



# Standard Specification for Polyethylene Stay In Place Form System for End Walls for Drainage Pipe<sup>1</sup>

This standard is issued under the fixed designation D7082; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope\*

1.1 This specification addresses the requirements for polyethylene stay in place forms for end walls or head walls for use with standard storm drainage systems.

1.2 The wall form system consists of a base wall form, a cap, an optional riser to adjust the height of the wall above the pipe, and an optional adaptor to adjust the pipe opening to accommodate smaller pipe sizes.

1.3 The form system is manufactured using the rotational molding process and is available in different colors.

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

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.*

NOTE 1—There is no known ISO equivalent to this standard.

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

D638 Test Method for Tensile Properties of Plastics

D648 Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position

D790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

D883 Terminology Relating to Plastics

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

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.24 on Plastic Building Products.

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<sup>2</sup> 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.

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

D1600 Terminology for Abbreviated Terms Relating to Plastics

D1693 Test Method for Environmental Stress-Cracking of Ethylene Plastics

D4883 Test Method for Density of Polyethylene by the Ultrasound Technique

## 3. Terminology

3.1 *Definitions:*

3.1.1 Definitions used in this specification are in accordance with definitions in Terminology D883 and abbreviations in accordance with Terminology D1600 unless otherwise indicated.

3.1.2 *end wall*—a wall installed at the outlet of a storm drainage pipe.

3.1.3 *head wall*—a wall installed at the inlet of a storm drainage pipe.

## 4. Ordering Information

4.1 Number and color of base wall forms,

4.2 Number and color of riser forms,

4.3 Number and color of caps, and

4.4 Number, color and size of adaptors.

## 5. Materials and Manufacture

5.1 The material used shall be a polyethylene meeting the criteria in Table 1.

5.2 Only virgin materials shall be used.

5.3 This product shall be manufactured using a rotational molding process.

## 6. Requirements

6.1 *Wall System Description:*

6.1.1 Base wall form is hollow with opening at the top to accept fill material and designed to accept either cap or riser section. Base wall has opening in the center for pipe and adaptors as needed. Pipe is secured to base wall form with galvanized screws. (See Fig. 1.)

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

TABLE 1 Material Specifications

Resin Properties	ASTM Method	Value	Units
Density (Range)	D1505 / D4883	0.9335 – 0.9395	g/cc
Melt Index (Range)	D1238 Cond. 190°C, 2.16 kg	3.5 – 7.5	g/10 min
Environmental Stress Crack Resistance (ESCR), F <sub>50</sub>	D1693, Cond. A	275	Hr
	100 % Igepal	55	Hr
	10 % Igepal		
Flexural Modulus (Minimum)	D790 at 1 % secant Procedure B	600 (87)	Mpa (kpsi)
Tensile Strength at Yield (Minimum)	D638, Type IV specimen	17.2 (2500)	Mpa (psi)
Tensile Break Elongation (Minimum)	50.8 mm/min @ 3.12 mm thick (2 in./min @ 1/8 in. thick)	420	%
Deflection Temperature (Minimum)	D648	50	°C
	@ 0.455 MPa (66 psi)	35	°C
	@ 1.82 MPa (264 psi)		

