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شرکت ملی گاز ایران
مدیریت پژوهش و فناوری
امور تدوین استانداردها

IGS

مشخصات فنی خرید

نوار زرد اخطار

Underground Yellow Warning Tape

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دفتر مدیرعامل

ابلاغ مصوبه هیأت مدیره

مدیر محترم پژوهش و فناوری

باسلام،

به استحضار می‌رساند در جلسه ۱۸۶۷ مورخ ۱۳۹۸/۱۲/۲۰ هیأت مدیره، نامه شماره گ.۰۰۰/۹/۱۶۳۵۲۰ مورخ ۱۳۹۸/۱۲/۰۵ آن مدیریت درمورد تصویب نهایی استاندارد به شرح زیر مطرح و مورد تصویب قرار گرفت:

۱- مشخصات فنی خرید نوار زرد اخطار IGS-M-PL-034(1)

۲- مشخصات فنی خرید لباس کار صنعتی IGS-M-SF-008(1)

۳- مشخصات فنی خرید شیرهای سماوری جوشی / فلنجی IGS-M-PL-002-1(5)

۴- دستورالعمل اجرا و راه اندازی خطوط تغذیه IGS-C-DN-100(0)

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Foreword

This standard is intended to be mainly used by NIGC and contractors, and has been prepared based on interpretation of recognized standards, technical documents, knowledge, backgrounds and experiences in natural gas industry 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 employees and contractors.

This standard must not be modified or altered by NIGC employees or its contractors. Any deviation from normative references and / or well-known manufacturer's specifications must be reported to Standardization division.

The technical standard committee welcomes comments and feedbacks 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 NIGC 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 specification provide minimum requirements for design, material, testing, inspection, marking and packaging for yellow polyethylene warning tape which is installed exactly above steel pipelines / basic grid or steel / polyethylene gas net works in underground buried services that warns against the damages of the gas pipes during re-excavating.

2. Reference Codes and Standards

Throughout this standard specification the following standard and codes are referred to, the edition of these standard and codes that are in effect at the time of issues of this standard specification.

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

2.1. ASTM D 5630(2006),"Standard Test Method for Ash Content in Plastics".

2.2. ISO 1133 (2011), "Plastics – Determination of the Melt Mass Flow Rate (MFR) and the Melt Volume – Flow Rates (MVR) of Thermoplastic".

2.3. ISO 1183-2 (2019), "Plastics – Method for Determining the Density of Non-Cellular Plastics – Part2: Density Gradient Method".

2.4. ISO 527-2 (2018), "Plastics – Determination of Tensile Properties – Part 3: Test Conditions for Films and Sheets".

2.5. BS EN 728 (1997), "Plastic Piping and Ducting System – Polyolefin Pipes and Fittings – Determination of Oxidation Induction Time".

3. Definitions and Abbreviations

3.1. Filler : A neutral substance which is added to raw material.

3.2. LLDPE: Linear Low Density Polyethylene

3.3. LDPE : Low Density Polyethylene

4. General Requirements

4.1 Material

The material shall be made of LLDPE or LDPE copolymer, film grade, with characteristics conforming to requirements given in table1.

The use of reprocess able materials or recyclable materials not permitted.

The ink which is used for repeated message shall be chemically inert and don't degraded when exposed to substances commonly found in soil.

Table 1. Required Characteristic

Property	Value	Unit	Test Method
MFR (190°C/2.16kg)	0.4-1.4 ± 20%	g/10min	ISO 1133
Density	≥ 920	Kg/m ³	ISO 1183
Tensile strength at yield	≥ 10	M Pa	ISO 527
Elongation at break	≥ 450	%	ISO 527
Oxidation induction time (at 200°C)	>15	min	EN 728
Ash content	≤ 0.5	%	ASTM D5630

4.2 Appearance

The appearance, colouring and marking of the warning device shall not exhibit any gels, streaks, pinholes, tears, blisters, particles of foreign matter, dispersed raw material or other visible defects. The edges shall be straight and parallel, free of nick and cuts visible without any magnifier.

4.3 Color

The color of warning tape shall be yellow marked with legible black lettering.

4.5 Dimensions

Length: 200 m ± 1%
 Width: 40 cm ± 2%
 Thickness: 0.3 mm ± 10%

4.6 Printed Message

A visual black printed message «خطر لوله گاز» on one side and in distances of one meter shall be repeated. The minimum size for lettering height of printed message shall not be less than 50 percent of the width. The printed messages shall be permanent and don't remove or discolored by normal handling.

5. Packing

Each warning tape reel shall be packed in carton to ensure suitable transportation.

6. Marking

The warning tape shall be marked at intervals not exceeding 1 m.

The marking shall be legible when viewed without magnification, durable and shall include at least the following information:

- a) Name or trademark of the manufacturer;
- b) Year of manufacture;
- c) Batch number;