

# Astern Power of Main Propulsion Machineries

## Object of Amendment

Rules for the Survey and Construction of Steel Ships Part B and D  
Guidance for the Survey and Construction of Steel Ships Part D  
Rules / Guidance for High Speed Craft  
Rules / Guidance for the Survey and Construction of Inland Waterway Ships

## Reason for Amendment

IACS Unified Requirement (UR) M25(Rev.4) stipulates that main propulsion machineries are to be able to maintain the astern revolutions of at least 70 % of their ahead maximum continuous revolutions. However, it was pointed out to IACS that it can be difficult for some ships (e.g. those using highly skewed propellers) to comply with this requirement. IACS, therefore, decided to review this requirement.

As a result of its review, IACS adopted UR M25(Rev.5) in December 2024 to stipulate requirements related to tests for confirming the astern power of main propulsion machineries complies with regulation II-1/28 of SOLAS.

Accordingly, relevant requirements are amended based on UR M25(Rev.5). In addition, some wording is revised to make it clear that the standard values for assessing ship manoeuvring performance during sea trials are only intended as reference values (i.e. they are not a mandatory requirement).

## Outline of the Amendment

The main details of this amendment are as follows:

- (1) Amends the revolution/power of the main propulsion machinery used for the astern test during the sea trial from at least 70 % of the ahead maximum continuous revolutions to the maximum permissible astern power (MPAP) permitted by the design of the main propulsion machinery, power transmission system and propulsion shaft system.
- (2) Revises some wording to clarify that standard values for assessing ship manoeuvrability during sea trials are just reference values, not a mandatory requirement.

## Effective Date and Application

- (1) Table B2.11, Part B of the Rules for the Survey and Construction of Steel Ships; Part D of the Rules for the Survey and Construction of Steel Ships; Part D of the Guidance for the Survey and Construction of Steel Ships; the Rules/Guidance for High Speed Craft; and the Rules/Guidance for the Survey and Construction of Inland Waterway Ships  
This amendment applies to ships for which the date of contract for construction is on or after 1 January 2026 or ships which undergo astern test during examinations of altered parts on or after 1 January 2026.
- (2) Annex 2.3.1-1, Part B of the Rules for the Survey and Construction of Steel Ships  
Effective date of this amendment is 1 January 2026.

An asterisk (\*) after the title of a requirement indicates that there is also relevant information in the corresponding Guidance.

ID:DD25-08

**Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)**

| Amended   | Original  | Remarks  |
|---|---|--|
| <p align="center"><b>RULES FOR THE SURVEY AND<br/>CONSTRUCTION OF STEEL SHIPS</b></p> <p align="center"><b>Part B CLASS SURVEYS</b></p><br><br><br><br><br><br><br><br><br><br><br><br><p><b>Chapter 2 CLASSIFICATION SURVEYS</b></p> | <p align="center"><b>RULES FOR THE SURVEY AND<br/>CONSTRUCTION OF STEEL SHIPS</b></p> <p align="center"><b>Part B CLASS SURVEYS</b></p><br><br><br><br><br><br><br><br><br><br><br><br><p><b>Chapter 2 CLASSIFICATION SURVEYS</b></p> | <p>* UR M25.5, which existed in UR M25 Rev4, is to describe the astern response characteristics of variable pitch propellers and has been moved to UR M83.</p> <p>UR M83 has been incorporated into Annex 2.3.1-3, Part B of the Rules by the amendment "Manoeuvring Performance of Controllable Pitch Propellers" dated 26 December 2024.</p> |

## Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)

