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District cooling pipes - Factory made flexible pipe systems - Part 3: Non bonded system with plastic service pipes; requirements and test methods

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

District cooling pipes - Factory made flexible pipe systems - Part 3: Non bonded system with plastic service pipes; requirements and test methods

Réseaux d'eau glacée - Systèmes de tuyaux flexibles
manufacturés - Partie 3 : Système non bloqué avec tube
de service en plastique - prescriptions et méthodes
d'essai

Fernkälterohre - Werkmäßig gefertigte flexible
Rohrsysteme - Teil 3: Nicht-Verbundrohrsysteme mit
Mediumrohren aus Kunststoff - Anforderungen und
Prüfungen

This European Standard was approved by CEN on 22 June 2020.

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Contents	Page
European foreword	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	7
4 Classification	7
4.1 Operating temperatures and service life	7
4.2 Design pressures	7
5 Requirements	8
5.1 General requirements	8
5.2 Service pipes, fittings and their connections	8
5.3 Sealing in linear direction of pipe assemblies	8
5.4 Water vapour permeation of pipe assemblies	8
6 Test procedures	8
Annex A (informative) Application of Miner's Rule	10
Annex B (informative) Guidelines for testing	13
Annex C (informative) Waste treatment and recycling	15
Bibliography	16

European foreword

This document (EN 17414-3:2020) has been prepared by Technical Committee CEN/TC 107 “Prefabricated district heating and district cooling pipe system”, 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of an identical text or by endorsement, at the latest by January 2021, and conflicting national standards shall be withdrawn at the latest by January 2021.

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.

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Introduction

Factory made flexible non bonded pipe systems with plastic service pipes for directly buried district cooling networks are of common technical usage. In order to ensure quality including product-related service life, to ensure safety in use, economical energy usage and to facilitate comparability in the market, CEN/TC 107 decided to set up standards for these products.

This document is one of a series of standards which form several parts of EN 17414, *District cooling 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 (this document).*

The other standards from CEN/TC 107 covering this subject are:

- EN 17415-1, *District cooling pipes – Bonded single pipe systems for directly buried cold water networks – Part 1: Factory made pipe assembly of steel or plastic service pipe, polyurethane thermal insulation and a casing of polyethylene;*
- EN 17415-2, *District cooling pipes – Bonded single pipe systems for directly buried cold water networks Part 2: Factory made fitting assemblies of steel or plastic service pipe, polyurethane thermal insulation and a casing of polyethylene¹;*
- EN 17415-3, *District cooling pipes – Bonded single pipe systems for directly buried cold water networks Part 3: Factory made steel valve assembly for steel or plastic service pipe, polyurethane thermal insulation and a casing of polyethylene¹;*
- EN ZZZZZ-1, *District cooling pipes – Design and installation of thermal insulated bonded single and twin pipe systems for directly buried cold water networks – Part 1: Design¹;*
- EN ZZZZZ-2, *District cooling pipes – Design and installation of thermal insulated bonded single and twin pipe systems for directly buried cold water networks – Part 2: Installation¹;*
- EN 489-1, *District heating pipes – Bonded single and twin pipe systems for buried hot water networks – Part 1: Joint casing assemblies and thermal insulation for hot water networks in accordance with EN 13941-1;*
- EN 14419, *District heating pipes – Bonded single and twin pipe systems for directly buried hot water networks – Surveillance systems.*

Waste management and recycling of materials is dealt with in Annex C.

¹ Under preparation.

1 Scope

This document specifies requirements and test methods for factory made thermally insulated non-bonded flexible pipe-in-pipe assemblies for directly buried district cooling distribution systems, comprising a service pipe and a casing of polyethylene. The pipe assembly can also include the following additional elements: measuring wires, spacers and diffusion barriers.

This document is intended to be used in conjunction with EN 17414-1.

This document applies only to insulated pipe assemblies, for continuous operation with water at various temperatures (1 to 30) °C and a maximum operation pressure of 25 bar dependent on material specified.

The design is based on an expected service life with continuous operation of a minimum 50 years.

