



شرکت ملی گاز ایران

مدیریت پژوهش و فناوری

امور تدوین استانداردها

IGS

مشخصات فنی خرید

سیستم غلاف انقباضی حرارتی برای دمای تا ۵۰ درجه سانتیگراد

Heat Shrinkable Sleeve system (Mastic Adhesive) for
Service Temperature up to 50 C.



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شرکت ملی گاز ایران



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باسلام،



به استحضار می‌رساند در جلسه ۱۶۸۶ مورخ ۱۳۹۵/۳/۲۳ هیأت مدیره، نامه شماره ۳۵۹۸۸/۰۰۰/۹۵ مورخ ۹۵/۰۲/۱۹ مدیر پژوهش و فناوری در مورد تصویب نهایی استانداردها به شرح زیر مطرح و مورد تصویب قرار گرفت:



۱. دستورالعمل سیستم غلاف انقباضی حرارتی برای دمای تا ۵۰ درجه سانتیگراد

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۲. دستورالعمل سیستم غلاف انقباضی حرارتی برای دمای تا ۶۰ درجه سانتیگراد

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۳. دستورالعمل سیستم غلاف انقباضی حرارتی برای دمای تا ۸۰ درجه سانتیگراد

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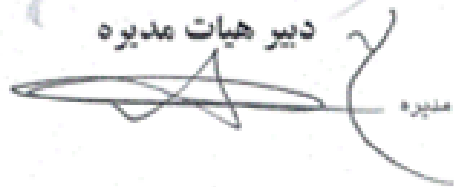


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FOREWORD

This standard is intended to be mainly used by NIGC and contractors and has been prepared on interpretation recognized standards , technical documents , knowledge , backgrounds and experiences in gas industries at national and international levels .

Iranian gas standards (IGS) are prepared , reviewed and amended by technical standard committees within NIGC Standardization division and submitted to the NIGC's "STANDARDS COUNCIL" for approval .

IGS Standards are subject to revision , amendment or withdrawal , if required , thus the latest edition of IGS shall be checked/inquired by NIGC users .

This standard must not be modified or altered by the end users within NIGC and her contractors . Any deviation from normative references and/or well known manufacturers specifications must be reported to Standardization division .

Any comments from concerned parties on NIGC distributed IGS are welcome to technical standards committees and will receive serious attention and consideration should a revision to standards is recommended .

GENERAL DEFINITIONS :

Throughout this standard the following definitions , where applicable , should be followed :

1- "STANDARDIZATION DIV." has been organized to deal with all aspects of industrial standards in NIGC . Therefore , all queries for clarification or amendments are requested to be directed to mentioned div.

2- "COMPANY" : refers to national Iranian gas company .

3- "SUPPLIER" : refers to a firm who will supply the service , equipment or material to igs specification whether as the prime producer or manufacturer or a trading firm .

4- "SHALL " : is used where a provision is mandatory .

5- "SHOULD" : is used where a provision is advised only .

6- "MAY" : is used where a provision is completely discretionary .

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1. SCOPE

This standard specification covers the minimum requirements of mastic type heat shrinkable sleeve used for external corrosion protection on the field girth weld areas of linepipes that has been mainly factory coated with three layer extruded polyethylene coating system .

Notes :

1 : The mastic type heat shrinkable sleeve shall be used for the pipeline projects with :

- Maximum operating temperature of up to 50 °C .
- The O.D up to 20 inches .

2 : The materials for field repair of main coating (melt stick , filler mastic and repair patch) are covered in Annex A .

3 : For use on other types of pipe coating systems compatibility shall be verified accordance to relevant engineering codes and standards .

2. REFERENCES

Throughout this standard specification , the following standards and codes are referred to , the edition of them , that are in effect at the time of issue of this standard specification (2008) shall , to the extent specified herein , form part of this standard specification . The applicability of changes in standards and codes that occur after the date of standards that referred , shall be mutually agreed upon by the purchaser and manufacturer or supplier .

2.1 Normative References

BS EN 12068 (1999) "Cathodic protection-External organic coatings for the corrosion protection of buried or immersed steel pipelines used in conjunction with cathodic protection-Tapes and shrinkable materials"

ASTM D 570 (1998) " Test method for water absorption of plastics"

ASTM D 638 (2002) "Test method for tensile properties of plastics"

ASTM D 870 (2002) "Practice for testing water resistance of coatings using water immersion"

ASTM D 1000 (1999) "Test method for pressure-sensitive adhesive-coated tapes used for electrical and electronic applications"

ASTM D 1044 (1999) "Test method for resistance of transparent plastics to surface abrasion"

ASTM D 2240 (2002) "Test method for rubber property-durometer hardness"

ASTM D 2671 (2000) "Test method for heat shrinkable tubing for electrical use"

ASTM E 28 (2002) "Test method for softening point of resins derived from naval stores by Ring-and-Ball apparatus"

ISO 1183 (1999) "Plastics-Methods for determining the density of non-cellular plastics-Part 3: Gas pykno meter method supersedes method A and B of BS 2782-6: Method 6 "

ISO 21809-3 (2006) "Materials equipment and offshore structures for petroleum, petrochemical and natural gas industries "

2.2. Informative References

NACE RP0303 (2003) "Field-applied heat-shrinkable sleeves for pipelines : Application , and quality control"

3. TERMS AND DEFINITIONS

Heat shrinkable sleeve

Coating that will reduce in dimensions from an expanded size to a predetermined size by the application of heat .

Mastic adhesive

A family of adhesive based on butyl-rubber , poly isobutylene , synthetic rubber and asphalt , with amorphous structure .

Coating repair material

Pre-manufactured patches fillers , etc. , compatible with and made from similar materials as the heat shrinkable sleeve .

Coating system

The complete number and types of coats applied to a substrate in a predetermined order .

Filler Material

Compatible material used under a heat shrinkable sleeve or repair patch to fill voids if any .

Factory coating (mill coating)

Coating applied to pipe length in a factory or yard before delivery .

4. GENERAL CHARACTERISTICS

The mastic type heat shrinkable sleeve shall consist of a mastic type adhesive coated wraparound sleeve .

The backing layer of the heat shrinkable sleeve shall be UV resistant irradiation (electron beam) cross linked high density poly ethylene .

The thickness of the system shall be measured at four positions around the circumference of the pipe , with 4 measurements taken at each position , and shall be an average of 2.5 mm .

The polyethylene backing of the heat shrinkable sleeve shall be supplied with a quality assurance indicator system that changes when heated to a sufficient temperature during installation .

This type of heat shrinkable coating system shall compose of a heat shrinkable sleeve and a closure patch .

The mastic type heat shrinkable sleeve shall meet the requirements of Table 1 .