

**APCO CRF LINED BODY RUBBER FLAPPER
SWING CHECK VALVE
SUGGESTED SPECIFICATION**

APPLICATION DATA 100.01-6

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March 12, 2025

Supersedes June, 2017



SECTION 40_XX_XX

LINED BODY RUBBER FLAPPER SWING CHECK VALVES FOR POTABLE WATER OR SEWAGE

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Swing Check Valves for Potable Water or Sewage

B. Related Sections:

1. (provided by the engineer)
2. (provided by the engineer)
3. (provided by the engineer)

1.02 REFERENCES

A. American Water Works Association (AWWA):

1. C508 Swing Check Valves for Waterworks Service

B. ASME B16.1 Pipe Flanges and Flanged Fittings

1.03 SUBMITTALS

- A. (provided by the engineer)

1.04 WARRANTY

- A. Valves shall be warranted by the manufacturer for defects in materials and workmanship for a period of two years (24 months) from date of shipment.

- B. The flex portion of the flapper contains nylon reinforcement and shall include a special extended warranty for twenty-five years.

PART 2 PRODUCTS

2.01 GENERAL

- A. (provided by the engineer)

2.02 LINED BODY RUBBER FLAPPER SWING CHECK VALVES FOR WATER, SEWAGE, ABRASIVE and SLURRY SERVICE

- A. Manufacturers: APCO CRF or pre-approved equal.

B. Design:

1. Rubber Flapper Swing Check Valve shall be single body flanged design.
2. General:
 - a. Design Maximum Working Pressure: 250 psig (1725 kPa)
 - b. Maximum Fluid Temperature: Dictated by elastomer selection
 - c. Valve design to provide 100% flow area when fully opened
 - d. The 4" (100mm) valve shall be capable of passing a 3" solid

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- e. Body Seat shall be on a 45-degree angle to the centerline of the pipe to permit horizontal or vertical (flow up) installation.
- f. Flapper is captured between the body and valve cover to permit the disc to flex open and closed. The flapper shall have a fully encapsulated steel disc and rubber plugs that are glued into the molded rubber. An integral O-ring shall be molded onto the face of the rubber flapper for positive sealing.
- g. Internally mounted leaf spring shall be used to assist in rapid closing of the valve. This leaf spring shall be securely held in place, captured between the cover and flapper.
- h. Hinge Section of the rubber flapper shall be designed to accelerate closing due to an elastic spring effect. High-strength fabric shall be integrally molded in the rubber over the disc and bar to form a flexible joint giving the flapper a high cycle life.

C. Materials:

- 1. Body: Ductile Iron ASTM A536 Gr.65-45-12
- 2. Rubber Lining: Rubber lining shall be bonded to all interior surfaces of the body and cover. Lining material shall be 1/8" thick Natural Rubber (NR), Terpolymer of Ethylene Propylene (EPDM), or Acrylonitrile Butadiene (NBR).
- 3. Rubber Flapper: Shall have alloy steel disc encapsulated with Acrylonitrile-Butadiene (NBR), or Terpolymer of Ethylene Propylene and A Diene (EPDM)
- 4. Internal leaf spring to be 301 (or 316) stainless steel per ASTM A313
- 5. Bolting: 316 stainless steel
- 6. ASME 125/150 flanged

D. Testing:

- 1. Each Valve shall be shop tested as a complete assembly in accordance with AWWA C508.
- 2. The flapper design shall have been tested to withstand 1,000,000 cycles in accordance with ANSI/AWWA C508 and show no signs of wear, cracking, or distortion to the flapper or seal and shall remain drop-tight at rated working pressure.
- 3. Certified test reports shall be available upon request.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install valves as specified in section (filled in by the engineer) and the manufacturer's instructions.
- B. (verbiage by engineer instructing how discharge piping should be installed)

3.02 COMMISSIONING

- A. Field testing (verbiage by engineer)