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**Cevi za daljinsko ogrevanje in daljinsko hlajenje - Vezani cevni sistemi za neposredno vkopana omrežja tople in hladne vode - Tovarniško izdelan sestav jeklenih ventilov za praznjenje in odzračevanje, poliuretanska toplotna izolacija in polietilenski plašč**

District heating and district cooling pipes - Bonded pipe systems for directly buried hot and cold water networks - Factory made steel valve assembly for draining and venting, polyurethane thermal insulation and a casing of polyethylene

Fernwärmerohre - Rohr-Verbundsysteme für erdverlegte Fernwärme- und Fernkältenetze - Teil 2: Werkmäßig gefertigte Baueinheiten für Entleerungs- und Entlüftungsarmaturen bestehend aus Stahl, einer Wärmedämmung aus Polyurethan und einer Ummantelung aus Polyethylen

Tuyaux de chauffage urbain et réseaux d'eau glacée - Systèmes bloqués de tuyaux préisolés pour les réseaux d'eau chaude et froide enterrés directement - Partie 2 : Assemblages d'appareils de robinetterie en acier manufacturés pour vidanges et purges, isolation thermique en polyuréthane et enveloppe en polyéthylène

**Ta slovenski standard je istoveten z: prEN 488-2**

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23.040.07	Cevovodi za daljinsko ogrevanje in njihovi deli	Pipeline and its parts for district heat
23.060.01	Ventili na splošno	Valves in general

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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

Fernwärmerohre - Verbund-Rohrsysteme für erdverlegte Fernwärme- und Fernkältenetze - Teil 2: Werkmäßig gefertigte Baueinheiten für Entleerungs- und Entlüftungsarmaturen bestehend aus Stahl, einer Wärmedämmung aus Polyurethan und einer Ummantelung aus Polyethylen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 107.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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

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**prEN 488-2:2023 (E)****European foreword**

This document (prEN 488-2:2023) 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 document is currently submitted to the CEN Enquiry.

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

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

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## Introduction

prEN 488-2 has been aligned with prEN 488-1 and other relevant European Standards.

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*
- prEN 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*
- prEN 488-1, *District heating pipes — Bonded single pipe systems for directly buried hot water networks — Part 1: 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 buried hot water networks — Surveillance systems*
- EN 15632 (all parts), *District heating pipes — Factory made flexible pipe systems*
- prEN 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*
- prEN 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 B.

## 1 Scope

This document specifies requirements for factory made thermally insulated bonded valve assemblies for draining and venting for directly buried hot and cold water networks in accordance with EN 13941-1, comprising a steel valve, steel service pipe, polyurethane (PUR) foam thermal insulation and a casing of polyethylene (PE).

The 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 10204, *Metallic products - Types of inspection documents*

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 16668, *Industrial valves - Requirements and testing for metallic valves as pressure accessories*

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 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>

## 4 Requirements

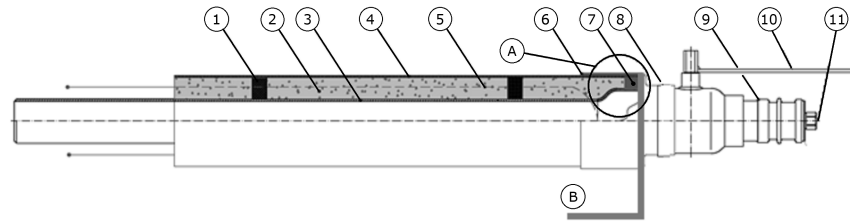
### 4.1 General

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

For information on inspection and testing see Annex A.

The fundamental technical design of valve assemblies for venting and draining is shown in Figure 1. Other designs (placement of ball valve, disks, resins e.g.) are possible. The producer shall give information regarding the tightness and lifetime to which the valve assembly is designed for. The temperature profiles and other operation conditions shall be written in the manufacturer's product information.



**Key**

1	spacer	7	permanently elastic sealing compound (optional)
2	polyurethane (PUR) foam thermal insulation	8	hose clamp (optional)
3	steel extension pipe	9	steel valve
4	casing	10	operating lever
5	measuring wire (optional)	11	safety plug with relief bore
6	shrinking sealing	A	thermal insulation at the steel valve body
		B	thermal insulated section

**Figure 1 — Valve assembly for venting and draining**

## 4.2 Steel valves

### 4.2.1 Pressure ratings for steel valves

#### 4.2.1.1 General

The steel valves shall be designed for use in pipe systems with a maximum operating pressure of 2,5 MPa. The pressure and leak tightness test of the steel valve shall be in accordance with EN 12266-1 (test reference, P10, P11, P12 seat leakage rate A).

NOTE For pressure testing of the pipe systems, see EN 13941-2.

For quality control see Annex A and prEN 488-1 with the exception that no type test shall be performed.

#### 4.2.1.2 Steel valves without indicated flow direction

Steel valves without an indicated flow direction shall support the pressure load in both directions.

### 4.2.2 Service temperatures for steel valves

The steel valves shall be able to withstand continuous operation with water at various temperatures in accordance with EN 13941-1 and at a minimum water temperature of 1 °C.

The pressure temperature curve of the manufacturer shall be considered.

## 4.3 Metallic parts

### 4.3.1 Specification

Steel grades for extension pipes are specified in EN 13941-1.

All steel valves, valve extension pipes and steel or brass components used for manufacturing of valve assemblies under the scope of this document shall as a minimum be delivered to the manufacturer with an inspection certificate 3.1 according to EN 10204. The inspection certificate shall on request be passed on to the customer.

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In case a material related inspection certificate 3.1 according to EN 10204 is required by the client who orders the valve assemblies, this request shall be given whilst placing the order with the manufacturer of the valve assemblies.

NOTE 1 Any later request for provision of such documentation could be too late and possibly can't be met by the manufacturer, since the manufacturer organizes the assignment of 3.1 certificates to the steel valves, steel extension pipes and steel or brass components before starting the production.

NOTE 2 For cold-formed steel valve bodies, the material certificates according to EN 10204 apply to the values of the chemical composition, but not to the values of the mechanical properties.

**4.3.2 Steel valve**

The steel valves should be ball valves.

If other types of steel valves are used, it shall be verified that their characteristics fulfil the requirements of this document.

The steel valve shall be fully welded. Detachable joints, such as flanged or screwed connections, except sealing system at the stem, shall not be used in the pressurized area.

The connection of the steel valves to stand pipes or hose lines shall have an internal or outside thread, flange or camlock coupling.

The preferred nominal diameters for steel valves are DN25, DN50, DN80 and DN100. Other nominal diameters may be agreed between the customer and the manufacturer.

All steel valves shall be in accordance with EN 16668.

**4.3.3 Valve extension pipe**

The valve extension pipe shall be in accordance with prEN 488-1.

**4.3.4 Surface conditions**

The surface conditions of the valve extension pipe shall be in accordance with EN 253.

**4.3.5 Accessory****4.3.5.1 General**

The assembly described in this document include the plug, screw or flange for connection with e.g. a hose line.

For stating the tightness of the shutting off of the steel valve before the operation a safety decompression shall be available.

NOTE Stoppers can e.g. be provided with decompression drilling at threaded connections.

**4.3.5.2 Plugs, screws and other coupling systems**

NOTE 1 Requirements of European legislation for pressure equipment with regard to the design requirements of the brass safety plugs can apply.

For inspection certificate, see 4.3.1.

NOTE 2 Requirements of European legislation for pressure equipment with regard to other materials used for plugs, screws and other coupling systems can apply.

**4.3.5.3 Flange connections**

Flanges according to EN 1092-1 shall be used.