

Auto Rising Flood Gate (WK Model# FG-AR) Specifications

Part 1 – General

- 1.01 Description:** Provide flood gate(s) factory assembled with frame(s) and all operating components in accordance with contract specifications and approved drawings.
- 1.02 Acceptable Manufacturers:** Flood gate shall be as manufactured by Walz & Krenzer, Inc (203-267-5712; sales@wkdoors.com).
- 1.03 Standards:** Comply with the provisions of the following (as applicable):
- A. AISC “Specifications for Design, Fabrication, and Erection of Structural Steel for Buildings”.
 - B. The Aluminum Assoc. “Aluminum Design Manual”.
 - C. AWS Structural Welding Code D1.1, D1.2, D1.3, D1.6.
 - D. ASME Structural Welding Code Section IX.
 - E. FEMA Bulletin 3-93, #102 & #114.
- 1.04 Submittals:**
- A. Manufacturers Data: Submit installation and maintenance manuals for flood gate.
 - B. Shop Drawings: Submit shop drawings approved by licensed Professional Engineer for flood gate including dimensional plans, elevations, sections, details for all mountings/connections, and parts list.
 - C. Calculations (optional for critical applications): Submit calculations approved by licensed Professional Engineer verifying the flood gate’s ability to withstand the design pressure loading.
 - D. QA Submittals: Submit test reports showing compliance with specified performance characteristics.
- 1.05 Qualifications:** Manufacturer shall present evidence attesting to at least five years successful experience in the design and manufacture of similar closures.

Part 2 – Products

- 2.01 Product Description:** Auto Rising flood gate shall be Model FG-AR as manufactured by Walz & Krenzer, Inc.
- 2.02 Materials:**
- A. Panel: 6061-T6 aluminum plate (diamond tread can be provided as an option).
 - B. Frame: ASTM A-36 steel (options include aluminum and stainless steel).
 - C. Gasket: WK EPDM lip seal gasket.

- D. Finish: aluminum panel painted with INSL-X CheckRust acrylic paint. Mild steel frame to be blast to near white metal per SSPC-SP-7 and primed with one coat of inorganic zinc primer. Finish coat with epoxy paint is available.
- E. Hinges: to include bronze oil-impregnated thrust bearing and stainless steel hinge pins.
- F. Gas Springs shall be stainless steel.
- G. Buoyant foam shall be rigid, extruded, closed cell polystyrene foam.

2.03 Design:

- A. Design Pressure: Gate designed to take a seating pressure to the full height of the gate.
- B. Sealing: provide lip seal gaskets for watertight seal on bottom and sides.
- C. When flood gate is in the lowered position, it becomes part of the ground or road surface.
- D. Non-skid coatings shall be used for top facing plate.
- E. Gate shall automatically close and seal by flood water filling the trough. The gate shall fully close before water level in trough reaches grade.
- F. Automatic gate actuation by flood water shall be provided for with buoyant closed cell foam and stainless steel gas springs.
- G. Side frames are angles for mounting to existing exterior face of the wall surface or flatbars for mounting inside door jambs.
- H. Bottom frame(s) shall have mounting holes for expansion anchors (options include masonry subframe with welded anchors for embedment in concrete). Bottom trough in which flood gate rests shall have perimeter edge anchors and cross beams to support vehicle and pedestrian loads.
- I. For flood gates located in roadways, appropriate live loads are to be specified, such as AASHTO H-20.
- J. Flood gate shall be designed to withstand flood waters up to its full height with allowable stresses in accordance with the Aluminum Association "Aluminum Design Manual" and AISC.
- K. For large and/or heavy floodgates: mechanical assist is required. Options include manual or powered winches.
- L. Additional requirements such as hydrodynamic loads, impact loads and breaking wave loads shall be added as required by the specific application.

2.04 Quality Assurance:

- A. Perform shop manual operational test.
- B. Perform shop hose test for lip seal gate.

- C. Liquid Penetrant Test (for critical applications): Welds in the “potential” leak path shall be liquid penetrant inspected in accordance with Appendix VIII of Section VIII of ASME Code Div. 1.

Part 3 – Execution

3.01 Fabrication:

- A. The finished product shall be rigid, neat in appearance, and free from all defects, warps, and buckles. All exposed joints and corners shall be well rounded.
- B. The panel and frame shall be flat within 1/8” in any 6’ length.
- C. All butt welds in frame to be full penetration welds.

3.02 Installation:

- A. Install flood gate in accordance with manufacturer’s instructions and approved shop drawings.
- B. After installation, perform field operational and chalk test per manufacturer’s instructions to verify seal.
- C. Finish paint (if applicable) after installation.

3.03 Warranty: Flood gate shall operate satisfactorily and be free of defects in material and workmanship for a period of not less than one year from the date of delivery.