



MARITIME SAFETY COMMITTEE
85th session
Agenda item 5

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GOAL-BASED NEW SHIP CONSTRUCTION STANDARDS

Comments on the report of the Pilot Panel on the trial application of the Tier III verification process using IACS Common Structural Rules (CSR)

Submitted by the Republic of Korea

SUMMARY

<i>Executive summary:</i>	This document provides comments and proposals regarding the Report of the Pilot Panel on the 2nd trial application of the Tier III verification process using IACS Common Structural Rules (CSR).
<i>Strategic direction:</i>	10
<i>High-level action:</i>	10.1.1
<i>Planned output:</i>	10.1.1.1
<i>Action to be taken:</i>	Paragraph 8
<i>Related documents:</i>	MSC 85/5/1, MSC 85/5; MSC 84/5; MSC 83/5/15 and MSC 82/5/11

Introduction

1 The Republic of Korea wishes to submit comments and proposals regarding document MSC 85/5/1 on the Report of the Pilot Panel (PP) on the 2nd trial application of the Tier III verification process using IACS Common Structural Rules (CSR). This document is submitted in accordance with the provisions of paragraph 4.10.5 of the Guidelines on the organization and method of work of the MSC and MEPC and their subsidiary bodies (MSC-MEPC.1/Circ.2).

Ship Construction File

2 With regard to the Ship Construction File (MSC 85/5/1, paragraph 9), we provide the following additional views:

- .1 The definition of “Calculating conditions and results” of structural strength within the SCF table given in paragraph 3 of document MSC 85/5, annex 3, needs further clarification as it still contains ambiguity and also requires too many ample materials. And we propose that the “Results” should include as-built structural drawings, manuals, etc. as shown in paragraph 10 of

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IACS UR Z23, but they do not need intermediate materials, such as the scantling reports for local structural members and intermediate calculated documents which are not related directly to a ship's safe operation, survey and repair.

- .2 We believe that requiring an SCF to be kept on board and ashore by the Company (paragraph 4 of MSC 85/5, annex 1) would necessitate adequate measures in order to protect intellectual property rights and so we propose that the following text be incorporated in the SOLAS amendments or the MSC circular and be written as follows:

[“The SCF documents/information shall only be used in the operations, surveys and maintenance of ships.”]

or

[“Ship owners or persons in charge of ships shall protect the business secret for SCF documents/information submitted and shall not use them except for the goals of the ship's safety, such as operation, survey and maintenance of ships, and shall be under obligation not to disclose them to anyone who should not be permitted to disclose them in order to achieve the goals.”]

Tier II functional requirements

- 3 We support the PP's view of the revised definition of net scantlings, as set out in document MSC 85/5/1, annex 3, II.3.4.1, in order to define it more clearly, but we considered the view of IACS on the net scantlings (MSC 82/5/11, paragraph 10) and propose that the primary support members be added in the revised definition as per the following text.

***The net scantlings should provide the structural strength required to sustain the design loads, assuming the structure is in intact condition and without any corrosion margin. However, when assessing fatigue and hull girder global strength including primary support members, a portion of the total corrosion margin may be added to the net scantlings to reflect the material thickness that can reasonably be expected to exist over the design life.*

- 4 We agree that the current functional requirement associated with ultimate strength (MSC 85/5/1, annex 3, II.3.3) needs more clarification that ships should be designed with sufficient ultimate strength and we propose that this requirement should be modified to limit the ultimate strength to the hull girder as the following text. As the ultimate strength calculation for the structural members of plates and stiffeners is requisitely to be carried out in the first step in the calculating procedure for hull girder ultimate strength.

“Ships should be designed to have adequate hull girder ultimate strength. Ultimate strength calculations should include ultimate hull girder capacity and ultimate strength of plates and stiffeners, and be verified for a longitudinal bending moment based on the environmental conditions in II.2.”

Part A, Tier III verification process

5 With regard to the voting methods (paragraph 12 of Part A of MSC 85/5/1, annex 1), we would prefer that a two-thirds majority be necessary in the decision-making process for determining the compliance of the Rules submitted with GBS in order to ensure that the decision is more widely supported by the Group of Experts, which was already shown in a document by the Republic of Korea (MSC 83/5/15, paragraph 3.1). With regard to the confidentiality agreement (MSC 85/5/1, paragraph 18), we also support the PP's recommendation (paragraph 17 of Part A of MSC 85/5/1, annex 1) without any comment.

Part B, Tier III information/documentation requirements and evaluation criteria

6 With regard to the evaluation criteria for residual strength (Tier III.5 of Part B of MSC 85/5/1, annex 1), we agree that the current IMO instruments for collision and grounding are insufficiently defined to be used in a residual strength calculation procedure and, as noted in the IACS document package for the IMO GBS pilot project, we also believe that a more detailed definition of structural damage extent due to collision and grounding and a procedure for evaluating residual strength should be established first through the safety level approach (or risk based approach) in the future.

7 According to the technical documents* for the results of the fatigue tests to investigate the effect of toe grinding on the fatigue strength of welded ship structure, the enhancement factors of fatigue life are more than 2.0. Therefore, we support the consideration of the surface treatment, such as grinding and peening, in the evaluation of fatigue life (Tier III.4.2.1.8 and III.4.3.9 of Part B of MSC 85/5/1, annex 1) and we have already suggested it in document MSC 84/5 (annex, III.4.c.8).

Action requested of the Committee

8 The Committee is invited to consider the above and take action as deemed appropriate.

* Refer to the International conference materials (PRADS, ISOPE) from the Republic of Korea:

- 1) PRADS: "Effect of Toe Grinding on Fatigue Strength of Ship Structure," 10th International Symposium on Practical Design of Ships and Other Floating Structures, 2007, volume 1, pp.601~608.
- 2) ISOPE: "A study on the Fatigue life of Large-scale Tubular K-joint," 18th International Offshore and Polar Engineering Conference, 2008, volume 4, pp. 335~340.