INTERNATIONAL STANDARD

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Ships and marine technology — Protective coatings and inspection method —

Part 5: Assessment method for coating damages

Navires et technologie maritime — Revêtements de protection et méthode d'inspection —

Partie 5: Méthode d'évaluation des dommages des revêtements

Reference number
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Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 8, *Ships and marine technology*, Subcommittee SC 8, *Ship design*.

ISO 16145 consists of the following parts, under the general title *Ships and marine technology — Protective coatings and inspection method:*

— *Part 1: Dedicated sea water ballast tanks*

— *Part 2: Void spaces of bulk carriers and oil tankers*

— *Part 3: Cargo oil tanks of crude oil tankers*

— *Part 4: Automated measuring method for the total amount of water-soluble salts*

— *Part 5: Assessment method for coating damages*

Introduction

The ISO 16145 series addresses qualified coating and inspection works in accordance with the requirements of IMO PSPC.

Technical Committee ISO/TC 8, SC 8 decided to standardize a coating and inspection method for the IMO PSPC series.

Coating quality itself depends largely on the surface preparation and coating application. Therefore, the right application of surface preparation and coating, in accordance with the coating manufacturer's recommendation including inspections at each step, are of vital importance.

This part of ISO 16145 is intended to serve as a standard for ship owners, shipyards, coating manufacturers, coating inspectors, and coating applicators in applying IMO PSPC in the new building stage.

Ships and marine technology — Protective coatings and inspection method —

Part 5:
Assessment method for coating damages

1 Scope

This part of ISO 16145 specifies a method for the assessment of coating damages of ballast tanks, as well as cargo oil tanks where IMO PSPC shall be applied, and it can also be applied to other areas as a reference.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 16145-1, *Ships and marine technology — Protective coatings and inspection method — Part 1: Dedicated sea water ballast tanks*

IACS UI SC223, *For Application of SOLAS Regulation II-1/3-2 Performance Standard for Protective Coatings (PSPC) for Dedicated Seawater Ballast Tanks in All Types of Ships and Double-side Skin Spaces of Bulk Carriers, adopted by Resolution MSC.215(82)*

MSC.215(82), *Performance Standard for Protective Coatings for Dedicated Seawater Ballast Tanks in All Types of Ships and Double-side Skin Spaces of Bulk Carriers*

MSC.288(87), *Performance Standard for Protective Coatings for Cargo Oil Tanks of Crude Oil Tankers*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
coating damage
damaged coating which has reached the steel substrate, caused by welding, fairing, mechanical impact, etc. during ship construction

