



Coating Technical File in Accordance with the IMO Performance Standard for Protective Coatings

This NACE International standard represents a consensus of those individual members who have reviewed this document, its scope, and provisions. Its acceptance does not in any respect preclude anyone, whether he or she has adopted the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not in conformance with this standard. Nothing contained in this NACE International standard is to be construed as granting any right, by implication or otherwise, to manufacture, sell, or use in connection with any method, apparatus, or product covered by Letters Patent, or as indemnifying or protecting anyone against liability for infringement of Letters Patent. This standard represents minimum requirements and should in no way be interpreted as a restriction on the use of better procedures or materials. Neither is this standard intended to apply in all cases relating to the subject. Unpredictable circumstances may negate the usefulness of this standard in specific instances. NACE International assumes no responsibility for the interpretation or use of this standard by other parties and accepts responsibility for only those official NACE International interpretations issued by NACE International in accordance with its governing procedures and policies which preclude the issuance of interpretations by individual volunteers.

Users of this NACE International standard are responsible for reviewing appropriate health, safety, environmental, and regulatory documents and for determining their applicability in relation to this standard prior to its use. This NACE International standard may not necessarily address all potential health and safety problems or environmental hazards associated with the use of materials, equipment, and/or operations detailed or referred to within this standard. Users of this NACE International standard are also responsible for establishing appropriate health, safety, and environmental protection practices, in consultation with appropriate regulatory authorities if necessary, to achieve compliance with any existing applicable regulatory requirements prior to the use of this standard.

CAUTIONARY NOTICE: NACE International standards are subject to periodic review, and may be revised or withdrawn at any time in accordance with NACE technical committee procedures. NACE International requires that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of initial publication and subsequently from the date of each reaffirmation or revision. The user is cautioned to obtain the latest edition. Purchasers of NACE standards may receive current information on all standards and other NACE publications by contacting the NACE FirstService Department, 15835 Park Ten Place, Houston, TX 77084-5145 (tel: +1 281-228-6200, email: firstservice@nace.org).

ABSTRACT

The coating technical file (CTF) contains documentation relevant to the selection, specification, installation, and inspection of coatings applied to a ship's seawater ballast tanks and double-skin spaces. It also contains documentation of in-service maintenance and repair of coating system(s). These requirements originate in the International Maritime Organization (IMO)'s⁽¹⁾ "Performance Standard for Protective Coatings for Dedicated Seawater Ballast Tanks in All Types of Ships and Double-Side Skin Spaces of Bulk Carriers" (PSPC),¹ Paragraph 3.4, Coating Technical File (CTF).

KEYWORDS

Marine, Ballast, IMO, MEPC 59/2/16, BWTS, Coating, Ships, Technical File, CTF, MSC.215(82), PSPC, TG 402, STG 44.

⁽¹⁾ International Maritime Organization (IMO), 4 Albert Embankment, London SE1 7SR, United Kingdom.

Foreword

The coating technical file (CTF) contains documentation relevant to the selection, specification, installation, and inspection of coatings applied to a ship's seawater ballast tanks and double-skin spaces. It also contains documentation of in-service maintenance and repair of coating system(s). These requirements originate in the International Maritime Organization (IMO)'s⁽¹⁾ "Performance Standard for Protective Coatings for Dedicated Seawater Ballast Tanks in All Types of Ships and Double-Side Skin Spaces of Bulk Carriers" (PSPC),¹ Paragraph 3.4, Coating Technical File (CTF).

This standard is intended for use by parties responsible for the construction of ships in compliance with IMO Resolution MSC.215(82).²

The benefits of the extensive documentation process requirements are twofold. The first is to ensure the coating system(s) is properly installed; the documentation serves as a quality control (QC)/quality assurance (QA) process. The second is to provide important historical data on the new-build's coating system(s) installation for future reference and provide a documentation system for ongoing maintenance and repair of coating system(s). The coating system(s) historical information is best collected and presented with an efficient information access system during the lifetime of the ship.

This standard was prepared by NACE Task Group 402, "PSPC Coating Technical File Standard Practice," which is administered by Specific Technology Group (STG) 44, "Marine Corrosion: Ships and Structures." It is cosponsored by STG 02, "Coatings and Linings, Protective—Atmospheric," STG 03, "Coatings and Linings, Protective—Immersion and Buried Service," and STG 04, "Coatings and Linings, Protective—Surface Preparation." This standard is published by NACE under the auspices of STG 44.

