Plasti-Fab® INC.

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DOWNWARD OPENING WEIR GATE
PLASTI-FAB CURRENT DENSITY BAFFLES

The function of a down-opening weir gate is to control the upstream water level, and/or pace the amount of discharge from a water system. At times there will be a level control sensor in the system which is directly connected to, and controlling an oscillating operator, in order to automatically pace the amount of flow discharged, or to maintain a constant upstream water depth.

Depending on the size of the weir opening and the heads involved, the downward opening weir gate can be constructed as a sandwich style gate, a one-inch solid FRP gate, or as a Heavy Duty Titeseal gate. It is best to use those for seating head applications to obtain the best leakage performance. However, they can be designed to perform well for unseating heads as well.

Guides The major difference between the down-opening weir gate and a slide gate is seen in the construction of the guide. The gate must pass down across a sealed channel invert. This means that the down-opening weir gate will almost always be surface-mounted. In addition, the guide will have a spigot back that matches the dimensions of the weir or channel opening, and there will be no bottom guide channel. The seals will be mounted on the guide rather than the gate. Guides can be fabricated using FRP or stainless steel, depending on the style of gate and the application requirements.

Lifts & Stem The vast majority of down-opening weir gates will use either a manual or electric actuator. Frequently the electric operators will include a modulating feature that may be controlled by a 4-20 mA signal. The lifts may be mounted on the headrail of a self-contained gate or on a pedestal. Stems will normally be of T-304 or T-316 stainless steel.

Wider weir openings may use a tandem lift and dual stem to help maintain a level weir crest and to keep the gate square in the guide. The general rule of thumb says that, if the gate width is twice the gate height, two stems should be considered.

Seals A neoprene J-seal mounted directly to the spigot back on the guide runs down each side of the opening and across the bottom invert. The weir gate will pass up or down over this seal and must remain in contact wit the seal if it is to operate correctly. Weir gates are most effective when the water pressure is pushing the gate against the seal (seating head).

Installation A downward opening weir gate requires that the water spill over the top of the gate rather than pass under or around. Deflection is an important consideration when designing and installing these gates. Weir gates are surface mounted using stainless steel anchor bolts, and must have enough room below the channel invert to allow the gate to be fully lowered. The gate is considered full-open when it reaches its lowest point of travel.

WHY BUY PLASTI-FAB?

1. Plasti-Fab weir gates offer high corrosion resistance to a very wide range of acids, caustics, salt water and other aggressive chemicals.
2. Plasti-Fab offers a broad range of down-opening weir gates including sandwich style, one-inch solid FRP gates, Heavyduty Titeseal gates, stainless steel and aluminum if required.
3. Plasti-Fab has over 25 years of experience in fiberglass gate design and has fabricated virtually every type of weir gate available.
4. Plasti-Fab has worked with every major lift manufacturer and can supply any style or type of lift required. You can request handwheel, geared mechanical lifts, portable operators, or modulating electric actuators.
5. Fiberglass weir gates are lightweight and easy to install.

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