



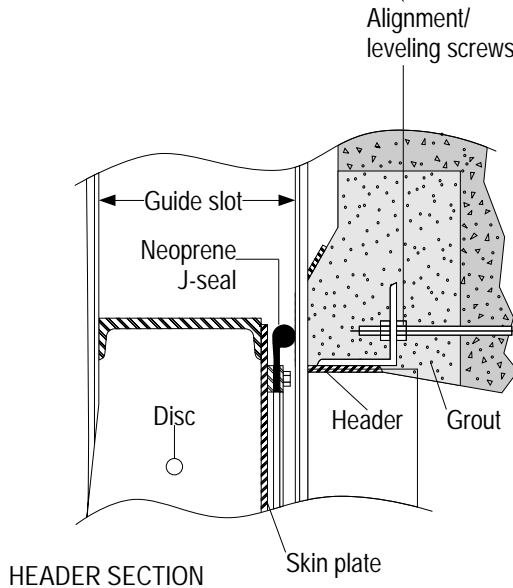
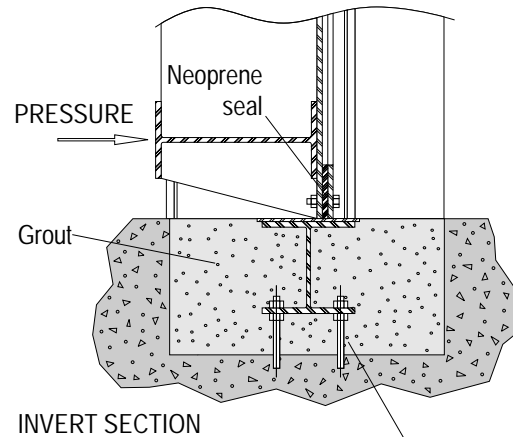
Rodney Hunt
A ZURN Company
Bulkhead Gates

Bulkhead

Gates



- A cost-effective method for dewatering channels.
- Custom designed sizes for specific applications.
- Stacking gates permits flow control for larger openings

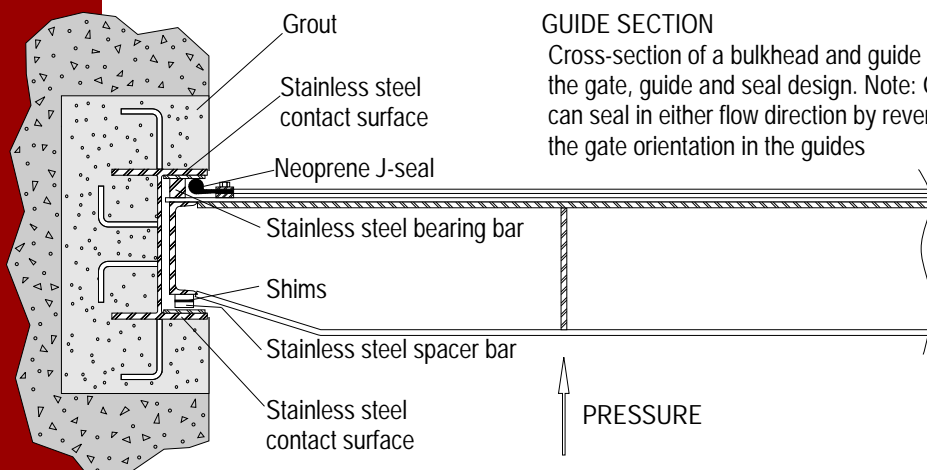


Bulkhead gates are large fabricated steel gates placed in vertical guides embedded in a concrete slot. The gates are normally operated with the use of an overhead crane. They can also be raised and locked in place to provide a method of storage. The gates can be designed to stack one on top of the other to close a large opening.

Bulkhead gates are normally specified for short-term, intermittent use to close off the flow in an open or submerged channel when one side is de-watered. Gates are usually installed and removed under balanced head conditions.

