

3-Part CSI Specifications

D3C-Hinged Watertight Door for Infrequent Access

These specifications are intended to be used as a guideline for architects and engineers as they establish the requirements for a particular project, and may be modified by them as deemed appropriate.

PART 1 - GENERAL

1.01 DESCRIPTION

- a.) Work Included: Provide special doors(s) factory assembled with frame(s) and hardware in accordance with the contract documents.

1.02 STANDARDS

- a.) Comply with the provisions of (as applicable).
 - (1) AWS Structural Welding Code.
 - (2) ASME Structural Welding Code Section IX.

1.03 SUBMITTALS

- a.) Manufacturers Data: Submit installation and maintenance instructions for special door(s).
- b.) Shop Drawings: Submit shop drawings for special door(s) including dimensioned plans and elevations, details of sections, connections and anchorage, and parts list.
- c.) Certificates (Optional): Submit certification that the door(s) furnished, or a door of similar design, has been satisfactorily tested to verify that it will withstand the design hydrostatic pressure.

1.04 QUALIFICATIONS

- a.) Experience: The manufacturer of the special door(s) shall present evidence attesting to at least 5 years of successful experience in the design and manufacture of both the door and the door seal of the types specified.

PART 2 - PRODUCTS

2.01 DOOR SHALL BE MODEL D3C AS MANUFACTURED BY PRESRAY CORPORATION.

2.02 MATERIALS

- a.) Structural Steel Plates and Shapes: ASTM A36 (options available are type 304 stainless steel, type 316 stainless steel, and type 6061 aluminum).
- b.) Finish: Brush-off blast clean per SSPC-SP7, prime with one coat rust inhibitive, lead free, red primer.

- c.) Door Gasket: Presray type 25 durometer neoprene molded rather than extruded, with fully molded corners, no mitered joints allowed. (Optional materials include Viton®, consult Presray in cases of unusual environmental conditions).
- d.) Hardware:
 - Hinges: Presray type. Lower hinge to include bronze oil-impregnated thrust bearing. Hinges shall include stainless steel hinge pins, stainless steel mounting bolts, and slotted hinge blades to protect the hinges from the pressure load.
 - Dogs: Presray Handles. Door size shall dictate the number of dogs. The spacing of the dogs with stainless steel rollers shall evenly distribute the loads and gasket compression. The handle shall be provided with an “o” ring seal and two oil-impregnated bronze flange bearings to maintain shaft alignment. When not in the dogged position, the handles shall be held in the stored position by disk springs. Each dog shall be equipped with a means for adjusting seal compression after installation in the field.
 - Viewing Panel: Presray type view port (optional).

2.03 DESIGN

- a.) Watertight door(s) shall be designed with a minimum 2:1 factor of safety based on material yield strength, and shall provide an effective seal against the design pressure.
- b.) The design of the door shall allow the pressure on the door to be transmitted to the frame and/or dogs.
- c.) The door shall provide a rectangular opening with square corners to facilitate easy passage.
- d.) Frame shall include suitable anchors for imbedment in concrete (options available include epoxy anchors for mounting in new masonry block walls, gaskets, bolts and inserts for attachment to existing concrete or block, or the frame ready for welding to existing steel structure).

2.04 FABRICATION

- a.) The edge coaming contacting the door gasket shall be machined, rather than as rolled, to maximize sealing.

2.05 INSPECTION AND TEST

- a.) All welds on steel assemblies that may be potential “leak path” shall be liquid penetrant inspected in accordance with ASME section VIII Div. of Appendix 8.
- b.) Finished assembly, or assembly similar in design shall be factory leak tested to verify that it will withstand the design hydrostatic pressure.

PART 3 - EXECUTION

3.01 INSTALLATION

- a.) Install special door in accordance with manufacturer's instructions and approved shop drawings.

PART 4 - WARRANTY

- 4.01 1-YEAR LIMITED AGAINST DEFECTS AND WORKMANSHIP FROM DATE OF SHIPMENT.