NACE Standard RP0191-2002
Item No. 21048

Standard
Recommended Practice

The Application of Internal Plastic Coatings for Oilfield Tubular Goods and Accessories

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CAUTIONARY NOTICE: NACE International standards are subject to periodic review, and may be revised or withdrawn at any time without prior notice.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 Membership Services Department, 1440 South Creek Drive, Houston, Texas 77084-4906 (telephone +1 [281] 228-6200).

Reaffirmed September 2002
Reaffirmed September 1996
Approved February 1991
NACE International
1440 South Creek Drive
Houston, Texas 77084-4906
+1 (281) 228-6200

ISBN 1-57590-153-6

Foreword

This standard recommended practice was prepared to serve as an industry guideline for the proper application of internal plastic coatings (IPC) on oilfield tubular goods and accessories. This standard is intended for end users, applicators, and manufacturers.

Premature failures of coatings on oilfield tubular goods and accessories often occur when the surface has not been properly prepared or the coating has not been properly applied. This standard presents proper procedures to be followed to ensure appropriate application of the coating to give the anticipated extended life to oilfield tubular goods and accessories.

This standard was originally prepared in 1991 by NACE Task Group T-1G-4, a component of Unit Committee T-1G on Protective Coatings, Elastomers, and Other Nonmetallic Materials for Oilfield Use. This standard was reviewed by T-1G and reaffirmed in 1996. It was reaffirmed in 2002 by Specific Technology Group (STG) 33 on Oil and Gas Production—Nonmetallics and Wear Coatings (Metallics). This STG is comprised of representatives from the oil and gas industry including consumers, producers, and interested individuals. This standard is issued by NACE International 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*, 4th ed., Paragraph 7.4.1.9. *Shall* and *must* are used to state mandatory requirements. *Should* is used that which is considered good and is recommended but is not absolutely mandatory. *May* is used to state that which is considered optional.

NACE International
Standard
Recommended Practice

The Application of Internal Plastic Coatings for Oilfield Tubular Goods and Accessories

Contents

Section 1: General

1.1 This standard presents guidelines for the proper application of coatings to the internal surfaces of oilfield tubular goods and accessories.

1.2 The function of the internal coating system is to provide a protective barrier between the metal surface and the environment.

1.3 By preventing or minimizing corrosive attack with protective coatings, the service life of the tubular goods and accessories is extended. Proper coating application prevents premature failure.

1.4 This standard addresses initial visual inspection of the tubular goods and accessories prior to coating, surface preparation, coating application, coating inspection, coupling/connection make-up, quality control, handling, storage, shipping, and marking or identification.

Section 2: Definitions

Applicator: An individual or company who performs the coating application.

End user (user): An individual or company, or its authorized representative(s), who will make use of the internally plastic-coated (IPC) tubular goods and accessories.

IPC material: Internally plastic-coated tubular goods (tubing, casing, line pipe, drill pipe) and accessories (couplings, fittings, valves, mandrels, etc.)

Manufacturer: An individual or company that manufactures the coating.

Plastic coating: A polymeric film applied to oilfield tubular goods (tubing, casing, line pipe, drill pipe) and oilfield accessories (e.g., couplings, fittings, valves, packers, etc.) to form a protective barrier between the metal surface and the environment to minimize corrosion attack, contamination, and/or deposit formation.

Thick-film coating: A coating that has a final dry film thickness of 250 to 760 µm (10 to 30 mils).

Thin-film coating: A coating that has a final dry film thickness of less than 250 µm (10 mils).

Section 3: Preliminary Requirements

3.1 The applicator shall furnish all labor, coating, and equipment to coat tubular goods and accessories internally in accordance with this standard.

3.2 In cases in which this standard is in conflict with the coating applicator's specifications, the applicator must review conflicts with the user prior to the job start-up.

3.3 The user reserves the right to inspect all IPC material and activities at any time and to reject any work that does not meet the requirements of this standard.

3.4 The applicator shall notify the user a minimum of 72 hours prior to the start-up of coating operations, unless otherwise agreed between the user and applicator.

3.5 It is the responsibility of the user to ensure that all tubular goods and accessories supplied by the user meet applicable API,[1] ANSI,[2] ASTM,[3] and NACE standards.

3.6 The applicator shall provide the user with specifications addressing the application procedures for the coating being applied.

3.7 Holiday inspection of tubular goods shall be conducted on all specified coated surfaces in accordance with one of the following levels:

Level I:	The tube body
Level II:	The tube body and pin-end chamfer
Level III:	The tube body, pin-end chamfer, and couplings

3.8 Holiday inspection of accessories shall be conducted on all coated surfaces exposed to the fluids.

3.9 When tubular goods or accessories are specified as holiday-free, holidays are not allowed on coated surfaces

[1] American Petroleum Institute (API), 1220 L Street., Washington, DC 20005.
[2] American National Standards Institute (ANSI), 1819 L Street, NW, Washington, DC 20036
[3] ASTM International (ASTM), 100 Barr Harbor Dr., West Conshohocken, PA 19428-2959.