TECHNICAL SPECIFICATION

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CEN/TS 12007-6

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English Version

Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 6: Specific functional recommendations for unplasticized polyamide (PA-U)

Infrastructures gazières - Canalisations pour pression maximale de service inférieure ou égale à 16 bar - Partie 6 : Recommandations fonctionnelles spécifiques pour le polyamide non plastifié (PA-U)

Gasinfrastruktur - Rohrleitungen mit einem maximal zulässigen Betriebsdruck bis einschließlich 16 bar - Teil 6: Spezifische funktionale Anforderungen für weichmacherfreies Polyamid

This Technical Specification (CEN/TS) was approved by CEN on 25 January 2021 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. CEN/TS 12007-6:2021 E

Contents

Page

European foreword

This document (CEN/TS 12007-6:2021) has been prepared by Technical Committee CEN/TC 234 “Gas infrastructure”, the secretariat of which is held by DIN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

The basis if this document has been provided by an Ad Hoc group of interested parties consisting variously of pipe manufacturers, material suppliers and gas network engineers. The aim is to support the introduction of Polyamide pipe, PA-U, into Europe for use in natural gas pipe networks operating at working pressures up to and including 16 bar. The Secretariat of the Ad Hoc group was held by NEN.

This document is part of the following series of standards, of which the parts 1 to 4 and this document are in the responsibility of CEN/TC 234 Working Group 2, Secretariat held by BSI and of which part 5 is in the responsibility of CEN/TC 234 Working Group 10, Secretariat held by NSAI:

— *Part 1: General functional requirements*

— *Part 2: Specific functional requirements for polyethylene (MOP up to and including 10 bar)*

— *Part 3: Specific functional requirements for steel*

— *Part 4: Specific functional requirements for renovation*

This document has been written in the style and form of the above functional EN standards, but at this time has the status only of a CEN TS. This document will be amended under the authority of CEN/TC 234 as soon as more supporting evidence of the safe use of PA-U becomes available.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document describes the specific functional requirements for polyamide (PA) pipelines in addition to the general functional requirements of EN 12007-1 for:

a) a maximum operating pressure (MOP) up to and including 16 bar;

b) an operating temperature between −20 °C and +40 °C.

This document covers one type of pipe:

— PA pipes single layer solid wall.

This document specifies common basic principles for gas infrastructure.

NOTE 1 Users of this document are aware that more detailed national standards and/or code of practice can exist in the CEN member countries.

This document is intended to be applied in association with these national standards and/or codes of practice setting out the above-mentioned basic principles.

NOTE 2 In the event of conflicts in terms of more restrictive requirements in national legislation/regulation with the requirements of this document, the national legislation/regulation takes precedence as illustrated in CEN/TR 13737 (all parts).

CEN/TR 13737 (all parts) give:

— clarification of all legislations/regulations applicable in a member state;

— if appropriate, more restrictive national requirements;

— a national contact point for the latest information.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 16486-1:2020, *Plastics piping systems for the supply of gaseous fuels — Unplasticized polyamide (PA-U) piping systems with fusion jointing and mechanical jointing — Part 1: General (ISO 16486-1)*

EN ISO 16486-2:2020, *Plastics piping systems for the supply of gaseous fuels — Unplasticized polyamide (PA-U) piping systems with fusion jointing and mechanical jointing — Part 2: Pipes (ISO 16486-2)*

EN ISO 16486-3, *Plastics piping systems for the supply of gaseous fuels — Unplasticized polyamide (PA-U) piping systems with fusion jointing and mechanical jointing — Part 3: Fittings (ISO 16486-3)*

EN ISO 16486-4, *Plastics piping systems for the supply of gaseous fuels — Unplasticized polyamide (PA-U) piping systems with fusion jointing and mechanical jointing — Part 4: Valves*[1]

EN ISO 16486-5, *Plastics piping systems for the supply of gaseous fuels — Unplasticized polyamide (PA-U) piping systems with fusion jointing and mechanical jointing — Part 5: Fitness for purpose of the system (ISO/DIS 16486-5)*[2]

[1] Under preparation. Stage at the time of publication: prEN ISO 16486-4.

EN 12327, *Gas infrastructure — Pressure testing, commissioning and decommissioning procedures - Functional requirements*

ISO 12176-1, *Plastics pipes and fittings — Equipment for fusion jointing polyethylene systems — Part 1: Butt fusion*[3]

ISO 12176-2, *Plastics pipes and fittings — Equipment for fusion jointing polyethylene systems — Part 2: Electrofusion*[4]

ISO 17885, *Plastic piping systems — Mechanical fittings for pressure piping systems — Specifications*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
nominal outside diameter
d_n
specified outside diameter

3.2
nominal wall thickness
e_n
numerical designation of the wall thickness of a component, which is a convenient round number, approximately equal to the manufacturing dimension in millimetres

3.3
standard dimension ratio
SDR
number approximately equal to the quotient of the nominal outside diameter and the nominal wall thickness

3.4
maximum operating pressure
MOP
maximum pressure at which a system can be operated continuously under normal operating conditions

Note 1 to entry: Normal operating conditions are: no fault in any device or stream.

[2] Under preparation. Stage at the time of publication: prEN ISO 16486-5.

[3] This standard is also applicable for PA-U without any changes.

[4] This standard is also applicable for PA-U without any changes