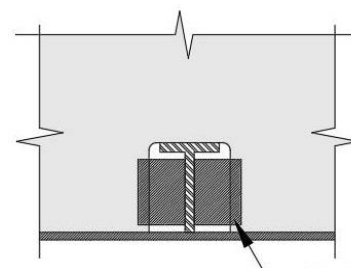


MEASUREMENT ORGANIZATION INFORMATIONAL NOTES– 06/10/2022

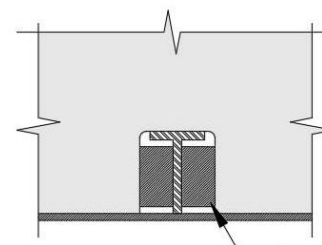
ORDINARY FRAME INTERSECTION CONFIGURATIONS The Marine Safety Center (MSC) responded by letter on June 9, 2022, to an inquiry from industry seeking comment on multiple frame intersection configurations designed to meet the policy criterion for ordinary frame penetration noted in § 69.109(p)(1)(i) of Marine Safety Center Technical Note (MTN) 01-99 CH-10, *Tonnage Technical Policy*. As noted in the referenced regulation “an ordinary frame must not be penetrated by an intersecting frame used to strengthen the vessel’s hull, except in a vessel of wooden construction.” A subsequent policy interpretation in the MTN allows such an intersection on metal framing, provided “steps are taken to render the final assembly to appear as as an integral unit by attachment along at least 50% of the intersecting frame’s perimeter.” Related issues on this topic were previously discussed in June of 2020, December 2018, October 2017, September 2014, and July 2012. The four proposed configurations are below, as often seen in a sectional view of a longitudinally framed vessel with transverse deep frames. The following is a summary of the MSC’s decision:

1. **“Lapped” Bracket Configuration.** A T-shaped frame intersecting an ordinary frame through a rectangular cut-out, attached to the ordinary frame via two collar plates (lapped brackets).



MSC Decision. We would treat this collar plate configuration to ‘appear as an integral unit,’ provided the collar plate material and method of attachment are consistent with the structural integrity of the ordinary frame. Guidance on typical frame intersection treatment when developing lap design and weld details can be found in the 1977 Ship Structure Committee report *Review of Ship Structural Details*, discussion on intersecting frames with fitted collar plates. For this specific arrangement, the brackets’ total attachment to the ordinary frame must not be less than the brackets’ total attachment to the T-shaped frame.

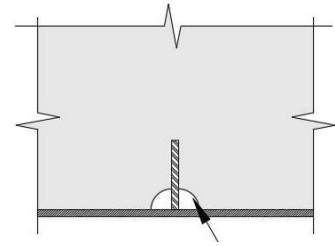
2. **“Butted” Bracket Configuration.** A T-shaped frame intersecting an ordinary frame through a rectangular cut-out, attached via two plate inserts (butted brackets).



MSC Decision. We would treat this insert plate configuration to ‘appear as an integral unit,’ provided the insert plate material and method of attachment are consistent with the structural integrity of the ordinary frame. Guidance on typically accepted details for inserted plates are available in Coast Guard Navigation and Vessel Inspection Circular No. 7-68. Also, the brackets’ total attachment to the ordinary frame must not be less than the brackets’ total attachment to the T-shaped frame.

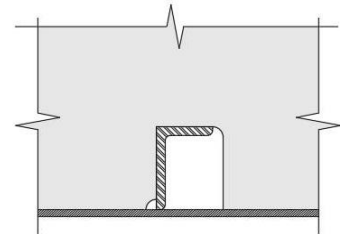
Informational Notes are issued by the Coast Guard Marine Safety Center’s Tonnage Division (MSC-4) for use by organizations that perform measurement work on the Coast Guard’s behalf under the authority of 46 CFR § 69.27. They are for informational purposes only, and are not intended as, nor should they be construed to represent, revisions of or substitutes for applicable statutes or regulations or established interpretations of either.

3. “Flat Bar” Intersection. A flat bar shaped frame intersecting an ordinary frame, attached throughout with the exception of a small radius at the bottom.



MSC Decision. We consider this flat bar frame intersection configuration to meet the requirements of § 69.109(p)(1)(i) of the MTN, provided it is a continuous weld, or intermittent weld equal to or greater than the 50% criteria. Note, the frame edge openings from the radiuses would be subject to the ‘proximity’ requirements of § 69.109(p)(4)(ii).

4. “Angle” Bar Intersection. An “angle” bar shaped frame intersecting an ordinary frame through a rectangular cut-out, attached along the outer portions of the web and flange of the “angle” bar, with radius cut out.



MSC Decision. We do **not** consider this configuration to meet the requirements of § 69.109(p)(1)(i) of the MTN.

The perimeter of the intersecting “angle” bar frame includes both the outer and inner surface of the frame, inclusive of the flange thickness. The attachment of the ordinary frame along the perimeter of the “angle” bar frame appears to be less than the 50% criterion of § 69.109(p)(1)(i). Accordingly, the ordinary frame would be invalidated due to penetration by the “angle” bar frame.

Informational Notes are issued by the Coast Guard Marine Safety Center's Tonnage Division (MSC-4) for use by organizations that perform measurement work on the Coast Guard's behalf under the authority of 46 CFR § 69.27. They are for informational purposes only, and are not intended as, nor should they be construed to represent, revisions of or substitutes for applicable statutes or regulations or established interpretations of either.