This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: F2389 – 17a

An American National Standard

Standard Specification for Pressure-rated Polypropylene (PP) Piping Systems[1]

This standard is issued under the fixed designation F2389; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope*

1.1 This specification establishes requirements for polypropylene (PP) piping system components made to metric sizes and IPS schedule 80 sizes, and pressure rated for water service and distribution supply (see Appendix X1). Included are criteria for materials, workmanship, dimensions and tolerances, product tests, and marking for polypropylene (PP) piping system components such as pipe, fittings, valves, and manifolds.

1.2 The components governed by this specification shall be permitted for use in water service lines, hot-and-cold water distribution, hydronic heating, and irrigation systems.

1.3 The pipe and fittings produced under this specification shall be permitted to be used to transport industrial process fluids, effluents, slurries, municipal sewage, etc. The user shall consult the manufacturer to determine whether the material being transported is compatible with the polypropylene piping system and will not affect the service life beyond limits acceptable to the user.

1.4 *Units*—The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory requirements prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D792 Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement

D1238 Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer

D1505 Test Method for Density of Plastics by the Density-Gradient Technique

D1598 Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure

D1600 Terminology for Abbreviated Terms Relating to Plastics

D2122 Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings

D2749 Symbols for Dimensions of Plastic Pipe Fittings

D3895 Test Method for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry

D4101 Specification for Polypropylene Injection and Extrusion Materials

F412 Terminology Relating to Plastic Piping Systems

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

2.2 *International Organization for Standardization (ISO) Standards:*[3]

ISO 4065 Thermoplastics Pipes—Universal Wall Thickness Table

ISO 9080 Plastics Piping and Ducting Systems—Determination of the Long-Term Hydrostatic Strength of Thermoplastics Materials in Pipe Form by Extrapolation

ISO 9393–2 Thermoplastics valves for industrial applications - Pressure test methods and requirements - Part 2: Test conditions and basic requirements

ISO 13760 Plastic Pipe for the Conveyance of Fluid Under Pressure – Miners Rule – Calculation Method for Cumulative Damage

ISO 15874 Plastics Piping Systems for Hot and Cold Water Installations—Polypropylene (PP)

ISO 15874-2 Plastics Piping Systems for Hot and Cold Water Installations—Polypropylene (PP)—Part 2: Pipes

ISO 15874-3 Plastics Piping Systems for Hot and Cold Water Installations—Polypropylene (PP)—Part 3: Fittings

ISO 15874-5 Plastics piping systems for hot and cold water installations — Polypropylene (PP) —Part 5: Fitness for

[1] This specification is under the jurisdiction of ASTM Committee F17 on Plastic Piping Systems and is the direct responsibility of Subcommittee F17.61 on Water.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH-1211, Geneva 20, Switzerland, http://www.iso.ch.

***A Summary of Changes section appears at the end of this standard**

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