

Specification for installations inside buildings conveying water for human consumption - Part 2: Design

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 806-2:2005 sisaldab Euroopa standardi EN 806-2:2005 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 30.05.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 806-2:2005 consists of the English text of the European standard EN 806-2:2005.</p> <p>This document is endorsed on 30.05.2005 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This document gives recommendations, and specifies requirements, on the design of potable water installations within buildings and for pipework outside buildings but within the premises (see EN 806-1) and applies to new installations, alterations and repairs.</p>	<p>Scope: This document gives recommendations, and specifies requirements, on the design of potable water installations within buildings and for pipework outside buildings but within the premises (see EN 806-1) and applies to new installations, alterations and repairs.</p>
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ICS 91.140.60

English version

Specification for installations inside buildings conveying water for human consumption - Part 2: Design

Spécifications techniques relatives aux installations pour
l'eau destinée à la consommation humaine à l'intérieur des
bâtiments - Partie 2: Conception

Technische Regeln für Trinkwasser-Installationen - Teil 2:
Planung

This European Standard was approved by CEN on 3 February 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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



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Contents

Foreword.....	3
1 Scope	4
2 Normative references	4
3 General requirements.....	7
4 Private water supplies.....	9
5 Acceptable materials.....	10
6 Components	14
7 Pipework inside buildings	14
8 Cold potable water services	15
9 Hot water systems	17
10 Prevention of bursting	18
11 Guidelines for water meter installations	21
12 Water conditioning	22
13 Acoustics.....	23
14 Protection of systems against temperatures external to pipes, fittings and appliances.....	23
15 Boosting	25
16 Pressure reducing valves	30
17 Combined drinking water and fire fighting services.....	31
18 Prevention of corrosion damage.....	32
19 Additional requirements for vented cold and hot water systems	33
Annex A (informative) List of acceptable materials (non-exhaustive).....	39
Annex B (informative) Aspects for water conditioning	42
Bibliography.....	49

Foreword

This document (EN 806-2:2005) has been prepared by Technical Committee CEN/TC 164 "Water supply", the secretariat of which is held by AFNOR.

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 2005, and conflicting national standards shall be withdrawn at the latest by September 2005.

This document has been prepared under the direction of CEN/TC 164 and is intended for the use of engineers, architects, surveyors, contractors, installers, water suppliers, consumers and regulatory inspections.

This standard has been written in the form of a practice specification. It is the second part of a European Standard consisting of five parts as follows:

- *Part 1: General*
- *Part 2: Design*
- *Part 3: Pipe sizing*
- *Part 4: Installation*
- *Part 5: Operation and maintenance*

NOTE : Products intended for use in water supply systems must comply, when existing, with national regulations and testing arrangements that ensure fitness for contact with drinking water. The Member states relevant regulators and the EC Commission agreed on the principle of a future unique European Acceptance Scheme (EAS), which would provide a common testing and approval arrangement at European level. If and when the EAS is adopted, European Product Standards will be amended by the addition of an Annex Z/EAS under Mandate M136 which will contain formal references to the testing, certification and product marking requirements of the EAS. Until EAS comes into force, the current national regulations remain applicable.

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

1 Scope

This document gives recommendations, and specifies requirements, on the design of potable water installations within buildings and for pipework outside buildings but within the premises (see EN 806-1) and applies to new installations, alterations and repairs.

2 Normative references

The following referenced documents are indispensable for the application 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 26, *Gas-fired instantaneous water heaters for sanitary uses production, fitted with atmospheric burners (Including Corrigendum 1998)*.

EN 89, *Gas-fired storage water heaters for the production of domestic hot water*.

EN 545, *Ductile iron, pipes, fittings, accessories and their joints for water pipelines — Requirements and test methods*.

EN 625, *Gas-fired central heating boilers — Specific requirements for the domestic hot water operation of combination boilers of nominal heat input not exceeding 70 kW*.

EN 805, *Water supply — Requirements for external systems and components outside buildings*.

EN 806-1:2000, *Specifications for installations inside buildings conveying water for human consumption — Part 1: General*.

prEN 806-3, *Specifications for installations inside buildings conveying water for human consumption — Part 3: Pipe sizing*.

EN 973, *Chemicals used for treatment of water intended for human consumption — Sodium chloride for regeneration of ion exchangers*.

EN 1057, *Copper and copper alloys — Seamless, round copper tubes for water and gas in sanitary and heating applications*.

EN 1254-1, *Copper and copper alloys — Plumbing fittings — Part 1: Fittings with ends for capillary soldering or capillary brazing to copper tubes*.

EN 1254-2, *Copper and copper alloys — Plumbing fittings — Part 2: Fittings with compression ends for use with copper tubes*.

EN 1254-3, *Copper and copper alloys — Plumbing fittings — Part 3: Fittings with compression ends for use with plastics pipes*.

