

MSC Guidelines for Review of Means of Escape (Subchapter H)

Procedure Number: H2-10

Revision Date: 1/5/2018

S. E. HEMANN, CDR, Chief, Hull Division

Purpose

The purpose of the Plan Review Guideline is to provide the submitter with general guidance and information for the preparation and submission of Means of Escape plans.

References

- a. Title 46 CFR Part 72 – Construction and Arrangement
 - b. Navigation and Vessel Inspection Circular (NVIC) 9-97 CH-1, “Guide to Structural Fire Protection.”
-

Contact Information

If you have any questions or comments concerning this document, please contact the Marine Safety Center by e-mail or phone. Please refer to the Procedure Number: **H2-10**

E-mail: msc@uscg.mil

Phone: 202-795-6730

Website: <http://www.dco.uscg.mil/msc>

Notes

1. Certain vessels may be designed to Subchapter H as modified by NVIC 8-93, “Equivalent Alternatives to 46 CFR Subchapter H Requirements Related to Means of Escape, Safe Refuge Areas, Main Vertical Zone (MVZ) Length.” If so, refer to Procedure Number H2-11, “MSC Guidelines for Review of Emergency Evacuation Plans (NVIC 8-93).”

2. It is recommended that the structural fire protection plan and the emergency evacuation plan be concurrently designed and reviewed on initial construction and at any time the escape arrangements or structural fire protection are altered. A number of issues are intertwined and must be reviewed together.

General Review Guidance

The means of escape requirements for Subchapter H passenger vessels have been developed for ocean-going ships that are expected to routinely operate at sea where outside help is normally not available. The regulations require at least one stairway in each MVZ that connects to all other decks within that zone. The stairways must be arranged to provide a ready and direct access to the lifeboat embarkation stations, or to a weatherdeck having exterior access to the embarkation stations. The regulations permit the use of vertical doors, passageways, and stairways as the means of escape from passenger areas.

MSC Guidelines for Review of Means of Escape (Subchapter H)

Procedure Number: H2-10

Revision Date: 1/5/2018

The escape routes on Subchapter H vessels are arranged to provide a direct escape path to the assembly areas (also called muster stations). The assembly areas are large public spaces such as restaurants or lounges that are usually located adjacent to the embarkation stations. The escape paths are sized to permit a rapid evacuation to the assembly areas, where the passengers can be accounted for by the crew and given further instructions. If the situation eventually leads to abandonment of the vessel, the passengers are directed from the assembly area to the various embarkation stations and survival craft. During this phase of the evacuation, the passengers travel in smaller groups to their assigned embarkation stations, thus the widths of the escape paths from the assembly areas to the embarkation stations are sized for the number of persons expected to use those paths for debarkation.

Arrangement

Ensure each MVZ is served by at least one Type 1 stairway, so that independent of entering adjoining MVZ's, escape may be effected from any accommodation space or any other space where persons may be normally quartered or employed, to all other decks having any such spaces within the same MVZ without coming out of the stairway enclosure. [46 CFR 72.05-20(e)]

- ❑ In cases where a Type 1 stairway is accessible from two MVZ's, it may be considered as the required Type 1 stairway for both zones provided all boundaries of the stairway meet MVZ requirements. [46 CFR 72.05-20(e)]
- ❑ Ensure each Type 1 stairway gives access to the embarkation deck or, if the embarkation deck does not extend to the portion of the vessel in question, gives access to at least one weather deck from which convenient communication to the embarkation deck is provided by means of Type 4 stairways. [46 CFR 72.05-20(e)]
- ❑ On the embarkation deck, each Type 1 stairway shall provide at least 44 in. of exit door width to each side of the vessel. Exit may be provided directly to weather or indirectly by passageways and/or corridors which lead to weather. [46 CFR 72.05-20(s)(3)]

Stairways

- ❑ Ensure all stairways are sized according to 46 CFR 72.05-20(p).
 - For all types of stairs the minimum width is determined on a deck-by-deck basis. However, once a minimum required width has been established at any one level, that width may not be reduced at any subsequent deck level in the direction of normal escape. [46 CFR 72.05-20(p)(2)]
 - Determine passenger capacity of the various spaces per 46 CFR 72.05-20(p)(3):

MSC Guidelines for Review of Means of Escape (Subchapter H)

