

National Marine Manufacturers Association

Product Compliance Specialist Examination

H-31 SEAT STRUCTURES (12/07)

1. Seat testing may not be appropriate for what types of seats?
 - a. Portable seats
 - b. Multi-person seats
 - c. Side mounted folding “helmsman seats”
 - d. Type B seats

2. The seat testing standard applies to
 - a. All boats
 - b. Boats over 10 hp.
 - c. Sailboats
 - d. Race boats

3. Which of the following statements is true?
 - a. H-31 addresses arrangements of seats
 - b. H-31 addresses ergonomics
 - c. H-31 addresses misuse of seats
 - d. H-31 addresses seat fasteners and structure

4. Deformation is described as;
 - a. Displacement of the seat less than 30 degrees from vertical
 - b. Angular displacement in excess of 10 degrees measured from the seat back
 - c. Displacement of the seat back in excess of 30 degrees from vertical
 - d. Angular displacement less than 10 degrees measured on the seat bottom

5. A positive locking swivel
 - a. Relies on positive mechanical interference to lock the seat in position
 - b. Relies on a friction to lock the seat in position
 - c. Relies on negative mechanical interference to lock the seat in position
 - d. Relies on a keyed or combination lock to lock the seat in position

6. Which of the following statement is true?
 - a. Ferrous metals include copper or copper alloys.
 - b. Plastic seat materials must be usable at temperatures between -30° F and 140° C
 - c. Stainless steel is considered to be a ferrous metal
 - d. Non-ferrous metals, when used, must be in contact with aluminum materials

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7. All Type B plastic seat materials applicable to H-31 must be exposed to 110 hrs of UV rays before testing.
 - a. True
 - b. False

8. A 31 inch long seat is a multi-person seat.
 - a. True
 - b. False

9. The difference between a Type A seat and a Type B seat is
 - a. Type A seats are always stronger than Type B seats
 - b. Type B seats maybe made of plastic and type A seats must be made of ferrous metal
 - c. Type B seats must withstand the dynamic loads generated at 1/2 the velocity required for Type A seats.
 - d. Readily removable Type B seats must have a warning label while readily removable Type A seats need not have a warning label

10. Pedestal mounting fasteners must be;
 - a. sized at #10 or larger
 - b. Limited in number
 - c. Of sufficient strength to pass a 340 kg pull test in tension
 - d. Threaded into a plywood base

11. Pivoting armrests on Type B seats,
 - a. Must withstand a 225 lb vertical static load at its weakest point
 - b. Must be tested to a 450 lb static load for 5 minutes
 - c. Are handholds subject to the 400 lb pull test requirement in H-41.5.4.1.1
 - d. Are exempt from the testing requirements

12. A two person seat must be tested at least;
 - a. Twice the transverse load as a single seat
 - b. Twice the impact load in the center of the seat
 - c. Twice the lateral load in the center of the seat
 - d. Once at the center of each seating position

13. Seats with slides must be tested
 - a. In any position
 - b. In the full aft position
 - c. In the full forward position
 - d. In the center position

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14. Which of the following testing statements is true?
- Seats with shock absorbers must be pinned and fixed
 - Seats with swivels must be prevented from rotating
 - Seats with slides must be allowed to pivot
 - Seats with adjustable height must return to 75% of their height after the vertical dynamic test
15. The impact velocity for the vertical dynamic seat test must be;
- 3 feet per second
 - 6 feet per second
 - 10 feet per second
 - None of the above
16. The vertical dynamic test requires that the impact point be
- 7 inches from the uncompressed seat back
 - 6 inches from the uncompressed seat back
 - 6 inches aft of the center of the seat pedestal
 - 7 inches aft of the center of the seat pedestal
17. What is the thickness of the mounting brackets used to attach the test platform to the floor?
- 1/8 inch
 - 1/4 inch
 - 3/8 inch
 - 1/2 inch
18. What is the drop height needed to achieve a ram speed of 5 feet per second?
- 1.68 inches
 - 4.66 inches
 - 6.72 inches
 - 18.66 inches
19. The impacting face of the ram is
- 8 inches in diameter steel plate
 - Covered with 1/2 foam
 - 9 inch diameter oak
 - Covered with carpeting

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20. Which of the testing statements is true?
- The cables suspending the testing ram can be 20 ft in length
 - The test winch must be 4 feet above the floor
 - The test winch must be less than 15 feet from the seat back
 - The test ram is 5 feet in length
21. Failure of the seat test happens when;
- A test platform pulls from the test area floor.
 - A seat maintains deformation for more than 5 minutes after the test.
 - A seat, with integral shock absorbers, returns to 70% of its original height.
 - The seat back angular displacement exceeds 10 degrees.
22. If a table pedestal is interchangeable with a Type A seat pedestal base, the table pedestal must be tested to the lateral load test.
- True
 - False
23. One of the reference organizations for ABYC H-31,
- Underwriters Laboratory
 - USCG
 - International Standards Organization/ISO
 - American Society for Testing and Materials International
24. Seat warning labels must be;
- On the seat pedestal
 - On the seat bottom
 - At the helm
 - In a visible location near the seat
25. All Type A seats may be occupied at speeds greater than 5 mph.
- True
 - False