



**Summary of Substantive Changes
between the 2017b^{e1} and 2019a editions of
ASTM D2846 “Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic
Hot- and Cold-Water Distribution Systems”**

Presented to the IAPMO Standards Review Committee on October 7, 2019

General: The changes to this standard might have an impact on currently listed products. The substantive changes are as follows:

- Removed the reference of ASTM D2855, replaced it with ASTM F3328 and reworded the steps for assembly to reflect the practice in ASTM F3328 (see Sections 2, and 15)
- Revised Note 8 to remove all color reference and primer requirements and verified that only the one-step solvent cementing procedure is required (see Note 8 in Section 7.1.1)
- Removed cure time chart and replaced it with the manufacturer’s recommended cure time (see Section 16)
- Deleted Section X2.2.2 for duplication with Section 16.1 (see Appendix X2)

Section 2, Referenced Documents: The following standards were added or deleted:

~~*ASTM D2855 Practice for the Two-Step (Primer and Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets*~~

ASTM F3328 Practice for the One-Step (Solvent Cement Only) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets

Section 7, Requirements for Solvent Cement and Adhesive Joints: Revised Note 8 to remove all color reference and primer requirements and verified that only the one-step solvent cementing procedure is required as follows:

7.1 CPVC Solvent Cements:

7.1.1 General—CPVC solvent cements, for use in CPVC 41, plastic-to-plastic, socket-type joints using the one-step solvent cementing procedure (Practice F3328) shall meet the requirements set forth in Specification F493.

~~*NOTE 8—CPVC solvent cements may exist which meet the requirements of the specification when used in accordance with the manufacturer’s recommendations, without a primer or cleaner. It is recommended that those CPVC solvent cements which may be used without a primer or cleaner be clear or yellow in color. Otherwise, it is recommended that CPVC solvent cement requiring the use of a primer or cleaner be orange in color. Color identification is recommended to facilitate cement recognition, to prevent the misuse of the cement and to minimize the unintentional use of other cements that may fail at elevated service temperatures. Medium bodied viscosity cement is recommended for CPVC products in this standard requiring the one-step solvent cementing procedure (Practice F3328). Local or national codes often define color requirements for the solvent cement*~~



Section 15, Assembly: Removed the reference of ASTM D2855, replaced it with ASTM F3328 and reworded the steps for assembly to reflect the practice in ASTM F3328 as follows:

15.1 Solvent Cemented Joints:

15.1.1 Interference Fit—Components meeting the dimensional requirements of this specification are designed to have an interference fit. Before making a cemented joint, it is advisable to check for an interference dry-fit. A good interference dry-fit exists when the pipe or tubing makes contact with the fitting socket wall between one third and two thirds of the way into the socket.

15.1.2 Cutting—Pipe and tubing may be cut to length with tubing cutters. Tubing cutters with thin cutting wheels designed

specially for plastic are recommended. Where tubing cutters are not available, a saw and mitre box may be used. Burrs and ridges caused by handling or cutting must be removed before assembling a joint.

15.1.3 Cleaning—A clean, dry cloth shall be used to clean the surfaces of pipe and fittings to remove all foreign materials, (Specification D2855, Section 7.4, Notes 10 and 11).

15.1.4 Step-by-Step Assembly—Correct assembly consists of the following steps:

- (1) Pipe shall be cut square (~~Specification D2855, Section 7.1, Fig. 5~~);
- (2) Pipe shall be chamfered and deburred (~~Specification D2855, Section 7.2 Fig. 6~~);
- (3) Dry fit pipe and fitting, pipe should enter fitting socket easily and go in from 1/3 to 2/3 of the socket depth (~~Specification D2855 Section 7.3~~);
- (4) Pipe and fitting socket shall be clean and dry (~~Specification D2855, Section 7.4~~);
- (5) Applicator shall be at least approximately half 1/2 the nominal pipe diameter (~~Specification D2855, Section 7.6~~);
- (6) The cement shall be **worked** into the surfaces to be joined using a circular motion;
- (7) A heavy even coat of CPVC cement shall be applied to the outside of the pipe end, (If the print line exists on the inserted pipe end, smearing or obliteration by the ~~scrubbing action~~ vigorous application of the solvent cement indicates proper cement application).

