



SLOVENSKI STANDARD

SIST EN 805:2000

01-november-2000

Oskrba z vodo - Zahteve za zunanje vodovode in dele

Water supply - Requirements for systems and components outside buildings

Wasserversorgung - Anforderungen an Wasserversorgungssysteme und deren Bauteile außerhalb von Gebäuden

Alimentation en eau - Exigences pour les réseaux extérieurs aux bâtiments et leurs composants

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ICS:

93.025 Zunanji sistemi za prevajanje vode External water conveyance systems

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EUROPEAN STANDARD
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English version

Water supply - Requirements for systems and components outside buildings

Alimentation en eau - Exigences pour les réseaux
extérieurs aux bâtiments et leurs composants

Wasserversorgung - Anforderungen an
Wasserversorgungssysteme und deren Bauteile außerhalb
von Gebäuden

This European Standard was approved by CEN on 7 June 1999.

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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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard 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of an identical text or by endorsement, at the latest by July 2000, and conflicting national standards shall be withdrawn at the latest by July 2000.

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

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Introduction

In specifying the requirements of this standard due regard has been taken of the importance of a reliable and safe supply of water for human consumption as well as for the purpose of trade, industry, agriculture and fire fighting.

The widely varying water supply legislative requirements, populations, social and climatic conditions across Europe have also been taken into account.

This standard does not make any implication with regard to ownership of or responsibility for pipes or other apparatus in the supply system.

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1 Scope

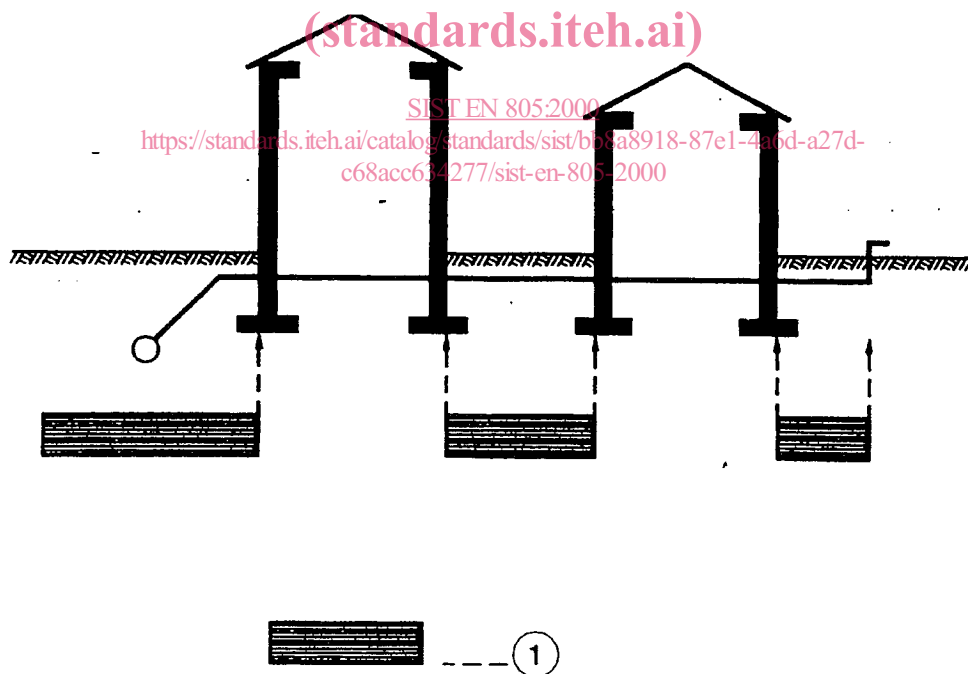
This standard specifies :

- general requirements for water supply systems outside buildings (see Figure 1) including potable water mains and service pipes, service reservoirs, other facilities and raw water mains but excluding treatment works and water resources development ;
- general requirements for components ;
- general requirements for inclusion in product standards which may include specifications which are more stringent ;
- requirements for installation, site testing and commissioning.

The requirements of this standard apply to :

- the design and construction of new water supply systems ;
- the extension of significant areas forming a coherent part of an existing water supply system ;
- significant modification and/or rehabilitation of existing water supply systems.

NOTE It is not intended that existing water supply systems are to be altered to comply with this standard, provided that there are no significant detrimental effects on water quantity, security, reliability and adequacy of the supply.



