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Field-Applied, Heat-Shrinkable-Sleeve Coating System for Pipelines: Application, Performance, and Quality Control

ABSTRACT

Revised in 2020, this NACE International standard practice provides current technology and industry practices for the use of field-applied heat-shrinkable-sleeve coating systems. The standard is intended for use by corrosion control personnel, design engineers, project managers, purchasers, and construction engineers and managers. It is applicable to underground steel pipelines in the oil and gas gathering, distribution, and transmission industries.

The standard practice presents guidelines for establishing minimum requirements to ensure proper application and performance of field-applied, heat-shrinkable sleeves to the external surfaces of coated pipe. Included are methods for (1) qualifying and controlling the quality of a heat-shrinkable sleeve, (2) guidelines for proper application, and (3) inspection and repair techniques to ensure its long-term performance. The standard is applicable to coating systems used to prevent corrosion in conjunction with cathodic protection, and heat-shrinkable wraparound- or tubular-type sleeve coating systems, underground steel pipelines.

KEYWORDS

Alyeska shear test, cathodic protection, dry film thickness, external corrosion, field-applied, heat-shrinkable-sleeve coating systems (HSS-CS), hot-melt adhesive layer, Lap shear, mastic-based adhesive layer, oil and gas distribution, polyolefin, SP0169, STG 03, submerged steel pipelines, surface preparation, TG 248, tubular-type heat-shrinkable-sleeve, weld-after-backfill, wraparound-type heat-shrinkable-sleeve

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Foreword

This NACE standard practice provides the most current technology and industry practices for the use of two types of field-applied, heat-shrinkable-sleeve coating systems (HSS-CS); one, where the polyolefin backing is coated with a mastic-based adhesive layer, and the other has the polyolefin backing coated with a hot-melt-based adhesive layer. This standard is intended for use by corrosion control personnel, design engineers, project managers, suppliers, purchasers, and construction engineers and managers. It is applicable to underground or submerged steel pipelines in the oil, gas, and water gathering, distribution, and transmission industries.

This standard practice was originally prepared in 2003 and revised in 2020 by Task Group (TG) 248, "Coatings, Heat-Shrink Sleeves for External Repair, Rehabilitations, and Weld Joints on Pipelines." TG 248 is administered by Specific Technology Group (STG) 03, "Coatings and Linings, Protective—Immersion and Buried Service." It is also sponsored by STG 04, "Coatings and Linings, Protective—Surface Preparation," and STG 35, "Pipelines, Tanks, and Well Casings." This standard is issued by NACE under the auspices of STG 03.

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.

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