~~(8) A light even coat of cement shall be applied to the fitting socket;~~

NOTE 14—Short application of solvent cement: is, when the application of solvent cement is less than the total socket depth on pipe or fitting socket, or both, to visually achieve a minimal cement bead at the socket entrance.

(8) A medium even layer of solvent cement shall be applied to the full depth of the fitting socket;

(9) A second layer of cement shall be applied to the pipe end if preparing joints 1-1/4 in. or larger;

~~(10) Assemble immediately, fitting socket rotating the pipe 1/4 turn as the pipe is bottomed~~ without delay while the cement is wet and fluid, assemble the pipe and fitting by forcefully bottoming the pipe in the fitting socket;

NOTE 15—When possible, rotate the pipe or fitting a 1/4 turn as the pipe is inserted in the fitting socket, but not after pipe has bottomed.

(11) Hold ~~the pipe and fitting~~ assembly for 15 to 20 s (colder weather may require longer hold times) to ensure the pipe does not ~~back push~~ out from the fitting socket and initial bonding occurs. A Properly assembled joints will display a full and continuous solvent cement bead of cement shall be visible around the socket entrance, ~~which is a good indication that an appropriate amount of solvent cement was applied.~~ If the bead is not continuous around the socket entrance, insufficient cement was used.

(12) After bottoming pipe and holding the joint together for a sufficient amount of time to prevent push out, immediately remove Excess solvent cement should be wiped off at the socket entrance by wiping with a clean dry cloth or paper towel.



Section 16, Installation: Removed cure time chart and replaced it with the manufacturer's recommended cure time as follows:

16.1 Installation Temperature—Extra care must be taken at temperatures of 40 °F or lower and 110 °F or higher. Always follow the manufacturer's installation instructions carefully for set and cure times.

16.2 Pressure Testing—CPVC piping systems made of 1/2 through 2-in. sizes in accordance with this specification, and utilizing ~~a~~ the one-step solvent cement requiring a primer or cleaner, can be cementing procedure should be hydrostatically pressure tested (using cold tap water only) at line pressure (150 psi maximum) after the solvent cemented joints have cured per the manufacturer's recommended cure times.

~~for at least the following amount of time:~~

~~Ambient~~

~~Temperature~~

~~Minimum Cure Times, h~~

~~1/2 in. to 1 in. 1 1/4 in. to 2 in. over 60 °F 1-2~~

~~40° to 60 °F 2-4~~

~~For cements not requiring a primer or cleaner, refer to the manufacturer's recommended cure times specific to that cement.~~

NOTE 16—Set is the time required before the joint can be carefully handled. Cure time is the time required before the system can be hydrostatically pressure tested or placed into service. Set and cure times are dependent upon pipe and fitting diameter, viscosity of the solvent cement, ambient temperature, humidity, and the dry joint tightness (interference fit). As a general rule, relatively short cure periods are satisfactory for high ambient temperatures with low humidity, small pipe sizes, quick drying solvent cements, and tight fitting joints. Longer cure times are required for low temperatures, large pipe sizes, slow drying solvent cements, and relatively high humidity.

Appendix X2, Design, Assembly, and Installation Considerations: Deleted Section X2.2.2 for duplication with Section 16.1 as follows:

X2.2 ~~Installation~~ Storage and Handling

X2.2.1 Storage and Handling—CPVC pipe, tubing, and fittings shall be stored under cover to avoid unnecessary dirt accumulation and long-term exposure to sunlight. Pipe and tubing shall be stored with continuous support in straight, uncrossed bundles. Care shall be used in handling to ensure that unnecessary abuse such as abrasion on concrete or crushing is avoided.

~~X2.2.2 Installation Temperature—Extra care shall be taken at temperatures of 40 °F or lower and 110 °F or higher. Always follow the manufacturer's installation instructions carefully.~~