 <b>PETROBRAS</b>	<b>TECHNICAL SPECIFICATION</b>		Nº: <b>I-ET-3010.00-1200-956-P4X-001</b>			
	CLIENT:					SHEET: <b>1 de 8</b>
	JOB:					
	AREA:					
<b>SRGE</b>	<b>TÍTULO: QUALIFICATION TEST FOR PAINT SYSTEMS</b>				<b>SRGE/ESUP</b>	
					<b>INTERNAL</b>	
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<b>INDEX OF REVISIONS</b>						
<b>REV.</b>	<b>DESCRIPTION AND/OR REVISED SHEETS</b>					
0	ORIGINAL					
A	GENERAL REVISION					
B	GENERAL REVISION ACCORDING TO THE REQUIREMENTS OF IOGP S-715					
C	WHERE INDICATED					
	REV. 0	REV. A	REV. B	REV. C	REV. D	REV. E
DATE	AUG/15/18	JUN/20/20	MAR/23/21	JUN/14/24		
EXECUTION	MMARROIG	MMARROIG	CJH4	CJH4		
CHECK	FABIANA	FABIANA	HR7W	CJX4		
APPROVAL	JUVENTINO	GONZALEZ	U32N	CJW2		
IN ACCORDANCE WITH DI-1PBR-00337, THE INFORMATION IN THIS DOCUMENT IS PROPERTY OF PETROBRAS, BEING PROHIBITED OUTSIDE OF THEIR PURPOSE.						
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TITLE:

QUALIFICATION TEST FOR PAINT SYSTEMS

SRGE/ESUP

INTERNAL

SUMMARY

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## OBJECTIVE

This specification establishes the minimum technical requirements for the preparation of surfaces and painting by VENDOR for offshore environments. This specification complements:

- a) Norsok M-501 rev 6,
- b) IOGP S-715 and its amendments (IOGP S-715L and IOGP S-715Q)

This specification is written as an overlay to IOGP S-715, version 1.0, July 2020, following the section structure of this standard, to assist in cross-referencing the requirements. The IOGP S-715 specification is based on Norsok M-501 rev6.

If a section or subsection of: Norsok M-501 rev6 or IOGP S-715 is not mentioned in this document, it means that no supplementary requirements and no modifications are considered in this respective section. Then, the respective section of IOGP S-715 or Norsok M-501 rev6 is mandatory. All modifications into Norsok M-501 rev6 or IOGP S-715 requirements are identified in this document with: Add (add to section or add new section), Replace (part of or entire section) or Delete.

In addition to the requirements of this technical specification, VENDOR shall follow all the requirements of the Exhibit I (Scope of Supply), as well as Exhibit III (Directives for Engineering Execution), Exhibit IV (Directives for Construction and Assembly), Exhibit V (Directives for Procurement), Exhibit VI (Directives for Planning and Control), Exhibit VII (Directives for Quality Management System) and Exhibit VIII (Directives for Commissioning Process).

The requirements herein listed are mandatory to VENDOR supplied equipment when mentioned this technical specification at specific project document. Otherwise, I-ET-3010.00-1200-956-P4X-002 shall be followed.

This technical specification may be used by VENDOR in case of equipment specified following IOGP specification, whether overlaid by a respective BUYER technical specification or not, even when not mentioned at project documentation. In this case, previous BUYER approval is required.

## SECTION I – COMPLEMENTARY REQUIREMENTS TO IOGP S-715 AND NORSOK M-501


### 1 SCOPE

Replace 2º paragraph.

This specification applies to shop applied coatings for new equipment and related structures and piping.

Add to section.

This specification is not applicable to internal coating of pressure vessels, piping and tanks. In that case, VENDOR shall follow I-ET-3010.00-1200-956-P4X-002.

