



# Standard Specification for Doors, Double, Gastight/Airtight, Individually Dogged, for Marine Use<sup>1</sup>

This standard is issued under the fixed designation F 1068; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This specification, to be used in conjunction with Specification F 1073, covers the principal dimensions and the mechanical requirements for manufacturing steel and aluminum individually dogged, airtight/gastight double doors for personnel access through bulkheads, complete with frames, intended to maintain the structural and the air and gas tightness integrity of the bulkheads.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 The following precautionary caveat pertains only to the Test Methods portion, Section 6, of this specification: *This standard does not purport to address the safety concerns associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>2</sup>

- A 36/A 36M Specification for Carbon Structural Steel
- A 131/A 131M Specification for Structural Steel for Ships
- B 209 Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- F 1073 Specification for Door Fittings, for Watertight/Gastight/Airtight, Weathertight, and Non-Tight Doors, for Marine Use

### 2.2 ABS Standard:

Rules for Building and Classing Steel Vessels<sup>3</sup>

### 2.3 Military Standards:

- MIL-R-900 Rubber Gasket Material, 45 Durometer Hardness<sup>4</sup>
- MIL-C-81706 Coating, Aluminum and Aluminum Alloys<sup>4</sup>
- MIL-P-24441 Epoxy-Polyamide Paint<sup>4</sup>
- DoD-STD-2138 Metal Sprayed Coating System for Corrosion Protection<sup>4</sup>
- TT-E-490 Enamel, Silicone Alkyd Copolymer, Semi-Gloss, Exterior<sup>4</sup>
- ZZ-R-765 Rubber, Silicone<sup>4</sup>

## 3. Ordering Information

3.1 Ordering for doors under this specification shall include the following:

- 3.1.1 Material of doors,
  - 3.1.2 Nominal and ASTM designations, fixed lights or no lights,
  - 3.1.3 Quantity, and
  - 3.1.4 Location of active and inactive panels.
- 3.2 Inspection and acceptance of doors shall be agreed upon between the purchaser and the supplier.

## 4. Construction, Shape, and Dimensions

4.1 The construction, shape, and clear opening dimensions shall be as shown in Fig. 1 and Table 1; in addition, they shall conform to the following requirements:

- 4.1.1 Door frames shall be supplied as indicated in Fig. 1. The corner radius inside of door frame shall be 8 in. (203 mm).
- 4.1.2 Dogs shall be located on the door panels unless otherwise specified.
- 4.1.3 The doors shall be fitted with dogs, hinges, hasp and staple assemblies, grab handles, label plates, and hook assemblies.
- 4.1.4 The position of the grab handles shall be located at the center of the height of each door panel.
- 4.1.5 The components shall be attached to the steel doors. Components shall be attached to aluminum doors by either welding or bolting.
- 4.1.6 The material of standard door components shall be as given in Table 2.