3.2
erection butt
pre-erection or erection joint of blocks

4 Abbreviated terms

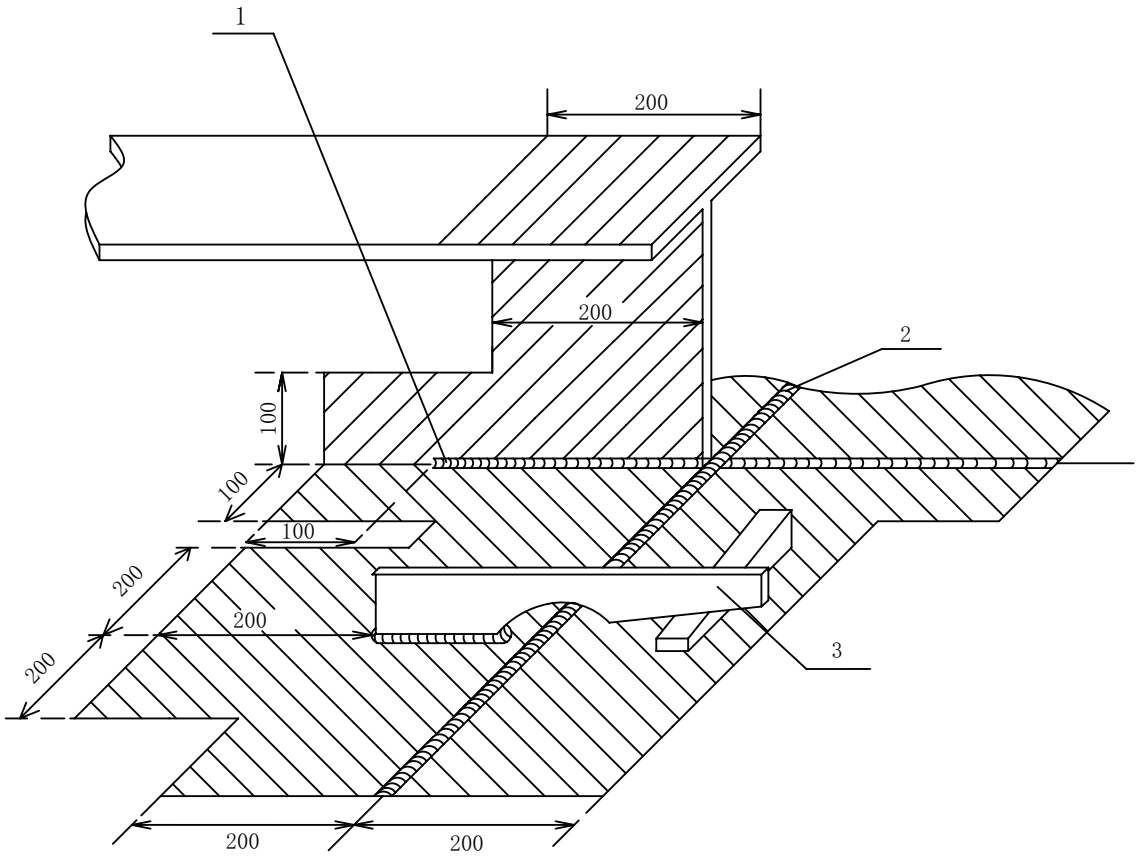
IMO	International Maritime Organization
PSPC	Performance Standard for Protective Coatings
FROSIO	Faglig Råd for Opplæring og Sertifisering av Inspektører innen Overflatebehandling (The Norwegian Professional Council for Education and Certification of Inspectors for Surface Treatment)
NACE	NACE International

5 Assessment of coating damages

5.1 The coating damages of the erection butt area shall be excluded in the assessment of coating damages as specified in MSC.215(82) and MSC.288(87).