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## 2 NORMATIVE REFERENCES

### Add to List

NORSOK M-501	Coating and Painting for Offshore, Marine Coastal and Subsea Environments
IOGP S-715 (July 2020)	Supplementary specification to NORSOK M-501 Coating and Painting for Offshore, Marine Coastal and Subsea Environments
IOGP S-715L (July 2020)	Information requirements for Coating and Painting for Offshore, Marine Coastal and Subsea Environments
IOGP S-715Q (July 2020)	Quality requirements for Coating and Painting for Offshore, Marine Coastal and Subsea Environments

### Delete to Section

IOGP S-715	Supplementary Specification to NORSOK M-501 Coating and Painting for Offshore, Marine Coastal and Subsea Environments
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### Add to Section

## 2.1 CLASSIFICATION SOCIETY

VENDOR shall perform the work in accordance with the requirements of the Classification Society.

VENDOR is responsible submit to the Classification Society the documentation in compliance with stated Rules.

## 2.2 GOVERNMENT REGULATION

NR 26	Sinalização de Segurança
NR-37	Saúde e Segurança em Plataformas de Petróleo

Brazilian Government regulations and Classification Society Rules are mandatory and shall prevail, if more stringent, over the requirements of this specification and other references herein. In case of conflict, SELLER shall submit an issue to BUYER´ s clarification.


## 2.3 REFERENCE DOCUMENTS

DR-ENGP-I-1.15	COLOR CODING
I-ET-3010.00-1200-956-P4X-002	GENERAL PAINTING
I-ET-3010.00-1200-940-P4X-002	GENERAL TECHNICAL TERMS
I-ET-3010.00-1200-970-P4X-003	REQUIREMENTS FOR PERSONNEL QUALIFICATION AND CERTIFICATION

## 3 TERMS AND DEFINITIONS

### Add to Section

Terms and definitions are also established in the latest revision of I-ET-3010.00-1200-940-P4X-002 - GENERAL TECHNICAL TERMS.

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## 4 GENERAL REQUIREMENTS

### 4.8 UNPAINTED SURFACES

Add to list.

- a) Non-insulated austenitic stainless steel with maximum operating temperature below 50°C
- b) Duplex stainless steel with maximum operating temperature below 80°C.
- c) Superduplex stainless steel with maximum operating temperature below 90°C.

Replace clause 4.13 heading with

### 4.13 ADDITIONAL REQUIREMENTS FOR STRUCTURES, OUTFITTING, EQUIPMENT, PIPING AND MATERIALS

Add to clause.

Carbon steel Supports (piping, electrical, instr., telecom) with operation temperature up to 80°C shall be hot deep galvanized and coated with CSDS 6B.

The HDG requirement may be waived in case of big/ small size outfitting (supports / structures).

- a) An element that does not fit a box of 5000x2000x2000mm does not have to be HDG.
- b) An element that fits a box of 50x100x100mm does not have to be HDG.
- c) An element made of plates with thickness >8mm does not have to be HDG.
- d) All angle bar perforated plate (e.g. oblong hole angle profile) shall be HDG.

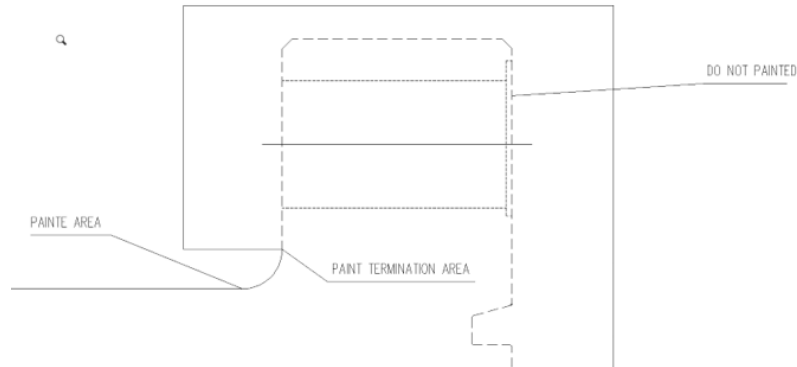
Delete section.

