

American National Standard

# ASSE 1079-2012(R2021)



## *Performance Requirements for* **Dielectric Pipe Unions**

**ASSE Board Approved:** January 2021

**ANSI Approved:** January 2021

**ICS Code:** 23 040 40 | 91 140 60





# General Information

---

Neither this standard, nor any portion thereof, may be reproduced without the written consent of ASSE International.

No product may be said to be ASSE listed unless the manufacturer has applied to ASSE, has had its product tested according to the applicable standards, the product has passed the test and displays the ASSE Seal on the product.

Instructions for receiving authorization to display the ASSE Seal are available from ASSE's International Office. Organizations wishing to adopt or list any ASSE Standard should print the ASSE Standard number on the cover page first and in equal or larger type to that of the adopting or listing organization.

ASSE International  
Mokena, Illinois  
Copyright © 2021, 2012, 2005  
All rights reserved.



# Foreword

---

This foreword shall not be considered a part of the standard. However, it is offered to provide background information.

ASSE standards are developed in the interest of consumer safety.

ASSE International is dedicated to the preservation of public health and safety through its guiding principle, “Prevention Rather Than Cure.”

ASSE’s Standards Program systematically evaluates new technologies through formal requests and addresses the development and promulgation of performance standards designed to safeguard public health and safety.

Standards for the performance of plumbing system components are considered by ASSE International to be of great value in the development of improved plumbing systems for the increased protection of public health and safety.

Dielectric pipe unions are designed to prevent stray currents in piping systems. These stray currents can come from dissimilar piping materials or improper grounding of electrical equipment. This standard provides guidance in the construction of pipe unions that incorporate electrical insulating properties to reduce the accelerated corrosion that can result from galvanic and stray currents.

Although material specifications are detailed within Section 4.1 of this standard, it is the responsibility of the manufacturer and the installer to comply with the relevant jurisdictional requirements.

The working group, which developed this standard revision, was set up within the framework of the Product Standards Committee of ASSE International.

Recognition is made of the time volunteered by members of this working group.

The standard does not imply ASSE’s endorsement of a product which conforms to these requirements.

Compliance with this standard does not imply acceptance by any code body.

Plumbing codes mandate how and where these devices are installed. However, this standard was promulgated using a specific set of installation requirements and conditions for the purpose of providing reasonable performance requirements and compliance testing.

It is recommended that these devices be installed consistent with local codes by qualified and trained professionals.

This standard was promulgated in accordance with procedures developed by the American National Standards Institute (ANSI).

This edition of the standard was approved by the ASSE Board of Directors on January 14, 2021 as an ASSE International standard.

