of gaseous fuels for maximum operating pressure up to and including 0,4 MPa (4 bar) -- Polyamide (PA) -- Part 1: General
ISO 15439-2:2007	Plastics piping systems for the supply of gaseous fuels for maximum operating pressure up to and including 0,4 MPa (4 bar) -- Polyamide (PA) -- Part 2: Pipes
ISO 15439-3:2007	Plastics piping systems for the supply of gaseous fuels for maximum operating pressure up to and including 0,4 MPa (4 bar) -- Polyamide (PA) -- Part 3: Fittings
ISO 21307:2009	Plastics pipes and fittings -- Butt fusion jointing procedures for polyethylene (PE) pipes and fittings used in the construction of gas and water distribution systems

Test Methods

ISO 9080:2003	Plastics piping and ducting systems -- Determination of the long-term hydrostatic strength of thermoplastics materials in pipe form by extrapolation
ISO 13477:2008	Thermoplastics pipes for the conveyance of fluids -- Determination of resistance to rapid crack propagation (RCP) -- Small-scale steady-state test (S4 test)
ISO 13478:2007	Thermoplastics pipes for the conveyance of fluids -- Determination of resistance to rapid crack propagation (RCP) -- Full-scale test (FST)
ISO 13479:2009	Polyolefin pipes for the conveyance of fluids -- Determination of resistance to crack propagation -- Test method for slow crack growth on notched pipes
ISO 16241:2005	Notch tensile test to measure the resistance to slow crack growth of polyethylene materials for pipe and fitting products (PENT)

ISO 16871:2003	Plastics piping and ducting systems -- Plastics pipes and fittings -- Method for exposure to direct (natural) weathering
ISO 18553:2002	Method for the assessment of the degree of pigment or carbon black dispersion in polyolefin pipes, fittings and compounds
ISO 24033:2009	Polyethylene of raised temperature resistance (PE-RT) pipes -- Effect of time and temperature on the expected strength
ISO/PRF TR 26873	Plastics pipes and fittings -- Definition and construction procedures for reference lines

Flanges, Couplings and Other Pipe Connections

2535:2001	Plastics -- Unsaturated-polyester resins -- Measurement of gel time at ambient temperature

Pipelines in General

3459:1976	Polyethylene (PE) Pressure Pipes – Joints Assembled with Mechanical Fittings – Internal Under-Pressure Test Method and Requirement
3501:1976	Assembled Joints Between Fittings and polyethylene (PE) pressure pipes – Test of resistance to pull out
3503:1976	Assembled joints between fittings and polyethylene (PE) pressure pipes – Test of leakproofness under internal pressure when subjected to bending

Irrigation Equipment

8779:2001	Polyethylene (PE) Pipes for Irrigation Laterals – Specifications
8796:2004	Polyethylene PE 32 and PE 40 pipes for irrigation laterals – Susceptibility to Environmental Stress-Cracking Induced by Insert-Type Fittings – Test Method and requirements

Petroleum Products and Natural Gas Handling Equipment

6993:2006	Buried, High-Impact Poly (vinyl chloride) (PVC-HI) Piping Systems for the Supply of Gaseous Fuels – Part 1: Pipes for a maximum operating pressure of 1 bar (100 kPa)

Materials

1628-3:2001	Plastics – Determination of the Viscosity of polymers in dilute solution using capillary viscometers – Part 3: Polyethylenes and Polypropylenes
1872-1:1993	Plastics – Polyethylene (PE) Moulding and Extrusion materials – Part 1: Designation System and Basis for Specifications
1872-2:2007	Plastics – Polyethylene (PE) moulding and extrusion materials – Part 2: Preparation of Test Specimens and Determination of Properties
1873-1:1995	Plastics – Polypropylene (PP) Moulding and Extrusion Materials – Part 1: Designation System and Basis for Specifications
1873-2:2007	Plastics – Polypropylene (PP) moulding and extrusion materials – Part 2: Preparation of Test Specimens and Determination of Properties
1874-1:1992	Plastics – Polyamide (PA) Moulding and Extrusion Materials – Part 1: Designation
1874-2:2006	Plastics – Polyamide (PA) Moulding and Extrusion Materials – Part 2: Preparation of Test Specimens and Determination of Properties
2580-1:2002	Plastics – Acrylonitrile-Butadiene-Styrene (ABS) Moulding and Extrusion Materials – Part 1: Designation system and basics for specifications
2580-2:2003	Plastics – Acrylonitrile-Butadiene-Styrene (ABS) Moulding and Extrusion Materials – Part 2: Preparation of Test Specimens and Determination of Properties
3451-4:1998	Plastics – Determination of Ash – Part 4: Polyamides
3451-5:2002	Plastics – Determination of Ash – Part 5: Poly (vinyl chloride)
4577:1983	Plastics – Polypropylene and Propylene-Copolymers – Determination of Thermal Oxidative Stability in Air – Oven Method
4894-1:1997	Plastics – Styrene/Acrylonitrile (SAN) Moulding and Extrusion Materials – Part 1: Designation system and basis for specifications
4894-2:1995	Plastics – Styrene/Acrylonitrile (SAN) Moulding and Extrusion Materials – Part 2: Preparation of Test Specimens and Determination of Properties
8986-1:1993	Plastics **--** Polybutene (PB) moulding and extrusion materials -- Part 1: Designation system and basis for specifications