EN 1254-4, *Copper and copper alloys — Plumbing fittings — Part 4: Fittings combining other end connections with capillary or compression ends*

EN 1254-5, *Copper and copper alloys — Plumbing fittings — Part 5: Fittings with short ends for capillary brazing to copper tubes*.

prEN 1254-7, *Copper and copper alloys — Plumbing fittings — Part 7: Fittings with press ends for metallic tubes*

EN 1452-1, *Plastics piping systems for water supply — Unplasticized poly(vinyl chloride) (PVC-U) — Part 1: General*.

EN 1452-2, *Plastics piping systems for water supply — Unplasticized poly(vinyl chloride) (PVC-U) — Part 2: Pipes*.

- EN 1452-3, *Plastics piping systems for water supply — Unplasticized poly(vinyl chloride) (PVC-U) — Part 3 : Fittings.*
- EN 1452-5, *Plastics piping systems for water supply — Unplasticized poly(vinyl chloride) (PVC-U) — Part 5: Fitness for purpose of the system.*
- ENV 1452-7, *Plastics piping systems for water supply — Unplasticized poly(vinyl chloride) (PVC-U) — Part 7: Guidance for the assessment of conformity.*
- EN 1487, *Building valves – Hydraulic safety groups – Tests and requirements.*
- EN 1488, *Building valves – Expansion group – Tests and requirements.*
- EN 1489, *Building valves – Pressure safety valves – Tests and requirements.*
- EN 1490, *Building valves - Combined temperature and pressure relief valves - Tests and requirements.*
- EN 1491, *Building valves – Expansion valve – Tests and requirements.*
- EN 1717, *Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow.*
- EN 10226-1, *Pipe threads where pressure tight joints are made on the threads - Part 1: Taper external threads and parallel internal threads - Dimensions, tolerances and designation.*
- EN 10240, *Internal and/or external protective coatings for steel tubes – Specification for hot dip galvanized coatings applied in automatic plants.*
- EN 10242, *Threaded pipe fitting in malleable cast iron.*
- EN 10255, *Non-Alloy steel tubes suitable for welding and threading – Technical delivery conditions.*
- EN 10284, *Malleable cast iron fittings with compression ends for polyethylene (PE) piping systems.*
- EN 12201-1, *Plastics piping systems for water supply – Polyethylene (PE) – Part 1: General*
- EN 12201-2, *Plastics piping systems for water supply – Polyethylene (PE) – Part 2: Pipes*
- EN 12201-3, *Plastics piping systems for water supply – Polyethylene (PE) – Part 3: Fittings.*
- EN 12201-5, *Plastics piping systems for water supply – Polyethylene (PE) – Part 5: Fitness for purpose of the system.*
- CEN/TS 12201-7, *Plastics piping systems for water supply – Polyethylene (PE) – Part 7: Guidance for the assessment of conformity.*
- EN 12502-1, *Protection of metallic materials against corrosion – Guidance on the assessment of corrosion likelihood in water distribution and storage systems – Part 1: General.*
- EN 12502-2, *Protection of metallic materials against corrosion – Guidance on the assessment of corrosion likelihood in water distribution and storage systems – Part 2: Influencing factors for copper and copper alloys.*
- EN 12502-3, *Protection of metallic materials against corrosion – Guidance on the assessment of corrosion likelihood in water distribution and storage systems – Part 3: Influencing factors for hot dip galvanised ferrous materials.*
- prEN 12502-4, *Protection of metallic materials against corrosion – Guidance on the assessment of corrosion likelihood in water distribution and storage conveying systems – Part 4: Influencing factors for stainless steels.*
- EN 12502-5, *Protection of metallic materials against corrosion – Guidance on the assessment of corrosion likelihood in water distribution and storage systems – Part 5: Influencing factors for cast iron, unalloyed and low alloyed steels.*

EN 806-2:2005 (E)

EN 12842, *Ductile iron fittings for PVC-U or PE piping systems – Requirements and test methods.*

EN 13443-1, *Water conditioning equipment inside buildings - Mechanical filters - Part 1: Particle rating 80 µm to 150 µm - Requirements for performances, safety and testing.*

EN 14095, *Water conditioning equipment inside buildings - Electrolytic treatment systems with aluminium anodes - Requirements for performance, safety and testing.*

EN 14525, *Ductile iron wide tolerance couplings and flange adaptors for use with pipes of different materials: ductile iron, Grey iron, Steel, PVC-U PE, Fibre – cement.*

prEN 14743, *Water equipment inside buildings - Softeners - Requirements for performance, safety and testing.*

EN 29453, *Soft solder alloys; chemical compositions and forms (ISO 9453:1990).*

EN 60335-2-21, *Household and similar electrical appliances - Safety - Part 2-21: Particular requirements for storage water heaters (IEC 60335-2-21:2002, modified).*

EN 60335-2-35, *Household and similar electrical appliances - Safety - Part 2-35: Particular requirements for instantaneous water heaters (IEC 60335-2-35:2002).*

EN 60534-8-4, *Industrial-process control valves — Part 8 : Noise considerations — Section 4: Prediction of noise generated by hydrodynamic flow (IEC 60534-8-4/1994).*

