SLOVENSKI STANDARD
SIST EN 15698-1:2020

01-januar-2020

Nadomešča:
SIST EN 15698-1:2009

Cevi za daljinsko ogrevanje - Poviti dvocevni sistemi za neposredno vkopana vročevodna omrežja - 1. del: Tovarniško izdelan dvocevni sestav iz jeklene cevi, poliuretanske toplotne izolacije in zunanjega polietilenskega plašča

District heating pipes - Bonded twin pipe systems for directly buried hot water networks - Part 1: Factory made twin pipe assembly of steel service pipe, polyurethane thermal insulation and a casing of polyethylene

Fernwärmerohre - Verbundmanteldoppelrohre für direkt erdverlegte Fernwärmenetze - Teil 1: Werkmäßig hergestelltes Verbund-Doppelrohrsystem, bestehend aus Stahl-Mediumrohr, Polyurethan-Wärmedämmung und einem Mantel aus Polyethylen

Tuyaux de chauffage urbain - Systèmes bloqués de bitubes pour les réseaux d'eau chaude enterrés directement - Partie 1 : Assemblages de bitubes manufacturés pour tube de service en acier, isolation thermique en polyuréthane et tube de protection en polyéthylène

Ta slovenski standard je istoveten z: **EN 15698-1:2019**

ICS:

23.040.07	Cevovodi za daljinsko ogrevanje in njihovi deli	Pipeline and its parts for district heat
23.040.10	Železne in jeklene cevi	Iron and steel pipes
91.140.10	Sistemi centralnega ogrevanja	Central heating systems

SIST EN 15698-1:2020 **en,fr,de**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 15698-1

October 2019

ICS 23.040.07; 23.040.10

Supersedes EN 15698-1:2009

English Version

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

Tuyaux de chauffage urbain - Systèmes bloqués de tuyaux doubler pré-isolés pour les réseaux d'eau chaude enterrés directement - Assemblage de bitudes pout tube de service en acier, isolation thermique en polyuréthane et tube de protection en polyéthylène

Fernwärmerohre - Verbundmanteldoppelrohre für direkt erdverlegte Fernwärmenetze - Teil 1: Werkmäßig hergestelltes Verbund-Doppelrohrsystem, bestehend aus Stahl-Mediumrohr, Polyurethan-Wärmedämmung und einem Mantel aus Polyethylen

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

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

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Ref. No. EN 15698-1:2019 E

Contents

Page

European foreword ... 3
Introduction ... 4
1 Scope ... 5
2 Normative references ... 5
3 Terms and definitions ... 5
4 Requirements ... 5
5 Test methods ... 9
6 Marking ... 12
Annex A (informative) **Guidelines for inspection and testing** ... 13
Annex B (informative) **Waste treatment and recycling** ... 14
Bibliography ... 15

European foreword

This document (EN 15698-1:2019) 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 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.

This document supersedes EN 15698-1:2009.

In comparison with the previous edition, the main changes in this new edition of EN 15698-1 are:

— editorial changes to the new structure of standards prepared by the Technical Committee CEN/TC 107.

EN 15698 is currently composed of the following parts:

— *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*;

— *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*.

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

This document has been elaborated as a complement to the standards on bonded pipe systems for buried hot water networks using steel service pipe and polyurethane foam thermal insulation and outer casing of polyethylene.

These standards 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 outer 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, *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 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 pipe — Pre-insulated flexible pipe systems*;

— 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*

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

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

1 Scope

This document specifies requirements and test methods for straight lengths of factory made thermally insulated bonded twin pipe assemblies for directly buried hot water networks in accordance with EN 13941-1, comprising two steel service pipes, rigid polyurethane foam thermal insulation and one casing of polyethylene.

The pipe assembly can also include the following additional elements: measuring wires, spacers and diffusion barriers.

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 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 directly buried hot water networks — Surveillance systems*

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

EN ISO 3126, *Plastics piping systems — Plastics components — Determination of dimensions (ISO 3126)*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in EN 17248 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

4 Requirements

4.1 General

Unless otherwise specified, the requirements shall be valid for each single measurement.

For information on suitable guidelines for inspection of manufactured bonded twin pipe assemblies see Annex A.

4.2 Steel service pipe

The material of the steel service pipes shall be as specified in EN 13941-1. Dimensions and surface condition of the steel service pipes shall be as specified in EN 253.

4.3 Casing

Material and casing properties shall be as specified in EN 253.

For the casing diameters specified in Table 1 the dimensions of the casing shall be as specified in EN 253.

The maximum out-of-roundness shall conform to Table 1 and be measured in accordance with EN ISO 3126.

Table 1 — Casing diameters

Nominal diameter of steel service pipes DN	Casing diameter, thermal insulation series1 $D_{C\,min}$ mm	Casing diameter, thermal insulation series 2 $D_{C\,min}$ mm	Casing diameter, thermal insulation series 3 $D_{C\,min}$ mm	Maximum out-of-roundness mm
15	125	140	160	1,2
20	125	140	160	1,2
25	140	160	180	1,2
32	160	180	200	1,3
40	160	180	200	1,4
50	200	225	250	1,4
65	225	250	280	1,5
80	250	280	315	1,6
100	315	355	400	2,0
125	400	450	500	2,5
150	450	500	560	3,0
200	560	630	710	4,0
250	710	800	900	5,0

4.4 Polyurethane (PUR) rigid foam thermal insulation

Material and thermal insulation properties shall be as specified in EN 253.

4.5 Pipe assembly

4.5.1 End alignment of flow and return steel service pipes

The alignment of the ends of the flow and return steel service pipes shall not differ more than 1 mm when measured in the longitudinal direction.

4.5.2 Distance between flow and return steel service pipes

The distance between flow and return steel service pipes shall be in accordance with Table 2.

The tolerance of the distance between the flow and return steel service pipes, Lp, is ± 1 mm when measured in the pipe ends and ± 2 mm when measured at any point inside the twin pipe assembly, see Figure 1.

Table 2 — Distance between steel service pipes

Nominal diameter of steel service pipes DN	**Distance between steel service pipes** L_p mm
15	19
20	19
25	19
32	19
40	19
50	20
65	20
80	25
100	25
125	30
150	40
200	45
250	45

4.5.3 Twisting of steel service pipes

The twisting, w, of the steel service pipes in one end of the twin pipe assembly in relation to the other end shall be maximum 3 mm. The twisting, w, of the steel service pipes in any end of the pipe assembly in relation to any point inside the pipe assembly shall be maximum 6 mm. For cut pipes the twisting, w, shall be maximum ± 3 mm, see Figure 1.