# 2021 Product Standards Committee

---

**Tsan-Liang Su, PhD, Chairperson**

*Stevens Institute of Technology  
Hoboken, NJ*

**Karl Abrahamson**

*Saint Paul Department of Safety  
and Inspections  
Cottage Grove, MN*

**Brian Andersen**

*C.J. Erickson Plumbing Co.  
Manhattan, IL*

**William Briggs Jr.**

*JB&B  
New York, NY*

**Terry Burger (non-voting)**

*ASSE International  
Cleveland, OH*

**William Chapin**

*Professional Code Consulting, LLC  
Cullman, AL*

**Mark E. Fish**

*Zurn Industries, LLC  
Cary, NC*

**Ron George**

*Plumb-Tech Design & Consulting Services LLC  
Newport, MI*

**Mark Gibeault**

*Kohler Company  
Kohler, WI*

**Daniel Gleiberman**

*Sloan  
Los Angeles, CA*

**Brandon Gunnell**

*Precision Plumbing Products  
Portland, OR*

**Chris Haldiman**

*Watts Water Technologies  
Springfield, MO*

**John F. Higdon, P.E.**

*Supply Source Solutions  
Matthews, NC*

**Jim Kendzel**

*American Supply Association  
Minneapolis, MN*

**Ramiro Mata**

*American Society of Plumbing  
Engineers (ASPE)  
Mentor, OH*

**Robert Neff**

*Delta Faucet  
Pendleton, IN*

**Thomas Pitcherello**

*State of New Jersey  
Bordentown, NJ*

**Daniel Rademacher**

*Plumbing Code and Design Consulting  
Butte, MT*

**Shabbir Rawalpindiwala**

*Kohler Company  
Kohler, WI*

**Billy Smith**

*American Society of Plumbing  
Engineers (ASPE)  
Montgomery, AL*

**Chris White (non-voting)**

*ASSE International  
Mokena, IL*

# 1079 Working Group (2012)

---

**Ken Van Wagnen**, Chairperson

*ASSE Standards Coordinator  
Westlake, Ohio*

**Sara Marxen**

*ASSE Compliance Coordinator  
Westlake, Ohio*

**Maribel Campos**

*ICC Evaluation Services  
Whittier, California*

**Tsan-Liang Su, PhD**

*Stevens Institute of Technology  
Hoboken, New Jersey*

**Steve Hazzard**

*ASSE Staff Engineer  
Westlake, Ohio*

**Robert Tesar**

*ASSE Seal Control Board  
Independence, Ohio*

# Table of Contents

---

<b>Section I</b> .....	<b>1</b>
1.0 General .....	1
1.1 Application .....	1
1.2 Scope .....	1
1.3 Reference Standards .....	1
<b>Section II</b> .....	<b>3</b>
2.0 Test Specimens .....	3
2.1 Samples Submitted for Test .....	3
2.2 Samples Tested .....	3
2.3 Drawings .....	3
2.4 Rejection .....	3
<b>Section III</b> .....	<b>4</b>
3.0 Performance Requirements and Compliance Testing .....	4
3.1 Hydrostatic Test .....	4
3.2 Dielectric Test .....	4
3.3 Deterioration at Manufacturer’s Extremes of Temperature and Pressure Ranges Test .....	5
<b>Section IV</b> .....	<b>6</b>
4.0 Detailed Requirements .....	6
4.1 Materials .....	6
4.2 Markings .....	6
4.3 Installation Instructions .....	6
<b>Section V</b> .....	<b>7</b>
5.0 Definitions .....	7
<b>Appendix A - Typical Dielectric Unions</b> .....	<b>8</b>

# Performance Requirements for Dielectric Pipe Unions

## Section I

### 1.0 General

#### 1.1 Application

Dielectric Pipe Unions (herein referred to as the “device”) are used to join dissimilar pipe materials to prevent the flow of galvanic current or to isolate sections of pipe from stray currents which could cause accelerated corrosion and premature failure of plumbing components and associated piping.

#### 1.2 Scope

##### 1.2.1 Description

These devices are metallic and join metallic pipe in a similar manner to standard pipe unions and flanges, with the added ability to electrically insulate one pipe section from another.

##### 1.2.2 Size Range

Iron and copper pipe sizes □ inch through 6 inches (10 mm to 150 mm).

##### 1.2.3 Adapter/Transition Fitting Connections

1.2.3.1 Taper pipe threads, except dryseal, shall be in compliance with ASME B1.20.1 or ASTM F1498.

1.2.3.2 Dryseal pipe threads shall be in compliance with ASME B1.20.3.

1.2.3.3 Cast copper alloy, wrought copper alloy and copper alloy solder joint connections shall comply with the dimensional requirements of ASME B16.18 or ASME B16.22.

##### 1.2.4 Pressure and Temperature

The minimum pressure shall be 125.0 psi (861.8 kPa) at a minimum temperature of 180.0 °F (82.2 °C).

#### 1.3 Reference Standards

- ASME B16.18-2001 (R2012), *Cast Copper Alloy Solder Joint Pressure Fittings*
- ASME B16.22-2001 (R2010), *Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings*
- ASME B1.20.1-1983 (R2006), *Pipe Threads, General Purpose (Inch)*
- ASME B1.20.3-1976 (R2008), *Dryseal Pipe Threads (Inch)*
- ASTM F1498-08, *Standard Specification for Taper Pipe Threads 60° for Thermoplastic Pipe and Fittings*