NSF International
Special Engineered Specification
NSF SE 7992

ABS & PVC DWV Fittings with Alternate Fitting Patterns

The Public Health and Safety Company.™

SPECIFICATIONS FOR A SPECIAL ENGINEERED (SE) PRODUCT
NSF SE 7992

ABS and PVC DWV Fitting with Alternate Fitting Patterns

1. Purpose:
This specification defines the product specific requirements for ABS and/or PVC fittings whose fitting patterns are not defined in ASTM D3311.

2. Scope of Specification:
This specification identifies the application, reference documents, testing requirements, material requirements, product marking, and in-plant quality control testing for ABS and PVC DWV fittings falling outside the scope of ASTM D3311.

3. Application:
Products meeting the requirements of this specification are for use in drain, waste, vent, and sewer applications.

4. Reference Documents:

ASTM D618 – Practice for Conditioning Plastics for Testing
ASTM D1600 – Terminology for Abbreviated Terms Relating to Plastics
ASTM D1784 – Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
ASTM D2122 – Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings
ASTM D2444 – Test Method for Determination of the Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight)
ASTM D2661 – Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings
ASTM D2665 – Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
ASTM D3965 – Specification for Rigid Acrylonitrile-Butadiene-Styrene (ABS) Materials for Pipe and Fittings
ASTM D4396 – Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds for Plastic Pipe and Fittings Used in Nonpressure Applications
ASTM F412 – Terminology Relating to Plastic Piping Systems
ASTM F1498 – Specification for Taper Pipe Threads 60° for Thermoplastic Pipe and Fittings
IAPMO PS-51 – Expansion Joints and Flexible Expansion Joints for DWV Piping Systems
NSF/ANSI Standard 14 – Plastic Piping System Components and Related Materials

5. Testing Requirements:

5.1 ABS DWV Fittings

5.1.1 Workmanship and Dimensions

5.1.1.1 Workmanship – ABS Fittings shall not, upon a visual inspection, contain imperfections that would interfere with the performance of the ABS system it is used with.

5.1.1.2 Dimensions –ABS fittings shall meet the dimensional requirements specified in ASTM D2661 Table A1.1.

Exception: Repair couplings are exempted from socket entrance inner diameter and socket bottom inner diameter requirements in Table 1. Repair couplings shall meet manufacturer's dimensions for socket inner diameter.

5.1.1.2.1 Reducing Bushing Wall Thickness – Reducing bushings of sizes 2 by 11/4 and 4 by 3 shall be permitted to have the socket wall thickness and spigot wall thickness below the minimum requirements defined in Table A1.1, but not less than 0.098 in. (2.5 mm), provided the inner socket and outer spigot are reinforced by a minimum of four ribs. The thickness of the supporting ribs shall not be less than 0.098 in. (2.5 mm).

5.1.1.2.2 The spigot dimensions of ABS Fittings shall be against the requirements specified in ASTM D2661 sections 6.2.1 and 6.2.2.

5.1.1.2.3 Threads – Tapered threads shall comply with the requirements of ASTM D2661 section A1.7. Straight threads are not required to comply with ASME B1.20.1

5.1.2 Deflection Load – ABS fittings shall meet the deflection load requirements specified in ASTM D2661 Section A1.8.

5.1.3 Impact Resistance – ABS Fittings shall be the impact resistance requirements specified in ASTM D2661 section A1.9.

5.1.4 Repair Couplings exempted from socket entrance inner diameter and socket bottom inner diameter in 5.1.1.2 shall withstand a hydrostatic pressure of 25psi. An assembly of pipe and repair coupling made in accordance with manufacturer instructions shall be subject to an internal hydrostatic pressure of 25psi for 1 hour. The pipe, coupling, and joint shall show no evidence of leaking.

5.2 PVC DWV Fittings

5.2.1 Workmanship and Dimensions

5.2.1.1 Workmanship – PVC Fittings shall not, upon a visual inspection, contain imperfections that would interfere with the performance of the PVC DWV system it is used with.

5.2.1.2 Dimensions – PVC DWV fittings shall meet the dimensional requirements specified in ASTM D2665 Table 1.

Exception: Repair couplings are exempted from socket entrance inner diameter and socket bottom inner diameter requirements in Table 1. Repair couplings shall meet manufacturer's dimensions for socket inner diameter.

