

UPDATE ON ASTM STANDARDS FOR LARGE-DIAMETER PVC SEWER PIPE

Up to 2024, ASTM F679 *Standard Specification for Poly(Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings* was the product standard for large-diameter solid-wall PVC sewer pipe. In 2024, F679 sizes were incorporated into ASTM D3034 *Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings*, and F679 was withdrawn. In 2006 wall thickness types and associated designators “T1” and “T2” were removed – however, some outdated project specifications still include these “T” descriptors.

The current edition of the D3034 standard includes:

- Sizes from 3- through 60-inch
- Four pipe stiffness (PS) / diameter ratio (DR) categories for large-diameter pipe
 - PS 28 / DR 41
 - PS 46 / DR 35
 - PS 75 / DR 32
 - PS 115 / DR 26
- Two cell classes for PVC pipe material
 - 12454
 - 12364
- One wall-thickness type (without “T1” or “T2” designators)

INITIAL DESIGN PHILOSOPHY

The first edition of the standard (published in 1980) included only one pipe stiffness = 46 psi, but two wall-thickness options. Each wall-thickness type was based on achieving the require pipe stiffness by using a different modulus of elasticity (E):

- T-1 wall calculated using $E = 400,000$ psi
- T-2 wall calculated using $E = 500,000$ psi

This method resulted in two separate tables that defined specific wall thicknesses corresponding to the two given modulus values.

MORE PIPE STIFFNESS VALUES ADDED

The 2003 edition of ASTM F679 added PS 115 (which was already a major product known as “heavy-wall sewer” in small-diameter PVC sewer). In 2008, PS 75 was also added to offer an intermediate stiffness level.

REVISED PHILOSOPHY: “T-1” AND “T-2” DESIGNATIONS BECOME OBSOLETE

In 2006, the design philosophy was changed: instead of separate tables for wall thickness, required pipe stiffness was achieved through a combination of non-specific wall thickness and modulus values. As long as a specified minimum wall thickness and minimum modulus of elasticity were met, the standard allowed the manufacturer to achieve the minimum pipe stiffness with any combination of wall-thickness and modulus values. *What remained in the standard was only one table for wall thickness – as a result, the “T-1” and “T-2” designations became obsolete and were removed.*

BOTTOM LINE: NO MORE WALL-THICKNESS CATEGORIES OR “T” DESIGNATIONS

- The current D3034 standard includes four PS values: 28, 46, 75, and 115.
- The standard does not include any wall-thickness categories or “T” designations.
- “T1” and “T2” should be removed from specifications, since they have been obsolete for 20 years.

References: ASTM D3034, Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; ASTM F679, Standard Specification for Poly(Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings (Withdrawn 2024); [Handbook of PVC Pipe Design and Construction](#), PVC Pipe Association; [PVC Nonpressure Pipe Standards for Gravity Sewer](#), PVC Pipe Association