

2000-SG STAINLESS STEEL SLIDE GATES

1. GENERAL CONDITIONS

1.1. SCOPE. This section covers Stainless Steel Flow Control Slide Gates and operators.

1.2. GENERAL. Slide gates, including actuation devices, lifting stems and all applicable accessories shall be of the size and type shown in the manufacturer's drawings and specified herein. Gate type, actuation type, frame type are specified in the sections below. Gate, frame and yoke design shall conform to AWWA C561 as required.

Gates supplied under this section shall be 2000-SG Stainless Steel Slide Gates as manufactured by Envirotech Gates LLC

1.3. QUALITY ASSURANCE

1.3.1. The manufacturer shall have experience in the production of substantially similar equipment, and shall show evidence of satisfactory operation in numerous installations. The manufacturer's shop welds, welding procedures and welders shall be qualified and certified in accordance with the requirement of the latest edition of ASME, Section IX.

1.3.2. Gates shall be shop inspected for proper operation before shipping.

1.4. SUBMITTALS. The manufacturer shall submit for approval by the purchaser, drawings showing the principal dimensions, general construction and materials used in the gate and lift mechanism.

1.5. MANUFACTURER. Gates supplied under this section shall be 2000-SG Stainless Steel Slide Gates as manufactured by Envirotech Gates LLC

2. PERFORMANCE

2.1. LEAKAGE. Slide gates shall be substantially watertight under the design head conditions. All gates shall meet or exceed the AWWA leakage standard.

3. PRODUCT

3.1. SLIDE GATES

3.1.1. GENERAL DESIGN. Gates shall be either, self-contained or non-self-contained and surface mount, in-channel mount or embedded type as indicated on the gate schedule.

The gate design shall be as to allow replacement of the J-seal without removing the door or un-anchoring the gate from its mounting position.

3.1.2. WALL ANCHORS. The wall anchors shall be stainless steel and supplied by the gate manufacturer. Refer to the gate schedule for anchor type. Anchor size should be according to the manufacturer's recommendations to handle the operating forces. (Unless using existing wall anchors to be specified by purchaser)

3.1.3. FRAME AND MOUNTING. The gate frame shall be constructed of structural members welded to form a rigid one-piece frame. The frame shall be suitable for the following mounting types: surface mount (SM), in-channel mount (CM) or embedded type (ET). The guide slot shall be made of UHMW-PE (ultrahigh molecular weight polyethylene).

3.1.4. GUIDES AND SEALS. The guides shall be made of UHMW-PE (ultra high molecular weight polyethylene) and shall be of such length as to retain and support at least two thirds (2/3) of the vertical height of the slide in the fully open position.

The J-seals shall be made of neoprene rubber. The sealing system shall maintain efficient sealing in any position of the slide and allow the water to flow only in the opened part of the gate.

The bottom seal shall be dove tail cut polyethylene with neoprene rubber imbedded seal.

Guides to be dowel pinned or accurate replacement and location.

3.2. OPERATORS AND STEM

3.2.1. STEM AND COUPLINGS. The operating stem shall be of stainless steel designed to transmit in compression at least 2 times the rated output of the operating manual mechanism with a 40 lbs effort on the hand wheel.

The stem diameter shall be called out in the gate schedule. The threaded portion of the stem shall have machined cut threads of the Acme type.

Where electric operator is used, the motor actuator shall be a 460-V, 3-phase, 60-hz motor with precision reduction gearing and enclosed in weatherproof housing. Controls

shall include a control power transformer, reversing control, torque switches, limit switches, open-stop-closed buttons and gate position indicator.

3.2.1.1. For stems in more than one piece and with a diameter of 1¾ inches (45 mm) and larger, the different sections shall be joined together by solid bronze couplings. Stems with a diameter smaller than 1¾ inches (45 mm) shall be pinned to an extension tube.

The couplings shall be grooved and keyed and shall be of greater strength than the stem.

3.2.1.2. Gates having a width greater than two times their height shall be provided with two lifting mechanisms connected by a tandem shaft.

3.2.2. STEM GUIDES. Stem guides shall be fabricated from type 304L (or 316L) stainless steel. The guide shall be equipped with an UHMW-PE bushing. Guides shall be adjustable and spaced in accordance with the manufacturer's recommendation.

3.2.3. STEM COVER. Rising stem gates shall be provided with a clear polycarbonate stem cover. The stem cover shall have a cap, condensation vents and red mylar position indicating tape. The tape shall be field applied to the stem cover after the gate has been installed and positioned.

3.2.4. LIFTING MECHANISM. Manual operators of the types listed in the schedule shall be provided by the gate manufacturer. The actuator can be a self-contained (SC), non-self-contained (NSC). This option will be called out in the gate schedule.

All bearings and gears shall be totally enclosed in a weather tight housing. The pinion shaft of crank-operated mechanisms shall be constructed of stainless steel and supported by roller or needle bearings.

Each manual operator shall be designed to operate the gate under the maximum specified seating and unseating heads by using a maximum effort of 40 lbs (178 N) on the crank or handwheel, and shall be able to withstand, without damage, an effort of 80 lbs (356 N).

The crank shall be removable and fitted with a corrosion-resistant rotating handle. The maximum crank radius shall be 15 inches (381 mm) and the maximum handwheel diameter shall be 24 inches (610 mm).

4. MATERIALS

PART	MATERIAL
Frame, stem guides	Stainless steel, Type 304L or 316L
J-seal	Neoprene ASTM D2000 Grade 2 BC 510
Slide	UHMW-PE Polyethylene
Threaded stem	Stainless steel ASTM A-276 type 303 MX or 316
Hardware	ASTM A276, Type 304 or 316
Pedestal (if required)	Stainless steel, Type 304L or 316L
Stem cover	Polycarbonate ASTM D-3935
Lift nut, couplings	Manganese bronze ASTM B584 UNS-C86500

5. SCHEDULE

Gate Identification	2000-SG				
Size Width x Height					
Operating Floor Elevation					
Frame Type					
Mounting					
Actuator Type					
Actuator Mount					

Frame Type: 304LSS
 316LSS
 Aluminum
 Carbon Steel
 Mounting: SM - Surface mount
 CM - In-channel mount
 ET - Embedded type
 Actuator Type: MO - Manual operator
 EO - Electric Operator
 Actuator Mount: SC - Self-contained
 NSCP - Non-self-contained Pedestal
 NSCB - Non-self-contained Bracket

6. EXECUTION

6.1. INSTALLATION. Gates and appurtenances shall be handled and installed in accordance with the manufacturer's recommendations.

6.2. FIELD TESTS

6.2.1. Following the completion of each gate installation, the gates shall be operated through at least two complete open/close cycles. If an electric or hydraulic operator is used, limit switches shall be adjusted following the manufacturer's instructions.

6.2.2. Gates should be checked for leakage by the contractor.