



**NSF International**  
Special Engineered Specification  
NSF SE 8817

**PW CPVC Metric and  
Standard Fittings**

The Public  
Health and Safety  
Company.™



## SPECIFICATIONS FOR A SPECIAL ENGINEERED (SE) PRODUCT NSF SE 8817

### PW CPVC Metric and Standard Fittings

#### 1. Purpose:

This specification defines the product specific requirements for PW CPVC Metric and Standard Fittings requirements.

#### 2. Scope of Specification:

This specification identifies the application, reference documents, testing requirements, material requirements, product marking, and in-plant quality control testing for fittings falling outside the scope of ASTM F438 and ASTM F439 and ASTM F441 and ASTM F442 due to at least one end of the fittings being produced to Metric sizes.

#### 3. Application:

Products meeting the requirements of this specification are for use in potable water pressure applications.

#### 4. Reference Documents:

##### ASTM Standards:

ASTM D1598 – Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure

ASTM D1599 – Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing, and Fittings

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 D1898 – Practice for Sampling Plastics

ASTM D2122 – Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings

ASTM F412 – Terminology Relating to Plastic Piping Systems

ASTM F438 – Specification for Socket-Type Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40

ASTM F439 – Specification for Socket-Type Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80

ASTM F477 – Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

ASTM F1498 – Specification for Taper Pipe Threads 60° for Thermoplastic Pipe and Fittings

##### NSF Standards:

NSF/ANSI Standard 14 – Plastic Piping System Components and Related Materials

NSF/ANSI Standard 61 – Drinking Water Systems Components – Health Effects

#### 5. Testing Requirements:

5.1.1 – Dimensions-standard – CPVC / Brass Transition Fittings (for use in potable water applications) shall meet the dimensional requirements of ASTM F441 or ASTM F442. Additionally, threads shall meet the requirements of ISO Thread/7.

5.1.2 – Dimensions-metric – Metric CPVC / Brass Transition Fittings (for use in potable water applications) shall meet the dimensional requirements of the manufacturer. Additionally, threads shall meet the requirements of ISO Thread/7.

5.2 – Hydrostatic Strength Testing - CPVC Fittings shall meet the requirements of 60 – 70 second short-term 73 F hydrostatic burst test. Schedule 40 shall meet the requirements of Table 4 of ASTM F438. Schedule 80 fittings shall meet the requirements of Table 6 of ASTM F439



5.3 – Potable Water Requirements – Products for use in potable water applications shall comply with the applicable section(s) of NSF/ANSI Standard 61.

**6. Materials:**

6.1 – CPVC – CPVC material used in the production of pipe and fittings meeting this specification shall meet or exceed a 23447-cell class when tested against ASTM D1784.

6.2 – Post Industrial recycled material is not authorized to be used in the production of fittings certified against this requirement.

**7. Product Marking:**

7.1 – The following minimum requirements shall be permanently and legibly marked on the transition Fitting:

- Manufacturer or the manufacturer’s authorized trademark
- The designation of the material used to produce the fitting
- Size
- NSF – pw – SE

7.2 – 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:

**Fittings or appurtenances used in poly(vinyl chloride) (PVC)  
or chlorinated poly(vinyl chloride)(CPVC) systems**

Test	Frequency
dimensions	
body wall thickness	weekly
socket bottom average diameter and out of roundness	24 h
socket entrance average diameter and out of roundness	24 h
socket depth <sup>1</sup>	24 h
socket wall thickness	24 h
spigot ends of fittings, minimum wall thickness	24 h
thread length <sup>1</sup>	weekly
thread gauge	24 h
all other required insert dimensions	weekly
burst pressure	weekly
<sup>1</sup> Socket depth and thread length are only required to be verified at the time a new tool is “qualified” or when new or repaired cores are made.	