5.2 Generally, the allowable range of the erection butt area (the hatching part) is given in Figure 1.

Dimensions in millimetres



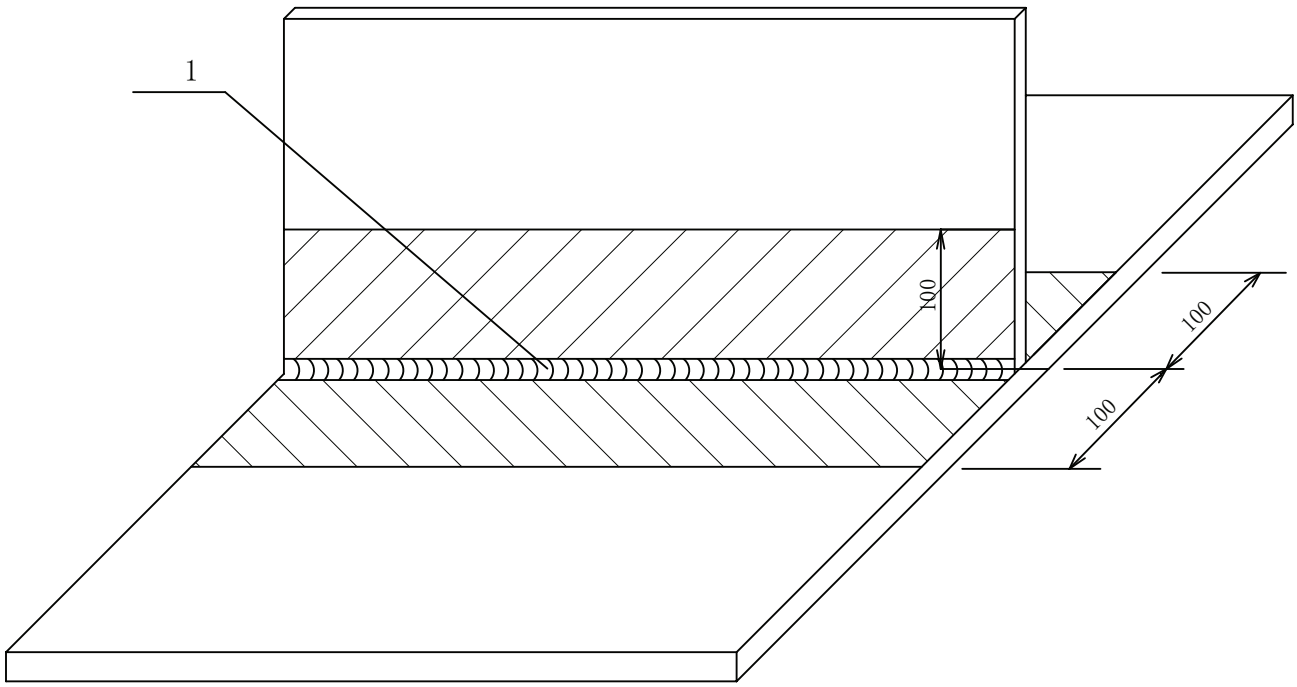
Key

1 reserved weld
2 erection butt
3 temporary fitting

Figure 1 — Erection butt range

5.3 Usually, the fillet welding on tank boundary watertight bulkhead (referred to as “watertight fillet”) is left without coating on block stage (because it has not yet been leakage tested), in which case it can be categorized as erection butt area as specified in IACS UI SC223. Generally, the allowable range of watertight fillet area (the hatching part) is given in Figure 2.

Dimensions in millimetres



Key

1 watertight fillet

Figure 2 — Watertight fillet range

5.4 The percentage of coating damages is generally assessed through the comparison with the figures given in Annex D, ISO 16145-1.

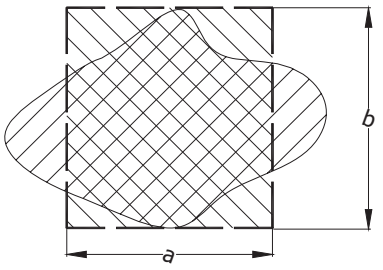
5.5 The percentage of coating damages can also be assessed through the graphic approximation with reference to Annex A.

5.6 The assessment of coating damages shall be confirmed by the coating inspector(s) certified at a minimum to NACE Coating Inspector Level 2, FROSIO Inspector Level lll, or equivalent as specified in IACS UI SC223, 6.1 interpretations and verified by the administration.

Annex A
(informative)

Approximate assessment of coating damages

A.1 The area of a single coating damage can be assessed by graphic approximation. For example, Figure A.1 shows a single coating damage whose area s is approximated to $a \times b$.



Key

actual coating damage

approximated graph

Figure A.1 — Approximate area of a single coating damage

A.2 Percentage of coating damages in the entire tank can be assessed as per Table A.1.

Table A.1 — Percentage of coating damages in the entire tank

Project Number				Tank Number		
Total area *S* of Tank						
Space ID	1	2	3	4	5	6
Location of coating damage						
Area of coating damage						
Space ID	7	8	9	10	11	12
Location of coating damage						
Area of coating damage						
Space ID	13	14	15	16	17	18…
Location of coating damage						
Area of coating damage						
Total area *s* of coating damages						
NOTE Percentage of coating damages in the entire tank coating (%) = total area *s* of coating damages/total area *S* of tank × 100 %						

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