

MSC Guidelines for Review of Fuel Oil Systems

Procedure Number: E1-10

Revision Date: 01/12/00

References

- a. Except as provided by this procedure, all CFR references will be from Title 46-Shipping.
 - b. Except as provided below, all vessels need to meet 56.50-60 (systems containing oil), 56.50-75 (diesel fuel systems), 56.50-85 (tank-vent piping), and 56.50-90 (sounding devices); and if applicable 56.50-65 (burner fuel-oil service systems), 56.50-70 (gasoline fuel systems), and 58.50 (independent fuel tanks). The burner fuel-oil systems and the gasoline fuel systems will not be addressed by this procedure.
 - c. Tank Vessels (Subchapter D) refer to Subchapter F iaw 31.30-1.
 - d. Passenger Vessels (Subchapter H) refers to Subchapter F iaw 70.20-1.
 - e. Cargo ships (Subchapters I and I-A) refer to Subchapter F iaw 90.20-1(a).
 - f. Offshore Supply Vessels (Subchapter L) doesn't have to meet Subchapter F but materials for Class II vital system must meet 128.210.
 - g. Research Vessels (Subchapter U) refers to Subchapter F iaw 188.20-1.
 - h. Venting and sounding requirements for respective tanks are listed in MSC Procedure E1-29.
 - i. Small Passenger Vessels (Subchapter K) do not need to meet the above requirements but must meet 119.435 through 119.470.
 - j. Small Passenger Vessels (Subchapter T) do not need to meet the above requirements but must meet 182.435 through 182.480.
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Disclaimer

These guidelines were developed by the Marine Safety Center staff as an aid in the preparation and review of vessel plans and submissions. They were developed to supplement existing guidance. They are not intended to substitute or replace laws, regulations, or other official Coast Guard policy documents. The responsibility to demonstrate compliance with all applicable laws and regulations still rests with the plan submitter. The Coast Guard and the U. S. Department of Transportation expressly disclaim liability resulting from the use of this document.

Contact Information

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Vessels Subject to Title 46 CFR Subchapter F

Materials

- ❑ Fuel supply piping to engines shall be of seamless steel, annealed seamless copper or brass pipe or tubing, or of nickel copper or copper nickel alloy. Fuel supply piping aboard vessels of 100 gross tons and less and tank barges shall be of copper, nickel copper or copper nickel having a minimum wall thickness of 0.035 inch. (56.50-75(a) and (b))
- ❑ Materials shall conform to the specifications/standards listed in 56.60. Alternatively, the materials may be selected from the specifications listed in sections I, III and VIII of the ASME code. (58.30-15(b))
- ❑ Oil piping passing through non-oil tank without stop valves must be of schedule 80 and its joints must be welded. (56.50-60(l))

Systems Containing Oil

- ❑ Oil piping systems must be separate from other piping systems as far as practicable, and positive means shall be provided to prevent interconnection in service. Pumps used to transfer oil must have no discharge connections to fire mains, boiler feed systems, or condensers. (56.50-60(a))
- ❑ Filling pipes, with shutoff valves fitted at the filling end, may be led directly from the deck into the tanks or to a manifold. Oil piping must not be led through accommodation spaces, except that low pressure fill piping not normally used at sea may pass through accommodation spaces if it is of steel construction. (56.50-60(c))
- ❑ Piping subject to internal head pressure from oil in the tank must be fitted with remotely operable positive shutoff valves located at the tank. (56.50-60(d))
- ❑ Oil piping must not run through feed or potable water tanks. (56.50-60(h))

Diesel Fuel Systems

- ❑ All fuel pipes, pipe connections, and accessories shall be readily accessible and protected against damage due to vibration. (56.50-75(a)(2))
- ❑ Vessels of 100 gross tons and less have exceptions listed in 56.50-75(b).
- ❑ When oil needs to be heated to lower its viscosity, heating coils must be properly installed in each tank. (56.50-60(b))

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- ❑ Piping conveying oil must run well away from hot surfaces. Piping, in proximity of equipment or lines having open flame or having parts operating above 500 degrees Fahrenheit, must be of seamless steel. (56.50-60(j))

Independent Fuel Tanks

- ❑ Passenger vessels exceeding 100 gross shall use fuel which has a flashpoint exceeding 110 degrees Fahrenheit. (58.50-1(b))
- ❑ Gasoline fuel tanks shall be constructed, installed, and tested iaw 58.50-5.
- ❑ Diesel fuel tanks shall be constructed, installed, and tested iaw 58.50-10.

Vessels Subject to Title 46 CFR Subchapter K and T

- ❑ The use of fuel, other than diesel fuel aboard Subchapter K vessels and diesel fuel or gasoline aboard Subchapter T vessels, as an alternative fuel for internal combustion engine will be reviewed on a case-by-case basis by the Commandant. (119.405 and 182.405 respectively)

Materials

- ❑ In lieu of requirements above for Subchapter F vessels, the use of schedule 80 aluminum piping is permissible on aluminum hulled vessels. Flexible hose must meet the requirements of 56.60-25 and 182.720(e) respectively. (119.455(a) and 182.455(a))
- ❑ The installation of fuel lines, including pipe, tube, and hose must comply with 119.455(b) and 182.455(b) respectively.

Diesel Fuel Systems

- ❑ The installation of fuel lines, including pipe, tube, and hose must comply with 119.455(b) and 182.455(b) respectively.
- ❑ Fill, sounding, and vent pipes must be installed iaw 119.445 and 119.450 for Subchapter K vessels and 182.445 and 182.450 for Subchapter T vessels.

Independent Fuel Tanks for Subchapter K and T Vessels

- ❑ Independent fuel tanks shall be constructed, installed, and tested iaw 119.440 and 182.440 respectively.