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شرکت ملی گاز ایران
مدیریت پژوهش و فناوری
امور تدوین استانداردها

IGS

مشخصات فنی خرید

اتصال عایقی

Isulating Joint



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شرکت ملی گاز ایران



دفتر مدیرعامل



ابلاغ مصوبه هیأت مدیره



مدیر محترم پژوهش و فناوری



باسلام،

به استحضار می‌رساند در جلسه ۲۰۰۳ مورخ ۱۴۰۱/۱۲/۱۴ هیأت مدیره، نامه شماره گ/۰۰۰/۲۰۶۶۳۸ مورخ ۱۴۰۱/۱۲/۰۷ مدیر پژوهش و فناوری درمورد تصویب نهایی مقررات فنی شرکت ملی گاز ایران به شرح زیر مطرح و مورد تصویب قرار گرفت.



۱- مشخصات فنی خرید اتصال عایقی

IGS-M-PL-006(5)



سید محمد پیشوایی
دبیر هیأت مدیره



رونوشت: مدیرعامل محترم شرکت ملی گاز ایران و رئیس هیأت مدیره

اعضای محترم هیأت مدیره

مشاور و رئیس دفتر محترم مدیرعامل

رئیس محترم امور حقوقی

رئیس محترم حسابرسی داخلی

رئیس محترم امور مجامع



Foreword

This standard specification is intended to be mainly used by N.I.G.C. and contractors, and has been prepared base on interpretation of recognized standards and technical documents, as well as knowledge, backgrounds and experiences in gas industries at national and international levels.

Iranian Gas Specification (IGS) are prepared, reviewed and amended by technical standard committees within NIGC standardization division of research and technology management and submitted to "the standards council of NIGC" for approval.

IGSs are subjected to revision, amendment or withdrawal, if required, and thus the latest edition of IGS shall be checked / inquired by NIGC'S users.

This standard must not be modified or altered by NIGC employees or its contractors. Any deviation or conflicts between this specification and other applicable standards, codes, procedure or well-known manufacturer's specifications must be resolved in writing by the user or its representative through Manager, Engineering Department or standardization division of NIGC.

The technical standard committee welcomes comments and feedbacks from concerned or interested corporate and individuals about this standard, and may revise this document accordingly based on the received feedbacks.

General Definitions

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

- 1- "STANDARDIZATION DIV." is organized to deal with all aspects of industry standards in NIGC. Therefore, all enquiries for clarification or amendments are requested to be directed to mentioned division.
- 2- "COMPANY": refers to National Iranian Gas Company (NIGC).
- 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.

Website: <http://igs.nigc.ir>

E-mail: igs@nigc.ir

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1. SCOPE

This specification covers minimum NIGC's requirements of design, material selection, fabrication, inspection and testing for butt weld end, monolithic insulating joints (IJ) used for electrical insulation between sections of non-sour natural gas pipelines with pressure class rating 150, 300 and 600 as per ASME B16.5, service temperature ranges from -29 °C to +60 °C. The insulating joint is intended to be girth welded between two pipeline sections under or above ground.

2. REFERENCES

Throughout this standard specification the following standard and codes are referred to. The applicability of changes in standards and codes that occur after the date of this standard that referred shall be mutually agreed upon by the purchaser and supplier and / or manufacturer

ASME B16.5 (2020) "Pipe Flanges and Flanged Fittings".

ASME B31.8 (2021) "Gas Transmission and Distribution Piping Systems".

ASME sec V (2021) "Nondestructive Examination".

ASME sec VIII (2021) "Division 1: Rules for Construction of Pressure Vessels"

ASME sec IX (2021) "Qualification Standard for Welding and Brazing Procedures Welders, Brazers and Welding and Brazing Operators".

ASTM A 105. (2014) "Standard Specification for Carbon Steel Forgings for Piping Application".

ASTM A 370 (2020) "Standard Test Method and Definitions for Mechanical Testing of Steel Products".

ASTM A 694. (2016) "Standard Specification for Forgings, Carbon and Alloy Steel for Pipe Flanges, Fittings, Valves and Parts for High Pressure Transmission Service".

ASTM D 709-17 (2017) "Standard Specification for Laminated Thermosetting Materials".

ASTM D 2000 (2018) "Standard Classification System for" Rubber Products in Automotive Applications".

API-5L. (2020) "Specification for Line Pipe".

API-1104. (2021) "Welding of Pipe Lines and Related Facilities".

MSS-SP-75 (2019) "Specification for High Test Wrought Butt-welding Fittings".

ISO 8501-1 (2007) "Preparation of Steel Substrates before Application of Paints and Related Products-Visual Assessment of Surface Cleanliness".

ISO TS 29001 (2020) "Petroleum, Petrochemical and Natural Gas Industries-Sector Specific Requirements-Requirements for Product and Service Supply Organization".

BS EN 10204 (2004) "Metallic Products-Types of Inspection Documents".

IGS-C-TP-020 (0): 2022 "Liquid Polyurethane for Rehabilitation and Repair of External coating

of Buried Steel Pipelines, Field joints, Buried Steel pilings new valves, Fittings and other piping components”.

IGS-M-TP-027(1): 2019 “External Liquid Epoxy Coating for Rehabilitation and repair of Buried Steel Pipelines, Bends, Field Joints, Valves and Fittings”.

3. TERMS AND DEFINITIONS

DFT (Dry Film Thickness)

The thickness of a coating remaining on the surface when the coating has hardened

NPS

Nominal Pipe Size (in)

PSL

Product Specification Level

Pup

A transition piece of pipe, API 5L grade, with specified nominal wall thickness used for fabricating of Insulating joint, with welded end preparation suitable for adjoining pipe as specified in the purchase order. SAWH pipes are not acceptable. No girth weld along to the pup piece is permitted.

Purchaser /End user

National Iranian Gas Company or subsidiaries or its approved representative that buys the insulating joint

Routine Test

Types of test are done during production performed by the manufacturer which has to be satisfied the products are in accordance with the requirements

SAWL

Tubular product having one longitudinal / straight seam produced by double submerged-arc welding

SMLS

Pipe without any weld seam, produced by a hot-forming process, which can be followed by cold sizing or cold finishing to produce the desired shape, dimension and properties

Type Test

Testing performed on typical sample to prove that material, design, manufacturing and etc. is capable of conforming to the requirements given in the relevant standard. Type test certificate is valid until the material; designation or production methods remain unchanged.

4. SYMBOLS AND ABBREVIATED TERMS

4.1. NDT. : Non-Destructive Test

4.2. NBR : Nitrile Butyl Rubber

4.3. HNBR : Hardened Nitrile Butyl Rubber with Recommended Shore Hardness of 75.

4.4. FKM : Fluoro elastomers Materials Like Viton