EN 60730-1, *Automatic electrical controls for household and similar use — Part 1: General requirements (IEC 60730-1:1999, modified).*

EN 60730-2-8, *Automatic electrical controls for household and similar use — Part 2-8: Particular requirements for electrically operated water valves, including mechanical requirements (IEC 60730-2-8:2000, modified).*

EN ISO 3822-1, *Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 1: Method of measurement (ISO 3822-1:1999).*

EN ISO 3822-2, *Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 2: Mounting and operating conditions for draw-off taps and mixing valves (ISO 3822-2:1995).*

EN ISO 3822-3, *Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 3: Mounting and operating conditions for in-line valves and appliances (ISO 3822-3:1997).*

EN ISO 3822-4, *Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 4: Mounting and operating conditions for special appliances (ISO 3822-4:1997).*

EN ISO 6509, *Corrosion of metals and alloys - Determination of dezincification resistance of brass (ISO 6509:1981).*

EN ISO 15874-1, *Plastics piping systems for hot and cold water installations – Polypropylene (PP) – Part 1: General (ISO 15874-1:2003).*

EN ISO 15874-2, *Plastics piping systems for hot and cold water installations – Polypropylene (PP) – Part 2: Pipes (ISO 15874-2:2003).*

EN ISO 15874-3, *Plastics piping systems for hot and cold water installations – Polypropylene (PP) – Part 3: Fittings (ISO 15874-3:2003).*

EN ISO 15874-5, *Plastics piping systems for hot and cold water installations – Polypropylene (PP) – Part 5: Fitness for purpose of the system (ISO 15874-5:2003).*

EN ISO/TS 15874-7, *Plastics piping systems for hot and cold water installations– Polypropylene (PP) – Part 7: Guidance for the assessment of conformity (ISO/TS 15874-7:2003).*

EN ISO 15875-1, *Plastics piping systems for hot and cold water installations – Crosslinked polyethylene (PE-X) – Part 1: General (ISO 15875-1:2003).*

EN ISO 15875-3, *Plastics piping systems for hot and cold water installations – Crosslinked polyethylene (PE-X) – Part 3: Fittings (ISO 15875-3:2003).*

EN ISO 15875-5, *Plastics piping systems for hot and cold water installations – Crosslinked polyethylene (PE-X) – Part 5: Fitness for purpose of the system (ISO 15875-5:2003).*

EN ISO/TS 15875-7, *Plastics piping systems for hot and cold water installations – Crosslinked polyethylene (PE-X) – Part 7: Guidance for the assessment of conformity (ISO/TS 15875-7:2003)*

EN ISO 15876-1, *Plastics piping systems for hot and cold water – Polybutylene (PB) – Part 1: General (ISO 15876-1:2003).*

EN ISO 15876-2, *Plastics piping systems for hot and cold water installations – Polybutylene (PB) – Part 2: Pipes (ISO 15876-2:2003).*

EN ISO 15876-3, *Plastics piping systems for hot and cold water installations – Polybutylene (PB) – Part 3: Fittings (ISO 15876-3:2003).*

EN ISO 15876-5, *Plastics piping systems for hot and cold water installations – Polybutylene (PB) – Part 5: Fitness for purpose of the system (ISO 15876-5:2003).*

EN ISO/TS 15876-7, *Plastics piping systems for hot and cold water installations – Polybutylene (PB) – Part 7: Guidance for the assessment of conformity (ISO/TS 15876-7:2003).*

EN ISO 15877-1, *Plastics piping systems for hot and cold water installations – Chlorinated poly(vinyl chloride) (PVC-C) – Part 1: General (ISO 15877-1:2003).*

EN ISO 15877-2, *Plastics piping systems for hot and cold water installations – Chlorinated poly(vinyl chloride) (PVC-C) – Part 2: Pipes (ISO 15877-2:2003).*

EN ISO 15877-3, *Plastics piping systems for hot and cold water installations – Chlorinated poly(vinyl chloride) (PVC-C) – Part 3: Fittings (ISO 15877-3:2003).*

EN ISO 15877-5, *Plastics piping systems for hot and cold water installations – Chlorinated poly(vinyl chloride) (PVC-C) – Part 5: Fitness for purpose of the system (ISO 15877-5:2003).*

EN ISO/TS 15877-7, *Plastics piping systems for hot and cold water installations – Chlorinated poly(vinyl chloride) (PVC-C) – Part 7: Guidance for the assessment of conformity (ISO/TS 15877-7:2003).*

ISO 15875-2, *Plastics piping systems for hot and cold water installations – Crosslinked polyethylene (PE-X) – Part 2: Pipes.*

IEC 60064-5-54, *Electrical installations of buildings - Part 5-54: Selection and erection of electrical equipment; Earthing arrangements, protective conductors and protective bonding conductors*

3 General requirements

3.1 Water supply

This document applies irrespective of the water being supplied by a statutory water supplier or from a private supply. Attention is drawn to national or local regulations and requirements.

3.2 Basic concepts

3.2.1 General

For design and construction of a potable water installation two types of installation are considered: