

150 PSI Ball Check and Foot Valves PVC, CPVC, PP, PVDF 1/2" through 4" Nominal Sizes

Scope:

This specification establishes the manufacturing requirements for PVC, CPVC, PP, and PVDF ball check and PVC, CPVC foot valves intended for use in industrial, commercial, and residential pressure-piping systems, where cost-effective, long-term resistance to corrosion is of prime importance. Maximum service temperatures are: PVC, 140° F; CPVC, 210° F; PP, 180° F; PVDF, 280° F.

Materials:

Major component parts shall be constructed from one of the following:

NPS 1/2 – 4 PVC (polyvinyl chloride), Cell Class 12454 per ASTM D 1784, industrial gray in color.

NPS 1/2 – 4 CPVC (chlorinated polyvinyl chloride), Cell Class 23447 per ASTM D 1784, industrial light gray in color.

NPS 1/2 – 2 PP (polypropylene) Cell Class PP0110-M30-A10120 (glass-filled material) and Cell Class PP0110-B67157 (unfilled material) as per ASTM D 4101. These materials shall be pigmented jet black.

NPS 1-1/2 – 2 Chem-Pure[®] (natural polypropylene) Cell Class PP0210-B45145 as per ASTM D 4101. Materials shall be unpigmented and of the highest purity.

NPS 1/2 – 2 PVDF (polyvinylidene fluoride) Type I compound per ASTM D 3222. The material shall be pigmented red for maximum UV opaqueness.

NPS 1/2 – 2 PVDF (polyvinylidene fluoride) Type I compound per ASTM D3222. The material shall be natural (unpigmented) 700 Series Kynar[®] of the highest purity and maximum transparency to UV radiation.

Dimensions/Valve Design:

PVC and CPVC socket-end connections shall conform to the requirements of ASTM D 2467 and F 439 for Schedule 80 pressure fittings. PP and PVDF socket-end connections shall be suitable for heat-fusion welding as specified in ASTM D 2567 Technique I. All threaded-end connections shall conform to the requirements of ASTM D 2467 and F 439 as well as ASTM F 1498 for tapered pipe threads.

The valve design shall be full port (NPS 6 size is standard port) with full flow around the rib-guided ball. Foot valve models shall have a minimum cumulative-area ratio of screen holes (inlet)-to-valve port of 3:1.

The valve seat shall be an elastomeric seal that will permit seating at low-head pressure, and an arrow shall be molded on the valve body for permanent visibility to indicate the intended direction of flow.

Markings:

Valves shall be clearly marked with the manufacturer's name or trademark, nominal size, material designation, ASTM number or equivalent symbol indicating compliance with applicable standards, and country of manufacture. PVC and CPVC valves shall additionally bear the NSF International certification mark NSF-pw, (verifying approval for conveyance of potable water).

Performance:

Valves shall be rated for 150 psi service at 73° F non-shock water service and have a minimum burst rating of 3.3 times the rated working pressure. Valves shall be certified to ASTM F 1970 by a third-party agency.

Installation:

At the specifying engineer's option, the manufacturer shall provide, at no additional cost, on-site training for installation/maintenance personnel. Otherwise, installation shall be as specified by the manufacturer's printed instructions.

150 PSI Model "B" Wafer Style Butterfly Valves PVC or CPVC 3", 4", 6" Nominal Sizes

Scope:

This specification establishes the manufacturing requirements for PVC and CPVC, Butterfly Valves intended for use in industrial, commercial, and residential pressure-piping systems for service temperatures that do not exceed 140° F for PVC systems or 210° F for CPVC systems, where resistance to corrosion is of prime importance does not.

Materials (PVC NPS 4 & 6, CPVC 3):

The body and disc shall be manufactured from a PVC or CPVC compound that meets the requirements of Cell Class 12454 polyvinyl chloride or Cell Class 23447 chlorinated polyvinyl chloride as outlined in ASTM D 1784.

The shaft shall be cadmium-plated steel alloy or 316 stainless steel as standard equipment. Optional shaft materials shall be available on request, i.e., titanium, stainless steel, etc.

The seat material shall be one of the following materials: ethylene-propylene-diene monomer (EPDM) or fluoroelastomer (FPM) with polytetrafluoroethylene (PTFE) bearing support at the top and bottom.

Bearings shall be corrosion-resistant, 20% glass-filled PTFE.

Secondary seal material shall be FPM or EPDM and correspond to the seat material for maximum chemical resistance.

Handles and worm-gear operators shall be of a contrasting color with corrosion-resistant epoxy coating per manufacturer's Engineering Specifications #AP00307002A.

Valve Design:

The valve body shall be of the wafer design for ease of installation and maintenance and shall be compatible with Class 150 ASME B16.5 flanges. Nominal sizes 3 through 6 shall also be compatible with DIN 8063 pattern.

The shaft shall be hexagonal or square to ensure positive rotation of the disc and be totally sealed from exposure to the process liquid.

The shaft shall be guided by glass-filled TFE bearings to protect against deflection. The shaft also shall have a directional indicator on top to indicate disc position when the handle is removed.

Markings:

Valves shall be clearly marked with the manufacturer's name or trademark, nominal size, material designation, and country of manufacture. PVC and CPVC valves shall additionally bear the NSF International certification mark, NSF-pw, (verifying approval for conveyance of potable water).

Performance:

Valves shall be rated bubble-tight at 150 psi 73° F non-shock water service except NPS 6 size shall be de-rated by 25%. The pressure rating shall be based on a minimum safety factor of 3.3.

Operation:

Valves shall be supplied by the manufacturer with one of the following:

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| a. Lever handle with index plate | e. 2" Square Operator Nut |
| b. Worm-Gear Operator | f. 2" Locking Type Square Operator Nut |
| c. Pneumatic Operator | g. Lockable Lever Handle |
| d. Electric Operator | h. Other Manual Accessories |

Installation:

At the specifying engineer's option, the manufacturer shall provide, at no additional cost, on-site training for installation/maintenance personnel. Otherwise, installation shall be as specified by the manufacturer's printed instructions.