

# Liquid-Applied Internal Protective Coatings for Oilfield Production Equipment

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 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**CAUTIONARY NOTICE:** NACE International standards are subject to periodic review and may be revised or withdrawn at any time without prior notice. 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. The user is cautioned to obtain the latest edition. Purchasers of NACE International standards may receive current information on all standards and other NACE International publications by contacting the NACE International FirstService Department, 15835 Park Ten Place, Houston, Texas 77084, telephone +1 (281) 228-6223.

## ABSTRACT

*This standard presents procedures for applying liquid coatings to the interior of various types of oilfield production equipment used primarily for the processing and storage of corrosive fluids in oilfield operations. It also details various factors required to obtain a satisfactory coating, including production equipment design and fabrication considerations, surface preparation, coating application, and inspection. This standard is maintained by Task Group 506.*

## KEYWORDS

*Nonmetallics, internal coatings*

# Foreword

This standard practice provides guidelines for obtaining an effective internal coating or corrosion barrier to protect against general or pitting corrosion of production equipment commonly used in oilfield operations at atmospheric and elevated pressures. This standard is not applicable to the internal or external coating of tubing, casing, line pipe, or other tubular goods. This standard is intended for end users, applicators, and manufacturers.

This standard details various factors required to obtain a satisfactory coating, including production equipment design and fabrication considerations, surface preparation, coating application, and inspection.

Determination of the need for coating, selection of portions of the production equipment to be coated, and selection of a coating are outside the scope of this standard. These decisions must be based on the user's experience, knowledge of the system conditions, project economics, and environmental and safety considerations. Because numerous excellent coatings are available, no attempt was made to list all of the coatings suitable for this service.

This standard was originally prepared in 1981 by Task Group T-1G-20, a component of former Unit Committee T-1G on Protective Coatings and Nonmetallic Materials for Oilfield Use, to replace former NACE Standard RP0372. It was revised in 1994 by T-1G-20, and in 2006 by Task Group (TG) 087, "STG 33 Standards and Technical Committee Reports: Revision, Reaffirmation, or Withdrawal." It was revised in 2019 by TG 506, "Review of NACE SP0181-2006 (formerly RP0181)." TG 506 is administered by Specific Technology Group (STG) 33, "Oil and Gas Production—Nonmetallics and Wear Coatings (Metallic)," and sponsored by STG 03, "Coatings and Linings, Protective: Immersion and Burned Service." This standard is issued by NACE under the auspices of STG 33.

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.

# Liquid-Applied Internal Protective Coatings for Oilfield Production Equipment

1.	General .....	4
2.	Definitions .....	4
3.	Production Equipment Design and Fabrication.....	4
4.	Coating Types .....	5
5.	Surface Preparation .....	6
6.	Application.....	8
7.	Inspection.....	9
8.	Cathodic Protection (CP) .....	10
9.	Laboratory and Field Testing.....	10
10.	Monitoring, Records, and Maintenance .....	11
11.	Safety Guidelines .....	11
	References.....	12
	Appendix A: Placing Caulking, Putty, or Filler—Mandatory.....	13
	Appendix B: Special Surface Preparation for Bund Tanks—Mandatory.....	14
	Appendix C: Inspection Report on Production Equipment—Mandatory .....	15
	Appendix D: Reinspection Report: Internal Coating on Production Equipment (After Period of Service)—Mandatory .....	17