NSAI
Standards

Irish Standard
I.S. EN 488:2015

District heating pipes - Preinsulated bonded pipe systems for directly buried hot water networks - Steel valve assembly for steel service pipes, polyurethane thermal insulation and outer casing of polyethylene

I.S. EN 488:2015

Incorporating amendments/corrigenda/National Annexes issued since publication:

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Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN 488:2015 is the adopted Irish version of the European Document EN 488:2015, District heating pipes - Preinsulated bonded pipe systems for directly buried hot water networks - Steel valve assembly for steel service pipes, polyurethane thermal insulation and outer casing of polyethylene

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 488

November 2015

ICS 23.060.01

Supersedes EN 488:2011+A1:2014

English Version

District heating pipes - Preinsulated bonded pipe systems for directly buried hot water networks - Steel valve assembly for steel service pipes, polyurethane thermal insulation and outer casing of polyethylene

Tuyaux de chauffage urbain - Systèmes bloqués de tuyaux préisolés pour les réseaux d'eau chaude enterrés directement - Robinets préisolés pour tubes de service en acier, isolation thermique en polyuréthane et tube de protection en polyéthylène

Fernwärmerohre - Werkmäßig gedämmte Verbundmantelrohrsysteme für direkt erdverlegte Fernwärmenetze - Vorgedämmte Absperrarmaturen für Stahlmediumrohre mit Polyurethan-Wärmedämmung und Außenmantel aus Polyethylen

This European Standard was approved by CEN on 5 September 2015.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 488:2015) 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 May 2016, and conflicting national standards shall be withdrawn at the latest by May 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 488:2011+A1:2014.

In comparison with the previous edition, the main changes in EN 488:2015 are:

— improvement and simplification of the type test of the steel valve. The cycle test has been integrated in the test sequence;

— the formulae in Annex C for the calculation of bending forces have been improved. C.1.3 of EN 488:2011+A1:2014 concerning alternative test application for diameters DN ≤ 200 mm, has been deleted.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

EN 488 has also been aligned with EN 448 and other relevant European Standards.

Other standards from CEN/TC 107 are:

— EN 253, *District heating pipes — Preinsulated bonded pipe systems for directly buried hot water networks — Pipe assembly of steel service pipe, polyurethane thermal insulation and outer casing of polyethylene*;

— EN 448, *District heating pipes — Preinsulated bonded pipe systems for directly buried hot water networks — Fitting assemblies of steel service pipes, polyurethane thermal insulation and outer casing of polyethylene*;

— EN 489, *District heating pipes — Preinsulated bonded pipe systems for directly buried hot water networks — Joint assembly for steel service pipes, polyurethane thermal insulation and outer casing of polyethylene*;

— EN 13941, *Design and installation of preinsulated bonded pipe systems for district heating;*

— EN 14419, *District heating pipes — Preinsulated bonded 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 — Preinsulated bonded twin pipe systems for directly buried hot water networks — Part 1: Twin pipe assembly of steel service pipe, polyurethane thermal insulation and outer casing of polyethylene*;

— EN 15698-2, *District heating pipes — Preinsulated bonded twin pipe systems for directly buried hot water networks — Part 2: Fitting and valve assembly of steel service pipes, polyurethane thermal insulation and outer casing of polyethylene.*

1 Scope

This European Standard specifies requirements and test methods for valves of prefabricated thermally insulated valve assemblies comprising a steel valve, rigid polyurethane foam insulation and an outer casing of polyethylene for use in directly buried hot water networks with pre-insulated pipe assemblies in accordance with EN 253.

This European Standard applies only to factory made prefabricated insulated valve assemblies for continuous operation with hot water at various temperatures in accordance with EN 253:2009+A2:2015, Clause 1 and the valve assemblies with a maximum operation pressure of 25 bar. For higher pressures, additional demands apply.

NOTE For this application, the following valve types are commonly used: ball valves, gate valves, and butterfly valves.

This European Standard does not include calculation rules for loads and stresses. These depend on the configuration of the system as it is installed. The design and installation rules are given in EN 13941.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 253:2009+A2:2015, *District heating pipes — Preinsulated bonded pipe systems for directly buried hot water networks — Pipe assembly of steel service pipe, polyurethane thermal insulation and outer casing of polyethylene*

EN 448:2015, *District heating pipes — Preinsulated bonded pipe systems for directly buried hot water networks — Fitting assemblies of steel service pipes, polyurethane thermal insulation and outer casing of polyethylene*

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

EN 10088-1:2014, *Stainless steels — Part 1: List of stainless steels*

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 12502-4, *Protection of metallic materials against corrosion — Guidance on the assessment of corrosion likelihood in water distribution and storage systems — Part 4: Influencing factors for stainless steels*

EN 13941:2009+A1:2010, *Design and installation of preinsulated bonded pipe systems for district heating*

EN 14419, *District heating pipes — Preinsulated bonded pipe systems for directly buried hot water networks — Surveillance systems*

EN ISO 12944-2, *Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Part 2: Classification of environments (ISO 12944-2)*

EN ISO 12944-5, *Paints and varnishes — Corrosion protection of steel structures by protective paint systems — Part 5: Protective paint systems (ISO 12944-5)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 253:2009+A2:2015 and EN 448 and the following apply. For types of valves, the terms and definitions given in EN 736-1 apply.

3.1
nominal pressure (PN) class
alphanumeric designation used for reference purposes related to a combination of mechanical and dimensional characteristics of a component of a pipe work system

Note 1 to entry: It comprises the letters PN followed by a dimensionless number.

Note 2 to entry: The number following the letters PN does not represent a measurable value and should not be used for calculation purposes except where specified in the relevant standard.

Note 3 to entry: The designation PN is not meaningful unless it is related to the relevant component standard number.

Note 4 to entry: The maximum allowable pressure of a pipework component depends on the PN number, the material and design of the component, its maximum allowable temperature, etc. The relevant European Component standards include tables of specified pressure/temperature ratings or, in minimum, include rules how to determine pressure/temperature ratings.

Note 5 to entry: It is intended that all components with the same PN and DN designations have the same mating dimensions for compatible flange types.

[SOURCE: EN 1333:2006, 2.1, modified – added Note 1 to entry.]

3.2
maximum operation pressure
maximum internal pressure acting against the pipe wall at any point or in any section of the pipeline at a given operating temperature

[SOURCE: EN 13941:2009+A1:2010, 3.1.19, modified]

3.3
nominal size
DN
alphanumeric designation of size, common to components in piping systems which are used for reference purposes

[SOURCE: EN ISO 6708:1995, 2.1, modified]

3.4
valve assembly
assembly of valve, valve extension pipe, PE-casing and PUR-foam

Note 1 to entry: Figure 1 gives an example of a valve assembly and its components.