Key

- 1 Field of application of this standard

Figure 1 - Field of application of this standard

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to the European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 1295-1, *Structural design of buried pipelines under various conditions of loading – Part 1 : General requirements.*

EN 1508, *Water supply - Requirements for systems and components for the storage of water.*

EN 45011, *General criteria for certification bodies operating product certification.*

EN 45012, *General criteria for certification bodies operating quality system certification.*

ISO 48, *Rubber, vulcanized or thermoplastic - Determination of hardness (hardness between 10 IRHD and 100 IRHD).*

EN ISO 9001, *Quality systems - Model for quality assurance in design/development, production, installation and servicing.*

EN ISO 9002, *Quality systems - Model for quality assurance in production, installation and servicing.*

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3 Definitions

For the purposes of this standard, the following definitions apply.

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3.1 Pressures

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For the designation of pressures in English, French and German see table 1 and annex A.2.

Table 1 - Designation of pressures in English, French, German

Abbreviation ^a	English	French	German	
DP	design pressure	pression de calcul en régime permanent	Systembetriebsdruck	System related
MDP	maximum design pressure	pression maximale de calcul	höchster Systembetriebsdruck	
STP	system test pressure	pression d'épreuve du réseau	Systemprüfdruck	
PFA	allowable operating pressure	pression de fonctionnement admissible	zulässiger Bauteilbetriebsdruck	Component related
PMA	allowable maximum operating pressure	pression maximale admissible	höchster zulässiger Bauteilbetriebsdruck	
PEA	allowable site test pressure	pression d'épreuve admissible sur chantier	zulässiger Bauteilprüfdruck auf der Baustelle	
OP	operating pressure	pression de fonctionnement	Betriebsdruck	System
SP	service pressure	pression de service	Versorgungsdruck	related
^a Valid for all language versions.				

3.1.1 allowable maximum operating pressure (PMA) maximum pressure occurring from time to time, including surge, that a component is capable of withstanding in service

3.1.2 allowable operating pressure (PFA) maximum hydrostatic pressure that a component is capable of withstanding continuously in service

3.1.3 allowable site test pressure (PEA) maximum hydrostatic pressure that a newly installed component is capable of withstanding for a relatively short duration, in order to ensure the integrity and tightness of the pipeline

3.1.4 design pressure (DP) maximum operating pressure of the system or of the pressure zone fixed by the designer considering future developments but excluding surge

3.1.5 maximum design pressure (MDP) maximum operating pressure of the system or of the pressure zone fixed by the designer considering future developments and including surge, where :

- MDP is designated MDP_a, when there is a fixed allowance for surge ;
- MDP is designated MDP_c, when the surge is calculated.

3.1.6**operating pressure (OP)**

internal pressure which occurs at a particular time and at a particular point in the water supply system

3.1.7**pressure zones**

areas of pressure ranges within a water supply system

3.1.8**service pressure (SP)**

internal pressure delivered at the point of connection to the consumer's installation at zero flow in the service pipe

3.1.9**surge**

rapid fluctuations of pressure caused by flow alterations over short periods of time

3.1.10**system test pressure (STP)**

hydrostatic pressure applied to a newly laid pipeline in order to ensure its integrity and tightness

3.2 System**3.2.1****gravity system**

system where flow and/or pressure are caused by the force of gravity. There are two kinds of such systems :

- pressurized gravity system, where the pipeline operates full ;
- non-pressurized gravity system, where the pipeline operates partially full.

3.2.2**local main**

water main which connects principal main(s) with service pipes

3.2.3**potable water**

water intended for human consumption as defined by the relevant national authorities

3.2.4**principal main**

water main serving as a principal distributor within the supply area, normally without direct consumer connections

