



P.O. Box 1058 • 370 South Athol Rd.
Athol, Massachusetts 01331
Phone: (978) 249-7924
Fax: (978) 249-3072

SECTION _____
RUBBER FLAP GATES

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The CONTRACTOR shall furnish all labor, materials, equipment and incidentals required to install and ready for operation rubber flap gates as shown on the Contract Drawings and as specified herein.

1.02 SUBMITTALS

- A. Provide the following information to confirm compliance with the specification in addition to the submittal requirements specified in Section _____.
 - 1. Complete description of all materials including the material thickness of all components.
 - 2. Installation drawings showing all details of construction, details required for installation, dimensions and anchor bolt locations.
 - 3. Maximum bending stress and deflection of the flap under the maximum design head (seating head).
 - 4. The location of the company headquarters and the location of the principle manufacturing facility. Provide the name of the company that manufactures the equipment if the supplier utilizes an outside source.

1.03 QUALITY ASSURANCE

- A. Qualifications
 - 1. All of the equipment specified under this Section shall be furnished by a single manufacturer with a minimum of 20 years experience designing and manufacturing water control gates.
 - 2. The specification is based on the Series 450 Rubber Flap Gate as manufactured by Whipps, Inc. of Athol, Massachusetts.

PART 2 EQUIPMENT

2.01 GENERAL

- A. Gates shall be as specified herein and have the characteristics and dimensions shown on the Contract Drawings.
- B. Leakage shall not exceed 0.1 gpm/ft of wetted seal perimeter in seating head condition.
- C. All structural components of the frame and reinforcing stiffeners on the flap shall be fabricated of stainless steel having a minimum thickness of 1/4-inch and shall have adequate strength to prevent distortion during normal handling, during installation and while in service.
- D. All welds shall be performed by welders with AWS certification.

- E. Finish: Mill finish on stainless steel. Welds shall be sandblasted to remove weld burn and scale.
- F. Materials:

<u>Components</u>	<u>Materials</u>
Frame	Stainless Steel, Type 304L, ASTM A240
Flap	Neoprene ASTM D2000 or EPDM
Flap Stiffeners and Flap Retainer	Stainless Steel, Type 304L, ASTM A240
Anchor Studs, Fasteners and Nuts	Stainless Steel, Type 316, ASTM A276

2.02 FRAME

- A. The frame shall be constructed of formed stainless steel plate with a minimum thickness of 1/4-inch.
 1. Frame design shall be of the flanged back type suitable for mounting directly to a wall with stainless steel anchor bolts and grout or mounting to a pipe flange with stainless steel mounting studs and a mastic gasket material. Mounting style shall be as shown on the Contract Drawings.
 2. Where the opening exceeds 42 inches in width or if multiple openings are required, horizontal and/or vertical members shall be incorporated within the opening of the frame.
 3. The frame shall be outfitted with a continuous, resilient seal around the entire perimeter of the opening. Stainless steel retainers and attachment bolts shall hold the seal in place.
 4. All frame members shall be designed to handle a full seating head condition with the flap in the closed position.
 5. The angle of the flap when seated against the frame shall be between 3 degrees and 7 degrees from the vertical.
 6. Lifting lugs shall be provided on the top of the frame to facilitate installation.

2.03 FLAP

- A. The flap shall be constructed of 1-1/4 inch minimum thickness rubber with a durometer between 40 and 65. The reinforcing stiffeners shall be constructed of stainless steel plate with a minimum thickness of 3/16-inch.
 1. Reinforcing stiffeners shall be bolted to the flap and mounted horizontally.
 2. The flap shall be attached to the frame with a 1/4-inch thick stainless steel retainer bar and stainless steel attachment hardware.
 3. The reinforcing stiffeners on the flap shall not deflect more than 1/4-inch of the span under the maximum seating head.
 4. A lifting handle shall be welded to the center of the bottom reinforcing stiffener on each flap. The lifting handle shall be constructed of 1/2-inch stainless steel rod.

2.04 ANCHOR BOLTS

- A. Anchor bolts shall be provided by the flap gate manufacturer for mounting the gates when shown on the Contract Drawings.
 1. Quantity and location shall be determined by the gate manufacturer.
 2. If epoxy type anchor bolts are provided, the gate manufacturer shall provide the studs and nuts.
 3. Anchor bolts shall have a minimum diameter of 1/2-inch.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Installation of the gates and appurtenances shall be done in a workmanlike manner. It shall be the responsibility of the CONTRACTOR to handle, store and install the equipment specified in this Section in strict accordance with the manufacturer's recommendations.
- B. The CONTRACTOR shall review the installation drawings and installation instruction prior to installing the gates.
- C. The gate assemblies shall be installed in a true vertical plane, square and plumb.
- D. The CONTRACTOR shall fill the void in between the gate frame and the wall with non-shrink grout as shown on the installation drawing and in accordance with the manufacturer's recommendations.

3.02 FIELD TESTING

- A. After installation, all gates shall be field tested in the presence of the ENGINEER and OWNER to ensure that all items of equipment are in full compliance with this Section. Each gate shall be visually inspected to confirm that the flap seats against the frame properly.

END OF SECTION