In NACE standards, the terms **shall**, **must**, **should**, and **may** are used in accordance with the definitions of these terms in the NACE Publications Style Manual. The terms **shall** and **must** are used to state a requirement, and are considered mandatory. The term **should** is used to state something good and is recommended, but is not considered mandatory. The term **may** is used to state something considered optional.

⁽¹⁾ International Maritime Organization (IMO), 4 Albert Embankment, London SE1 7SR, United Kingdom.

NACE International Standard Practice (SP0111-2019)

Coating Technical File in Accordance with the IMO Performance Standard for Protective Coatings

1. General	4
2. Definitions	5
3. Coating Technical File Formats.....	5
References.....	12

FIGURES

Figure 1: Coating Technical File Requirements	7
Figure 2: Work and Inspection Records Comparison	10
Figure 3: Work and Inspection Records.....	11
Figure 4: In-Service Maintenance Coating Technical File Requirements.....	12

Section 1: General

- 1.1** This standard describes a “best practices” approach to satisfying the CTF requirements of the IMO PSPC for seawater ballast tanks and double-side skin spaces. The guidelines provided are for use with implementation of hard-copy data collection systems as well as flat file electronic and relational database systems.
- 1.1.1** Best practices can also be defined as the most efficient (least amount of effort) and effective (best results) way of accomplishing a task, based on repeatable procedures that have proved themselves over time for large numbers of people. A given best practice is only applicable to a particular condition or circumstance and may have to be modified or adapted for similar circumstances. In addition, a “best” practice can evolve to become better as improvements are discovered.
- 1.2** The primary goal of this standard is to provide an efficient and accurate methodology for the collection, management, and presentation of the data required by the PSPC and to facilitate the ongoing corrosion management of seawater ballast tanks and double-side skin spaces to reach the intended 15-year service life of installed coating systems.
- 1.2.1** The preconstruction phase documents, including selection of the coating system, inspection procedures, coating process, coating inspector qualification, and repair procedures for the coating during construction (areas that may become damaged during construction efforts or nonconforming installed coatings), establish an engineered path for the installation of the coatings on seawater ballast tanks or double-side skin spaces. This first step ends with the tripartite agreement, which shall be agreed on and signed by the shipyard or builder, coating manufacturer, and ship owner.
- 1.2.2** The second step is to ensure that the coatings are installed as specified. This shall be accomplished through extensive inspection and verification that the coating system is installed as specified in the tripartite agreement. This portion of the process could potentially generate thousands of sheets of documentation in support of the work effort and subsequent inspections. The requirements as noted in PSPC Paragraphs 3.4.2.3 and 3.4.2.5 overlap significantly in the data point collection. This duplication of effort can be identified as a quality control (QC)/quality assurance (QA) set of processes.
- 1.3** The CTF supplied to the ship should be in a standardized language format; English is currently the language used for the balance of IMO documentation. Therefore, the logical decision is to deliver the CTF to be kept shipboard in English. However, to remain practicable during the execution of the work, the majority of work and inspection records pertaining to the installation of the cited coatings should be collected in the native language. The required reports shall be translated into English for inclusion in the CTF.
- 1.4** Whereas completely electronic data acquisition and management systems have the ability to collect, manage, and present all the project data and require minimal space to store, this technology solution may not be employed by all shipyards, or effectively utilized by ships’ personnel. Therefore, this standard addresses methods from hard-copy, hand-written forms through relational database-type systems.
- 1.5** The amount of data gathered during the application of ballast tank coatings when a ship is constructed as required by the IMO PSPC is significant. The requirements as noted in PSPC Paragraphs 3.4.2.3 and 3.4.2.5 overlap significantly in the data point collection. This standard strives to prioritize the value of the collected data for process verification during construction and management and presentation of said data for effective engineering use during the lifetime of the ship.
- 1.5.1** The familiarity and accuracy of data collection is significant with regard to performance of inspections. The goal of this process is to ensure the coatings are properly installed with appropriate documentation. A practical solution is to require the CTF deliverable to be summary sheets of the coating work and inspection results by tank/space identifier. The summary sheets provide the pertinent information and note traceability to the original documents, which are not necessarily a physical part of the onboard CTF.
- 1.5.2** Some data are useful on board and serve to validate compliance, and some are collected specific data points and measured values that are not useful to the ship or to validating organizations. Hence, the data are separated into two parts: data included in the CTF and available on board for validation, and data that are boxed up as drawings and stored (possibly off the ship) and presented only when and if needed.