| Amended  | Original  | Remarks   |
|--|---|---|
| <b>Table B2.11 Survey – Sea Trials *1</b>  |   |   |
| Test Items   | Details   |   |
| 1 Speed tests  | (Omitted)   |   |
| 2 Astern tests   | <p>(1) Astern tests are to be carried out <u>from a control position</u> in accordance with the following (a) and (b), and the items related to stopping ability specified in <b>An1.4.3, Annex 2.3.1-1 “Guidance for the Test of Ship Manoeuvrability”, Part B of the Rules</b> are to be measured. <del>When applying this requirement, tests are to be carried out from all control positions where there are multiple control positions for reversing operations to astern runs.</del></p> <p>(a) While the ship is running ahead at maximum speed, an order for full astern is issued and the reversing operation from ahead run to full astern run is carried out as quickly as possible.</p> <p>(b) Ships unable to perform the test at maximum speed are to run ahead at not less than the speed specified in <b>An1.1.1-9, Annex 2.3.1-1 “Guidance for the Test of Ship Manoeuvrability”, Part B of the Rules</b>. While the ship is at this speed, an order for full astern is issued and the reversing operation from ahead run to full astern run is carried out as quickly as possible.</p> <p>(2) Engines are to be functioning normally while the ship is running astern. Main <del>enginespropulsion machineries</del> are to be <del>ratescapable of maintain more than 70 % of maximum continuous revolutions</del> <u>operating the MPAP referred to in 1.3.2, Part D of the Rules</u>, and ships are to keep running astern for the periods specified in the following (a) and (b) corresponding to engine type. In addition, performance is to satisfy <b>1.3.2, Part D of the Rules</b>. <u>This test is to also be conducted in accordance with the provisions of ISO 19019:2005, section 5.4: Astern trial.</u></p> <p>(a) For ships with main engines other than steam turbines: Until the astern speed (rotational speed in rpm) stabilises.</p> <p>(b) For ships with steam turbines: A period of at least 15 <i>minutes</i>; the astern trial, however, is to be limited to 30 <i>minutes</i> or in accordance with manufacturer recommendations to avoid overheating the turbine due to the effects of “windage” and friction.</p> <p>(3) For gas-fueled dual fuel engines, the confirmation specified in (2)(a) above is to be carried out for all operating modes (i.e. the applicable gas mode, diesel mode, etc.).</p> | <p>M25.4</p> <p>M25.1 (last sentence)<br/>ISO 19019:2005, section 5.4 states that it is desirable to receive wind from aft (head wind) or forward (tail wind)., and that heating of the propulsion shaft system and abnormal vibration and noise should be recorded.<br/>M25.1</p> <p>M25.2</p> |
| (-3 to -13 are omitted.)   | (Omitted)   |   |
| The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (A) |   |   |

Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)

| Amended   | Original   | Remarks   |
|---|--|---|
| <p align="center"><b>Annex 2.3.1-1 TEST OF SHIP MANOEUVRABILITY</b></p> <p align="center"><b>An1 <u>Procedures</u> for the Test of Ship Manoeuvrability</b></p> <p align="center"><b>An2 Standards for Ship Manoeuvrability</b></p> <p><b>An2.1 Scope</b></p> <p><b>An2.1.1 General</b><br/> <b>1</b> This <u>An2</u> shows standards for reference based upon <i>IMO Res. MSC. 137(76)</i> “STANDARDS FOR SHIP MANOEUVRABILITY”.<br/> <b>2</b> Standards for ship manoeuvrability shown in this Appendix are based on the standard conditions defined in <b>An1.1.1-8</b>.<br/> <b>3</b> Standards for ship manoeuvrability shown in this requirement are for ships carrying dangerous chemicals in bulk, ships carrying liquefied gasses in bulk and ships of not less than 100 <i>m</i> in length.</p> <p align="center"><b>An2.2 Standards for Ship Manoeuvrability</b></p> <p><b>An2.2.1 Turning Ability</b><br/>                     The tactical diameter is not to exceed 5<i>L</i>.<br/>                     The advance is not to exceed 4.5<i>L</i>.</p> | <p align="center"><b>Annex 2.3.1-1 TEST OF SHIP MANOEUVRABILITY</b></p> <p align="center"><b>An1 <u>Guidance</u> for the Test of Ship Manoeuvrability</b></p> <p align="center"><b>An2 Standards for Ship Manoeuvrability</b></p> <p><b>An2.1 Scope</b></p> <p><b>An2.1.1 General</b><br/> <b>1</b> This <u>requirement is</u> based upon <i>IMO Res. MSC. 137(76)</i> “STANDARDS FOR SHIP MANOEUVRABILITY” adopted on 4 December 2002.<br/> <b>2</b> Standards for ship manoeuvrability shown in this Appendix are based on the standard conditions defined in <b>An 1.1.1-8</b>.<br/> <b>3</b> Standards for ship manoeuvrability shown in this requirement are for ships carrying dangerous chemicals in bulk, ships carrying liquefied gasses in bulk and ships of not less than 100 <i>m</i> in length.</p> <p align="center"><b>An2.2 Standards for Ship Manoeuvrability</b></p> <p><b>An2.2.1 Turning Ability</b><br/>                     The tactical diameter is not to exceed 5<i>L</i>.<br/>                     The advance is not to exceed 4.5<i>L</i>.</p> | <p>Amended the wording.</p> <p>Revised to clarify that it is not a mandatory requirement.</p> |

**Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)**

| Amended   | Original  | Remarks   |
|---|---|---|
| <p><b>An2.2.2 Stopping Ability</b><br/>                     The track reach is not to exceed 15L. However, this value may be modified by the Administration where ships of large displacement make <u>applying</u> this <u>standard</u> impracticable but should in no case exceed 20 ship lengths.</p> | <p><b>An2.2.2 Stopping Ability</b><br/>                     The track reach is not to exceed 15L. However, this value may be modified by the Administration where ships of large displacement make this <u>criterion</u> impracticable, but should in no case exceed 20 ship lengths.</p> | <p>Revised to clarify that it is not a mandatory requirement.</p> |
| <p>The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (B)</p>   |   |   |

DRAFT

Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)

| Amended   | Original  | Remarks   |
|---|---|---|
| <p align="center"><b>RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</b></p> <p align="center"><b>Part D MACHINERY INSTALLATIONS</b></p> <p align="center"><b>Chapter 1 GENERAL</b></p> <p><b>1.3 General Requirements for Machinery Installations</b></p> <p><b>1.3.2 Astern Power*</b></p> <p><b>1</b> Sufficient power for going astern is to be provided to secure proper control of the ship in all normal circumstances.</p> <p><b>2</b> <u>The minimum astern power required by -1 above to secure proper control of the ship in all normal circumstances is to be determined by the ship designer and is not to exceed the maximum permissible astern power (MPAP) for which the main engines, power transmission systems and propulsion shaft systems are designed.</u></p> <p><b>3</b> The <u>astern power of main propulsion machinery is to enable the reasonable braking after the reversing operations from ahead run.</u></p> <p><b>4</b> <u>Main propulsion systems with reversing gears, controllable pitch propellers or electric propeller drive are to be designed for the MPAP, which is not to lead to the overload of the propulsion machinery.</u></p> <p><u>Note:</u></p> | <p align="center"><b>RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</b></p> <p align="center"><b>Part D MACHINERY INSTALLATIONS</b></p> <p align="center"><b>Chapter 1 GENERAL</b></p> <p><b>1.3 General Requirements for Machinery Installations</b></p> <p><b>1.3.2 Astern Power</b></p> <p><b>1</b> Sufficient power for going astern is to be provided to secure proper control of the ship in all normal circumstances. (Newly added)</p> <p><b>2</b> The main propulsion machinery is to <u>be capable of maintaining in free route astern at least at 70% of the ahead revolutions for a period of at least 30 minutes. The output astern which may be developed in transient conditions is to be such as to enable the braking of the ship within reasonable time.</u></p> <p><b>3</b> For the <u>main propulsion systems with reversing gears, controllable pitch propellers or electric propeller drive, running astern is not to lead to the overload of the propulsion machinery.</u></p> | <p>M25.1 (except for last sentence)<br/>MPAP: Maximum Permissible Astern Power</p> <p>With the revision of UR M25, this part which was the NK original requirement is changed to the standard on the design, and it is transferred to the Guidance.<br/>M25.3</p> <p>M25.3 Note</p> |

**Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)**

| Amended  | Original | Remarks   |
|--|----------|---|
| <p><u>The designed maximum astern power, as referred to in 2.1.30, Part A, defining the maximum astern speed for the design of the main steering gear and rudder stock as per 15.2.2(3), Part D, 13.2.2.1, Part 1, Part C and 3.2, Part CS is not to be taken less than the <i>MPAP</i>.</u></p> |          | <p>According to Part D 1.3.2-2, “MPAP” means the maximum astern power which is acceptable per the design of the main-propulsion system.</p> <p>According to the Note mentioned on the left, “designed maximum astern power” means the maximum astern power which is acceptable on the design of the main steering gear and the rudder stock.</p> <p>“designed maximum astern power” must be MPAP or more.</p> <p>In other words, the steering gear can withstand a larger astern power than the main-propulsion system by design.</p> |
| <p>The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (A)</p>  |          |   |

Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)

| Amended   | Original   | Remarks   |
|---|--|---|
| <p align="center"><b>RULES FOR HIGH SPEED CRAFT</b></p> <p align="center"><b>Part 9 MACHINERY INSTALLATIONS</b></p> <p align="center"><b>Chapter 1 GENERAL</b></p> <p><b>1.2 General Requirements for Machinery Installations</b></p> <p><b>1.2.2 Astern Power</b></p> <p><b>1</b> Sufficient power for going astern is to be provided to secure proper control of the ship in all normal circumstances.</p> <p><b>2</b> <u>The minimum astern power required by -1 above to secure proper control of the ship in all normal circumstances is to be determined by the ship designer and is not to exceed the maximum permissible astern power (MPAP) for which the main engines, power transmission systems and propulsion shaft systems are designed.</u></p> <p><b>3</b> <u>Main propulsion systems with reversing gears, controllable pitch propellers, waterjet propulsion systems or electric propeller drive are to be designed for the MPAP, which is not to lead to the overload of the propulsion machinery.</u></p> <p><u>Note:</u><br/> <u>The designed maximum astern power, as referred to in 2.1.9, Part 1, defining the maximum astern speed for the design of the main steering gear and rudder stock as per 15.2.2(3), Part D of the Rules for the Survey and Construction of Steel Ships is not to be taken less than the MPAP.</u></p> | <p align="center"><b>RULES FOR HIGH SPEED CRAFT</b></p> <p align="center"><b>Part 9 MACHINERY INSTALLATIONS</b></p> <p align="center"><b>Chapter 1 GENERAL</b></p> <p><b>1.2 General Requirements for Machinery Installations</b></p> <p><b>1.2.2 Astern Power</b></p> <p><b>1</b> Sufficient power for going astern is to be provided to secure proper control of the ship in all normal circumstances.<br/>(Newly added)</p> <p><b>2</b> For the main propulsion systems with reversing gears, controllable pitch propellers, waterjet propulsion systems or electric propeller drive, <u>running astern</u> is not to lead to the overload of propulsion machinery.</p> | <p>Same as the amendment of 1.3.2-2, Part D of the Rules for the Survey and Construction of Steel Ships.</p> <p>Same as the amendment of 1.3.2-4, Part D of the Rules for the Survey and Construction of Steel Ships.</p> |



Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)

| Amended  | Original | Remarks |
|--|----------|---------|
| The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (A) |          |         |

DRAFT

Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)

| Amended   | Original  | Remarks  |
|---|---|--|
| <p><b>RULES FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS</b></p> <p><b>Part 7 MACHINERY INSTALLATIONS</b></p> <p><b>Chapter 1 GENERAL</b></p> <p><b>1.3 General Requirements for Machinery Installations of Tugs and Pushers</b></p> <p><b>1.3.2 Astern Power*</b></p> <p><b>1</b> Sufficient power for going astern is to be provided to secure proper control of the ship in all normal circumstances.</p> <p><b>2</b> <u>The minimum astern power required by -1 above to secure proper control of the ship in all normal circumstances is to be determined by the ship designer and is not to exceed the maximum permissible astern power (MPAP) for which the main engines, power transmission systems and propulsion shaft systems are designed.</u></p> <p><b>3</b> <u>The astern power of main propulsion machinery is to enable the reasonable braking after the reversing operations from ahead run.</u></p> <p><b>4</b> <u>Main propulsion systems with reversing gears, controllable pitch propellers or electric propeller drive are to be designed for the MPAP, which is not to lead to the overload</u></p> | <p><b>RULES FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS</b></p> <p><b>Part 7 MACHINERY INSTALLATIONS</b></p> <p><b>Chapter 1 GENERAL</b></p> <p><b>1.3 General Requirements for Machinery Installations of Tugs and Pushers</b></p> <p><b>1.3.2 Astern Power</b></p> <p><b>1</b> Sufficient power for going astern is to be provided to secure proper control of the ship in all normal circumstances. (Newly added)</p> <p><b>2</b> <u>The main propulsion machinery is to be capable of maintaining in free route astern at least at 70% of the ahead revolutions for a period of at least 30 minutes. The output astern which may be developed in transient conditions is to be such as to enable the braking of the ship within reasonable time.</u></p> <p><b>3</b> <u>For the main propulsion systems with reversing gears, controllable pitch propellers or electric propeller drive, running astern is not to lead to the overload of the propulsion</u></p> | <p>Same as the amendment of 1.3.2-2, Part D of the Rules for the Survey and Construction of Steel Ships.</p> <p>Same as the amendment of 1.3.2-4, Part D of the Rules for the Survey and</p> |

**Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)**

| Amended   | Original          | Remarks                             |
|---|-------------------|-------------------------------------|
| <p>of the propulsion machinery.</p> <p><u>Note:</u><br/> <u>The designed maximum astern power, as referred to in 2.1.31, Part 1, defining the maximum astern speed for the design of the main steering gear and rudder stock as per 12.2.2(3), Part 7, 2.1.4, Part 4 is not to be taken less than the MPAP.</u></p> | <p>machinery.</p> | <p>Construction of Steel Ships.</p> |
| <p>The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (A)</p>   |                   |                                     |

DRAFT

Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)

| Amended  | Original  | Remarks   |
|--|---|---|
| <p align="center"><b>GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</b></p> <p align="center"><b>Part D MACHINERY INSTALLATIONS</b></p> <p align="center"><b>D1 GENERAL</b></p> <p align="center"><b>D1.3 General Requirements for Machinery Installations</b></p> <p><b><u>D1.3.2 Astern Power</u></b><br/> <u>In applying “Sufficient power for going astern is to be provided to secure proper control of the ship” referred to in 1.3.2-1, Part D of the Rules and “The astern power of main propulsion machinery is to enable the reasonable braking” referred to in 1.3.2-3, Part D of the Rules, the standard for astern power of main propulsion machinery is to be capable of maintaining a free route astern of at least 70 % of the ahead revolutions for a period of at least 30 minutes.</u></p> | <p align="center"><b>GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</b></p> <p align="center"><b>Part D MACHINERY INSTALLATIONS</b></p> <p align="center"><b>D1 GENERAL</b></p> <p align="center"><b>D1.3 General Requirements for Machinery Installations</b></p> <p align="center">(Newly added)<br/>(Newly added)</p> | <p>Moved from the former part of original of 1.3.2-2, Part D of the Rules for the Survey and Construction of Steel Ships.<br/>Refer to the remark for the amendment of 1.3.2-2, Part D.</p> |
| <p align="center">The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (A)</p>   |   |   |

**Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)**

| Amended   | Original  | Remarks  |
|---|---|--|
| <p align="center"><b>GUIDANCE FOR HIGH SPEED CRAFT</b></p> <p align="center"><b>Part 2 CLASS SURVEYS</b></p> <p align="center"><b>Chapter 2 CLASSIFICATION SURVEYS</b></p> <p><b>2.3 Sea Trials and Stability Experiments</b></p> <p><b>2.3.1 Sea Trials</b><br/>                     Details of each test to be carried out during sea trials are to be in accordance with the following requirements.</p> <p>(1) Speed test<br/>                     The craft's speed is to be measured during navigating with maximum continuous output of main propulsion engines through the course the length of which is known beforehand.</p> <p>(2) Astern test<br/>                     The astern test is to be carried out in accordance with the following (a) to (c):</p> <p>(a) While the main propulsion machinery is running ahead at its maximum continuous output, an order for full astern is issued <u>from a control position</u>, and the reversing operation from ahead run to full astern run is carried out as quickly as possible, and the astern performance and stopping performance of craft are to be verified.</p> | <p align="center"><b>GUIDANCE FOR HIGH SPEED CRAFT</b></p> <p align="center"><b>Part 2 CLASS SURVEYS</b></p> <p align="center"><b>Chapter 2 CLASSIFICATION SURVEYS</b></p> <p><b>2.3 Sea Trials and Stability Experiments</b></p> <p><b>2.3.1 Sea Trials</b><br/>                     Details of each test to be carried out during sea trials are to be in accordance with the following requirements.</p> <p>(1) Speed test<br/>                     The craft's speed is to be measured during navigating with maximum continuous output of main propulsion engines through the course the length of which is known beforehand.</p> <p>(2) Astern test<br/>                     The astern test is to be carried out in accordance with the following (a) to (c):</p> <p>(a) While the main propulsion machinery is running ahead at its maximum continuous output, an order for full astern is issued and the reversing operation from ahead run to full astern run is carried out as quickly as possible, and the astern performance and stopping performance of craft are to be verified. <u>In applying this provision, the tests are to be carried out from all control positions where there are multiple control positions for the reversing operation to astern run.</u></p> | <p>Same as the amendment of Table B2.11, Part B of the Rules for the Survey and Construction of Steel Ships.</p> |

**Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)**

| Amended  | Original   | Remarks |
|--|--|---------|
| <p>(b) It is to be confirmed that the machinery is functioning normally while the ship is running astern. The main engine is to be kept at the <u>MPAP referred to in 1.2.2, Part 9 of the Rules</u> until the astern speed (rotational speed in rpm) stabilises. <u>This test is to also be conducted in accordance with ISO 19019:2005, section 5.4, Astern trial.</u></p> <p>(c) For gas-fuelled dual fuel engines, the confirmation specified in (b) is to be carried out for all operating modes (gas mode, diesel mode, etc.).</p> <p>((3) to (11) are omitted.)</p> | <p>(b) It is to be confirmed that the machinery is functioning normally while the ship is running astern. The main engine is to be kept <u>at a rate of more than 70% of the maximum continuous revolutions</u> until the astern speed (rotational speed in rpm) stabilizes.</p> <p>(c) For gas-fuelled dual fuel engines, the confirmation specified in (b) is to be carried out for all operating modes (gas mode, diesel mode, etc.).</p> <p>((3) to (11) are omitted.)</p> |         |
| <p>The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (A)</p>  |  |         |

**Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)**

| Amended  | Original  | Remarks  |
|--|---|--|
| <p><b>GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS</b></p> <p><b>Part 2 CLASS SURVEYS</b></p> <p><b>Chapter 2 CLASSIFICATION SURVEYS</b></p> <p><b>2.3 River Trials and Stability Experiments</b></p> <p><b>2.3.1 River Trials</b></p> <p><b>1</b> The <u>astern</u> test required by 2.3.1-1(1), Part 2 of the Rules is to be carried out in accordance with the following (1) to (3).</p> <p>(1) While the ship is running ahead at maximum speed, an order for full astern is issued <u>from a control position</u> and the reversing operation from ahead run to full astern run is carried out as quickly as possible. The elapsed time for the ship to stop after the full astern order, heading angle of the ship and stopping distance are to be measured. For ships that are unable to perform the test at maximum speed, the ship is to run ahead at not less than the speed of at least 90% of the ship speed corresponding to not less than 95% of the maximum continuous revolutions of the main engine. However, the measurements of the items regarding stopping ability may be dispensed with, provided that sufficient data is available from an astern test of a sister ship and subject to the special</p> | <p><b>GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS</b></p> <p><b>Part 2 CLASS SURVEYS</b></p> <p><b>Chapter 2 CLASSIFICATION SURVEYS</b></p> <p><b>2.3 River Trials and Stability Experiments</b></p> <p><b>2.3.1 River Trials</b></p> <p><b>1</b> The <u>Astern</u> test required by 2.3.1-1(1), Part 2 of the Rules is to be carried out in accordance with the following (1) to (3).</p> <p>(1) While the ship is running ahead at maximum speed, an order for full astern is issued and the reversing operation from ahead run to full astern run is carried out as quickly as possible. The elapsed time for the ship to stop after the full astern order, heading angle of the ship and stopping distance are to be measured. For ships that are unable to perform the test at maximum speed, the ship is to run ahead at not less than the speed of at least 90% of the ship speed corresponding to not less than 95% of the maximum continuous revolutions of the main engine. However, the measurements of the items regarding stopping ability may be dispensed with, provided that sufficient data is available from an astern test of a sister ship and subject to the special approval by the</p> | <p>Same as the amendment of Table B2.11, Part B of the Rules for the Survey and Construction of Steel Ships. (However, in case of inland waterway ships, it is not practical to apply ISO 19019:2005, section 5.4. This is because ISO 19019:2005, section 5.4 is not for river trial and for sea trial and recommendation of designation of wind direction is not suitable due to constraint of test area.)</p> |

**Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)**

| Amended   | Original  | Remarks  |
|---|---|--|
| <p>approval by the Society.</p> <p>(2) It is to be confirmed that the machinery is functioning normally while the ship is running astern. The main engine is to be kept at <u>the MPAP referred to in 1.3.2, Part 7 of the Rules</u>. The ship is to be kept running astern until the astern speed (rotational speed in rpm) stabilises, and the performance is to be confirmed in accordance with <b>1.3.2, Part 7 of the Rules</b>.</p> <p>(3) For gas-fuelled dual fuel engines, the confirmation specified in (2) is to be carried out for all operating modes (gas mode, diesel mode, etc.).</p> <p align="center"><b>Part 7 MACHINERY INSTALLATIONS</b></p> <p align="center"><b>Chapter 1 GENERAL</b></p> <p><b>1.3 General Requirements for Machinery Installations of Tugs and Pushers</b></p> <p><b><u>1.3.2 Astern Power</u></b><br/> <u>In applying the “Sufficient power for going astern is to be provided to secure proper control of the ship” referred to in 1.3.2-1, Part 7 of the Rules and “The astern power of main propulsion machinery is to enable the reasonable braking” referred to in 1.3.2-3, Part 7 of the Rules, the standard for astern power of main propulsion machinery is to be capable of maintaining a free route astern of at least 70 % of the ahead revolutions for a period of at least 30 minutes.</u></p> | <p>Society.</p> <p>(2) It is to be confirmed that the machinery is functioning normally while the ship is running astern. The main engine is to be kept at <u>a rate of more than 70% of the maximum continuous revolutions</u>. The ship is to be kept running astern until the astern speed (rotational speed in rpm) stabilizes and the performance is to be confirmed in accordance with <b>1.3.2, Part 7 of the Rules</b>.</p> <p>(3) For gas-fuelled dual fuel engines, the confirmation specified in (2) is to be carried out for all operating modes (gas mode, diesel mode, etc.).</p> <p align="center"><b>Part 7 MACHINERY INSTALLATIONS</b></p> <p align="center"><b>Chapter 1 GENERAL</b></p> <p><b>1.3 General Requirements for Machinery Installations of Tugs and Pushers</b></p> <p><b>(Newly added)</b><br/> <b>(Newly added)</b></p> | <p>Same as amendment of D1.3.2, Part D of the Guidance for the Survey and Construction of Steel Ships.</p> |



## Amended-Original Requirements Comparison Table (Astern Power of Main Propulsion Machineries)

| Amended   | Original | Remarks |
|---|----------|---------|
| <b>EFFECTIVE DATE AND APPLICATION (A)</b>   |          |         |
| <ol style="list-style-type: none"> <li>1. The effective date of the amendments is 1 January 2026.</li> <li>2. Notwithstanding the amendments, the current requirements apply to ships for which the date of contract for construction* is before the effective date.<br/> * “contract for construction” is defined in the latest version of IACS Procedural Requirement (PR) No.29.</li> </ol>  |          |         |
| IACS PR No.29 (Rev.0, July 2009)  |          |         |
| <ol style="list-style-type: none"> <li>1. The date of “contract for construction” of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding.</li> <li>2. The date of “contract for construction” of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder.<br/> For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a “series of vessels” if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided: <ol style="list-style-type: none"> <li>(1) such alterations do not affect matters related to classification, or</li> <li>(2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval.</li> </ol> The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed.</li> <li>3. If a contract for construction is later amended to include additional vessels or additional options, the date of “contract for construction” for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a “new contract” to which 1. and 2. above apply.</li> <li>4. If a contract for construction is amended to change the ship type, the date of “contract for construction” of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder.</li> </ol> <p>Note:<br/>This Procedural Requirement applies from 1 July 2009.</p> |          |         |
| <b>EFFECTIVE DATE AND APPLICATION (B)</b>   |          |         |
| <ol style="list-style-type: none"> <li>1. The effective date of the amendments is 1 January 2026.</li> </ol>  |          |         |