



Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings¹

This standard is issued under the fixed designation D 2855; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This practice describes a procedure for making joints with poly(vinyl chloride) plastic (PVC) pipes, both plain ends and fittings, and bell ends, by means of solvent cements. These procedures are general ones for PVC piping. In non-pressure applications, simplified procedures may be used. Manufacturers should supply specific instructions for their particular products, if and when it seems necessary.

1.2 The techniques covered are applicable only to PVC pipe, both plain and bell-end, and fittings of the same classes as described in Specification D 1784.

1.3 Pipe and fittings are manufactured within certain tolerances to provide for the small variations in the extrusion, belling, and molding processes and are not to exact size. A partial list of standards for PVC pipe, fittings, and cements suitable for use in making solvent-cemented joints is given in Appendix X1.

1.4 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.5 The text of this practice references notes and footnotes that provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the practice.

1.6 *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 limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

D 740 Specification for Methyl Ethyl Ketone²

D 1600 Terminology for Abbreviated Terms Relating to Plastics³

D 1784 Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds³

D 2564 Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems⁴

F 402 Practice for Safe Handling of Solvent Cements, Primers, and Cleaners Used for Joining Thermoplastic Pipe and Fittings⁴

F 412 Terminology Relating to Plastic Piping Systems⁴

F 656 Specification for Primers for Use in Solvent Cement Joints of Poly(Vinyl Chloride) (PVC) Plastic Pipe and Fittings⁴

NOTE 1—Other standards suitable for use in making solvent-cemented joints for PVC pipe and fittings are listed in Appendix X1.

3. Terminology

3.1 *Definitions*—Definitions are in accordance with Terminology F 412, and abbreviations are in accordance with Terminology D 1600, unless otherwise specified.

4. Summary of Practice

4.1 To consistently make good joints, the following should be clearly understood and adhered to:

4.1.1 The joining surfaces must be softened (dissolved) and made semi-fluid.

4.1.2 Sufficient cement must be applied to fill the gap between pipe and fitting.

4.1.3 Assembly of pipe and fittings must be made while the surfaces are still wet and fluid.

4.1.4 Joint strength develops as the cement dries. In the tight part of the joint the surfaces will tend to fuse together; in the loose part the cement will bond to both surfaces.

4.2 Penetration and dissolving can be achieved by the cement itself, by a suitable primer, or by the use of both primer and cement. A suitable primer will penetrate and dissolve the plastic more quickly than cement alone. In cold weather, more time and additional applications are required (see Fig. 1).

4.3 More than sufficient cement to fill the loose part of the joint must be applied (see Fig. 2). Besides filling the gap,

¹ This practice is under the jurisdiction of ASTM Committee F-17 on Plastic Piping Systems and is the direct responsibility of Subcommittee F17.20 on Joining.

Current edition approved March 10, 1996. Published May 1996. Originally published as D 2855 – 70. Last previous edition D 2855 – 93.

² *Annual Book of ASTM Standards*, Vol 06.04.

³ *Annual Book of ASTM Standards*, Vol 08.01.

⁴ *Annual Book of ASTM Standards*, Vol 08.04.