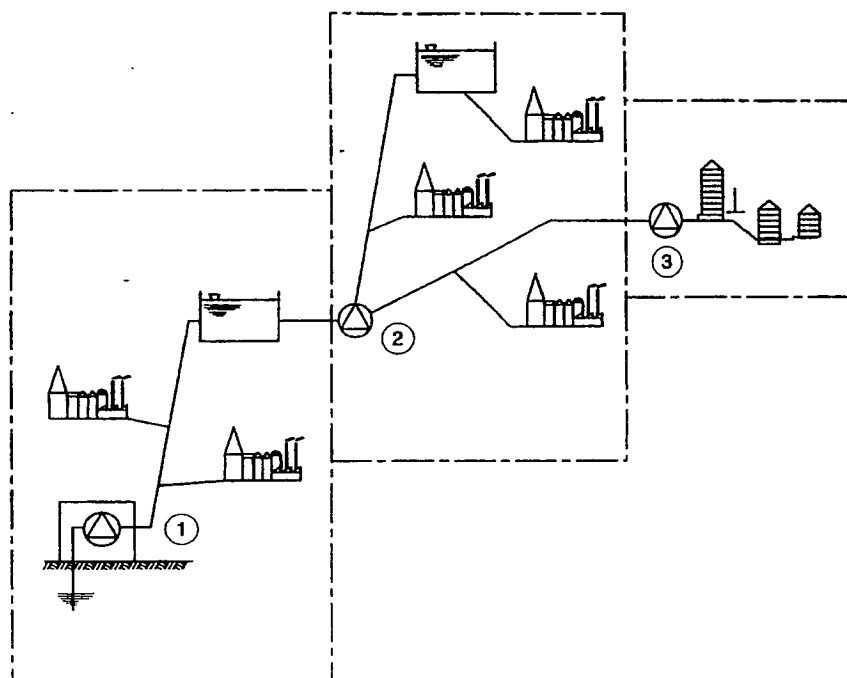
3.2.5**pumped and gravity system**

system where the gravity system and the pumped system are used, either separately or in combination, to provide the flow and/or pressure

3.2.6**pumping station**

pumping installation designed to provide adequate pressure and flow within the distribution system. Three types can be distinguished (see Figure 2) :

- main lift normally at the outlet of the treatment works, or source if there is no treatment, to provide flow to the service reservoir ;
- intermediate to deliver flow on the way to a service reservoir or supply area ;
- booster to pump directly from and to the area without storage.



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Figure 2 - Example of different types of pumping stations

3.2.7 pumped system
system where flow and/or pressure are provided by means of one or more pumps and where the pipeline operates full

3.2.8 reservoir
storage facility for water

3.2.9 service pipe
water pipe which supplies water from the local main to the consumer

3.2.10 service reservoir
covered reservoir for potable water which includes water compartment(s), control building, operation equipment and access arrangement providing reserve supplies, pressure stability and balancing demand fluctuations

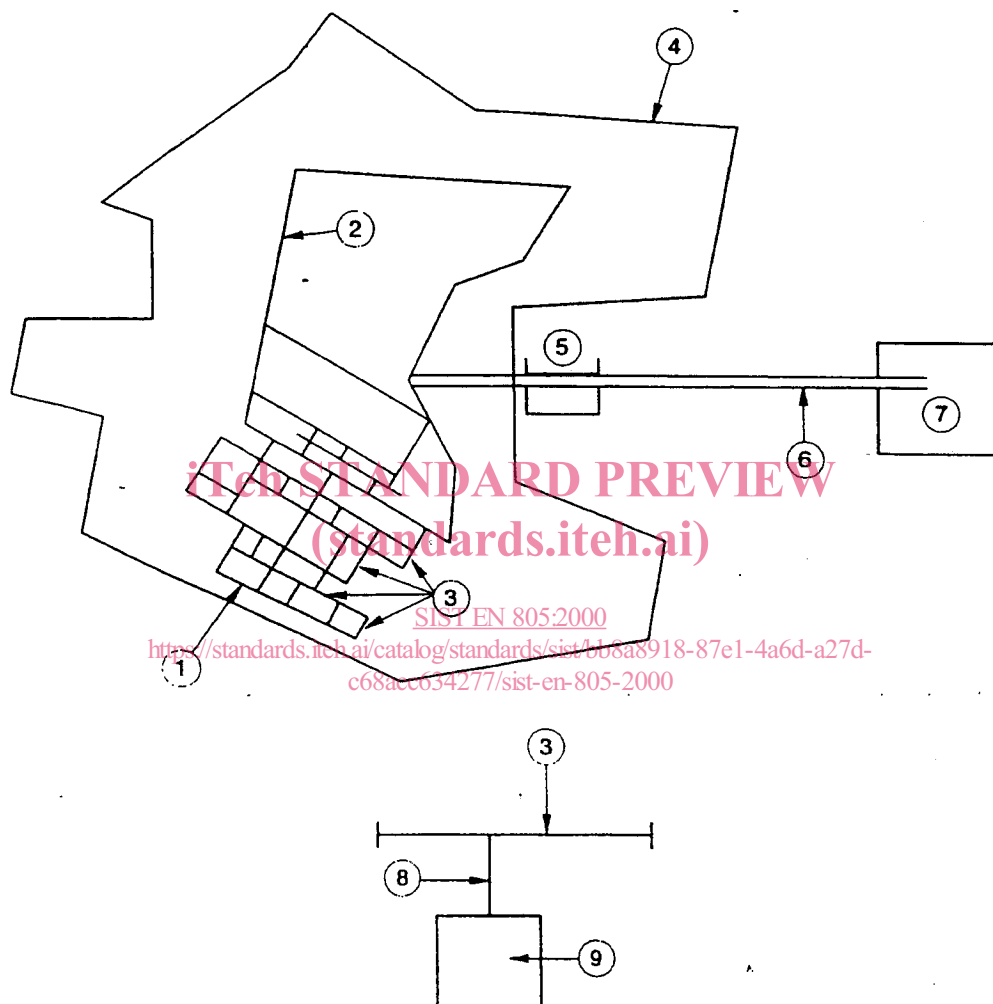
3.2.11 standby plant
plant or system, such as additional pumps or duplicate mains, installed to provide secondary means for the supply of services in the event of failure or malfunction of the normal operating unit

