

National Marine Manufacturers Association

Product Compliance Specialist Examination

Permanent Fuel Systems (12/07)

1. Permanently installed fuel tanks,
 - a. Must not move more than 1 inch in any direction.
 - b. Must not move more than ¼ inch in any direction measured at its mounting surface
 - c. Must not move more than 1 inch in any direction measured from its mounting surface
 - d. Must not move more than ¼ inch when a load of 90 lbs is applied

2. The minimum amount of fuel allowed to be spilled in the event of hose failure for a period of 2 ½ minutes with the boat in the static floating position is:
 - a. 2 oz.
 - b. 5 oz.
 - c. 8 oz.
 - d. 12 oz.

3. The fuel hose rating and type have what major difference between Type A1 and A2 hoses as compared to Type B1 and B2 fuel hoses is,
 - a. Both may be used on diesel fuel systems if routed outside of the engine compartment
 - b. Should not be used on outboard powered boats
 - c. Type B1 and B2 are not subject to the 2-1/2 minute fire test
 - d. Both types are allowed be routed inside of an engine compartment

4. A permanently installed metallic fuel tank must have a minimum ¼ space between a flat mounting surface and the bottom of the tank.
 - a. True
 - b. False

5. A permanent metallic fuel tank may be installed in contact with a self-wicking material, such as carpeting.
 - a. True
 - b. False

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6. If the required markings on a fuel hose are cut off because the hose is short,
- The hose must be discarded
 - The hose may be tagged with the required marking
 - The hose does not need the required markings, provided that longer pieces of the same hose and inventory comply
 - Both B and C
7. Fuel fill hose spud connections can be smooth walled.
- True
 - False
8. A fuel fill hose clamp must have a nominal band width of:
- 1/4 inch
 - 5/16 inch
 - 3/8 inch
 - 1/2 inch
9. Fuel system warning labels must contain which following information:
- Hazard, Nature, Consequence and Instructions relative to the hazard.
 - Nature, Consequence, Instructions and contact information.
 - Signal word for the hazard only
 - Instruction on how to avoid the hazard
10. How long and at what pressure must a 100 gallon fuel system be tested for, when the calculated maximum hydrostatic head pressure is 3 psi?
- 3 psi for 10 minutes
 - 3 psi for 5 minutes
 - 4.5 psi for 10 minutes
 - 4.5 psi for 5 minutes

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11. Fuel vent and fill openings,
 - a. Must be located such that overflowing fuel is contained in the boat.
 - b. Must be 15 inches away from one another
 - c. Must be sealed
 - d. Must be separated by 18 inches

12. A fuel fill deck plate on a gasoline powered vessel must be permanently marked and,
 - a. Must be non-metallic
 - b. Cannot be labeled with the word "Fuel"
 - c. May have a permanent label next to the fill to identify fuel type as "Gas", "Gasoline", or the ISO symbol
 - d. Must be permanently marked identifying the type of fuel on the cap that is attached to the fill fitting with a chain.

13. All flexible fuel hoses must be,
 - a. Secured or supported every 18 inches or less
 - b. Secured by fire resistant clamps if maintaining anti-siphon protection
 - c. Secured or routed to prevent chafing on boat structure
 - d. Both b and c

14. Fuel hose connection clamps
 - a. shall depend solely on the spring tension of the metal
 - b. Must be at least ¼ inch away from the hose end
 - c. Can overlap
 - d. shall not be installed to impinge directly on the hose

15. Fuel tank labels,
 - a. Must state the maximum test pressure
 - b. Must be readable as positioned on an installed tank
 - c. Must state that the tank has been tested to CFR 33 section 183.510(a)
 - d. All of the above

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16. Non-installed permanent fuel tanks may be shipped loose to be installed by the selling dealer or buyer.

- a. True
- b. False

17. A fuel system leak detection test,

- a. Must be conducted on every installed fuel system
- b. Must use only the pressure drop method
- c. Other than the pressure drop method, must be used at every joint except fuel fill and exterior vent fittings.
- d. Both A and C

18. The static floating position must be established in order to check which of the following USCG requirement(s).

- a. Accumulation of water on top of a metallic fuel tank (33 CFR section 183.550)
- b. Anti-siphon protection (33 CFR section 183.568)
- c. 5 ounce fuel leakage (33 CFR section 183.558)
- d. All the above

19. An electrically operated fuel shut-off valve must also have a provision for manual operation.

- a. True
- b. False

20. The NMMA Type Accepted components of a fuel system include,

- a. Electric fuel valves
- b. Electric fuel pumps
- c. Fuel filters & strainers
- d. Fuel tanks & hoses

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21. Hose clamps are required to have corrosion resistance of 300 stainless steel series or better.

- a. True
- b. False

22. Multiple position valves must have.

- a. solenoid stops
- b. be ignition protected
- c. have position and function indicators
- d. renewable valve seats.

23. If a diesel metallic fuel tank is encased in plastic or FRP the tank must not be

- a. ferrous metal
- b. integral to the hull
- c. capable of inspection when installed
- d. supported by other means than foam

24. Drain openings on a filter housing assembly shall be

- a. tapered pipe plugs or threaded shoulder plug
- b. brass
- c. galvanically isolated from the filter housing
- d. sealed with o-rings

25. Each vent system shall have a flame arrester that can be

- a. grounded with the bonding system
- b. double clamped
- c. cleaned unless the vent system itself is a flame arrester
- d. prevent blow back