

**COMMERCIAL STANDARD CS 219-59**

**Dimensions and Tolerances for Solvent Welded  
Rigid ABS Plastic Pipe**

A recorded  
voluntary standard of the  
trade published by  
the U.S. Department  
of Commerce



For sale by the Superintendent of Documents

U.S. Government Printing Office, Washington 25, D.C. Price 5 cents

**WITHDRAWN**

**U.S. DEPARTMENT OF COMMERCE**

**Frederick H. Mueller, Secretary**

**OFFICE OF TECHNICAL SERVICES**

**Commodity Standards Division**

With the cooperation of  
National Bureau of Standards

**COMMERCIAL STANDARDS**

Commercial Standards are developed by manufacturers, distributors, and users in cooperation with the Commodity Standards Division of the Office of Technical Services, and with the National Bureau of Standards. Their purpose is to establish quality criteria, standard methods of test, rating, certification, and labeling of manufactured commodities, and to provide uniform bases for fair competition.

The adoption and use of a Commercial Standard is voluntary. However, when reference to a Commercial Standard is made in contracts, labels, invoices, or advertising literature, the provisions of the standard are enforceable through usual legal channels as a part of the sales contract.

Commercial Standards originate with the proponent industry. The sponsors may be manufacturers, distributors, or users of the specific product. One of these three elements of industry submits to the Commodity Standards Division the necessary data to be used as the basis for developing a standard of practice. The division by means of assembled conferences or letter referenda, or both, assists the sponsor group in arriving at a tentative standard of practice and thereafter refers it to the other elements of the same industry for approval or for constructive criticism that will be helpful in making any necessary adjustments. The regular procedure of the division assures continuous servicing of each Commercial Standard through review and revision whenever, in the opinion of the industry, changing conditions warrant such action.

**SIMPLIFIED PRACTICE RECOMMENDATIONS**

Under a similar procedure the Commodity Standards Division cooperates with industries in the establishment of Simplified Practice Recommendations. Their purpose is to eliminate avoidable waste through the establishment of standards of practice for sizes, dimensions, varieties, or other characteristics of specific products; to simplify packaging practices; and to establish simplified methods of performing specific tasks.

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The initial printing of Commercial Standard CS219-59 was made possible through the cooperation of the Society of the Plastics Industry.

**W W A R D H T W**

# Dimensions and Tolerances for Solvent Welded Rigid ABS Plastic Pipe

[Effective May 1, 1959]

## 1. PURPOSE

1.1 The purpose of this Commercial Standard is to establish on a National basis standard dimensions and tolerances for SWP<sup>1</sup> size rigid acrylonitrile-butadiene-styrene pipe (referred to herein as ABS plastic pipe in accordance with the recommended abbreviation in ASTM Designation: D1600-58T); to promote understanding between producers and users, fair competition between sellers, and to maintain public confidence in the quality of the products of the industry.

## 2. SCOPE

2.1 This Commercial Standard covers dimensions and tolerances for outside diameters and wall thicknesses for eleven nominal pipe sizes for rigid ABS plastic pipe intended for solvent welding in three series of wall thicknesses. Pipe with these dimensions is commonly referred to as SWP size. A suggested form for declaring compliance with the standard is given.

## 3. REQUIREMENTS

3.1 DIMENSIONS AND TOLERANCES.—Outside diameters, wall thicknesses and their tolerances shall be as specified in Table 1 when measured in accordance with Paragraph 4.1.

## 4. INSPECTION PROCEDURE

4.1 Any length of pipe may be checked for dimensions. Measurements shall be made at a temperature of  $23^{\circ} \pm 1^{\circ} \text{C}$  ( $73.4^{\circ} \pm 1.8^{\circ} \text{F}$ ) by a micrometer accurate to  $\pm 0.001$  inch. A tapered plug can be inserted into the pipe for purposes of rounding it out to facilitate measuring the outside diameter of the pipe. Pipe shall be within the size tolerances specified.

## 5. IDENTIFICATION OR LABELING

5.1 In order that purchasers may be assured that the dimensions of the rigid SWP size ABS plastic pipe actually comply with all requirements of the Commercial Standard, it is recommended that manufacturers include the following statement in conjunction with their names and addresses on labels, invoices, sales literature, etc.:

The dimensions of this rigid SWP size ABS plastic pipe are in accordance with Commercial Standard CS219-59, as developed by the trade, under the procedure of the Commodity Standards Division, and issued by the U.S. Department of Commerce.

