

Watertight Door with Inflatable Gasket (WK Model# WT-FD-ID) Specifications

Part 1 – General

- 1.01 Description:** Provide inflatable gasket watertight/airtight door(s) factory assembled with frame(s) and all operating components in accordance with contract specifications and approved drawings.
- 1.02 Acceptable Manufacturers:** Watertight/airtight door 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.
 - F. ASTM A36, D2000.
 - G. American Iron and Steel Institute (AISI) CL 304, 316, 316L.
- 1.04 Submittals:**
- A. Manufacturers Data: Submit installation and maintenance manuals for watertight/airtight door.
 - B. Shop Drawings: Submit shop drawings approved by licensed Professional Engineer for watertight/airtight door 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 watertight/airtight door’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 ten years successful experience in the design and manufacture of similar closures.

Part 2 – Products

- 2.01 Product Description:** Watertight/airtight door shall be Model WT- FD-ID as manufactured by Walz & Krenzer, Inc.
- 2.02 Materials:**
- A. Panel: A-36 steel (aluminum and stainless steel available).

- B. Frame: A-36 steel (aluminum and stainless steel available).
- C. Latches: Stainless steel sliding latch bolts
- D. Gasket: fabric-reinforced EPDM inflatable gasket.
- E. Finish: steel or aluminum panels and frames to be coated with (1) primer coat and (2) top coats of shop polyurethane system. Stainless steel to be uniform bead blast per SSPC-SP17 (other options available upon request).
- F. Hinges: to include bronze oil-impregnated thrust bearing and stainless steel hinge pins.

2.03 Design:

- A. Design Pressure: # (in feet of water or psi). Specify seating (pushing door closed) or unseating direction (pushing door open).
- B. Door perimeter shall be sealed by (2) independent gaskets for redundancy in case of puncture or air leak.
- C. Side frames are available as angles for mounting on the exterior face of the wall surface, or as flatbars for mounting inside door jambs.
- D. Bottom frame is a ½” flatbar, which can be recessed ½” into floor surface to achieve a flush bottom sill.
- E. Corners of watertight/airtight door to have a minimum 7” radius at frame.
- F. Air source options (select one):
 - a. WK standard air manifold only. For use with manual air pump (e.g. bicycle pump) or portable compressed air tank supplied by others. Manifold includes standard automotive Schrader valve stems for inflation.
 - b. Rechargeable compressed air tank stored on door panel, supplied with WK standard air manifold. Does not require external air source except for re-charging tank.
 - c. Rechargeable compressed air tank stored on door panel, supplied with push-button manifold for easy operation.
 - d. All options include 0-30 psi pressure gauges.
- G. Installation:
 - a. Frame(s) shall have mounting holes for expansion or adhesive concrete anchors for installation on existing openings.
 - b. For new concrete pours, frame(s) shall have welded embedment anchors and/or a masonry subframe.
 - c. Other options included weld-on installation (field welding by installer).
- H. Sealing surfaces shall be uninterrupted by steps greater than 0.015”, free of cracks, and with finish lay parallel to seal.
- I. Options include power operation, viewing windows, locks, and remote indication/control/monitoring.
- J. Door size and design pressure direction shall determine the quantity and type of latches or panel stops.

2.04 Quality Assurance:

- A. Perform shop dimensional & flatness tests.
- B. Perform shop operational test.
- C. Perform shop chalk test.
- D. Air leakage test: inflate gasket(s) and confirm no loss of pressure for 0.5 hours after settling period.
- E. Non-Destructive Testing (if required) options include:
 - a. Liquid Penetrant Test: Welds in the “potential” leak path shall be liquid penetrant inspected in accordance with Appendix VIII of Section VIII of ASME Code Div. 1.
 - b. Magnetic Particle Testing (MT) available for non-stainless steel.
 - c. Other tests are available upon request.
- F. Hydrostatic Test (if required): Provide hydrostatic test data certifying that the closure furnished, or a closure of similar design, has been satisfactorily tested to verify that it will withstand the designed hydrostatic pressure with no visible leakage. Available upon request.

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. All welding shall be performed in accordance with the requirements of the applicable AWS or ASME standards.
- C. The panel gasket channel and frame sealing surface shall be flat within 1/8” with a maximum deviation of 1/16” in any 6’ length.
- D. All butt welds to be full penetration welds.

3.02 Installation:

- A. Install watertight/airtight door 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:** Watertight/airtight door 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