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Care, Handling, and Installation of Internally Plastic-Coated Oilfield Tubular Goods and Accessories

ABSTRACT

This standard recommended practice covers the care, handling, transportation, and installation of internally plastic-coated (IPC) oilfield tubular goods and accessories (IPC material). It presents guidelines for the proper care, handling, and installation of IPC oilfield tubular goods and accessories. This standard is maintained by Task Group 486.

KEYWORDS

Oilfield, composites, maintenance

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Foreword

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.

This standard practice covers the care, handling, transportation, and installation of internally plastic-coated (IPC) oilfield tubular goods and accessories (IPC material). Some internal plastic coatings are inherently brittle or may be incompatible with various chemicals used in oil and gas production operations and therefore are susceptible to damage from poor handling procedures, well operations, and chemical attack. Coating damage (e.g., cracks, chips, and disbondment) reduces coating effectiveness and results in premature coating failure. To minimize coating damage and prolong coating life, special handling and operating procedures must be used with IPC material during all phases of storage, transport, installation, and operation. Following the guidelines presented in this standard helps users, oil and gas producers, transportation companies, workover companies, and well-servicing companies and personnel to ensure the most cost-effective use of IPC material.

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. It was reaffirmed in 1996 by T-1G, and revised in 2005 by Task Group (TG) 087, "Reaffirmation, Revision, or Withdrawal of STG 33 Standards and Technical Committee Reports." It was revised in 2015 by TG 486, "Review of NACE Standard RP0291-2005." TG 486 is administered by Specific Technology Group (STG) 33, "Oil and Gas Production—Nonmetallics and Wear Coatings (Metallic)," and sponsored by STG 03, "Protective Coatings and Linings—Immersion/Buried." This standard is published by NACE International under the auspices of STG 33.

NACE International Standard Practice (SP0291-2017)

Care, Handling, and Installation of Internally Plastic-Coated Oilfield Tubular Goods and Accessories

Section 1: General

1.1 This standard presents guidelines for the proper care, handling, and installation of IPC oilfield tubular goods and accessories.

1.2 The function of the internal coating system is to form a protective barrier between the metal surface and the environment to prolong the useful life of the tubular goods and accessories.

1.3 If the coating is damaged during storage, handling, transportation, or installation, the protective barrier may be broken. This reduces coating performance and may result in premature failure of the coating system and the steel substrate.

1.4 This standard addresses specific areas of concern to help prevent or minimize damage to IPC material. Topics covered are basic parameters for bending during handling, requirements for proper yard storage, requirements for various modes of transportation, the storage of internally coated tubular goods on-site, tubular and accessory installation requirements, in service guidelines for intervention, special CRA requirements, and spot quality testing.

1.5 The care and handling procedures discussed here-in are limited to specific topics discussed and are limited to the parameters discussed below.

Section 2: Definitions

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

Corrosion-Resistant Alloy (CRA): Alloy material containing chrome, nickel, and other corrosion-resistant alloying elements. See Part 3 of NACE MR0175/ISO[(1)] 15156.[1]

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

Plastic coating: A polymeric material applied to oilfield tubular goods (tubing, casing, drill pipe, etc.) and oilfield accessories (fittings, valves, packers, etc.) that forms a protective barrier between the metal and the environment to minimize corrosion attack, contamination, and/or deposit formation.

Transporter: An individual or company who transports the IPC material from one location to another.

User: An individual, company, or authorized representative who makes use of the IPC material.

Section 3: Preliminary Requirements

3.1 IPC material shall be handled by the applicator, transporter, and user in a manner to prevent damage to the coating, metal, and threads.

3.2 The applicator shall apply API[(2)]-modified thread compound to all exposed threads on IPC material unless an alternate thread compound is specified by the user. User-approved, closed-end plastic or steel-reinforced plastic (composite) thread/end protectors shall be installed by the applicator on IPC material and shall remain in place during all phases of handling, storage, and transport.

[(1)] International Organization for Standardization (ISO), Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland.
[(2)] American Petroleum Institute (API), 1220 L St. NW, Washington, DC 20005.