



**SLOVENSKI STANDARD**  
**SIST EN 14339:2005**

**01-december-2005**

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**Podzemni hidranti**

Underground fire hydrants

Unterflurhydranten

Bouches d'incendie enterrées

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**SIST EN 14339:2005**

**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 14339**

July 2005

ICS 13.220.10; 93.080.30

English version

**Underground fire hydrants**

Bouches d'incendie enterrées

Unterflurhydranten

This European Standard was approved by CEN on 20 June 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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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This European Standard (EN 14339:2005) has been prepared by Technical Committee CEN/TC 192 "Fire service equipment", the secretariat of which is held by BSI, in cooperation with CEN/TC164 "Water supply" and CEN/TC 69 "Industrial Valves".

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of an identical text or by endorsement, at the latest by January 2006, and conflicting national standards shall be withdrawn at the latest by January 2006.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this European Standard.

This is one of a series of standards for fire hydrants.

This is the first edition of this European Standard.

No International Standard exists for underground fire hydrants.

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.

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## Introduction

The purpose of a fire hydrant installation is to provide a connection (i.e. hydrant) to the water main to which the firefighter can connect firefighting equipment. Underground hydrants consist of one or more valves and outlet connectors and are installed in an underground chamber with a surface box and intended primarily to supply water for firefighting and also may be used by water utilities (as defined in 3.3).

This European Standard is in conformity with the general requirements already established by CEN/TC 164 in the field of water supply.

In respect of quality of water intended for human consumption caused by the product covered by this European Standard:

- 1) this European Standard provides no information as to whether the product may be used without restriction in any of the Member States of the EU or EFTA;
- 2) it should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

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## 1 Scope

This European Standard specifies the requirements, test methods and marking applicable to underground fire hydrants intended for fire fighting purposes:

- to be installed in a water distribution system;
- in sizes DN 80 and DN 100;
- suitable for an allowable operating pressure, PFA, of 10 bar or 16 bar or 25 bar with or without drain facility;
- having a vertical or horizontal, flanged, socket or spigot inlet;
- with one or two outlets and having outlet/s to national requirements;
- of globe (screw down) or gate valve type.

This European Standard also provides for the evaluation of conformity of the underground fire hydrants to the requirements of this European Standard.

This European Standard applies to fire hydrants for potable and non-potable water and for filtered water. Additional requirements may apply for other liquids.

Couplings connected to outlets are outside the scope of this European Standard and should conform to national requirements.

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## 2 Normative references

SIST EN 14339:2005

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The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 681-1, *Elastomeric seals — Material requirements for pipe joint seals used in water and drainage applications — Part 1: Vulcanized rubber*

EN 1074-1:2000, *Valves for water supply — Fitness for purpose requirements and appropriate verification tests — Part 1: General requirements*

EN 1074-2:2000, *Valves for water supply — Fitness for purpose requirements and appropriate verification tests — Part 2: Isolating valves*

EN 1074-6:2004, *Valves for water supply — Fitness for purpose requirements and appropriate verification tests — Part 6: Hydrants*

EN 1092-1, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 1: Steel flanges*

EN 1092-2, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 2: Cast iron flanges*

EN 1503-1, *Valves — Materials for bodies, bonnets and covers — Part 1: Steels specified in European Standards*

**EN 14339:2005 (E)**

EN 1503-3, *Valves — Materials for bodies, bonnets and covers — Part 3: Cast irons specified in European Standards*

EN ISO 9001:2000, *Quality management systems — Requirements (ISO 9001:2000)*

**3 Terms and definitions**

For the purposes of this European Standard, the following terms and definitions apply.

**3.1****hydrant**

connection to a water supply system including an isolating valve  
[EN 1074-6:2004]

**3.2****fire hydrant**

hydrant designed to supply water for fire fighting during all phases of the fire

**3.3****underground fire hydrant**

fire hydrant installed in an underground chamber with a surface box, intended primarily to supply water for firefighting and which may also be used by water utilities

**3.4****obturator**

movable component of the valve whose position in the fluid flow path permits, restricts or obstructs the fluid flow (see EN 736-2). In addition it can be captive or loose

**3.5****captive obturator**

device for controlling the flow out of a pipeline and into a pipeline

**3.6****loose obturator**

device for controlling flow out of a pipeline but which prevents flow into a pipeline

**3.7****shell**

pressure-containing envelope of the valve

NOTE It normally comprises the body and, when included in the design, a bonnet or cover and the body bonnet or body cover joint (see EN 736-2).

