

**MSS SP-122-2012**

# Plastic Industrial Ball Valves

**Standard Practice**  
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**TABLE OF CONTENTS**

<b><u>SECTION</u></b>	<b><u>PAGE</u></b>
1 SCOPE .....	1
2 MATERIALS OF CONSTRUCTION .....	1
3 PRESSURE-TEMPERATURE RATINGS AND DESIGN REQUIREMENTS .....	1
4 LAYING LENGTH DIMENSIONS .....	2
5 SAFETY FEATURES .....	2
6 PORT SIZE .....	2
7 ACTUATOR APPLICATION REQUIREMENTS .....	2
8 PRODUCTION TESTS .....	3
9 MARKING .....	3

**TABLE**

1 Industrial Union Ball Valves – Laying Lengths .....	5
---	---

**FIGURE**

1 Union Ball Valve .....	4
2 Single Union Ball Valve .....	4
3 Non-Union Ball Valve .....	4

**ANNEX**

A Referenced Standards and Applicable Dates .....	6
---	---

## PLASTIC INDUSTRIAL BALL VALVES

### 1. SCOPE

1.1 This Standard Practice establishes requirements for plastic industrial ball valves in nominal pipe sizes (NPS) 1/2 through 4, designed for general industrial systems for the distribution of pressurized liquids that are chemically compatible with the piping material. It reflects the industry practice for the design, manufacture, and application of these valves.

1.2 This Standard Practice applies to valves having the ball seal against two self-lubricating seats of the following types:

- a) **Union Ball Valves** All joint ends have detachable nuts and end connectors.
- b) **Single Union Ball Valves** Only one joint end has detachable nut and end connector, with the other joints being integral to the valve body.
- c) **Non-Union Ball Valves** All joint ends are integral to the valve body.

1.3 This Standard Practice covers the following:

- a) Materials of Construction
- b) Pressure-Temperature Ratings and Design Requirements
- c) Commonly Used Laying Length Dimensions
- d) Safety Features
- e) Port Size
- f) Actuator Application Requirements
- f) Production Tests
- f) Markings

### 2. MATERIALS OF CONSTRUCTION

2.1 Plastic materials, such as polyvinyl chloride (PVC), chlorinated polyvinyl chloride (CPVC), acrylonitrile-butadiene styrene (ABS), polypropylene (PP), and polyvinylidene fluoride (PVDF) are routinely used as materials of construction for ball valves types indicated in this Standard Practice.

Due to the number of grades and classifications of these materials, standard specifications cannot be readily established and are subject to agreement between customer and manufacturer. If intended for use in potable water, the materials should be listed for that use by an independent testing laboratory or agency.

2.2 Seals and seats of various materials are commonly used in plastic valves. The manufacturer shall ensure the seals and seats provided are compatible with the stated intended use.

2.3 Any lubricants used shall be nontoxic, shall not support the growth of bacteria, and shall have no deteriorating effect on the seal or component materials.

### 3. PRESSURE-TEMPERATURE RATINGS AND DESIGN REQUIREMENTS

3.1 The maximum non-shock pressure-temperature ratings of valves covered by this Standard Practice shall be those established by the manufacturer for the particular design and material. The design stresses in the components of the valves shall comply with the following: