

National Marine Manufacturers Association
Product Compliance Specialist Examination
Basic & Level Flotation (2013 MY)
ABYC H-8 (2004, Corrected 2006)

1. The total flotation material needed for basic flotation, requires which of the following items,
 - a. Flotation for the swamped boat
 - b. Flotation for the submerged propulsion equipment
 - c. Flotation for the persons capacity and dead weight
 - d. All of the above

2. Modified flotation is required for
 - a. Outboard boats rated for less than 2 HP
 - b. Inboard and sterndrive boats less than 20'
 - c. Outboard powered boats less than 26'
 - d. Outboard boat with a maximum of 2 hp

3. After pre-conditioning, a boat meeting basic flotation must have enough flotation to keep a portion of the boat above the surface of the water when loaded with weights,
 - a. Equal to 25 % of the dry weights of propulsion system and battery(s)
 - b. Equal to 50% of the fuel weight
 - c. Equal to 75 % of the persons capacity marked on the boat
 - d. Equal to 25 % of the dead weight

4. Basic Flotation
 - a. is required for all inboard boats 26 feet or less
 - b. is required for all outboard boats 26 feet or less
 - c. is required for all outboard boats with less than 2 hp
 - d. is required for all sterndrive boats less than 20 feet

National Marine Manufacturers Association
Product Compliance Specialist Examination
Basic & Level Flotation (2013 MY)
ABYC H-8 (2004, Corrected 2006)

5. Non-integral air chambers,
 - a. must be laminated to the hull structure
 - b. must be foam filled
 - c. must exclude the two largest chambers if used for modified flotation
 - d. cannot be included as part of the level flotation requirement

6. To insure that all boats of a specific model meet the flotation requirements, flotation shall be provided for
 - a. the heaviest production tolerances and all standard or optional equipment that may be installed or provided for
 - b. the heaviest production tolerances and all standard equipment provided by the manufacturer
 - c. the average production tolerances and only the equipment that has been installed at the factory
 - d. the amount of flotation material may vary depending on the actual weight of each boat

7. When calculating basic flotation requirements, the value W_e
 - a. dry weight of hull, i.e., everything below swamped water line
 - b. Is the conversion factor for factory installed equipment, hardware and accessories
 - c. Dry weight for factory installed equipment, hardware, and accessories
 - d. May be separated into different submerged material weights instead of using the .96 conversion factor

National Marine Manufacturers Association
Product Compliance Specialist Examination
Basic & Level Flotation (2013 MY)
ABYC H-8 (2004, Corrected 2006)

The following example boat will be used for questions #8 - #13

A 18' 6" sterndrive boat with a 72" beam has the following weights and information:

Propulsion/Engine -- 597 lb.
Maximum person's capacity -- 1260 lb. or 9 persons
Dry hull weight – 1205 lbs.—
 Fiberglass - 1120 lb.
 Fir Plywood - 85
Dry deck weight – 300 lbs.—
 Fiberglass 285 lb.
 Balsa - 15 lb.
Hardware & optional equipment -- 185 lb.
Fuel capacity – 35 gals
Battery (Qty – 2)– 90 lbs
Buoyancy of flotation foam (lbs/ft³) – 60.4
K factor for hardware= 0.69

8. What is the swamped weight of the boat (hull, deck, hardware)?
- a. 300 lbs
 - b. 499 lbs
 - c. 1205 lbs
 - d. 2287 lbs
9. How much flotation foam is required to support the swamped hull, deck, and hardware?
- a. 7.35 ft³
 - b. 7.8 ft³
 - c. 8.3 ft³
 - d. 8.8 ft³

National Marine Manufacturers Association
Product Compliance Specialist Examination
Basic & Level Flotation (2013 MY)
ABYC H-8 (2004, Corrected 2006)

