

Anticorrosive Coating of Industrial Equipment

Procedure

This Standard replaces and cancels its previous revision.

The CONTEC - Authoring Subcommittee provides guidance on the interpretation of this Standard when questions arise regarding its contents. The Department of PETROBRAS that uses this Standard is responsible for adopting and applying the sections, subsections and enumerates thereof.

Technical Requirement: A provision established as the most adequate and which shall be used strictly in accordance with this Standard. If a decision is taken not to follow the requirement ("non-conformity" to this Standard) it shall be based on well-founded economic and management reasons, and be approved and registered by the Department of PETROBRAS that uses this Standard. It is characterized by imperative nature.

Recommended Practice: A provision that may be adopted under the conditions of this Standard, but which admits (and draws attention to) the possibility of there being a more adequate alternative (not written in this Standard) to the particular application. The alternative adopted shall be approved and registered by the Department of PETROBRAS that uses this Standard. It is characterized by verbs of a nonmandatory nature. It is indicated by the expression: **[Recommended Practice]**.

Copies of the registered "non-conformities" to this Standard that may contribute to the improvement thereof shall be submitted to the CONTEC - Authoring Subcommittee.

Proposed revisions to this Standard shall be submitted to the CONTEC - Authoring Subcommittee, indicating the alphanumeric identification and revision of the Standard, the section, subsection and enumerate to be revised, the proposed text, and technical/economic justification for revision. The proposals are evaluated during the work for alteration of this Standard.

"This Standard is exclusive property of Petróleo Brasileiro S. A. - PETROBRAS, internal application and PETROBRAS Subsidiaries and shall be used by its suppliers of goods and services under contracts or similar under the conditions established in Bidding, Contract, Agreement or similar.

The use of this Standard by other companies / organizations / government agencies and individuals is the sole responsibility of the users.."

CONTEC

Comissão de Normalização
Técnica

SC - 14

Painting and Anticorrosive
Coatings

Introduction

PETROBRAS Technical Standards are prepared by Working Groups - WG (consisting specialized of Technical Collaborators from Company and its Subsidiaries), are commented by Company Units and its Subsidiaries, are approved by the Authoring Subcommittees - SCs (consisting of technicians from the same specialty, representing the various Company Units and its Subsidiaries), and ratified by the Executive Nucleus (consisting of representatives of the Company Units and its Subsidiaries). A PETROBRAS Technical Standard is subject to revision at any time by its Authoring Subcommittee and shall be reviewed every 5 years to be revalidated, revised or cancelled. PETROBRAS Technical Standards are prepared in accordance with PETROBRAS Technical Standard N-1. For complete information about PETROBRAS Technical Standards see PETROBRAS Technical Standards Catalog.

Foreword

This Standard is the English version (issued in 12/2016) of PETROBRAS N-2 REV. M 09/2015. In case of doubt, the Portuguese version, which is the valid document for all intents and purposes, shall be used.

1 Scope

1.1 The objective of this Standard is to establish the procedure for selection of the internal and external anticorrosive paint system of onshore and offshore industrial equipment.

NOTE 1 Anticorrosive paint systems for internal and external areas of tanks, spheres and storage cylinder shall be according PETROBRAS [N-2913](#).

NOTE 2 Maintenance painting of offshore installations shall be according PETROBRAS [N-1374](#).

1.2 This Standard is applied to procedures started after its date of issuance.

1.3 This Standard contains Technical Requirements and Recommended Practices.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document applies.

PETROBRAS [N-9](#) - Tratamento de Superfícies de Aço com Jato Abrasivo e Hidrojateamento;

PETROBRAS [N-13](#) - Requisitos Técnicos para Serviços de Pintura;

PETROBRAS [N-268](#) - Fabricação de Vaso De Pressão;

PETROBRAS [N-1374](#) - Revestimentos Anticorrosivos para Manutenção de Unidades Marítimas de Exploração de Produção;

PETROBRAS [N-1514](#) - Tinta Indicadora de Alta Temperatura;

PETROBRAS [N-2231](#) - Tinta de Etil - Silicato de Zinco - Alumínio;

PETROBRAS [N-2288](#) - Tinta de Fundo Epóxi Pigmentada com Alumínio;

PETROBRAS [N-2630](#) - Tinta Epoxi - Fosfato de Zinco de Alta Espessura;

PETROBRAS [N-2677](#) - Tinta de Poliuretano Acrílico;

PETROBRAS [N-2680](#) - Tinta Epóxi, sem Solventes, Tolerante A Superfícies Molhadas;

PETROBRAS [N-2912](#) - Tinta Epóxi Novolac;

PETROBRAS [N-2913](#) - Revestimentos Anticorrosivos para Tanque, Esfera e Cilindro de Armazenamento;

ABNT [NBR 14847](#) - Inspeção de Serviços de Pintura em Superfícies Metálicas;

ABNT [NBR 15158](#) - Limpeza de Superfície de Aço por Compostos Químicos;

ABNT [NBR 15185](#) - Inspeção de Superfícies para Pintura Industrial;

ABNT [NBR 15488](#) - Pintura Industrial - Superfície Metálica para Aplicação de Tinta - Determinação do Perfil de Rugosidade;

ABNT [NBR 16172](#) - Revestimentos Anticorrosivos - Determinação de Descontinuidades em Revestimentos Anticorrosivos Aplicados sobre Substratos Metálicos;

ISO [8501-1](#) - Preparation of Steel Substrates before Application of Paints and Related Products - Visual Assessment of Surface Cleanliness - Part 1: Rust Grades and Preparation Grades of Uncoated Steel Substrates and of Steel Substrates after Overall Removal of Previous Coatings;

ISO [8503-4](#) - Preparation of Steel Substrates before Application of Paints and Related Products - Surface Roughness Characteristics of Blast-Cleaned Steel Substrates - Part 4: Method for the Calibration of ISO Surface Profile Comparators and for the Determination of Surface Profile - Stylus Instrument Procedure;

ISO [8503-5](#) - Preparation of Steel Substrates before Application of Paints and Related Products Surface Roughness Characteristics of Blast-Cleaned Steel Substrates - Part 5: Replica Tape Method for the Determination of the Surface Profile;

ASTM [D 610](#) - Standard Test Method for Evaluating Degree of Rusting on Painted Steel Surfaces;

NACE [WJ-2/SSPC-SP WJ 2](#) - Joint Surface Preparation Standard Waterjet Cleaning of Metals-Very Thorough Cleaning (WJ-2);

SSPC [SP 11](#) - Power Tool Cleaning to Bare Metal;

SSPC [VIS-4/NACE VIS 7](#) - Guide and Reference Photographs for Steel Surfaces Prepared by Waterjetting.

NOTE For documents referred in this Standard and for which only the Portuguese version is available, the PETROBRAS department that uses this Standard should be consulted for any information required for the specific application.

3 Application

For the purposes of application of this Standard, the following equipment items are considered:

- a) loading arms;
- b) boilers;
- c) stacks;
- d) desalters;
- e) incinerators;
- f) fired heaters;
- g) heat exchangers and others pressure vessels as defined in PETROBRAS [N-268](#);
- h) reactors;
- i) regenerators;
- j) flares;
- k) process towers

NOTE For internal and external anticorrosive coatings of spheres and storage cylinders, PETROBRAS [N-2913](#) shall be followed.

4 General Conditions

4.1 The paint systems standardized herein are established considering the specific conditions to which they are subject, whether or not there is thermal insulation, and the operating temperature.