

# National Marine Manufacturers Association

## Product Compliance Specialist Examination

### LPG Systems and Appliances (2013 MY)

#### ABYC A-1 (06) & A-30 (06)

1. According to A-1, the definition of Readily Accessible is:
  - a. Capable of being reached quickly and safely under emergency conditions without the use of tools
  - b. Capable of being reached for maintenance without removal of permanent boat structure
  - c. Capable of being reached for inspection with the use of tools
  - d. Capable of being reached quickly with the use of tools
  
2. Liquefied Petroleum Gas is:
  - a. Lighter than air
  - b. Mixes evenly with air
  - c. Heavier than air
  - d. The same as compressed natural gas
  
3. Printed instructions must be provided with an LPG system and must include:
  - a. cleaning instructions
  - b. refueling instructions
  - c. test procedures
  - d. appliance maintenance instructions
  
4. A pressure gauge is required on each LPG System:
  - a. to enable quick and easy testing for leakage
  - b. to gauge how much fuel is left in the cylinder
  - c. to be mounted on the appliance side of the regulator
  - d. Is not required if another suitable leak detection system is installed
  
5. Which of the following is the definition of “unattended sources of ignition?”
  - a. the user can walk away from the appliance with the burners lighted.
  - b. non-ignition protected electrical devices intended to function without attention by an operator, and/or that can cycle on and off automatically.
  - c. ignition protected electrical devices intended to start and function without attention by an operator, and/or that can cycle on and off automatically.
  - d. The source of ignition is applied with external flame devices such as butane fire sticks.

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6. An LPG Locker is designed to:
  - a. have extra space for the storage of portable gasoline fuel tanks
  - b. be gas tight to the engine space unless the engine space is ignition protected
  - c. hold empty reserve LPG cylinders
  - d. to contain spilled or leaked propane
  
7. To facilitate leak detection, LPG has an \_\_\_\_\_, added and required by law.
  - a. color
  - b. taste
  - c. odor
  - d. audible alarm
  
8. A LPG System must have:
  - a. an electrically operated shut off valve
  - b. dedicated and regulated supply line from the cylinder locker to each appliance
  - c. an explosive vapor detection system
  - d. provision for multiple cylinders
  
9. A LPG System must have:
  - a. A shut off valve or its control in the vicinity of the appliance
  - b. a readily accessible manual or electric solenoid shut off valve operable from the helm
  - c. a pressure regulator which delivers gas not in excess of 5 psi (35kPa)
  - d. a relief valve discharging into the open atmosphere
  
10. LPG Lockers must be:
  - a. located above the waterline
  - b. open only from the top
  - c. readily accessible
  - d. all of the above

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11. LPG supply lines must:
  - a. be UL listed according to UL21 – LP Gas Hose
  - b. have permanently attached end fittings
  - c. if metal be either copper or stainless steel Grades K or L
  - d. if flexible have double hose clamps at all connections
  
12. LPG supply lines shall:
  - a. be grounded
  - b. be galvanically compatible with the appliance
  - c. be bundled with the wiring harness to ensure adequate support
  - d. be supported to prevent cutting, abrading or damage to the lines
  
13. After installation of the supply lines:
  - a. a soap bubble test must be conducted at each fitting
  - b. a vacuum test must be conducted for no less than 3 minutes
  - c. a solenoid function test must be conducted
  - d. an air pressure test not less than 5 psi (35kPa) must be completed prior to connection to the regulator or appliance
  
14. When testing for leaks:
  - a. smell for escaped propane
  - b. use an ammonia based testing solution
  - c. the pressure gauge reading should remain constant for not less than three minutes
  - d. use a lighter or match to observe leaks at any connection
  
15. On boats with gasoline engines a warning sign shall warn against
  - a. Smoking in the vicinity of the burners
  - b. Turn off all flames while re-fueling
  - c. Starting and lighting the burners before fueling
  - d. Secure the LPG system at the bottle prior to refueling
  
16. ABYC Standard A-30 covers appliances with integral LPG cylinders:
  - a. used for cooking and heating purposes
  - b. less than 16 pounds in capacity
  - c. less than 16 ounces in capacity
  - d. designed for external grilling only

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17. Appliances with more than eight ounces but less than 16 ounces of attached cylinder capacity shall
- not be installed or used in the interior of the boat.
  - be installed in an ignition protected space
  - isolated from the engine room
  - none of the above
18. Printed Instructions for appliances with integral LPG cylinders must include:
- proper installation, location for use and stowage of the appliance
  - operating instructions
  - refueling instructions
  - all of the above
19. Integral LPG Cylinders:
- may be stowed inside the vessel if less than 8 ounces capacity and installed in the appliance or being held in reserve
  - may be stowed in a rope locker
  - must be less than 16 ounces capacity for use in an appliance in an accommodation space
  - shall be DOT approved 2P/2Q containers with rim vent release (RVR) if over 8 ounces maximum capacity.
20. Appliances with integral cylinders must:
- have easily accessible controls
  - require a two stage operation to go from off to on
  - be capable of being securely fastened to the vessel before use
  - all of the above