

**ANNEX 7**

**RESOLUTION MEPC.309(73)  
(adopted on 26 October 2018)**

**AMENDMENTS TO THE 2014 GUIDELINES ON SURVEY AND CERTIFICATION  
OF THE ENERGY EFFICIENCY DESIGN INDEX (EEDI)  
(RESOLUTION MEPC.254(67), AS AMENDED BY RESOLUTION MEPC.261(68))**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(a) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee conferred upon it by international conventions for the prevention and control of marine pollution from ships,

RECALLING ALSO that it adopted, by resolution MEPC.203(62), Amendments to the annex of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (inclusion of regulations on energy efficiency for ships in MARPOL Annex VI),

NOTING that the aforementioned amendments to MARPOL Annex VI entered into force on 1 January 2013,

NOTING ALSO that regulation 5 (Surveys) of MARPOL Annex VI, as amended, requires ships to which chapter 4 applies shall also be subject to survey and certification taking into account guidelines developed by the Organization,

NOTING FURTHER that it adopted, by resolution MEPC.214(63), the *2012 Guidelines on survey and certification of the Energy Efficiency Design Index (EEDI)*, and, by resolution MEPC.234(65), the amendments thereto,

NOTING FURTHER that it adopted, by resolution MEPC.254(67), the *2014 Guidelines on survey and certification of the Energy Efficiency Design Index (EEDI)*, and by resolution MEPC.261(68), amendments thereto,

RECOGNIZING that the aforementioned amendments to MARPOL Annex VI require relevant guidelines for the smooth and uniform implementation of the regulations,

HAVING CONSIDERED, at its seventy-third session, proposed amendments to the *2014 Guidelines on survey and certification of the Energy Efficiency Design Index (EEDI)*, as amended,

1 ADOPTS amendments to the *2014 Guidelines on survey and certification of the Energy Efficiency Design Index (EEDI)*, as set out in the annex to the present resolution;

2 INVITES Administrations to take the aforementioned amendments into account when developing and enacting national laws which give force to and implement provisions set forth in regulation 5 of MARPOL Annex VI, as amended;

3 REQUESTS the Parties to MARPOL Annex VI and other Member Governments to bring the amendments to the attention of shipowners, ship operators shipbuilders, ship designers and any other interested groups;

4 AGREES to keep these Guidelines, as amended, under review, in light of the experience gained with their application.

ANNEX

**AMENDMENTS TO THE 2014 GUIDELINES ON SURVEY AND CERTIFICATION  
OF THE ENERGY EFFICIENCY DESIGN INDEX (EEDI)  
(RESOLUTION MEPC.254(67), AS AMENDED BY RESOLUTION MEPC.261(68))**

1 Footnote for the title of section 2 is replaced by the following:

**"2 DEFINITIONS<sup>1</sup>**

<sup>1</sup> Other terms used in these guidelines have the same meaning as those defined in the *2018 Guidelines on the method of calculation of the attained EEDI for new ships* (resolution MEPC.308(73))."

2 Paragraph 4.1.1 is replaced by the following:

"4.1.1 The attained EEDI should be calculated in accordance with regulation 20 of MARPOL Annex VI and the *2018 Guidelines on the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships* (resolution MEPC.308(73)) (EEDI Calculation Guidelines). Survey and certification of the EEDI should be conducted in two stages: preliminary verification at the design stage and final verification at the sea trial. The basic flow of the survey and certification process is presented in figure 1."

3 Paragraphs 4.2.2.1 and 4.2.2.2 are replaced by the following:

- ".1 deadweight (DWT) or gross tonnage (GT) for passenger and ro-ro passenger ships, the maximum continuous rating (MCR) of the main and auxiliary engines, the ship speed ( $V_{ref}$ ), as specified in paragraph 2.2.2 of the EEDI Calculation Guidelines, type of fuel, the specific fuel consumption (*SFC*) of the main engine at 75% of MCR power, the *SFC* of the auxiliary engines at 50% MCR power, and the electric power table for certain ship types, as necessary, as defined in the EEDI Calculation Guidelines;
- ".2 power curve(s) (kW – knot) estimated at design stage under the condition as specified in paragraph 2.2.2 of the EEDI Calculation Guidelines, and, in the event that the sea trial is carried out in a condition other than the above condition, also a power curve estimated under the sea trial condition;"

4 Paragraph 4.2.8.2 is replaced by the following:

".2 LNG cargo tank capacity in m<sup>3</sup> and BOR as defined in paragraph 2.2.5.6.3 of the EEDI Calculation Guidelines;"

5 Paragraph 4.2.8.5 is replaced by the following:

".5  $SFC_{SteamTurbine}$  for steam turbine, as specified in paragraph 2.2.7 of the EEDI Calculation Guidelines."