10. How much flotation foam is required to support the submerged propulsion equipment including battery?

- a. 6.2 ft³
- b. 7.5 ft³
- c. 8.0 ft³
- d. 8.6 ft³

11. How much flotation foam is required to support the person's capacity and dead weight?

- a. 3.5 ft³
- b. 3.9 ft³
- c. 4.3 ft³
- d. 4.7 ft³

12. What is the calculated minimum required amount of flotation material?

- a. 18.8 ft³
- b. 19.6 ft³
- c. 20.3 ft³
- d. 21.2 ft³

13. If a 1 cubic foot of foam weighs 4 lbs what is its buoyancy?

- a. 4.0 lbs
- b. 58.4 lbs
- c. 60.4 lbs
- d. 62.4 lbs

14. A 21 ft outboard boat with a maximum rating of 200 hp

- a. Must meet modified level flotation
- b. Must meet level flotation
- c. must meet basic flotation
- d. Does not require flotation

National Marine Manufacturers Association
Product Compliance Specialist Examination
Basic & Level Flotation (2013 MY)
ABYC H-8 (2004, Corrected 2006)

15. Which boat types are covered by H-8.
- a. Catamarans
 - b. Pontoon boats
 - c. Canoes
 - d. sailboats
16. An 18.5 ft. boat has a passenger carrying area measuring 8 ft. by 6.5 ft., what is its loading area?
- a. 3.2 ft by 2.6 ft
 - b. 4.55 ft by 2.6 ft
 - c. 5.6 ft by 4.55 ft
 - d. 8.0 ft by 6.5 ft
17. The forward-most or aft-most two feet of the top surface of the hull or deck is the
- a. Swamped Waterline
 - b. Reference area
 - c. Reference length
 - d. Reference depth
18. When preconditioning a boat for a flotation test
- a. fill fuel tanks with fuel and seal openings
 - b. swamp the boat for at least 18 minutes
 - c. vent compartments that may entrap water
 - d. water and holding tanks must be empty
19. After preconditioning the boat, during the first level flotation test,
- a. The angle of heel shall not be more than 30 degrees
 - b. Both fore and aft references areas shall be above the surface of the water
 - c. The test weights shall be placed in the loading area
 - d. Loading excludes weights for persons and dead weight

National Marine Manufacturers Association
Product Compliance Specialist Examination
Basic & Level Flotation (2013 MY)
ABYC H-8 (2004, Corrected 2006)

The following example boat will be used for questions #20 - #25

A 19.5 ft. outboard powered boat with a permanent fuel tank has the following weights and information:

175 Maximum HP (single)

Maximum weight capacity -- 1580 lbs.

Maximum persons capacity -- 900 lbs.

Dry hull weight – 985 lbs total – below swamped waterline

Fiberglass laminate 815 lbs

Fir Plywood – 170 lbs

Dry deck weight –265 lbs – above swamped waterline

Fiberglass laminate 235 lbs

Balsa core – 30 lbs

Fuel capacity- 30 gallons

Hardware & optional equipment -- 105 lb. above swamped waterline

Hardware & optional equipment – 165 lbs below swamped waterline

Battery – 45lbs

Buoyancy of flotation foam (lbs/ft³) – 60.4

Conversion factor (K) for hardware – 0.69

20. What is the swamped weight of the outboard engine and battery?
- a. 479 lbs
 - b. 504 lbs
 - c. 560 lbs
 - d. 644 lbs
21. What is the minimum amount of flotation material needed to support the swamped engine and battery?
- a. 9.9 cubic feet
 - b. 8.4 cubic feet
 - c. 7.0 cubic feet
 - d. 6.7 cubic feet

National Marine Manufacturers Association
Product Compliance Specialist Examination
Basic & Level Flotation (2013 MY)
ABYC H-8 (2004, Corrected 2006)

22. What is the minimum amount of flotation material is needed to support the swamped boat?
- a. 7.2 cubic feet
 - b. 8.9 cubic feet
 - c. 9.7 cubic feet
 - d. 10.2 cubic feet
23. What is the minimum amount of flotation is needed to support the persons capacity and dead weight?
- a. 4.9 cubic feet
 - b. 5.5 cubic feet
 - c. 6.3 cubic feet
 - d. 7.0 cubic feet
24. What is the minimum amount of flotation material would be needed for this complete boat?
- a. 22.2 cubic feet
 - b. 23.5 cubic feet
 - c. 24.1 cubic feet
 - d. 24.9 cubic feet
25. If the boat in the above example was designed for twin outboard engines what would be the swamped engine weight used to determine the amount of foam needed for F_p ?
- a. 689 lbs
 - b. 760 lbs
 - c. 810 lbs
 - d. 894 lbs