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**Sistemi daljinskega ogrevanja in hlajenja - Izrazi in definicije**

District heating and district cooling pipe systems - Terms and definitions

Fernwärme- und Fernkälterohrsysteme - Begriffe

Canalisations pour le chauffage urbain et réseaux d'eau glacée - Termes et définitions

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**SIST EN 17248:2020****en,fr,de**

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EUROPEAN STANDARD

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## District heating and district cooling pipe systems - Terms and definitions

Canalisations pour le chauffage urbain et réseaux d'eau glacée - Termes et définitions

Fernwärme- und Fernkälterohrsysteme - Begriffe

This European Standard was approved by CEN on 12 August 2019.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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## European foreword

This document (EN 17248:2019) 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of an identical text or by endorsement, at the latest by April 2020, and conflicting national standards shall be withdrawn at the latest by April 2020.

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

This document compiles a vocabulary of terms, with their definitions, applied in the field of district heating and district cooling pipe systems with factory made system components. Only terms which are particular to the pertinent field in CEN/TC 107 are included.

The other standards from CEN/TC 107 are:

- 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 448, *District heating pipes — Bonded single pipe systems for directly buried hot water networks — Factory made fitting assemblies of steel service pipes, polyurethane thermal insulation and a casing of polyethylene;*
- EN 488, *District heating pipes — Bonded single pipe systems for directly buried hot water networks — Factory made steel valve assembly for steel service pipes, polyurethane thermal insulation and a casing of polyethylene;*
- EN 489-1, *District heating pipes - Bonded single and twin pipe systems for directly buried hot water networks - Part 1: Joint casing assemblies and thermal insulation for hot water networks in accordance with EN 13941-1;*
- 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 13941-2, *District heating pipes - Design and installation of thermal insulated bonded single and twin pipe systems for directly buried hot water networks — Part 2: Installation;*
- EN 14419, *District heating pipes — Bonded single and twin pipe systems for directly buried hot water networks — Surveillance systems;*
- EN 15632 (all parts), *District heating pipes - Pre-insulated flexible pipe systems;*
- EN 15698-1, *District heating pipes — Bonded twin pipe systems for directly buried hot water networks — Part 1: Factory made twin pipe assembly of steel service pipes, polyurethane thermal insulation and one casing of polyethylene*
- EN 15698-2, *District heating pipes — Bonded twin pipe systems for directly buried hot water networks — Part 2: Factory made fitting and valve assemblies of steel service pipes, polyurethane thermal insulation and one casing of polyethylene*

## 1 Scope

This document compiles a vocabulary of terms, with their definitions, applied in the field of district heating and district cooling pipe systems with factory made system components. Only terms which are particular to the pertinent field in CEN/TC 107 are included.

## 2 Normative references

There are no normative references in this document.

## 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:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

### 3.1

#### above ground installation

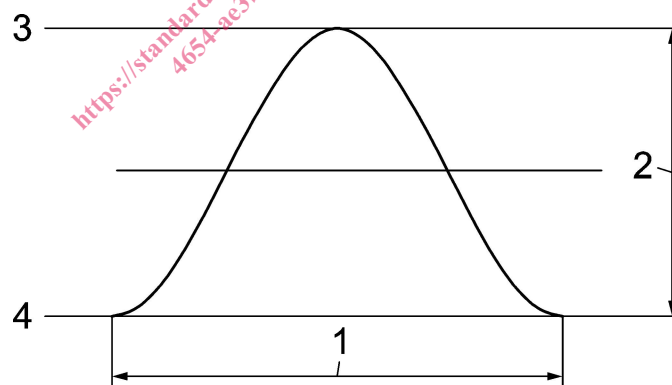
installation method where the pipe is not surrounded by soil

### 3.2

#### action cycle

impact comprising of one full action course, ranging from a minimum (maximum) level through an average value to a maximum (minimum) level and back

Note 1 to entry: See Figure 1 for the principle of action cycles.



