

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 488-1:2025 sisaldab Euroopa standardi EN 488-1:2025 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 19.03.2025.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 488-1:2025 consists of the English text of the European standard EN 488-1:2025.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 19.03.2025.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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English Version

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

Tuyaux de chauffage urbain - Systèmes bloqués monotubes pour les réseaux d'eau chaude enterrés directement - Partie 1 : Assemblage d'appareils de robinetterie d'arrêt en acier manufacturés pour tubes de service en acier, isolation thermique en polyuréthane et enveloppe en polyéthylène

Fernwärmerohre - Einrohr-Verbundsysteme für direkt erdverlegte Fernwärmenetze - Teil 1: Werkmäßig gefertigte Stahlsperrarmaturenbaueinheit für Stahl-Mediumrohre, Wärmedämmung aus Polyurethan und einer Ummantelung aus Polyethylen

This European Standard was approved by CEN on 27 January 2025.

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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 foreword

This document (EN 488-1:2025) has been prepared by Technical Committee CEN/TC 107 “District heating and cooling 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 September 2025, and conflicting national standards shall be withdrawn at the latest by September 2025.

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 488:2019.

EN 488-1:2025 includes the following significant technical changes with respect to EN 488:2019:

- alignment with the structure of EN 253;
- the valves shall be designed for an operating pressure of 2,5 MPa in accordance with 4.2.1;
- the requirements for the valve extension pipes are specified in 4.4.3;
- for the leak-tightness of the seat of the unloaded steel valves up to DN 400, a distinction is no longer made between different leakage rates, see 5.3.1.3;
- added requirement: Before measuring the torque, the valve shall be closed for 24 h, see 5.3.1.4;
- when marking the valve assemblies, information about the diffusion barrier is also to be provided, see 6.5.

The EN 488 series is currently composed of the following parts:

- EN 488-1, *District heating pipes – Bonded single pipe systems for directly buried hot water networks – Part 1: Factory made steel shut-off valve assembly for steel service pipes, polyurethane thermal insulation and a casing of polyethylene* (this document);
- EN 488-2, *District heating and district cooling pipes – Bonded pipe systems for directly buried hot and cold water networks – Part 2: Factory made steel service valve assembly for steel service pipes, polyurethane thermal insulation and a casing of polyethylene*.

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, Türkiye and the United Kingdom.

Introduction

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 488-2, *District heating and district cooling pipes — Bonded pipe systems for directly buried hot and cold water networks — Part 2: Factory made steel valve assembly for draining and venting, 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 buried hot water networks — Surveillance systems*
- EN 15632 (all parts), *District heating pipes — Factory made 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*
- EN 17248, *District heating and district cooling pipe systems — Terms and definitions*
- EN 17414 (all parts), *District cooling pipes — Factory made flexible pipe systems*
- EN 17415 (all parts), *District cooling pipes — Bonded single pipe systems for directly buried cold water networks*
- EN 17878 (all parts), *District heating pipes — Factory made flexible pipe systems with a lower temperature profile*

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

1 Scope

This document specifies requirements and test methods for factory made thermally insulated bonded steel shut-off valve assemblies for hot water networks in accordance with EN 13941-1, comprising a steel valve, valve extension pipes, polyurethane (PUR) foam thermal insulation and a casing of polyethylene.

This document applies to steel valve assemblies with an internal pressure of maximum 2,5 MPa.

The principles of this document can be applied to thermal insulated bonded steel valve assemblies with internal pressures higher than 2,5 MPa, provided that special attention is paid to the effects of pressure.

The steel shut-off valve 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 19, *Industrial valves — Marking of metallic valves*

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 736-1, *Valves — Terminology — Part 1: Definition of types of valves*

EN 736-3, *Valves — Terminology — Part 3: Definition of terms*

EN 10204, *Metallic products — Types of inspection documents*

EN 12266-1, *Industrial valves — Testing of metallic valves — Part 1: Pressure tests, test procedures and acceptance criteria — Mandatory requirements*

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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 736-1, EN 736-3 and EN 17248 apply.

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

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