#### 4.13.7 MANUFACTURER STANDARD, OFF-THE-SHELF ITEMS

Add section.

#### 4.13.8 COATING OF PIPING AND EQUIPMENT

The coating of the flange shall be up to the sealing area (contact area), except for internally coated piping and CRA compact flanges. For CRA (substrates classified as austenitic stainless steels) of API 6A and ISO27509 flanges shall be coated as detailed in Figure 1

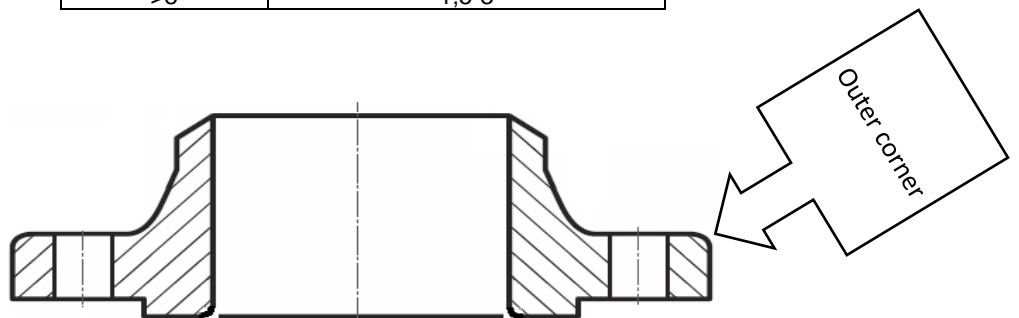


**Figure 1 – Coated and not coated area of compact flange.**

The outer flange corners of carbon steel flanges shall be rounded to the radius indicated in Table 1. Tolerance for corners radius is +2,0mm, -0,0 mm.

**Table 1 – Minimum radius required at flange outer corners.**

NPS	Radius, mm
½ to 6	1
>8	1,5-3



**Figure 2 -Details of substrate preparation of flange.**

Add section.

#### 4.13.10. COLOR OF PAINT SYSTEMS

Color specification for paint systems, required identification of equipment, pipelines, structures, etc., or for safety reasons, is according to DR-ENGP-I-1.15- COLOR CODING


Bright and light colors shall be selected for internal coatings of tanks and confined spaces in order to facilitate the visual identification of corrosion spots during inspections.

### 10 QUALIFICATION REQUIREMENTS

#### 10.2.2 QUALIFICATION OF PAINT OPERATORS

Replace first paragraph with

Personnel carrying out surface preparation and coating application shall be qualified as specified at I-ET-3010.00-1200-970-P4X-003 - REQUIREMENTS FOR PERSONNEL QUALIFICATION AND CERTIFICATION.

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### 10.2.5 QUALIFICATION OF SUPERVISORS, FOREMEN AND QC PERSONNEL

Replace first and second paragraph with

Personnel carrying out inspection or verification shall be qualified as specified I-ET-3010.00-1200-970-P4X-003 - REQUIREMENTS FOR PERSONNEL QUALIFICATION AND CERTIFICATION.

### 13 QUALITY MANAGEMENT AND PERFORMANCE ASSURANCE

Add new section.

#### 13.2. WARRANTY

The COATING WARRANTY shall be as stated at I-ET-3010.00-1200-956-P4X-002.



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Supplementary-Specs  
-to-NORSOK-M-501-

## SECTION III – IOGP S-715L: INFORMATION REQUIREMENTS FOR COATING AND PAINTING FOR OFFSHORE, MARINE COASTAL AND SUBSEA ENVIRONMENTS



Info-Reqs-for-Coatin  
g-and-Painting-S-715I

## SECTION V – IOGP S-715Q: QUALITY REQUIREMENTS FOR COATING AND PAINTING FOR OFFSHORE, MARINE COASTAL AND SUBSEA ENVIRONMENTS



Quality-Reqs-for-Coa  
ting-and-Painting-S-7