**3.8****DN nominal size**

alphanumeric designation of the size of pipework components used for reference purposes. It comprises the letters DN followed by a dimensionless round number which is loosely related to the effective dimensions, in millimetres, of the bore or external diameter of the end connections

[EN 1074-1:2000]

**3.9****PN nominal pressure**

alphanumeric designation used for reference purposes and related to a combination of numerical and dimensional characteristics of a component of a pipe system. It comprises the letters PN followed by a dimensionless round number

[EN 1074-1:2000]



**3.10****allowable operating pressure PFA**

maximum hydrostatic pressure that a component can withstand continuously in service  
[EN 1074-1:2000]

**3.11****allowable maximum operating pressure PMA**

maximum hydrostatic pressure including surge that a component can withstand from time to time in service  
(see EN 1074-1)

**3.12****allowable test pressure PEA**

maximum hydrostatic pressure that a newly installed component can withstand for a relatively short duration when either fixed above ground level or laid and backfilled underground in order to ensure the integrity and tightness of the pipeline  
[EN 1074-1:2000]

**3.13****flow coefficient Kv (Cv)**

rate of flow in cubic metres per hour that will cause a differential pressure of one bar through the fire hydrant  
(see EN 736-3)

**4 Design requirements****4.1 General dimensions**

As a minimum, the dimensions indicated in Figure 1 shall be given in the manufacturer's catalogue.

**4.2 Shell**

The shell material of the hydrant shall be chosen from Table 1.

**Table 1 — Shell material**

Material	Reference standard
Flake graphite cast iron	EN 1503-3
Spheroidal graphite cast iron	EN 1503-3
Stainless steel	EN 1503-1

**4.3 Elastomers**

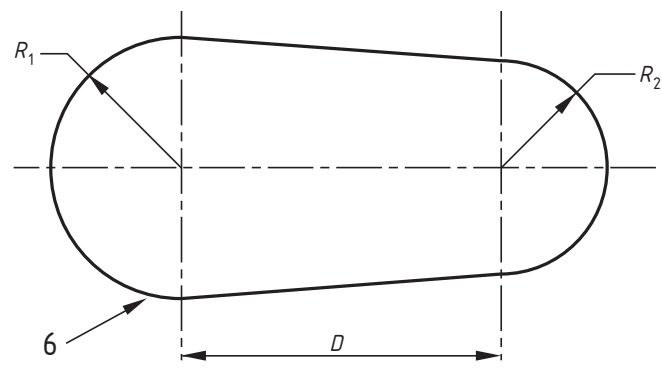
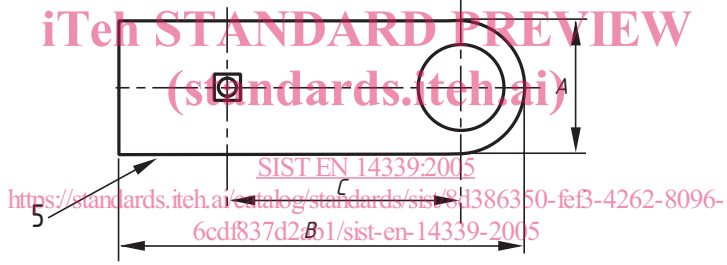
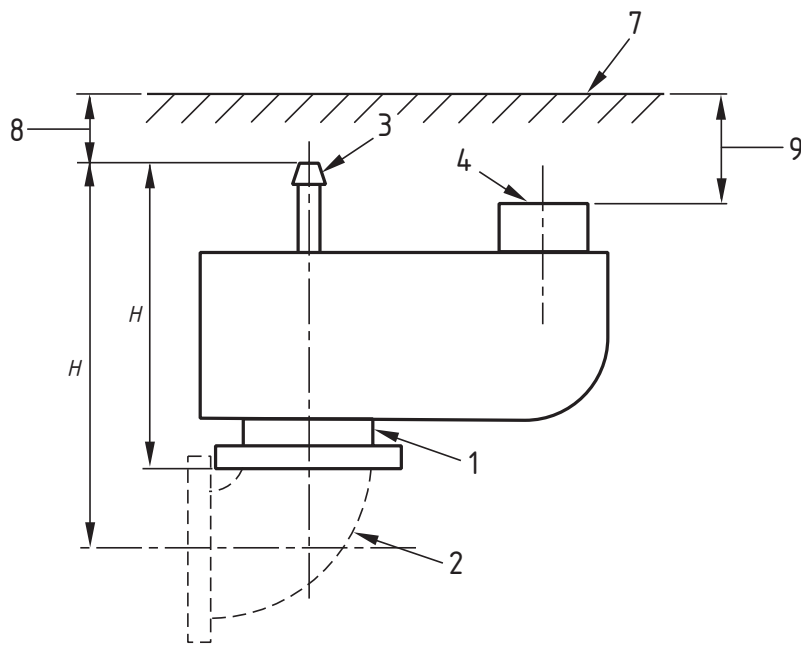
All elastomeric seals within the hydrant shall comply with EN 681-1. They shall be either type WA for cold potable water use or suitable for the fluid with which they come into contact (see 4.6).