<sup>1</sup> "Solvent Welded Pipe", intended for use where pipe is joined to fittings by solvent welding.

TABLE 1.—Diameters and Wall Thicknesses of Rigid ABS Plastic Pipe, SWP Size

Nominal Pipe Size	Outside Diameters and Tolerances		Wall Thicknesses and Tolerances		
			Series 1	Series 2	Series 3
<i>Inch</i>	<i>Inch</i>	<i>Inch</i>	<i>Inch</i>	<i>Inch</i>	<i>Inch</i>
½	0. 600	+0. 010 -0. 000	-----	-----	0. 050 ± 0. 003
¾	0. 855	+0. 010 -0. 000	-----	-----	0. 053 ± 0. 003
1	1. 140	+0. 010 -0. 000	-----	-----	0. 072 ± 0. 004
1¼	1. 420	+0. 010 -0. 000	-----	-----	0. 089 ± 0. 004
1½	1. 730	+0. 010 -0. 000	-----	-----	0. 115 ± 0. 006
2	2. 250	+0. 010 -0. 000	-----	0. 095 ± 0. 006	0. 141 ± 0. 008
2½	2. 570	+0. 010 -0. 000	-----	0. 107 ± 0. 006	0. 161 ± 0. 009
3	3. 250	+0. 015 -0. 005	-----	0. 136 ± 0. 008	0. 203 ± 0. 012
4	4. 100	+0. 018 -0. 007	0. 130 ± 0. 008	0. 171 ± 0. 010	0. 256 ± 0. 015
5	5. 110	+0. 020 -0. 007	0. 160 ± 0. 010	0. 213 ± 0. 012	0. 319 ± 0. 018
6	6. 220	+0. 020 -0. 007	0. 195 ± 0. 012	0. 260 ± 0. 015	0. 389 ± 0. 022

### 6. EFFECTIVE DATE

6.1 Having met all procedural requirements of the Commodity Standards Division, including approval by the acceptors hereinafter listed, this Commercial Standard was issued by the United States Department of Commerce, effective May 1, 1959.

EDWIN W. ELY,

*Chief, Commodity Standards Division*

### HISTORY OF PROJECT

In a letter dated March 13, 1958, The Society of the Plastics Industry, Inc., requested the cooperation of the Commodity Standards Division in the development of a Commercial Standard covering dimensions and tolerances for solvent welded rigid ABS plastic pipe. After adjustment of the proposal in accordance with industry consensus, the Recommended Commercial Standard was circulated to the industry for acceptance October 17, 1958. A correction, clarifying the intent of the standard and insuring a satisfactory fit in solvent welded joints, was distributed to interested organizations on November 18, 1958.

On April 1, 1959, the Commodity Standards Division announced that acceptances had been received representing a satisfactory majority and that the Commercial Standard, to be designated CS219-59, would become effective May 1, 1959.

Project Manager: H. A. Bonnet, Commodity Standards Division, Office of Technical Services.

Technical Advisor: Dr. Frank W. Reinhart, Plastics Section, National Bureau of Standards.

## STANDING COMMITTEE

The following individuals comprise the membership of the standing committee, which is to review, prior to circulation for acceptance, revisions proposed to keep the standard abreast of progress. Comment concerning the standard and suggestions for revision may be addressed to any member of the committee or to the Commodity Standards Division, Office of Technical Services, United States Department of Commerce which acts as secretary for the committee.

H. M. McDANIEL, Republic Steel Corp., Republic Building, Cleveland, Ohio  
PAUL THOMAS, Asiatic Petroleum Corp., 50 West 50th St., New York, N.Y.  
A. S. TRIPOLI, Triangle Conduit & Cable Co., Inc., Triangle and Jersey Avenues,  
New Brunswick, N.J.  
JAMES G. WAITE, El-Mar Sales Co., Inc., 535 North Fourth St., Minneapolis,  
Minn.  
TED M. YEISER, Crescent Plastics, Inc., 955 Diamond Ave., Evansville, Ind.

## ACCEPTORS

The organizations listed below have individually accepted this standard for use as far as practicable in the production, distribution, purchase, or testing of solvent welded rigid ABS plastic pipe. In accepting this standard they reserve the right to depart from it as they individually deem advisable. It is expected that products which actually comply with the requirements of this standard in all respects will be regularly identified or labeled as conforming thereto, and that purchasers will require such specific evidence of conformity.