Reinforced Plastics

8283-1:1991	Plastics Pipes and Fittings – Dimensions of Sockets and Spigots for Discharge Systems Inside Buildings – Part 1: Unplasticized Poly (vinyl chloride) (PVC-U) and Chlorinated Poly (vinyl chloride) (PVC-C)
8283-2:1992	Plastics Pipes and Fittings – Dimensions of Sockets and Spigots for Discharge Systems Inside Buildings – Part 2: Polyethylene (PE)
8283-3:1992	Plastics Pipes and Fittings – Dimensions of Sockets and Spigots for Discharge Systems Inside Buildings – Part 3: Polypropylene (PP)
8283-4:1992	Plastics Pipes and Fittings – Dimensions of Sockets and Spigots for Discharge Systems Inside Buildings – Part 4: Acrylonitrile/Butadiene/Styrene (ABS)
8659:1989	Thermoplastics Valves – Fatigue Strength – Test Method
8770:2003	Plastics Piping Systems for Soil and Waste Discharge (Low and High Temperature) Inside Buildings – Polyethylene (PE)
8772:2006	Plastics Piping Systems for non-pressure underground drainage and sewerage - Polyethylene (PE) 8773:2006 Plastics piping systems for non-pressure underground drainage and sewerage--Polypropylene(PP) 8779:2001 Polyethylene (PE) Pipes for Irrigation Laterals – Specifications
8795:2001	Plastics Piping Systems for the Transport of Water Intended for Human Consumption – Migration assessment -- Determination of migration values of plastics pipes and fittings and their joints

NEMA

National Electrical Manufacturers Association
1300 North 17th Street
Suite 1752
Rosslyn, VA 22209
(703) 841-3200
Internet Address: www.nema.org

NEMA RN 1-2005	Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit (IMC)
NEMA TC 2-2003	Electrical Polyvinyl Chloride (PVC) Tubing and Conduit
NEMA TC 3-2004	Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing
NEMA TC 6 & 8-2003	Polyvinyl Chloride (PVC) Plastic Utilities Duct for Underground Installations
NEMA TC 7-2005	Smooth Wall Coilable Electrical Polyethylene Conduit

NEMA TC 9-2004	Fittings for Polyvinyl Chloride (PVC) Plastic Utilities Duct for Underground Installation
NEMA TC 13-2005	Electrical Nonmetallic Tubing (ENT)
NEMA TC 14-2002	Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
NEMA TC 18-2004	Packaging of Master Bundles for EPC-40 Polyvinyl Chloride (PVC) Conduit
NEMA TC 19-2001	Nonmetallic Riser U-Type Guards
NEMA TCB 2-2000	NEMA Guidelines for the Selection and Installation of Underground Nonmetallic Duct

NFPA

National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169
(617) 770-3000
Internet Address: www.nfpa.org

NFPA 13	Standard for the Installation of Sprinkler Systems
NFPA 13D	Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes
NFPA 13R	Standard for the Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height
NFPA 30	Flammable and Combustible Liquids Code
NFPA 54	National Fuel Gas Code
NFPA 70	National Electrical Code
NFPA 70A	National Electrical Code Requirements for One- and Two-Family Dwellings and Mobile Homes
NFPA 79	Electrical Standard for Industrial Machinery
NFPA 90A	Standard for the Installation of Air-Conditioning and Ventilating Systems
NFPA 90B	Standard for the Installation of Warm Air Heating and Air-Conditioning Systems
NFPA 414	Standard for Aircraft Rescue and Fire-Fighting Vehicles

NSF

NSF International
789 N Dixboro Rd.
Ann Arbor, MI 48105

(734) 769-8010
www.nsf.org

NSF/ANSI 14 Plastics Piping Components and Related Materials (2009)

NSF/ANSI 61 Drinking Water System Components – Health Effects (2009)

NSF Listing of	Plastic Materials, Pipe, Fittings and Appurtenances for Potable Water and Waste Water
NSF Listing of	Drinking Water Additives – Health Effects

UL

Underwriters Laboratories, Inc.
2600 N.W. Lake Rd.
Camas, WA 98607
(877) 854-3577
www.ul.com