5.2.1.2.1 Reducer bushings of sizes 2 by 11/4 and 4 by 3 shall be permitted to have the socket wall thickness and spigot wall thickness below the minimum requirements defined in Table 1, but not less than

0.098 in. (2.5 mm), provided the inner socket and outer spigot are reinforced by a minimum of four ribs. The thickness of the supporting ribs shall not be less than 0.098 in. (2.5 mm).

5.2.1.2.2 The spigot dimensions of PVC DWV Fittings shall be against the requirements specified in ASTM D2665 section 6.2.2.1.

5.2.1.2.3 Threads – Tapered threads shall comply with the requirements of ASTM D2665 section 7.5, Straight threads are not required to comply with ASME B1.20.1

5.2.2 Deflection Load – PVC DWV fittings shall meet the deflection load requirements specified in ASTM D2665 Section 6.3.2.

5.2.3 Impact Resistance – PVC DWV Fittings shall meet the impact resistance requirements specified in ASTM D2665 section 6.4.

5.2.4 Repair Couplings exempted from socket entrance inner diameter and socket bottom inner diameter in 5.2.1.2 shall withstand a hydrostatic pressure of 25psi. An assembly of pipe and repair coupling made in accordance with manufacturer instructions shall be subject to an internal hydrostatic pressure of 25psi for 1 hour. The pipe, coupling and joint shall show no evidence of leaking.

5.2.5 Telescoping repair couplings or expansion joints shall meet the requirements of IAPMO PS-51. Telescoping repair couplings or expansion joints tested to IAPMO PS-51 are exempted from section 5.2.3 and 5.2.4.

6. **Materials:**

6.1 ABS DWV Fitting Material Requirements

6.1.1 Composition – Acrylonitrile Butadiene Styrene Plastic shall meet the compositional requirements of ASTM D2661 section 5.2.1.

6.1.2 Physical Properties Requirements – ABS DWV Fittings produced against this specification shall be produced from materials meeting or exceeding a 3-2-2-2-2 cell class when tested against the requirements of ASTM D3965 in accordance with ASTM D2661 section A1.4.

6.1.3 Rework / Regrind Material – Rework or Regrind material, if used in the production of ABS DWV Fittings under this specification, shall be of the same formulation and from the same plant location as the virgin material used in the production of the fittings.

6.2 PVC DWV Fitting Material Requirements

6.2.1 Physical Properties Requirements – PVC DWV Fittings produced against this specification shall be produced from materials meeting or exceeding a 12454 cell class when tested against the requirements of ASTM D1784 or 11432 cell class when tested against the requirements of ASTM D4396.

6.2.2 Rework / Regrind Material – Rework or Regrind material, if used in the production of PVC DWV Fittings under this specification, shall be of the same formulation and from the same plant location as the virgin material used in the production of the fittings.

7. Product Marking:

7.1 ABS DWV Fittings Marking Requirements

7.1.1 The following minimum requirements shall be permanently and legibly marked on the ABS DWV Fitting:

- NSF® dwv SE
- ABS
- Manufacturer or the manufacturer's authorized trademark

7.2 PVC DWV Fittings Marking Requirements

7.2.1 The following minimum requirements shall be permanently and legibly marked on the PVC DWV Fitting:

- NSF® dwv SE
- PVC
- Manufacturer or the manufacturer's authorized trademark

7.3 If recessed marking is used on the Fittings then the recessed marking shall not cause cracks or reduce the wall thickness below the minimum specified.

8. In-plant Q.C. Requirements:

The following tests are to be performed at start-up and at the designated frequencies thereafter. These tests shall be performed in accordance with Section 5 of this document:

Test	Frequency	
	ABS	PVC
Deflection load and crush	Annually	Annually
Dimensions		
- Body wall thickness	Weekly	Weekly
- Socket bottom avg. diameter and out of roundness[1]	24 h	24 h
- Socket entrance avg. diameter and out of roundness[1]	24 h	24 h
- Socket depth[1]	24 h	24 h
- Socket wall thickness	24 h	24 h
- Spigot ends of fittings, min. wall thickness	24 h	24 h
- Spigot ends of fittings, avg. diameter and out of roundness	24 h	24 h
- Thread length	Weekly	Weekly
- Thread gauge	Weekly	Weekly
Flattening	Annually	Annually
Impact @ 22.8ºC (73ºF)[2]	Weekly	Weekly
[1] Plug gauges are permitted, provided the mold has been qualified by complete dimensioning and performance of appropriate testing on all products from all mold cavities to verify compliance with the referenced standard. [2] Fittings with threads and backwater valves do not require impact testing.		