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شرکت ملی گاز ایران

مدیریت پژوهش و فناوری

امور تدوین استانداردها

IGS

مشخصات فنی خرید

مواد پوششی با پایه نفتی : گریدسخت

Bitumen Based Coating Material : Hard Grade

FOREWORD

This standard specification 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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IGS-TP-011 PART 2 BITUMEN BASED COATING MATERIALS

1-scope

BITUMEN ENAMEL HARD GRADE

TO BE USED IN TROPICAL OR SEMI TROPICAL SIGHTS SUCH AS SISTAN AND BALUCHESTAN , HORMOZGAN AND KHUZESTAN , AND APPLIED BY A SOUND COATING MACHINERY FITTED UP WITH A FULLY EFFECTIVE AND MECHANICALLY STIRRED KETTLE.

THE BITUMEN ENAMEL SHALL CONSIST OF A UNIFORM MIXTURE OF PETROLEUM BITUMEN AND INERT NON-FIBROUS FILLER , PLUS SUITABLE ADDITIVES.

2- RAW MATERIAL

2-1 PETROLEUM BITUMEN: A MIXTURE OF HIGH MOLECULAR MASS HYDROCARBONS DERIVED FROM PETROLEUM BY OXIDATION OF SUITABLE SELECTED BASES IN ORDER TO PRODUCE A MATERIAL CONFORMING TO THIS SPECIFICATION.

2-2 FILLER: THE FILLER SHALL BE NON-HYGROSCOPIC AND UNREACTIVE WITH THE OTHER CONSTITUENTS OF THE PROTECTION , AND RESISTANT TO ATTACK BY THE MEDIUM TO WHICH IT WILL NORMALLY BE EXPOSED. IT SHALL BE STABLE AT THE MAXIMUM APPLICATION TEMPERATURE OF THE COATING MATERIAL.

THE PARTICLE SIZE OF THE FILLER SHALL MEET THE FOLLOWING REQUIREMENTS WHEN TESTED BY THE METHOD GIVEN IN BS 1796:PART 1 : 1989

PASSING 90 μm TEST SIEVE : NOT LESS THAN 93%

PASSING 250 μm TEST SIEVE : NOT LESS THAN 99%

TEST SIEVES SHALL COMPLY WITH THE REQUIREMENTS OF BS 410 .

3- PHYSICAL CHARACTERISTICS

3-1 REQUIREMENTS TO BE MET BY BITUMEN ENAMEL

THE ENAMEL SHALL COMPLY WITH THE REQUIREMENTS GIVEN IN TABLE 1 WHEN TESTED BY THE METHODS SPECIFIED.

TABLE 1 : PROPERTIES OF BITUMEN ENAMEL

| CHARACTERISTICS | UNIT | REQUIREMENT | METHOD OF TEST |
|--|---------------------|-------------|--|
| FILLER CONTENT BY IGNITION, % BY MASS | % | 45-55 | BS 4147(1980) APPENDIX B |
| SOFTENING POINT (RING AND BALL) | °C | 100-150 | BS 2000 (1988) PART 58 |
| PENETRATION (25 °C) | 10 ⁻¹ MM | 5-10 | BS 4147 (1980) APPENDIX D |
| DENSITY (25°C) | G/CM ³ | 1.4-1.1.65 | BS 4147 (1980) APPENDIX C |
| FLASH POINT (CLEVELAND OPEN CUP) . (MIN) | °C | 260 | BSEN 22592 (1994) (ISO 2592 (1973)) |

3-2 REQUIREMENTS TO BE MET BY BITUMEN ENAMEL ON PRIMED STEEL THE ENAMEL IN CONJUNCTION WITH AN APPROPRIATE PRIMER SYNTHETIC PRIMER , SHALL COMPLY WITH THE REQUIREMENTS GIVEN IN TABLE 2 WHEN TESTED BY THE METHODS SPECIFIED.

TABLE 2 : PROPERTIES OF BITUMEN ENAMEL ON PRIMED STEEL

| TEST | UNIT | REQUIREMENT | METHOD OF TEST |
|---|-----------------|-------------------|----------------|
| | | | BS 447 (1980) |
| SAG (MAX)75°C , 24h | mm | 1.5 | APPENDIX E |
| BEND AT 0°C (MIN) | mm | 10 | APPENDIX F |
| PEEL, INITIAL AND DELAYED . (MAX) 30°C 40°C 50°C 60°C | mm | 3.0 3.0 3.0 | APPENDIX H |
| IMPACT , DISBONDED AREA , 25°C (MAX) | mm ² | 6500 | APPENDIX G |

NOTE:

THE BITUMEN ENAMEL AND PRIMER SHALL BE PROVIDED BY THE SAME SUPPLIER.

4-PACKAGING

THE BITUMEN ENAMEL SHALL BE SUPPLIED IN ONE OF THE FOLLOWING FORMS:

- A) IN NON-CONTAMINATED STEEL DRUMS CONTAINING NOT MORE THAN 200 LITRES.
- B) IN CRAFT PAPER BAGS , WITH EASILY STRIPPABLE LINING CONTAINING APPROXIMATELY 50 KG (ONLY IN CASE OF LOCAL PURCHASE).