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**UNIFIED INTERPRETATION OF PROVISIONS OF IMO SAFETY, SECURITY,
AND ENVIRONMENT-RELATED CONVENTIONS**

**Clarification of the requirements regarding the fire insulation of ducts between the fire
damper and the penetrated division**

Submitted by IACS

SUMMARY

Executive summary: This document seeks clarification on the application of the requirements of SOLAS regulation II-2/9.7.3.1.3 regarding the fire insulation of the sleeve of the duct that is situated between the fire damper and the division that the duct is penetrating

*Strategic direction,
if applicable:* 6

Output: 6.1

Action to be taken: Paragraph 9

Related documents: None

Introduction

1 SOLAS regulation II-2/9 prescribes requirements aimed at containing a fire in the space of origin. Paragraph 7.3.1 of this regulation, as adopted by resolution MSC.365(93), addresses ducts passing through "A" class divisions and sub-paragraph 3 states:

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

...

.3 automatic fire dampers shall be fitted in all ducts with a free cross-sectional area exceeding 0.075 m² that pass through "A" class divisions. Each damper shall be fitted close to the division penetrated and the duct between the damper and the division penetrated shall be constructed of steel in accordance with paragraphs 7.2.4.2.1 and 7.2.4.2.2. The fire damper shall

operate automatically, but shall also be capable of being closed manually from both sides of the division. The damper shall be fitted with a visible indicator which shows the operating position of the damper. Fire dampers are not required, however, where ducts pass through spaces surrounded by "A" class divisions, without serving those spaces, provided those ducts have the same fire integrity as the divisions which they penetrate. A duct of cross-sectional area exceeding 0.075 m² shall not be divided into smaller ducts at the penetration of an "A" class division and then recombined into the original duct once through the division to avoid installing the damper required by this provision."

2 Paragraphs 7.2.4.2.1 and 7.2.4.2.2 of SOLAS regulation II-2/9 state:

- .2.1 constructed of steel in accordance with paragraphs 7.2.4.1.1 and 7.2.4.1.2; and
- .2.2 insulated to "A-60" class standard throughout the spaces they pass through, except for ducts that pass through spaces of category (9) or (10) as defined in paragraph 2.2.3.2.2."

Discussion

3 SOLAS regulation II-2/9.7.3.1.3 prescribes requirements for ducts passing through "A" class division with a cross-sectional area exceeding 0.075 m² and addresses the fire insulation of the sleeve of the duct that is located between the fire damper and the division that the duct is penetrating. IACS considers that there could be three different understandings of the requirements regarding the provision of fire insulation of such arrangements, as follows:

- .1 **(Case 1)** - "A-60" class fire insulation of the duct is required for the sleeve located between the fire damper and the division, according to SOLAS regulation II-2/9.7.3.1.3 and II-2/9.7.2.4.2.2, regardless of the class of fire insulation of the division that the duct is penetrating, e.g. A-0, A-30 or A-60.
- .2 **(Case 2)** - "A-60" class fire insulation of the sleeve of the duct as described above, is not required in all cases. However, to prevent the spread of fire, this section of the duct shall be provided with fire insulation that has "at least" the same fire integrity as the division that the duct is penetrating.
- .3 **(Case 3)** - The fire insulation (including its class) of the sleeve of the duct located between the fire damper and the division, depends on the outcome of the fire test of the damper itself, performed in accordance with the requirements of the FTP Code, when the fire insulation of the arrangement is provided according to figure A1 of section All of appendix 2 to part 3 of annex 1 to the FTP Code. If the fire damper has been successfully tested without "A-60" fire insulation during the test, it is not deemed necessary to provide "A-60" fire insulation on the sleeve of the duct located between the fire damper and the division that the duct is penetrating.

Additional considerations

4 IACS notes that SOLAS regulation II-2/9.7.3.1, as adopted by resolution MSC.99(73), reads as follows:

"7.3.1 ... Where ventilation ducts with a free cross-sectional area exceeding 0.02 m² pass through "A" class bulkheads or decks, the opening shall be lined with a steel sheet sleeve. However, where such ducts are of steel construction and pass through a deck or bulkhead, the ducts and sleeves shall comply with the following:

- .1 ...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 bulkhead or deck through which the duct passes; and
- .2 Ducts with a free cross-sectional area exceeding 0.075 m² shall be fitted with fire dampers in addition to the requirements of paragraph 7.3.1.1. ... Fire dampers are not required, however, where ducts pass through spaces surrounded by "A" class divisions, without serving those spaces, provided those ducts have the same fire integrity as the divisions which they pierce. ..."

5 Noting paragraph 4 above, it is understood that, before it was amended by resolution MSC.365(93), SOLAS regulation II-2/9.7.3 required ducts to have the same fire integrity as the divisions which they penetrate.

6 However, SOLAS regulation II-2/9.7.3.1.3, as amended by resolution MSC.365(93), specifies requirements for the class of fire insulation of duct penetrations but only for ducts with a free cross-sectional area exceeding 0.075 m². Therefore, it could be considered that the reference to sub-paragraphs 2.1 and 2.2 of SOLAS regulation II-2/9.7.2.4 is erroneous and reference should rather be made to sub-paragraphs 1.1 and 1.2 of that regulation.

7 IACS also notes that the current SOLAS regulation II-2/9.7.3.1.3 includes the following sentence:

"Fire dampers are not required, however, where ducts pass through spaces surrounded by "A" class divisions, without serving those spaces, provided those ducts have the same fire integrity as the divisions which they penetrate."

8 Noting paragraph 7 above, IACS understands that "A-60" class fire insulation of the duct is not always required even if a fire damper is not provided for duct penetrations. IACS considers that there is no reasonable technical justification to enhance the class of fire insulation with which ducts or sleeves shall be provided, depending on whether or not fire dampers are fitted.

Action requested of the Sub-Committee

9 The Sub-Committee is invited to:

- .1 consider the foregoing, in particular, the three different understandings, as discussed in paragraph 3 and the additional considerations, as discussed in paragraphs 4 to 8 above;
- .2 provide clarification regarding the fire insulation of the duct penetrations required by SOLAS regulation II-2/9.7.3.1.3; and
- .3 take action, as appropriate.