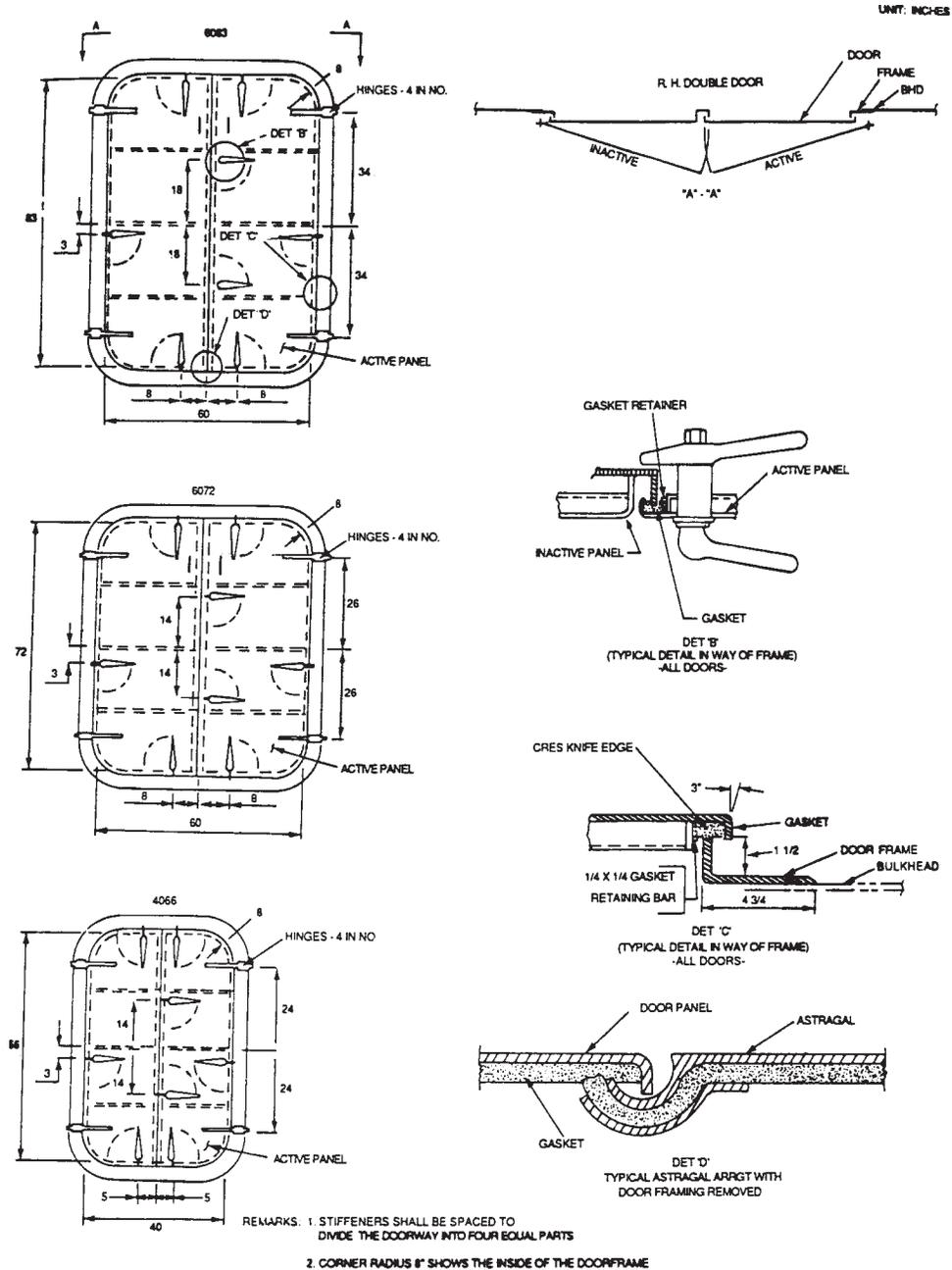
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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> Available from American Bureau of Shipping (ABS), ABS Plaza, 16855 Northchase Dr., Houston, TX 77060.

<sup>4</sup> Available from Standardization Documents, Order Desk, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, ATTN: NPODS.



REMARKS: 1. STIFFENERS SHALL BE SPACED TO DIVIDE THE DOORWAY INTO FOUR EQUAL PARTS  
 2. CORNER RADIUS 8" SHOWS THE INSIDE OF THE DOORFRAME

NOTE 1—1 in. = 25.4 mm.

FIG. 1 Typical Double-Door Details

4.1.7 Welding shall be done in accordance with ABS Rules for Building and Classing Steel Vessels.

**5. Workmanship, Finish, and Appearance**

5.1 All sharp and ragged edges shall be ground flush and removed for personnel protection.

5.1.1 The door panels, upon completion, shall be straight with a tolerance of  $\pm 1/16$  in. (1.6 mm).

5.2 Pretreatment and priming of door components shall be as follows:

5.2.1 Steel door and components, except component No. 3, are to be coated with inorganic zinc rich primer, SSPC Paint 20 Type I-C, at 1.5 to 3.0 mils (MDFT), both sides, before assembly, following surface preparation in accordance with the manufacturer's instructions.

5.2.2 Aluminum door and components, except component No. 3, are to be pretreated with vinyl wash primer coating, followed with lead free, chromate free, anti-corrosion prime coating. Pretreatment and primer are to be applied before

**TABLE 1 Steel and Aluminum Doors**

NOTE 1—1 in. = 25.4 mm.

