

SUB-COMMITTEE ON SHIP DESIGN AND
CONSTRUCTION
7th session
Agenda item 3

SDC 7/3/1
26 November 2019
Original: ENGLISH
Pre-session public release:

**AMENDMENTS TO THE EXPLANATORY NOTES TO SOLAS CHAPTER II-1
SUBDIVISION AND DAMAGE STABILITY REGULATIONS (RESOLUTION MSC.429(98))**

Internal watertight integrity of passenger ships above the bulkhead deck

Submitted by IACS

SUMMARY

Executive summary: This document seeks clarification of the application of the Explanatory Notes contained in resolution MSC.429(98), applicable to semi-watertight sliding doors above the bulkhead deck that are also required to meet provisions for fire integrity

*Strategic direction,
if applicable:* Other work

Output: OW 41

Action to be taken: Paragraph 16

Related documents: None

Introduction

1 Provisions for the internal watertight integrity of passenger ships above the bulkhead deck are contained in SOLAS regulation II-1/17 with the *Revised Explanatory Notes to SOLAS chapter II-1 subdivision and damage stability regulations* (resolution MSC.429(98)) (Revised Explanatory Notes) providing guidance, inter alia, in relation to this SOLAS regulation.

2 In particular, paragraph 2 of the Revised Explanatory Notes regarding regulation 17.1 states that semi-watertight doors above the bulkhead deck should be sliding doors, as per the following text:

"If watertight doors are located above the worst final and above the worst intermediate waterline in damage cases contributing to the attained subdivision index A, but within the area where the door becomes intermittently immersed (fully or partly) at angles of heel in the required range of positive stability beyond the equilibrium position, such

doors are to be power operated and remotely controlled sliding semi-watertight doors complying with the requirements of regulation 13..."

3 Further, paragraph 4 of the Revised Explanatory Notes regarding regulation 17.1 states that:

"Doors fitted above the bulkhead deck, which are required to meet both fire protection and watertight requirements should comply with the fire requirements in regulation II-2/9.4.1.1 and the watertight requirements in paragraphs 1 and 2 above. Notwithstanding the ultimate sentence of regulation II-2/9.4.1.1.2, watertight doors fitted above the bulkhead deck should be insulated to the standard required by table 9.1 and regulation II-2/9.2.2.1.1.1. The door must be capable of operation using both the remote fire door control circuit and the remote watertight door control circuit..."

4 It is noted that paragraphs 1 and 2 of the Revised Explanatory Notes regarding regulation 17.1 discuss compliance with SOLAS regulation II-1/13.

Discussion

5 SOLAS regulation II-2/9.4.1.1.5 prescribes requirements for fire doors in main vertical zone bulkheads, galley boundaries and stairway enclosures, other than power-operated watertight doors and those which are normally locked.

6 Before the adoption of the Revised Explanatory Notes, doors required to be watertight sliding doors were only those located below the bulkhead deck, except as discussed in MSC/Circ.541, to which the footnote in SOLAS regulation II-1/17.1 refers.

7 However, IACS is of the opinion that due to the guidance set out in paragraph 17.1.4 of the Revised Explanatory Notes, differing interpretations, as set out in options 1 and 2 below, could exist.

Option 1: the intention was not to include these semi-watertight doors in the 'non application' statement in SOLAS regulation II-2/9.4.1.1.5 for power-operated watertight doors

8 In this case, the required compliance with both watertight and fire integrity requirements mentioned in paragraph 4 of the Revised Explanatory Notes regarding regulation 17.1, which includes SOLAS regulations II-1/13 and II-2/9.4.1.1.5, generates the following inconsistencies in the application of the regulations:

- .1 the required acceptable range for the time of closure of fire doors (between 10 s and 40 s (hinged) or between 0.1 m/s to 0.2 m/s (sliding) in SOLAS regulation II-2/9.4.1.1.5.2 is not always compatible with that of watertight doors (between 20 s and 40 s in SOLAS regulation II-1/13.7.1.7). Also, the door's width, as prescribed by the provisions in the FSS Code, may exceed the maximum width of 1200 mm, specified in SOLAS regulation II-1/13.7.1.2. It is not clear if these semi-watertight doors also fall within this limited width of 1200 mm;
- .2 if the fire door is bounding a hazardous area, requirements for power accumulators of fire doors (SOLAS regulation II-2/9.4.1.1.5.8) may be in conflict with the requirements for the watertight doors (SOLAS regulations II-1/13.7.5 or II-1/13.7.3.3);

-
- .3 the automatic re-opening of fire doors (SOLAS regulation II-2/9.4.1.1.5.11) is in conflict with the requirements for watertight doors, forbidding such re-opening (SOLAS regulations II-1/13.9.2 and II-1/13.8.1); and
 - .4 the fire door control system should be subject to the fire test required by SOLAS regulation II-2/9.4.1.1.5.15.

Option 2: the intention was to include these semi-watertight doors in the "non application" statement in SOLAS regulation II-2/9.4.1.1.5 for power-operated watertight doors

9 In this case, semi-watertight doors do not have to comply with the requirements of SOLAS regulation II-2/9.4.1.1.5. Consequently, only compliance with the fire integrity requirements of SOLAS regulations II-2/9.4.1.1.1, II-2/9.4.1.1.2 and II-2/9.4.1.1.4 is required and, subject to consideration of paragraph 12 below, compliance with SOLAS regulation II-2/9.4.1.1.8 may also be required.

10 Under option 1, it is not clear which requirements prevail and are to be complied with.

11 Under option 2, the requirements of SOLAS regulation II-2/9.4.1.1.5 do not apply. Therefore, semi-watertight doors cannot re-open as permitted by SOLAS regulation II-2/9.4.1.1.5.11 when the controls are set in the closing position and the door controls will not be required to be fire-tested as stated in SOLAS regulation II-2/9.4.1.1.5.15.

Further issues

12 In addition to the above discussion, application of the exception included in SOLAS regulation II-2/9.4.1.1.8 to these doors needs to be considered and clarified.

13 Further, it is noted that reference to regulation II-2/9.4.1.1.2 in the text of paragraph 4 of the Revised Explanatory Notes regarding regulation 17.1, which makes reference to the insulation of watertight doors, should be amended to read "regulation II-2/9.4.1.1.3".

14 IACS also notes that the term "semi-watertight door" has been given two different meanings. On one hand, SOLAS regulation II-2/9.4.1.1.8 refers to "weather-tight doors (semi-watertight doors)". On the other hand, paragraph 2 of the Revised Explanatory Notes to SOLAS regulation II-1/17.1 infers that a semi-watertight door is the same as a watertight door but tested with a reduced head of water.

Proposal

15 IACS is of the view that the above two options (paragraphs 8 to 11) pose questions that need answering and the matters discussed in paragraphs 12 to 14 require resolution.

Action requested of the Sub-Committee

16 The Sub-Committee is invited to consider the above comments, including providing necessary clarity in the Revised Explanatory Notes to SOLAS regulation II-1/17, and take action, as appropriate.