

DELAWARE MATERIAL SPECIFICATION

RADIAL GATES MS 225

1. SCOPE

This specification covers the quality of radial (Tainter) gates for water control.

2. QUALITY OF MATERIALS

Materials in radial gates and appurtenances shall conform to the requirements of the applicable specifications listed below for the alloy, grade, type, or class of material and the condition and finish appropriate to the structural and operational requirements:

<u>Material</u>	<u>ASTM Specifications</u>
Cast iron	A 48, Class 30, or A 126, Class B
Cast steel	A 27 or A 148
Structural steel shapes, plates and bars	A 36
Carbon steel bars	A 108 or A 575
Stainless steel	A 167, A 276, or A 582 type 302, 303, 304, or 304L
Zinc-coated steel sheets	A 653 or A 924
Bronze bar, rods, shapes	B 21 or B98
Cast Bronze	B 584

Galvanizing (zinc coating) shall conform to the requirements of Material Specification 582.

3. GATES

Unless otherwise specified, the gates shall be fabricated from structural steel with skin plates made of smooth or corrugated iron or steel sheets. They shall conform to the dimensions shown on the drawings and shall be built to withstand the specified head. The curvature of the skin plate shall be concentric with the pivot pins or trunnions. Gates shall be supplied with pin bearings, pins, hoist, galvanized hoisting cable and all anchor bolts. Unless otherwise specified, the pin bearings shall be cast iron and of the embedded type.

4. HOIST

Hoists shall be of the worm-gear type and shall be equipped with hand crank or be power operated as specified on the drawings. Hoists shall be furnished complete with all lubricants, anchor bolts and other appurtenances necessary for their installation and operation.

5. RUBBER SEALS

Each gate shall be fitted with rubber seals along the side and bottom edges of the gate face. The seals shall be of the belt type or "J" type, as specified, and shall be designed to bear on the walls and bottom of the structure or on rubbing plates and sills to insure a watertight fit when the gate is closed. When specified, a rubber seal shall also be provided at the top edge of the gate.

6. INSTALLATION INSTRUCTIONS

Prior to gate installation, the Contractor shall provide the Engineer with the manufacturer's complete installation data, instructions for adjustments and drawings or templates showing the location of anchor bolts and pin bearings for each gate.

7. PAINTING

Gates and accessories shall be galvanized or painted with the specified paint system.

8. CERTIFICATION

The supporting data submitted to the Engineer shall include the manufacturer's name and the hydraulic head for which for which the gate is designed together with such drawings and specifications as may be necessary to show that the gate conforms to the requirements of this specification.