**4.4 Obturator – main valve**

The hydrant obturator shall be either captive or loose type.

The manufacturer shall declare if the design of the hydrant permits the obturator to be replaced in situ.

NOTE For safety reasons this replacement should only be carried out when the fire hydrant is not under pressure.



- Key
- |   |  |
|---|--|
| 1 Vertical inlet DN                       | 5 Maximum size of hydrant (A max, B max)                         |
| 2 Horizontal inlet DN                     | 6 Minimum clear area of Surface box and Covers (D, R1min, R2min) |
| 3 Drive                                   | 7 Ground level   |
| 4 Outlet connector                        | 8 Height of the ground level above spindle                       |
| 9 Height of the ground level above outlet | H Depth of the outlet from the spindle                           |

Figure 1 — Typical fire hydrant

## 4.5 Stem seals

Stem seal provision and servicing facilities shall be in accordance with national requirements valid in the country of use of the product.

NOTE 1 Stem seals of globe (screw down) hydrants are capable of being replaced with the valve closed and under operating pressure.

NOTE 2 Stem seals of gate valve hydrants are capable of being replaced with the valve fully open and under operating pressure.

NOTE 3 The term 'stem' is also known as 'spindle'.

NOTE 4 A future revision of this European Standard will give a list of acceptable provisions, allowing each Member State to choose those provisions they wish.

## 4.6 Materials including lubricants in contact with water intended for human consumption

Pending the introduction of a common European Approvals Scheme 'E.A.S.', all materials including lubricants in the construction of a hydrant, that are likely to come into contact with water for human consumption, shall comply with the National Regulations in the country of use.

## 4.7 Leaktightness and mechanical strength

### 4.7.1 General

The hydrant shall be suitable for use at the relevant pressures shown in Table 2, and shall meet the requirements of 4.7.2 to 4.7.3.

SIST EN 14339:2005  
Table 2 — Pressures  
<https://standards.iteh.ai/catalog/standards/sist/8d386350-fef3-4262-8096-6e14937d2ab1/sist-en-14339-2005>

PN	PFA MPa (bar)	PMA MPa (bar)	PEA <sup>a</sup> MPa (bar)
10	1,0 (10)	1,2 (12)	1,7 (17)
16	1,6 (16)	2,0 (20)	2,5 (25)
25	2,5 (25)	3,5 (35)	3,75 (37,5)
<sup>a</sup> PEA only applies to valves not in the closed position.			

### 4.7.2 Shell and all pressure containing components (including stem seals)

#### 4.7.2.1 Leaktightness

When tested in accordance with the Annex A of EN 1074-1:2000, using the values of PEA from Table 2, there shall be no visible sign of leakage past the valve.

NOTE This is equivalent to rate "A" as defined in EN 1074-1:2000.

#### 4.7.2.2 Mechanical strength

Having successfully passed the leak tightness test 4.7.2.1, the hydrant shall not show any sign of defect.