OCMI, the vessel owner shall submit plans as described in §116.202 of this part.

Subpart C—Hull Structure

§116.300 Structural design.

Except as otherwise allowed by this subpart, a vessel must comply with the structural design requirements of one of the standards listed below for the hull material of the vessel.

(a) Steel hull vessels:

(1) Rules and Regulations for the Classification of Yachts and Small Craft, Lloyd's Register of Shipping (Lloyd's); or

(2) Rules for Building and Classing Steel Vessels Under 61 Meters (200 Feet) in Length, American Bureau of Shipping (ABS);

(b) Aluminum hull vessels:

(1) Rules and Regulations for the Classification of Yachts and Small Craft, Lloyd's; or

(i) For a vessel of more than 30.5 meters (100 feet) in length—Rules for Building and Classing Aluminum Vessels, ABS; or

(ii) For a vessel of not more than 30.5 meters (100 feet) in length—Rules for Building and Classing Steel Vessels Under 61 Meters (200 Feet) in Length, ABS, with the appropriate conversions from the ABS Rules for Building and Classing Aluminum Vessels; or

(2) ABS Guide for High Speed Craft.

(c) Steel hull vessels operating in protected waters—Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways, ABS.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended at 62 FR 51348, Sept. 30, 1997]

§116.330 Sailing vessels.

The design, materials, and construction of masts, posts, yards, booms, bowsprits, and standing rigging on a sailing vessel must be suitable for the intended service. The hull structure must be adequately reinforced to ensure sufficient strength and resistance to plate buckling. The cognizant OCMI may require the owner to submit detailed calculations on the strength of the mast, post, yards, booms, bowsprits, and standing rigging.

[CGD 85–080, 61 FR 900, Jan. 10, 1996; 61 FR 20556, May 7, 1996]

§116.340 Alternate design considerations.

The Commanding Officer, Marine Safety Center, may approve the structure of a vessel of novel design, unusual form, or special materials, which does not meet the requirements of §116.300, if it is shown by systematic analysis based on engineering principles that the vessel structure provides adequate safety and strength. An owner seeking approval of an alternate design shall submit detailed plans, material component specifications, and design criteria, including the expected operating environment, resulting loads on the vessel, and design limitations for such a vessel, to the Marine Safety Center.

Subpart D—Fire Protection

§116.400 Application.

(a) This subpart applies to:

(1) Vessels carrying more than 150 passengers; or

(2) Vessels with overnight accommodations for more than 49 passengers but not more than 150 passengers.

(b) A vessel with overnight accommodations for more than 150 passengers must comply with §72.05 in subchapter H of this chapter.

§116.405 General arrangement and outfitting.

(a) *Fire hazards to be minimized.* The general construction of the vessel must be such as to minimize fire hazards insofar as it is reasonable and practicable.

(b) *Combustible materials to be limited.* Limited amounts of combustible materials such as wiring insulation, pipe hanger linings, nonmetallic (plastic) pipe, and cable ties are permitted in concealed spaces except as otherwise prohibited by this subpart.

(c) *Combustibles insulated from heated surfaces.* Internal combustion engine exhausts, boiler and galley uptakes, and similar sources of ignition must be kept clear of and suitably insulated from combustible material.

(d) *Separation of machinery and fuel tank spaces from accommodation spaces.* Machinery and fuel tank spaces must be separated from accommodation spaces by boundaries that prevent the passage of vapors.

(e) *Paint and flammable liquid lockers.* Paint and flammable liquid lockers must be constructed of steel or equivalent material, or wholly lined with steel or equivalent material.

(f) *Nonmetallic piping in concealed spaces.* The use of nonmetallic (plastic) pipe within a concealed space in a control space, accommodation space, or service space is permitted in nonvital service only if the piping material has a flame spread rating of not more than 20 and a smoke developed rating of not more than 10 when tested in accordance with ASTM E 84 (incorporated by reference, see §114.600) or UL 723 by an independent laboratory.

(g) *Vapor barriers.* Vapor barriers must be provided where insulation of any type is used in spaces where flammable and combustible liquids or vapors are present, such as machinery spaces and paint lockers.

(h) *Interior finishes.* Combustible interior finishes allowed by §116.422(d) of this part must not extend into hidden spaces, such as behind linings, above ceilings, or between bulkheads.

(i) *Waste Receptacles.* Unless other means are provided to ensure that a potential waste receptacle fire would be limited to the receptacle, waste receptacles must be constructed of noncombustible materials with no openings in the sides or bottom.

(j) *Mattresses.* All mattresses must comply with either:

(1) The U.S. Department of Commerce Standard for Mattress Flammability (FF 4–72.16), 16 CFR Part 1632, Subpart A and not contain polyurethane foam; or,

(2) International Maritime Organization Resolution A.688(17) ''Fire Test Procedures For Ignitability of Bedding Components.'' Mattresses that are tested to this standard may contain polyurethane foam.

[CGD 85–080, 61 FR 900, Jan. 10, 1996, as amended at 62 FR 51348, Sept. 30, 1997; USCG–2000–7790, 65 FR 58462, Sept. 29, 2000]

§ 116.415 Fire control boundaries.

(a) *Type and construction of fire control bulkheads and decks*—(1) *Major hull structure.* The hull, structural bulkheads, columns and stanchions, superstructures, and deckhouses must be composed of steel or equivalent material.

(2) Bulkheads and decks—Bulkheads and decks must be classed as A–60, A–30, A–15, A–0, B–15, B–0, C, or C' based on the following:

(i) A-Class bulkheads or decks must be composed of steel or equivalent material, suitably stiffened and made intact with the main structure of the vessel, such as the shell, structural bulkheads, and decks. They must be so constructed that, if subjected to the standard fire test, they are capable of preventing the passage of smoke and flame for 1 hour. In addition, they must be so insulated with approved structural insulation, bulkhead panels, or deck covering so that, if subjected to the standard fire test for the applicable time period listed below, the average temperature on the unexposed side does not rise more than 139 °C (250 °F) above the original temperature, nor does the temperature at any one point, including any joint, rise more than 181 °C (325 °F) above the original temperature:

A–60 Class	60 minutes
A–30 Class	30 minutes
A–15 Class	15 minutes
A–0 Class	0 minutes

(ii) Penetrations in A-Class fire control boundaries for electrical cables, pipes, trunks, ducts, etc. must be constructed to prevent the passage of flame and smoke for one hour. In addition, the penetration must be designed or insulated so that it will withstand the same temperature rise limits as the boundary penetrated.

(iii) B-Class bulkheads and decks must be constructed of noncombustible materials and made intact with the main structure of the vessel, such as shell, structural bulkheads, and decks, except that a B-Class bulkhead need not extend above an approved continuous B-Class ceiling. They must be so constructed that, if subjected to the standard fire test, they are capable of preventing the passage of flame for 30 minutes. In addition, their insulation