A low leakage requirement can be satisfied through the use of resilient seats across the bottom and on both sides. If it is a submerged opening there would likewise be a rubber seal across the top.

Bulkhead Gates



GUIDE SECTION

Cross-section of a bulkhead and guide showing the gate, guide and seal design. Note: Gates can seal in either flow direction by reversing the gate orientation in the guides

Bulkhead Gates Specifications



1. GENERAL

This specification relates to the design, materials of construction, fabrication and furnishing of the bulkhead gate with appurtenant seals, guides, sills and accessories required for complete and proper operation of the gates. The bulkhead gate shall be manufactured by the Rodney Hunt Company or approved equal. Manufacturers shall have a minimum of 10 years experience in the design and manufacture of equipment of this type. Manufacturer shall submit as a minimum a list of 10 projects with bulkhead gate installations. The list shall include project name, contact, telephone number, years of service, size and method of operation.

2. MATERIALS

All component parts will be of the type of material shown and conform to the standards designated in this section. Plate or Structural Steel:

ASTM A36, A242, A441 or A599 Stainless Steel:

ASTM A167 or A276, Type 302 or 304

Component Item	ASTM Standard
1. Gate Disc Skin Plate	Steel Plate
2. Gate Disc Frame Members	Structural Steel
3. Retainer Bars and Fasteners for seals	Stainless Steel
4. Fasteners (Studs, Anchors, and Assembly Bolts)	Stainless Steel
5. Seals Contact Surfaces	Stainless Steel
6. Seals	
HY Q	Neoprene D2000, Grade AA625
JSeal	Neoprene D2000, Grade 2BC515
7. Guide Slots (Prefabricated)	Structural Steel

3. DESIGN COMPUTATIONS

A. Gate Disc The gate disc shall consist of a smooth skin plate with horizontal and vertical structural reinforcing members and shall be continuously welded throughout to form a boxlike structure. The gate shall be designed to safely withstand the maximum unbalanced head as designated in the gate schedule without exceeding that submitted by the Manufacturer and approved by the Engineer. Approval by the Engineer shall not relieve the Manufacturer from the responsibility for the adequacy of the design. The disc deflection

shall not exceed 1/360 of the nominal gate width. A flat bar shall be welded to the outer periphery of the skin plate to provide a mounting surface for the gate seals. All steel gate components shall have a minimum thickness of 5/16".

B. Seals Resilient seals shall be placed along the top, bottom, and both sides of the gate to reduce leakage. The seal attaching hardware shall be stainless steel and attached in a manner to permit replacement of the seals. The side and top seals shall be of the "J" type and the bottom seal of the flushbottom type. Jseal comers shall be formed by continuous molded sections. Joints between the molded corners and top and side seals shall be a square butt type located a minimum of 12" from the corner. The molded corner shall be bonded to the top and side seal and assembled to the gate disc in the manufacturer's shop. Mitered joints are not acceptable.

C. Guide slots, Sill, and Header Prefabricated structural steel guide slots shall be provided. These shall be to the proper dimensions and shall include stainless steel seal contact surfaces on both upstream and downstream faces. These guides extend twice the height of the gate above the sill so the gate can be raised completely out of the flow. The stainless steel seal contact surface may have maximum roughness of 125 microinch rms. The bottom sill shall consist of a structural steel beam with a stainless steel seal contact surface. The header shall consist of a structural steel angle or formed steel plate with a stainless steel seating surface.

4. PAINTING

The gate disc and all exposed steel surfaces shall be blasted to SSPC SP10. Hoisting Equipment

Prime: One (1) coat of Amerlock 400 at 5.0 mils thick

Finish: One (1) coat of Amercoat 450HS, color gray
Immersed Equipment

Prime: One (1) coat of Amerlock 400 at 5.0 mils thick

Finish: One (1) coat of Amerlock 400 at 5.0 mils thick

5. WELDING

All welding will be done in accordance with AWA D1.1.