3.2.12**trunk main**

water main which interconnects source(s), treatment works, reservoir(s) and/or supply areas, normally without direct consumer connection(s)

3.2.13**water distribution system**

part of the water supply system comprising pipelines, service reservoirs, pumping stations and other assets by which water is distributed to the consumers. It begins at the outlet from the water treatment works (or source, if there is no treatment) and ends at the point of connection to the consumer's installation (see Figure 3).

**key**

- 1 Network
- 2 Principal main
- 3 Local main
- 4 Supply area
- 5 Service reservoir (may be present)
- 6 Trunk main
- 7 Source or treatment works
- 8 Service pipe
- 9 Consumer

Figure 3 - Example of a water distribution system

3.3 Components

- 3.3.1 accessories**
components, other than pipes, fittings or valves, which are used in a pipeline, e.g. glands, bolts, locking rings for joints, ferrules
- 3.3.2 adjustable joint**
joint which permits significant angular deflection at the time of installation but not thereafter
- 3.3.3 coating**
additional material applied to the external surface of a component to protect it from corrosion, mechanical damage or chemical attack
- 3.3.4 ferrule**
component used to connect a service pipe to a main, usually capable of shutting off the flow of water to the service pipe
- 3.3.5 fitting**
component, other than a pipe, which allows pipeline deviation, change of direction or bore. In addition, flanged-socket pieces, flanged-spigot pieces and collars/couplings are defined as fittings
- 3.3.6 flexible joint**
joint which permits significant angular deflection, both during and after installation and which can accept a slight offset of the centre line
- 3.3.7 flexible pipe**
pipe whose load carrying capacity is limited by deformation (diametral deflection and/or strain) under load to the ultimate design criteria without breaking or overstressing (flexible behaviour)
- 3.3.8 joint**
connection between the ends of two components including the means of sealing
- 3.3.9 lining**
additional material applied to the internal surface of a component to protect it from corrosion, mechanical damage or chemical attack
- 3.3.10 pipe**
component of uniform bore, normally straight in axis, having e.g. socket, spigot or flanged ends
- 3.3.11 pipe barrel**
cylindrical part of the pipe with a uniform cross section excluding socket and spigot where appropriate
- 3.3.12 rigid joint**
joint that does not permit significant angular deflection, either during or after installation
- 3.3.13 rigid pipe**
pipe whose load carrying capacity is limited by breaking without significant deformation of its cross section (rigid behaviour)

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3.3.14**semi-rigid pipe**

pipe whose load carrying capacity is limited either by deformation/overstressing (flexible behaviour) or by breaking (rigid behaviour) depending on its ring stiffness and/or the conditions of installation

3.3.15**valve**

component isolating or controlling flow and pressure, e.g. isolating valve, control valve, pressure reducing valve, air valve, non-return valve, hydrant

3.4 Diameters**3.4.1****external diameter (OD)**

mean external diameter of the pipe barrel at any cross section. For pipes with externally profiled barrels, the external diameter is taken as the maximum diameter when viewed in cross-section.

3.4.2**internal diameter (ID)**

mean internal diameter of the pipe barrel at any cross section

3.4.3**nominal size (DN/ID or DN/OD)**

numerical designation of the size of a component, which is a whole number approximately equal to the actual dimension in millimetres. This applies to either the internal diameter (DN/ID) or the external diameter (DN/OD).

3.5 Installation**iTeh STANDARD PREVIEW**

Installation terms are shown in figure 4. **(standards.iteh.ai)**

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