

Raised Watertight Hatch (WK Model# WTH-R) Specifications

Part 1 – General

- 1.01 Description:** Provide raised watertight hatch factory assembled with frame and all operating components in accordance with contract specifications and approved drawings.
- 1.02 Acceptable Manufacturers:** Watertight hatch 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 hatch.
 - B. Shop Drawings: Submit shop drawings approved by licensed Professional Engineer for watertight hatch 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 hatch’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 hatch shall be Model WTH-R as manufactured by Walz & Krenzer, Inc.
- 2.02 Materials:**
- A. Panel & Frame: ASTM A-36 steel (options include aluminum and 304 or 316 stainless steel).

- B. Gasket: neoprene gasket, 25 duro with fully molded corners. For pressures exceeding 22 psi, 40 duro gasket is used. Optional gasket material for unusual environmental conditions including viton, silicone, hypalon and others. O-rings used for high pressure hatches.
- C. Securing dogs: xylan-coated steel dogs. Other options available upon request (stainless steel, bronze).
 - a. For low pressure or seating applications, stainless steel dogging mechanism recommended.
 - b. In some cases where operation is from outside only, stainless steel/bronze drop bolts may be used for reduced maintenance and lower cost.
- D. Operating Mechanism (if required): bronze or stainless steel toggles, stainless steel link bars, stainless steel gears.
- E. Bushings and bearings for dogs (if required): bronze oil impregnated bearings.
- F. Hinges: To include bronze oil-impregnated thrust bearing and stainless steel hinge pins.
- G. Grab handles included for lifting hatch.
- H. 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).

2.03 Design:

- A. Design Pressure: # (in feet of water or psi). Specify seating (pushing hatch closed) or unseating direction (pushing hatch open).
- B. Operation Type:
 - a. Individually-Dogged: hatch shall be operable from one or both sides via individual dogs. Recommended for infrequent use.
 - b. Quick-Acting: dogs are interconnected and operated all at once via a handwheel. Recommended for hatches that are used frequently.
- C. Rectangular hatch openings shall have square corners unless otherwise specified. Radiused corners, circular openings, and other custom hatch opening shapes available.
- D. Spring-balancing: manually-operated hatches require counterweight or spring-balancing due to the weight of the panel:
 - a. Hatches exceeding 50 lbs of operating force to open/close shall have EZ-Balance system:
 - 1. Designed to suit for any hatch size and weight
 - 2. Very low operating force regardless of size
 - 3. Shall be balanced such that hatch weigh is perfectly balanced throughout hatch swing
 - b. Other options for balancing available upon request.
- E. Hydraulic power operation available upon request.

- F. Options include fall protection, hold-open braces, and remote operation/indication.
- 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. Frame knife-edge shall be rounded and smooth to maximize sealing.
- I. Hatch size and design pressure direction shall determine the quantity and type of dog. Dogs are designed to adjust gasket compression in the field.

2.04 Quality Assurance:

- A. Perform shop dimensional & flatness tests.
- B. Perform shop operational test.
- C. Perform shop chalk test to ensure 100% watertight/airtight seal.
- D. 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.
- E. 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 knife edge 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 hatch in accordance with manufacturer’s instructions and approved shop drawings.

- B. After installation, perform field operational and field chalk test per manufacturer's instructions to verify installation and watertight integrity of hatch.
- C. Finish paint (if applicable) after installation.

3.03 Warranty: Watertight hatch 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.