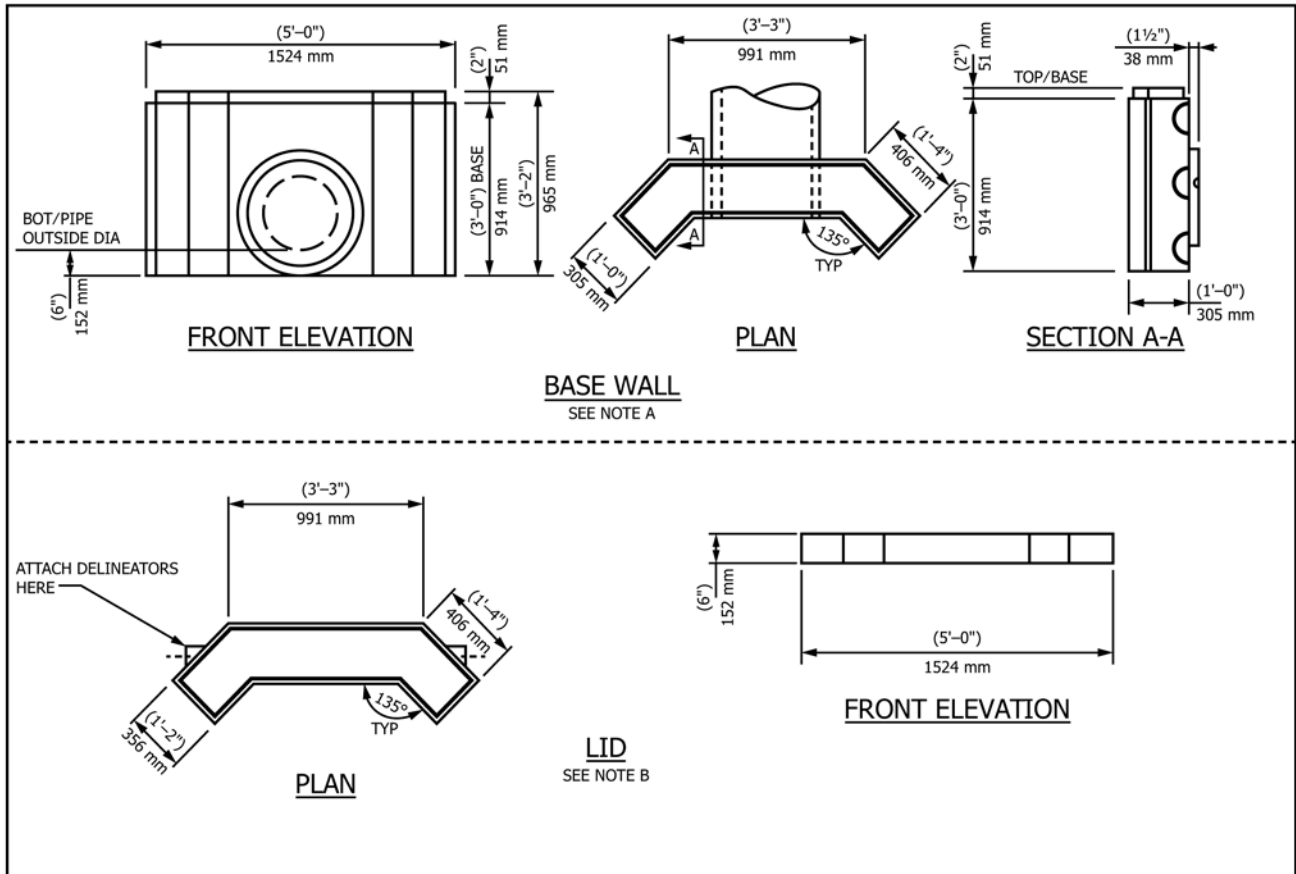


FIG. 1 Base Wall and Lid

6.1.2 Riser form is hollow with opening at top to accept fill material and cap section. Multiple risers can be installed on base wall. (See Fig. 2.)

6.1.3 Cap fits on top of base wall or riser and is secured with galvanized screws. (See Fig. 1.)

6.1.4 Adaptor section is used to adjust the size of the pipe opening as needed. Adaptor is secured to base wall form with galvanized screws and pipe is secured to adaptor with galvanized screws. (See Fig. 2.)

6.2 Workmanship, Finish, and Appearance:

6.2.1 The surface of the form system components shall be finished to mimic a split stone face, with the appearance of mortar joints and with the vertical joints offset on alternating courses.

6.2.2 Physical properties of finished form system components.

6.2.2.1 Dimensions—See Figs. 1 and 2.

7. Test Methods

7.1 Physical Properties:

7.1.1 Dimensions shall be measured to the nearest 2 mm with the exception of the material thickness, which is measured as noted on Fig. 2, Note E.

