

## 33.18 DIESEL FUEL TANKS

### 33.18.1

All materials used shall be resistant to deterioration as a result of contact with diesel fuel and other liquids or compounds with which the material may normally come in contact under normal operating conditions, e.g., grease, lubrication oil, common bilge solvents, and salt or fresh water.

### 33.18.2 Metallic Tanks

#### 33.18.2.1

Copper tanks shall be internally tin coated.

#### 33.18.2.2

If galvanized, sheet steel tanks shall be galvanized on the outside only.

#### 33.18.2.3

Tank fitting plates shall be made of 5052, 5083, 5086, 6061, or 6063 aluminum or 300 series stainless steel.

#### 33.18.2.4

Aluminized steel tanks shall have a corrosion inhibiting baked paint or equivalent coating not less than .0015 inch (.0381mm) thickness applied to the total tank exterior.

#### 33.18.2.5

Fuel tanks shall not be constructed of terneplate steel.

### 33.18.3 Corrosion Resistance

#### 33.18.3.1

For corrosion resistance, fuel tank material shall be at least the minimum thickness listed in H-33 [Table IV](#). Metallic materials not listed in H-33 [Table IV](#) shall be tested in accordance with ASTM B117, Salt Spray (Fog) Testing for a minimum of 400 hours and demonstrate corrosion resistance equivalent to a similar material listed.

**NOTE: Material thickness specified in H-33 [TABLE IV](#) may not be sufficient to meet the structural requirements of the standard.**

#### 33.18.3.2

Non-metallic materials, such as fiberglass, are acceptable for corrosion resistance; however, all other requirements of this standard must be met.

#### 33.18.3.3

Metals and metal alloys used in a fuel system shall be selected to minimize galvanic action.

**NOTE: The copper based alloys normally used for fuel fittings and lines are acceptable for direct coupling with all fuel tank materials listed in H-33 [Table IV](#), except aluminum.**

#### 33.18.3.3.1

Copper-base alloy components shall be separated from contact with aluminum tanks or fitting plates by means of a galvanic barrier, such as 300 series stainless steel.

#### 33.18.3.4

After machining, all steel pipe fittings shall be zinc plated, and treated with yellow dichromate dip per ASTM B633, *Specification for Electrodeposited Coatings of Zinc on Iron and Steel*.

#### 33.18.3.5

Fasteners used to couple fittings, such as fuel senders to aluminum tanks, shall be of 300 series stainless steel.

### 33.18.4 Design, Construction, and Testing

#### 33.18.4.1

Non-integral fuel tanks shall be capable of withstanding mechanical strength tests as described in [H-33.21](#).

#### 33.18.4.2

The test pressure shall not be less than three psi (21kPa). See [H-33.21.1](#).

#### 33.18.4.3

The tank design shall be such that no exterior metallic part of the tank will trap water when the tank is installed as intended with the boat in the static floating position.

#### 33.18.4.4

If baffles are provided, the total open area provided in the baffles shall be a maximum of 30 percent of the tank cross section in the plane of the baffle. Baffle openings shall be designed so that they do not prevent the fuel flow across the bottom, or trap vapor across the top of the tank.

#### 33.18.4.5

Threaded connections into fuel tanks shall be in accordance with American Standard Taper Pipe Thread (NPTF) and shall provide for thread engagement in accordance with H-33 [Table V](#).

#### 33.18.4.6

Rigid tubes and fill pipes that extend near the tank bottom shall have clearance to prevent contact with the bottom due to flexing of the tank.

#### 33.18.4.7

If the fuel pick-up tube and/or return tube is not furnished as part of the tank, the tank manufacturer shall provide a detailed construction print of the installation.

### 33.18.5 Labeling

#### 33.18.5.1

All fuel tanks shall bear a label with at least the following information:

**33.18.5.1.1** manufacturer's name or trademark and address

**33.18.5.1.2** month, or lot number, and year of manufacture

**33.18.5.1.3** capacity in US gallons/liters;

**33.18.5.1.4** material specification and thickness;

**33.18.5.1.5** fuel for which the tank is suitable;

**33.18.5.1.6** maximum test pressure;

**33.18.5.1.7** model designation.

#### 33.18.5.2

Each letter and number on this label shall

**33.18.5.2.1** be at least 1/16 inch (1.6mm) high, and

**33.18.5.2.2** contrast with the basic color of the label, or embossed on the label.

#### 33.18.5.3

Each label shall:

**33.18.5.3.1** withstand the combined effects of exposure to water, oil, salt spray, direct sunlight, heat, cold, and wear expected in normal operation of the boat, without loss of legibility, and

**33.18.5.3.2** resist efforts to remove or alter the information on the label without leaving some obvious sign of such efforts.

#### 33.18.5.4

The tank label shall be readable as positioned on the installed tank.

### 33.18.6

Each tank shall be tested prior to installation to the maximum pressure indicated on the tank label. The fuel tank shall evidence no leakage under such testing. The test pressure shall not be less than three psi (21kPa). See [H-33.21.1](#).