Procedure Number: H2-10

Revision Date: 1/5/2018

- Passenger staterooms – designed capacity.
- Crew staterooms – 2/3 capacity.
- Theaters, dining halls and similar spaces having fixed seating – maximum seating capacity.
- Lounges, club rooms, etc. – 1 person for every 20 square feet of deck area
- Working spaces – normal operating capacity.
- Type 1 stairways:
 - In determining the number of persons using the stairways, all persons within the MVZ's in question are assumed to be using Type 1 stairways. If more than one Type 1 stairway serves a particular zone, the persons shall be distributed between the stairways.
 - No consideration is given to any Type 2 or 3 stairways.
- Types 2, 3 and 4 stairways:
 - In determining the number of persons using the stairways, the normal operation of the vessel shall be the determining factor.
 - If any stairway forms part of the normal debarkation route, the number of persons using the stairway for that purpose shall be considered.
- For all types of stairways, the stair width shall be clear of all obstructions other than handrails. [46 CFR 72.05-20(l)]
- In general, curved, spiral or winding stairways are not permitted. [46 CFR 72.05-20(h)]
- Stairway landings shall be sized as follows: [46 CFR 72.05-20(r)]
 - For all types of stairways, at the top and bottom of each flight of stairs, there shall be a clear landing having an area at least equal to the square of the actual stair tread width.
 - For Type 1 stairways, there shall be provided within the enclosure at each deck level a landing having a minimum clear area in square feet, exclusive of the stairs, equal to 1.2 times the number of persons from that deck using the stairway.
 - Where an aisle around a stairway is required due to the relationship of the flights, such aisle shall have a clear width at all points at least equal to the actual stair tread width.

MSC Guidelines for Review of Means of Escape (Subchapter H)

Procedure Number: H2-10

Revision Date: 1/5/2018

- Insofar as is reasonable and practicable, Type 1 and 2 stairways, and all elevator enclosures, should not give direct access to accommodations or other enclosed spaces in which a fire may originate. [46 CFR 72.05-20(f)]
- Ensure the doors leading to stairways have been properly sized: [46 CFR 72.05-20(s)]
 - The dimensioning of doors shall be based on the same fundamentals used for stairway tread widths. However, the number of people involved for a particular door shall be determined from the arrangements, each door being calculated independent of any other doors to the stairway at the same level.
 - In no case shall a clear door width be less than 28 in.
 - The total clear width of doors to stairways shall be in accordance with table 46 CFR 72.05-20(s).
- Ensure that (with the exception of staterooms) each door, hatch or scuttle opens toward the expected direction of escape from the space served [46 CFR 72.05-25(a)(2)].

Means of Escape

- Ensure there are at least two means of escape from all general areas accessible to the passengers or where the crew may be quartered or normally employed. [46 CFR 72.10-5]
 - At least one of these means of escape shall be independent of watertight doors.
 - Elevators shall not be considered as one of the required means of escape.
 - Stairways serving only a space and a balcony to a space shall not be considered as one of the required means of escape.
 - The two means of escape shall be as remote as practicable.
 - Ladders leading to deck scuttles may not be included as a means of escape except as permitted by 46 CFR 72.10-15.
 - No means shall be provided for locking doors giving access to either of the two required means of escape.
 - In all cases, public spaces having a deck area of over 300 sq. ft. shall have at least two exits. Where practicable, these exits shall give egress to different corridors, rooms or spaces.
 - The stairways, corridors and doors shall be so arranged as to permit a ready and direct access to the various lifeboat embarkation areas.
- Dead end corridors, or the equivalent, more than 40 feet in length shall not be permitted.

MSC Guidelines for Review of Means of Escape (Subchapter H)

Procedure Number: H2-10

Revision Date: 1/5/2018

- Stairways and any connecting lobbies and interior corridors leading to the assembly stations and embarkation stations are considered safety areas. If the escape routes pass through any open deck areas or exterior stairways, they are considered part of the escape path and should meet the structural fire protection requirements for type (4) spaces instead of type (13) spaces.
-

Disclaimer

This guidance is not a substitute for applicable legal requirements, nor is it itself a rule. It is not intended to nor does it impose legally-binding requirements on any party. It represents the Coast Guard's current thinking on this topic and may assist industry, mariners, the general public, and the Coast Guard, as well as other federal and state regulators, in applying statutory and regulatory requirements. You can use an alternative approach for complying with these requirements if the approach satisfies the requirements of the applicable statutes and regulations. If you want to discuss an alternative, you may contact the Marine Safety Center (MSC), the unit responsible for implementing this guidance.