UL 94	Tests for Flammability of Plastic Materials for Parts in Devices and Appliances
UL 514 B	Conduit, Tubing, and Cable Fittings
UL 514 C	Standard for Nonmetallic Outlet Boxes, Flush-Device Boxes and Covers
UL 651	Standard for Schedule 40 and 80 Rigid PVC Conduit and Fittings
UL 651 A	Type EB and A Rigid PVC Conduit and HDPE Conduit
UL 651 B	Standard for Continuous Length HDPE Conduit
UL 746 A	Standard for Polymeric Material – Short Term Property Evaluations
UL 746 B	Standard for Polymeric Materials – Long Term Property Evaluations
UL 1285	Standard for Pipe and Couplings, Polyvinyl Chloride (PVC), and Oriented Polyvinyl Chloride (PVCO) for Underground Fire Service
UL 1660	Liquid-Tight Flexible Nonmetallic Conduit
UL 1713	Standard for Safety for Pressure Pipe and Couplings, Glass-Fiber Reinforced, for Underground Fire Service
UL 1821	Standard for Safety for Thermoplastic Sprinkler Pipe and Fittings for Fire Protection Service
UL 1887	Standard for Fire Test of Plastic Sprinkler Pipe for Visible Flame and Smoke Characteristics

UNI-Bell

Uni-Bell PVC Pipe Association
2711 LBJ Freeway, Suite 1000
Dallas, TX 75234
(972) 243-3902
www.uni-bell.org

UNI-B-1	Recommended Standard Specification for Thermoplastic Pipe Joints, Pressure and Non-Pressure Applications
UNI-B-6	Recommended Practice for Low-Pressure Air Testing of Installed Sewer Pipe

UNI-B-8	Recommended Practice for the Direct Tapping of Polyvinyl Chloride (PVC) Pressure Water Pipe (Nominal Diameters 6-12 Inch)
UNI-B-9	Recommended Performance Specification for Polyvinyl Chloride (PVC) Profile Wall Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter (Normal Pipe Sizes 4-48 Inches)

Model Codes

ICC

International Code Council
500 New Jersey Avenue, NW,
6th Floor,
Washington, DC 20001-2070
1-888-ICC-SAFE (422-7233)
(202) 783-2348

webmaster@iccsafe.org
2009 International Building Code
2009 International Residential Code
2009 International Fire Code
2009 International Fuel Gas Code
2009 International Plumbing Code
2009 International Mechanical Code
2009 International Private Sewage Disposal Code

IAPMO

International Association of Plumbing and Mechanical Officials
5001 E. Philadelphia St.
Ontario, CA 91761
1-909-472-4100
iapmo@iapmo.org

2009 Uniform Plumbing Code
2009 Uniform Mechanical Code

PHCC

Plumbing-Heating-Cooling Contractors-National Association
180 S. Washington Street
P.O. Box 6808
Falls Church, VA 22046
Phone: (703) 237-8100
naphcc@naphcc.org

2009 National Standard Plumbing Code

UNI-BELL PVC PIPE ASSOCIATION

This association limits membership to producers of PVC pipe with elastomeric gasketed bell ends. This type of pipe is used extensively in buried water, sewer and irrigation systems. Uni-Bell was formed in 1971 to service the technical, education and research needs of this large and important segment of the plastic pipe industry. Uni-Bell has responded to the engineering, regulatory, public health and standardization communities by sponsoring research projects, providing technical assistance, and publishing the Uni-Bell Handbook of PVC Pipe Design and Construction.

For more information contact: Uni-Bell PVC Pipe Association
2655 Villa Creek Drive, Suite 155
Dallas, TX 75234
(972) 243-3902
www.members.aol.com/unibell

PLASTIC PIPE AND FITTINGS ASSOCIATION

PPFA is the national trade association of manufacturers of plastics piping products used for plumbing applications. Its membership includes pipe and fittings manufacturers and suppliers of materials, equipment and solvent cements. It was formed in 1978 to promote the use and code acceptance of plastics piping and plumbing applications. These applications include, but are not limited to, water service, water distribution, DWV, building drain, sewer and fire sprinkler systems.

For more information contact: Plastic Pipe and Fittings Association
800 Roosevelt Road
Bldg. C, Suite 20
Glen Ellyn, IL 60137-5833
(703) 858-6540

Sources of Other Information

Various organizations issue manuals, guides, and reports dealing with selection, design, installation and maintenance of plastics piping systems. Some of the more commonly referenced publications and the issuing organizations are as follows:

- **American Gas Association**
  400 North Capitol Street NW
  Washington, DC 20001
  (202) 824-9091
  www.aga.com

  Plastic Pipe Manual for Gas Service
  Guide for Gas Transmission and Distribution Systems

- **U.S. Army**

  Maintenance and Operation of Gas Systems, Nov. 1970, Army TM 5-654

- **American Water Works Association** (address given earlier)

  AWWA M23 – PVC Pipe – Design and Installation
  AWWA Committee Report on the Design and Installation of Polyethylene Pipe made in Accordance with AWWA C906

- **American Association of State and Highway Transportation Officials** (address given earlier)

  Section 18, Soil-Thermoplastic Pipe Interaction Systems, Standard Specifications for Highway Bridges

- **Plastics Pipe Institute**

  A listing of the currently issued reports can be obtained from PPI at www.plasticpipe.org*.*