BSI Standards Publication

District heating pipes — Factory made flexible pipe systems

Part 1: Classification, general requirements and test methods

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National foreword

This British Standard is the UK implementation of EN 15632-1:2022. It supersedes BS EN 15632-1:2009+A1:2014, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee RHE/9, Insulated underground pipelines.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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English Version

District heating pipes - Factory made flexible pipe systems - Part 1: Classification, general requirements and test methods

Tuyaux de chauffage urbain - Systèmes de tuyaux flexibles manufacturés - Partie 1 : Classification, exigences générales et méthodes d'essai

Fernwärmerohre - Werkmäßig gedämmte flexible Rohrsysteme - Teil 1: Klassifikation, allgemeine Anforderungen und Prüfungen

This European Standard was approved by CEN on 27 March 2022.

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European foreword

This document (EN 15632-1:2022) has been prepared by Technical Committee CEN/TC 107 "Prefabricated district heating and district cooling pipe systems", the secretariat of which is held by DS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2022, and conflicting national standards shall be withdrawn at the latest by November 2022.

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.

This document supersedes EN 15632-1:2009+A1:2014.

This document is one of a series of standards which form several parts of EN 15632, *District heating pipes — Factory made flexible pipe systems*:

— *Part 1: Classification, general requirements and test methods*;

— *Part 2: Bonded system with plastic service pipes; requirements and test methods*;

— *Part 3: Non bonded system with plastic service pipes; requirements and test methods*;

— *Part 4: Bonded system with metal service pipes; requirements and test methods*.

In comparison with EN 15632-1:2009+A1:2014, the following changes have been made:

a) improved description of the bending test in 5.2 and 6.2;

b) improved description of the thermal insulation in 5.4;

c) improved description of the compressive creep test in 6.3;

d) improved calculation of the thermal conductivity in Annex A, A.6;

e) improved calculation of the radial thermal resistance in Annex B;

f) completely revised "guideline for testing" in the informative Annex C.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: 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.

Introduction

District heating technology has developed rapidly since its origin and especially in recent times. Today, there are different generations of district heating networks. The technologies of these generations are driven by the different heat sources and operating temperatures used.

CEN/TC 107 provides a set of European standard series for rigid and flexible piping systems in district heating to suit all generations and requirements of district heating networks in the market.

The standard documents ensure quality for pre-fabricated piping systems in district heating.

This standard series covers flexible, pre-fabricated piping systems for operation conditions as described in the scope of this document.

1 Scope

This document specifies classification, general requirements and test methods for flexible, factory made, buried district heating pipe systems.

This document is intended to be used in conjunction with part 2, 3 or 4, as applicable.

Depending on the pipe assembly (see Table 4), this document is applicable to a maximum operating temperature of 95 °C (part 2 and 3) and a maximum operating temperature of 120 °C (for part 4) and design pressures of 0,6 MPa to 2,5 MPa.

The pipe systems are designed for a service life of at least 30 years. For pipe systems with plastic service pipes, the respective temperature profiles are specified in EN 15632-2 and EN 15632-3.

NOTE For the transport of other liquids, for example potable water, additional requirements can be applicable.

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 253, *District heating pipes - Bonded single pipe systems for directly buried hot water networks - Factory made pipe assembly of steel service pipe, polyurethane thermal insulation and a casing of polyethylene*

EN 1605, *Thermal insulating products for building applications - Determination of deformation under specified compressive load and temperature conditions*

EN 1606, *Thermal insulating products for building applications - Determination of compressive creep*

EN 12085, *Thermal insulating products for building applications - Determination of linear dimensions of test specimens*

EN 13941-1, *District heating pipes - Design and installation of thermal insulated bonded single and twin pipe systems for directly buried hot water networks - Part 1: Design*

EN 14419, *District heating pipes - Bonded single and twin pipe systems for buried hot water networks - Surveillance systems*

EN 17248, *District heating and district cooling pipe systems - Terms and definitions*

EN 60811-406:2012, *Electric and optical fibre cables - Test methods for non-metallic materials - Part 406: Miscellaneous tests - Resistance to stress cracking of polyethylene and polypropylene compounds*

EN ISO 845, *Cellular plastics and rubbers - Determination of apparent density (ISO 845)*

EN ISO 3127, *Thermoplastics pipes - Determination of resistance to external blows - Round-the-clock method (ISO 3127)*

EN ISO 9967, *Thermoplastics pipes - Determination of creep ratio (ISO 9967)*

EN ISO 9969, *Thermoplastics pipes - Determination of ring stiffness (ISO 9969)*