#### Key

- 1 one action cycle
- 2 action (or stress or deformation) range
- 3 maximum level of the action, stress or deformation
- 4 minimum level of the action, stress or deformation

**Figure 1 — Principle of one action cycle**

## EN 17249:2019 (E)

## 3.3

**ageing**

keeping the service pipe at a defined, elevated temperature for a certain time while also exposing the casing to a defined temperature

## 3.4

**ageing factor** $f_a$ 

factor without a dimension which expresses the ageing of the thermal insulation in relation to the expected service life

## 3.5

**anchor**

construction used to transfer the forces from the service pipe through the thermal insulation by use of a steel plate to a fixed point

## 3.6

**artificial ageing**

keeping the complete pipe assembly at a certain, elevated temperature for a certain time

## 3.7

**assembly of measuring elements**

process where a fitter during the assembly of pipe elements connects measuring elements into a measuring section

## 3.8

**batch**

specified quantity of material made under the same uniform production conditions in one production run by one manufacturer

## 3.9

**bending angle** $\alpha$ 

deviation in direction of the pipe centre lines

Note 1 to entry: For the principle of deviation in direction of the pipe centre lines see Figure 2.

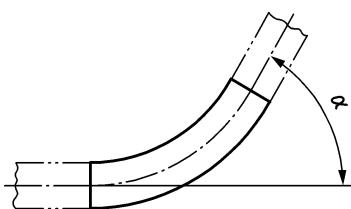


Figure 2 — Principle of deviation in direction of the pipe centre lines

## 3.10

**bonded system**

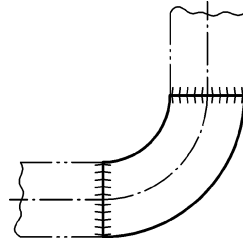
pipe element which is bonded by thermal insulation



**3.11****butt welded bend**

bend manufactured either by hot bending of a steel pipe or by hot forming of steel plates which are subsequently welded together

Note 1 to entry: See Figure 3 for a butt welded bend.



**Figure 3 — Butt welded bend**

**3.12****casing**

outer layer of polythene (which may contain a diffusion barrier) intended to protect the thermal insulation and service pipe from the effects of ground water, moisture and mechanical damage

**3.13****characteristic value**

value of a stochastic variable which, at a probability of 95 %, will not be exceeded

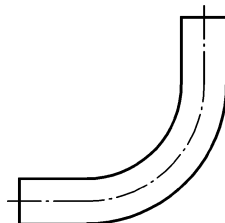
**3.14****centre line deviation**

deviation between the centre line of the service pipe and the centre line of the casing

**3.15****cold formed bend**

bend manufactured by cold bending of steel pipe

Note 1 to entry: See Figure 4 for a cold formed bend.



**Figure 4 — Cold or hot formed bend**

**3.16****cold laying**

method of pipeline laying where the pipes are installed and put into operation without pre-stressing, in which the yield strength of the service pipe material may be exceeded

**EN 17249:2019 (E)****3.17****connection point**

accessible place outside the pipe system where a measuring instrument can be connected to a measuring section

Note 1 to entry: The place could be in a shaft, in a house connection, in a measuring post, in a cabinet, etc.

**3.18****continuous operating temperature**

temperature at which the pipe system is designed to operate continuously

**3.19****creep**

slow progressive strain under the influence of stress

**3.20****deformation-controlled action**

action called forth by enforced deformation or movement

Note 1 to entry: Examples of deformation-controlled actions are thermal expansion or deformation differences, caused by soil settling.

**3.21****density**

mass of a body of a material divided by the volume of the body

**3.22****design pressure**

internal pressure equal to or greater than the maximum operating pressure against the pipe wall at any point or in any section of the pipeline at design temperature

**3.23****design temperature range**

temperature range which, in combination with the design pressure, determines the basis for the strength/expansion calculation

**3.24****detection of moisture**

detection of moisture-related parameters with measuring instruments

Note 1 to entry: Only moisture in the thermal insulation due to defects or bad workmanship is relevant.

Note 2 to entry: The parameters could be electrical resistance and/or impedance.

**3.25****deviations in surveillance systems**

result of comparing the values for moisture-related parameters measured by the surveillance system with the values given in the technical documentation

**3.26****diffusion barrier**

any layer in the pipe assembly, different than PE, installed between the thermal insulation and the casing, or in the casing with the aim to restrict the diffusion of gases