NOTE 2—2.2 lb = 1 kg.

NOTE 3—Weight does not include fittings.

Steel Doors						
Nominal Number	Clear Opening, in.	Size of Door, in.	Thickness of Door Plate, in.	Size of Stiffener, in.	Size of Frame, Angle, in.	Calculated Weight, lb
4066	40 × 66	42 × 68	¼	2 × 1¼ × ¼ angle	4¾ × 1½ × ¼	338
6072	60 × 72	62 × 74	¼	2 × 1½ × ¼ angle	4¾ × 1½ × ¼	503
6083	60 × 83	62 × 85	¼	2½ × 1½ × ¼ angle	4¾ × 1½ × ¼	569
Aluminum Doors						
4066	40 × 66	42 × 68	¼	3 × 3 × ⅜ 'T' bar	4¾ × 2 × ⅜	171.2
6072	60 × 72	62 × 74	¼	3 × 3 × ⅜ 'T' bar	4¾ × 2 × ⅜	238.4
6083	60 × 83	62 × 85	¼	3 × 3 × ⅜ 'T' bar	4¾ × 2 × ⅜	265.5

**TABLE 2 Standard Door Material**

Number	Component	Steel	Aluminum Alloy
1	Door panels	Specifications A 36/A 36M or A 131/A 131M	Specification B 209
2	Gasket retainer	Specifications A 36/A 36M or A 131/A 131M	Specification B 209
3	Gasket	Neoprene 45 Durometer or equal	MIL-R-900
4	Stiffeners	Specifications A 36/A 36M or A 131/A 131M	Specification B 209
5	Door frame	Specifications A 36/A 36M or A 131/A 131M	Specification B 209

assembly, following surface preparation in accordance with the manufacturer's instructions.

## 6. Test Methods

6.1 Design all doors with their respective fittings from the inside (stiffener side) to a test head of 5 psi (34 kPa) and a proof test of 7.5 psi (50 kPa) to ensure no deformation of the panel.

6.2 Before delivery certify the doors for gastight/airtight integrity.

## 7. Product Marking

7.1 Each door shall be marked with the purchase order number by attaching a CRES label plate to the door panel using letters at least ½ in. (13 mm) high, designating the ASTM

designation number, nominal number, thickness of the door plate, and direction of opening. Other markings may be in paint.

7.2 Label plates shall be screwed or bolted to the door panel on steel and aluminum doors, but in no way adversely affect the airtightness or gas tightness.

## 8. Packaging and Package Marking

8.1 Doors shall be crated or attached to a pallet in a manner acceptable for shipment by a common carrier. The door and door frame assembly shall be shipped as one unit with the gasket protected from knife edges by an inserted partition.

## 9. Keywords

9.1 airtight; dogged; doors; double doors; gastight; marine; ship

## SUPPLEMENTARY REQUIREMENTS

The following supplementary requirements shall apply only when specified by the contract or order.

### S1. Painting

S1.1 Pretreatment and priming of door components shall be metal spray coating in accordance with DoD-STD-2138, Type II on both sides prior to assembly.

S1.2 Aluminum door and components shall be treated with a chemical conversion coating MIL-C-81706, second primed with one coat epoxy polyamide primer (Formula 150 of MIL-P-24441) alkyd haze-gray (TT-E-490 or equal). Apply

coating before assembly, following surface preparation in accordance with the manufacturer's instruction.

### S2. Internal Pressure

S2.1 Design and proof test pressures other than 5 and 7.5 psi (34 and 52 kPa), respectively, if required, shall be indicated.

S2.2 Clear openings other than those specified in Table 1, if required, shall be indicated.

**S3. Special Heat Resisting Gaskets**

S3.1 Special heat resisting gaskets in accordance with ZZ-R-765, Class 3B, Grade 30 are to be installed.

**S4. Aluminum Doors**

S4.1 Aluminum doors for 5 psi (34 kPa) internal and external pressures are to be indicated.

**S5. Additional Test Requirements**

S5.1 Test requirements, when indicated, shall allow 1 out of 50 doors to be tested for 1.5 times the test requirements performed by the manufacturer.

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