This document does not cover surveillance systems.

In conjunction with the other parts of EN 17414, this document is applicable to pipes, fittings, their joints and to joints with components made of non-plastics materials intended to be used for district cooling installations.

NOTE For the transport of other liquids, for example potable water, additional requirements could 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 489-1, *District heating pipes - Bonded single and twin pipe systems for buried hot water networks - Part 1: Joint casing assemblies and thermal insulation for hot water networks in accordance with EN 13941-1*

EN 12201-1, *Plastics piping systems for water supply, and for drainage and sewerage under pressure - Polyethylene (PE) - Part 1: General*

EN 12201-2, *Plastics piping systems for water supply, and for drainage and sewerage under pressure - Polyethylene (PE) - Part 2: Pipes*

EN 12201-3, *Plastics piping systems for water supply, and for drainage and sewerage under pressure - Polyethylene (PE) - Part 3: Fittings*

EN 12201-5, *Plastics piping systems for water supply, and for drainage and sewerage under pressure - Polyethylene (PE) - Part 5: Fitness for purpose of the system*

EN 17414-1, *District cooling pipes - Factory made flexible pipe systems - Part 1: Classification, general requirements and test methods*

EN ISO 15874-1, *Plastics piping systems for hot and cold water installations - Polypropylene (PP) - Part 1: General (ISO 15874-1)*

EN ISO 15874-2, *Plastics piping systems for hot and cold water installations - Polypropylene (PP) - Part 2: Pipes (ISO 15874-2)*

EN ISO 15874-3, *Plastics piping systems for hot and cold water installations - Polypropylene (PP) - Part 3: Fittings (ISO 15874-3)*

EN ISO 15874-5, *Plastics piping systems for hot and cold water installations - Polypropylene (PP) - Part 5: Fitness for purpose of the system (ISO 15874-5)*

EN ISO 15875-1, *Plastics piping systems for hot and cold water installations - Crosslinked polyethylene (PE-X) - Part 1: General (ISO 15875-1)*

EN ISO 15875-2, *Plastics piping systems for hot and cold water installations - Crosslinked polyethylene (PE-X) - Part 2: Pipes (ISO 15875-2)*

EN ISO 15875-3, *Plastics piping systems for hot and cold water installations - Crosslinked polyethylene (PE-X) - Part 3: Fittings (ISO 15875-3)*

EN ISO 15875-5, *Plastics piping systems for hot and cold water installations - Crosslinked polyethylene (PE-X) - Part 5: Fitness for purpose of the system (ISO 15875-5)*

EN ISO 15876-1, *Plastics piping systems for hot and cold water installations - Polybutene (PB) - Part 1: General (ISO 15876-1)*

EN ISO 15876-2, *Plastics piping systems for hot and cold water installations - Polybutene (PB) - Part 2: Pipes (ISO 15876-2)*

EN ISO 15876-3, *Plastics piping systems for hot and cold water installations - Polybutene (PB) - Part 3: Fittings (ISO 15876-3)*

EN ISO 15876-5, *Plastics piping systems for hot and cold water installations - Polybutene (PB) - Part 5: Fitness for purpose of the system (ISO 15876-5)*

EN ISO 21003-1, *Multilayer piping systems for hot and cold water installations inside buildings - Part 1: General (ISO 21003-1)*

EN ISO 21003-2, *Multilayer piping systems for hot and cold water installations inside buildings - Part 2: Pipes (ISO 21003-2)*

EN ISO 21003-3, *Multilayer piping systems for hot and cold water installations inside buildings - Part 3: Fittings (ISO 21003-3)*

EN ISO 21003-5, *Multilayer piping systems for hot and cold water installations inside buildings - Part 5: Fitness for purpose of the system (ISO 21003-5)*

EN ISO 22391-1, *Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 1: General (ISO 22391-1)*

EN ISO 22391-2, *Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 2: Pipes (ISO 22391-2)*

EN ISO 22391-3, *Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 3: Fittings (ISO 22391-3)*

EN ISO 22391-5, *Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 5: Fitness for purpose of the system (ISO 22391-5)*