

SUB-COMMITTEE ON SHIP SYSTEMS AND
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**UNIFIED INTERPRETATION OF PROVISIONS OF IMO SAFETY, SECURITY, AND
ENVIRONMENT-RELATED CONVENTIONS**

**Draft unified interpretations on the details of duct penetrations
(SOLAS regulation II-2/9.7)**

Submitted by IACS

SUMMARY

Executive summary: This document contains draft unified interpretations of SOLAS regulations II-2/9.7.3.1.1, II-2/9.7.3.1.2 and II-2/9.7.3.2, with a view to facilitating their consistent and global implementation

Strategic direction, if applicable: 6

Output: 6.1

Action to be taken: Paragraph 8

Related documents: None

Introduction

1 SOLAS regulation II-2/9 prescribes requirements aimed at containing a fire in the space of origin. In particular, it requires that penetrations of structural divisions by electric cables, pipes, trunks and ducts are to maintain their fire integrity.

2 With regard to the protection of penetrations, SOLAS regulation II-2/9.3.1 states:

"Where "A" class divisions are penetrated, such penetrations shall be tested in accordance with the Fire Test Procedures Code, subject to the provisions of paragraph 4.1.1.6. In the case of ventilation ducts, paragraphs 7.1.2 and 7.3.1 apply. However, where a pipe penetration is made of steel or equivalent material having a thickness of 3 mm or greater and a length of not less than 900 mm (preferably 450 mm on each side of the division), and no openings, testing is not required. Such penetrations shall be suitably insulated by extension of the insulation at the same level of the division."

SOLAS regulation II-2/9.7.3.2

7 SOLAS regulation II-2/9.3.2 prescribes the requirements for the penetration of the "B" class divisions. For penetrations by a pipe, a clearance around the pipe of up to 2.5 mm is acceptable (based on SOLAS regulation II-2/9.3.2.2). For penetrations by a duct, detailed requirements are provided in SOLAS regulation II-2/9.7.3.2. However, SOLAS regulation II-2/9.7.3.2 includes no requirements regarding the clearance around the duct. Having carefully considered this issue, IACS has concluded that no clearance should be allowed between the duct and the division, and has prepared a draft unified interpretation of SOLAS regulation II-2/9.7.3.2 on this basis.

Action requested of the Sub-Committee

8 The Sub-Committee is invited to consider the foregoing and, in particular, the draft unified interpretations provided in the annex, and take action, as appropriate.

ANNEX

DRAFT UNIFIED INTERPRETATIONS OF SOLAS REGULATION II-2/9.7

SOLAS regulation II-2/9.7.3.1.1 states:

"7.3.1 Ducts passing through "A" class divisions shall meet the following requirements:

- .1 where a thin plated duct with a free cross sectional area equal to, or less than, 0.02 m² passes through "A" class divisions, the opening shall be fitted with a steel sheet sleeve having a thickness of at least 3 mm and a length of at least 200 mm, divided preferably into 100 mm on each side of a bulkhead or, in the case of a deck, wholly laid on the lower side of the decks penetrated;"

Interpretation

In the case of a duct that passes through, and then curves under a deck, the length of its steel sleeve should be determined according to the centerline of the duct as shown in figure 1 below.

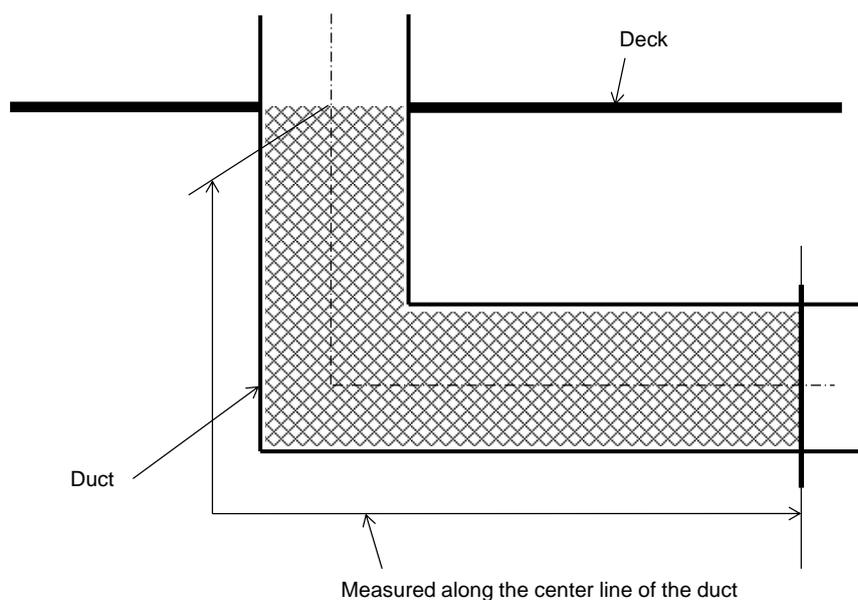


Figure 1 - Length of the steel sleeve

SOLAS regulation II-2/9.7.3.1.2 states:

"7.3.1 Ducts passing through "A" class divisions shall meet the following requirements:

- .1 ...
- .2 where ventilation ducts with a free cross-sectional area exceeding 0.02 m², but not more than 0.075 m², pass through "A" class divisions, the openings shall be lined with steel sheet sleeves. The ducts and sleeves shall have a thickness of at least 3 mm and a length of at least 900 mm. When passing through bulkheads, this length shall be divided preferably into 450 mm on each side of the bulkhead. These ducts, or sleeves lining such ducts, shall be provided with fire insulation. The insulation shall have at least the same fire integrity as the division through which the duct passes; and"

Interpretation

The fire insulation required by regulation SOLAS II-2/9.7.3.1.2 should be provided only to the part of the duct and/or sleeve that is on the same side of the division being fire insulated, and be extended for a minimum of 450 mm along the duct and/or sleeve.

SOLAS regulation II-2/9.7.3.2 states:

"7.3.2 Ventilation ducts with a free cross-sectional area exceeding 0.02 m² passing through "B" class bulkheads shall be lined with steel sheet sleeves of 900 mm in length, divided preferably into 450 mm on each side of the bulkheads unless the duct is of steel for this length."

Interpretation

When a duct passing through a division is to be in accordance with SOLAS regulations II-2/9.3.2 and II-2/9.7.3.2, no clearance should be allowed between the duct and the division.