6 Paragraph 4.2.5 is replaced by the following:

"4.2.5 For ships to which regulation 21 of MARPOL Annex VI applies, the power curves used for the preliminary verification at the design stage should be based on reliable results of tank tests. A tank test for an individual ship may be omitted based

on technical justifications such as availability of the results of tank tests for ships of the same type. In addition, the omission of tank tests is acceptable for a ship for which sea trials will be carried out under the condition as specified in paragraph 2.2.2 of the EEDI Calculation Guidelines, upon agreement of the shipowner and shipbuilder and with the approval of the verifier. To ensure the quality of tank tests, the ITTC quality system should be taken into account. Model tank tests should be witnessed by the verifier."

7 Paragraph 4.2.7.4 is replaced by the following:

".4 detailed report on the method and results of the tank test; this should include at least the tank test results at sea trial condition and under the condition as specified in paragraph 2.2.2 of the EEDI Calculation Guidelines;"

8 Paragraph 4.3.1 is replaced by the following:

"4.3.1 Sea trial conditions should be set as the conditions specified in paragraph 2.2.2 of the EEDI Calculation Guidelines, if possible."

9 Paragraph 4.3.5 is replaced by the following:

"4.3.5 Sea conditions should be measured in accordance with ITTC Recommended Procedure 7.5-04-01-01.1 Speed and Power Trials 2017 or ISO 15016:2015."

10 Paragraph 4.3.6 is replaced by the following:

"4.3.6 Ship speed should be measured in accordance with ITTC Recommended Procedure 7.5-04-01-01.1 Speed and Power Trials 2017 or ISO 15016:2015, and at more than two points of which range includes the power of the main engine as specified in paragraph 2.2.5 of the EEDI Calculation Guidelines."

11 Paragraph 4.3.8 is replaced by the following:

"4.3.8 The submitter should develop power curves based on the measured ship speed and the measured output of the main engine at sea trial. For the development of the power curves, the submitter should calibrate the measured ship speed, if necessary, by taking into account the effects of wind, current, waves, shallow water, displacement, water temperature and water density in accordance with ITTC Recommended Procedure 7.5-04-01-01.1 Speed and Power Trials 2017 or ISO 15016:2015. Upon agreement with the shipowner, the submitter should submit a report on the speed trials including details of the power curve development to the verifier for verification."

12 Paragraphs 4.3.9.1 and 4.3.9.2 are replaced by the following:

".1 for ships for which sea trial is conducted under the condition as specified in paragraph 2.2.2 of the EEDI Calculation Guidelines: the attained EEDI should be recalculated using the measured ship speed at sea trial at the power of the main engine as specified in paragraph 2.2.5 of the EEDI Calculation Guidelines; and

".2 for ships for which sea trial cannot be conducted under the condition as specified in paragraph 2.2.2 of the EEDI Calculation Guidelines: if the measured ship speed at the power of the main engine as specified in

paragraph 2.2.5 of the EEDI Calculation Guidelines at the sea trial conditions is different from the expected ship speed on the power curve at the corresponding condition, the shipbuilder should recalculate the attained EEDI by adjusting ship speed under the condition as specified in paragraph 2.2.2 of the EEDI Calculation Guidelines by an appropriate correction method that is agreed by the verifier."

13 Paragraph 4.3.13 is replaced by the following:

"4.3.13 The EEDI Technical File should be revised, as necessary, by taking into account the results of sea trials. Such revision should include, as applicable, the adjusted power curve based on the results of sea trials (namely, modified ship speed under the condition as specified in paragraph 2.2.2 of the EEDI Calculation Guidelines), the finally determined deadweight/gross tonnage,  $\eta$  for LNG carriers having diesel electric propulsion system and *SFC* described in the approved NO<sub>x</sub> Technical File, and the recalculated attained EEDI based on these modifications."

14 Section 2 of appendix 2 is replaced by the following:

"These guidelines provide a framework for the uniform application of the EPT-EEDI validation process for ships for which required auxiliary engine power is calculated under paragraph 2.2.5.7 of the EEDI Calculation Guidelines."

15 Paragraph 3.5 of appendix 2 is replaced by the following:

"3.5  $P_{AE}$  herein is defined as per the definition in paragraph 2.2.5.6 of the EEDI Calculation Guidelines."

16 Paragraph 4.1 of appendix 2 is replaced by the following:

"4.1 These guidelines are applicable to ships as stipulated in paragraph 2.2.5.7 of the EEDI Calculation Guidelines."

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