### ASSOCIATIONS

Society of the Plastics Industry, Inc., New York, N.Y.

### FIRMS AND OTHER INTERESTS

Alpha Plastics Inc., Livingston, N.J.  
American Brass & Iron Foundry—Plastics Division, Newark, Calif.  
Bolta Products Division, General Tire & Rubber Co., Lawrence, Mass.  
Busada Manufacturing Corp., Flushing, N.Y.  
Carlton Products Corp., Aurora, Ohio.  
Chesflex Division, St. Regis Paper Co., Yonkers, N.Y.  
Dixie Plastics Manufacturing Co., New Orleans, La.  
Eclipse Plastic Industries, Inc., Sarasota, Fla.  
Evanite Plastic Co., Division of the Evans Pipe Co., Uhrichsville, Ohio.  
Franklin Plastics, Inc., Franklin, Pa.  
Industrial Plastic Fittings Division, The R & K Plastic Industries Co., Cleveland, Ohio.

Johnson Plastic Corp., Chagrin Falls, Ohio.  
Kansas State, Department of Administration, Purchasing Division, Topeka, Kans.  
Manufacturers Corporation of Ohio, Mansfield, Ohio.  
Patzig Testing Laboratories, Des Moines, Iowa.  
Plastex Co., The, Columbus, Ohio.  
Plastiline, Inc., White Plains, N.Y.  
Republic Steel Corp., Cleveland, Ohio.  
Sloane Manufacturing Co., Sun Valley, Calif.  
Texas Vitrified Pipe Co., Mineral Wells, Tex.  
Triangle Conduit & Cable Co., Inc., New Brunswick, N.J.  
Walworth Co., New York, N.Y.  
Western Plastics Corp., Hastings, Nebr.  
Yardley Plastics Co., Columbus, Ohio.

### U.S. GOVERNMENT

Department of the Army, Standards Branch, Procurement Division, DCSLOG, The Pentagon, Washington, D.C.

## OTHER COMMERCIAL STANDARDS

A list of Commercial Standards may be obtained from the Commodity Standards Division, Office of Technical Services, U.S. Department of Commerce, Washington 25, D.C. This list contains the purchase price of each publication and directions for ordering copies.

**ACCEPTANCE OF COMMERCIAL STANDARD**  
**CS219-59, Dimensions and Tolerances<sup>1</sup> for Solvent Welded**  
**Rigid ABS Plastic Pipe**

If acceptance has not previously been filed, this sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of this Commercial Standard.

Date \_\_\_\_\_

Commodity Standards Division,  
Office of Technical Services,  
U.S. Department of Commerce,  
Washington 25, D.C.

Gentlemen:

We believe that this Commercial Standard constitutes a useful standard of practice, and we individually plan to utilize it as far as practicable in the

production <sup>1</sup>    distribution <sup>1</sup>    purchase <sup>1</sup>    testing <sup>1</sup>

of this commodity.

We reserve the right to depart from the standard as we deem advisable.

We understand, of course, that only those articles which actually comply with the standard in all respects can be identified or labeled as conforming thereto.

Signature of authorized officer \_\_\_\_\_

(In ink)

\_\_\_\_\_  
(Kindly typewrite or print the following lines)

Name and title of above officer \_\_\_\_\_

Organization \_\_\_\_\_

(Fill in exactly as it should be listed)

Street address \_\_\_\_\_

City, zone, and State \_\_\_\_\_

<sup>1</sup> Underscore the applicable words. Please see that separate acceptances are filed for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interest, trade associations, trade papers, etc., desiring to record their general support, the words "General support" should be added after the signature.

(Cut on this line)

## TO THE ACCEPTOR

The following statements answer the usual questions arising in connection with the acceptance and its significance:

1. *Enforcement.*—Commercial Standards are commodity specifications voluntarily established by mutual consent of those concerned. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the interested groups as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices, and the like.

2. *The acceptor's responsibility.*—The purpose of Commercial Standards is to establish, for specific commodities, nationally recognized grades or consumer criteria, and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the standard, where practicable, in the production, distribution, or consumption of the article in question.

3. *The Department's responsibility.*—The major function, performed by the Department of Commerce in the voluntary establishment of Commercial Standards on a nationwide basis is fourfold: First, to act as an unbiased coordinator to bring all interested parties together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

4. *Announcement and promulgation.*—When the standard has been endorsed by a satisfactory majority of production or consumption in the absence of active, valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or of the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.