8. Sampling, Inspection, and Retest

8.1 Sampling—A minimum of five randomly selected samples shall be tested.

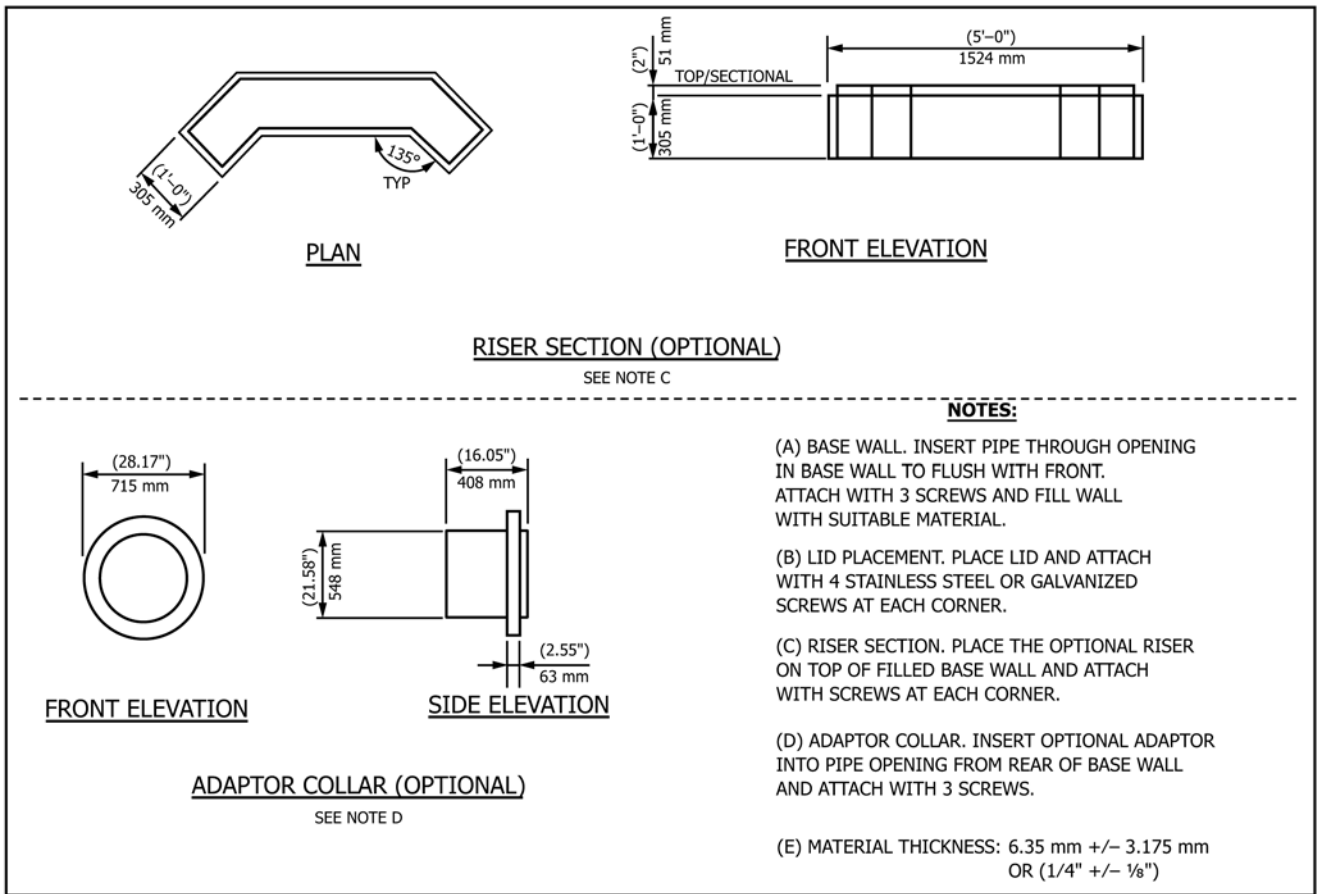


FIG. 2 Optional Riser Section and Adaptor

8.2 *Retest and Rejection*—If the results of any test(s) do not meet the requirements of this specification, the test(s) shall be conducted again.

**9. Certification**

9.1 When specified in the purchase order or contract, a manufacturer’s certification that the material was designed, manufactured, sampled, tested, and inspected in accordance with this specification, and has been found to meet the requirements shall be furnished to the purchaser. When specified in the purchase order or contract, a report of the test results shall be furnished. Each certification so furnished shall be signed by an authorized agent of the manufacturer.

**10. Product Marking**

10.1 Marking on the product shall include the following:

10.1.1 The letters “ASTM” followed by the designation number of this specification,

10.1.2 The letters “PE,”

10.1.3 The product name, and

10.1.4 The name or trademark of the manufacturer.

**11. Packaging and Package Marking**

11.1 Materials shall be packaged in accordance with the supplier’s standard practice.

**12. Quality Assurance**

12.1 When the product is marked with this designation, D7082, the manufacturer affirms that the product was manufactured, inspected, sampled, and tested in accordance with this specification and has been found to meet the requirements of this specification.

**13. Keywords**

13.1 drainage; endwall; headwall; stay in place form

**SUMMARY OF CHANGES**

Committee D20 has identified the location of selected changes to this standard since the last issue (D7082–04(2010)) that may impact the use of this standard. (October 1, 2015)

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|--|---|
| (1) Reworded 5.2 to remove D7209 reference.        | (4) Reworded section 8.1, 8.2(new), 11.1. |
| (2) Removed 6.2.1, 8.2, 8.2.1                      | (5) Renumbered 8.3 to 8.2.                |
| (3) Renumbered 6.2.2 – 6.2.3.1 to 6.2.1 – 6.2.2.1. |   |

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