BRITISH STANDARD

BS EN
14339:2005

Underground fire hydrants

The European Standard EN 14339:2005 has the status of a British Standard

ICS 13.220.10; 93.080.30

BSI
British Standards

National foreword

This British Standard is the official English language version of EN 14339:2005. It partially supersedes BS 750:1984 which will be withdrawn on publication of the revised version which is in progress.

The revision of BS 750 will specify the national operational and health and safety requirements that are necessary for underground fire hydrants to conform to BS EN 14339. It will also include specific national requirements not included in BS EN 14339, including requirements for surface box frames and covers.

The UK participation in its preparation was entrusted by Technical Committee FSH/17, Fire brigade equipment, to Subcommittee FSH/17/1, Hydrants, hydrant systems, couplings and indicator plates, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled "International Standards Correspondence Index", or by using the "Search" facility of the *BSI Electronic Catalogue* or of British Standards Online.

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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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Contents

Page

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.

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.

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.

2 Normative references

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 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

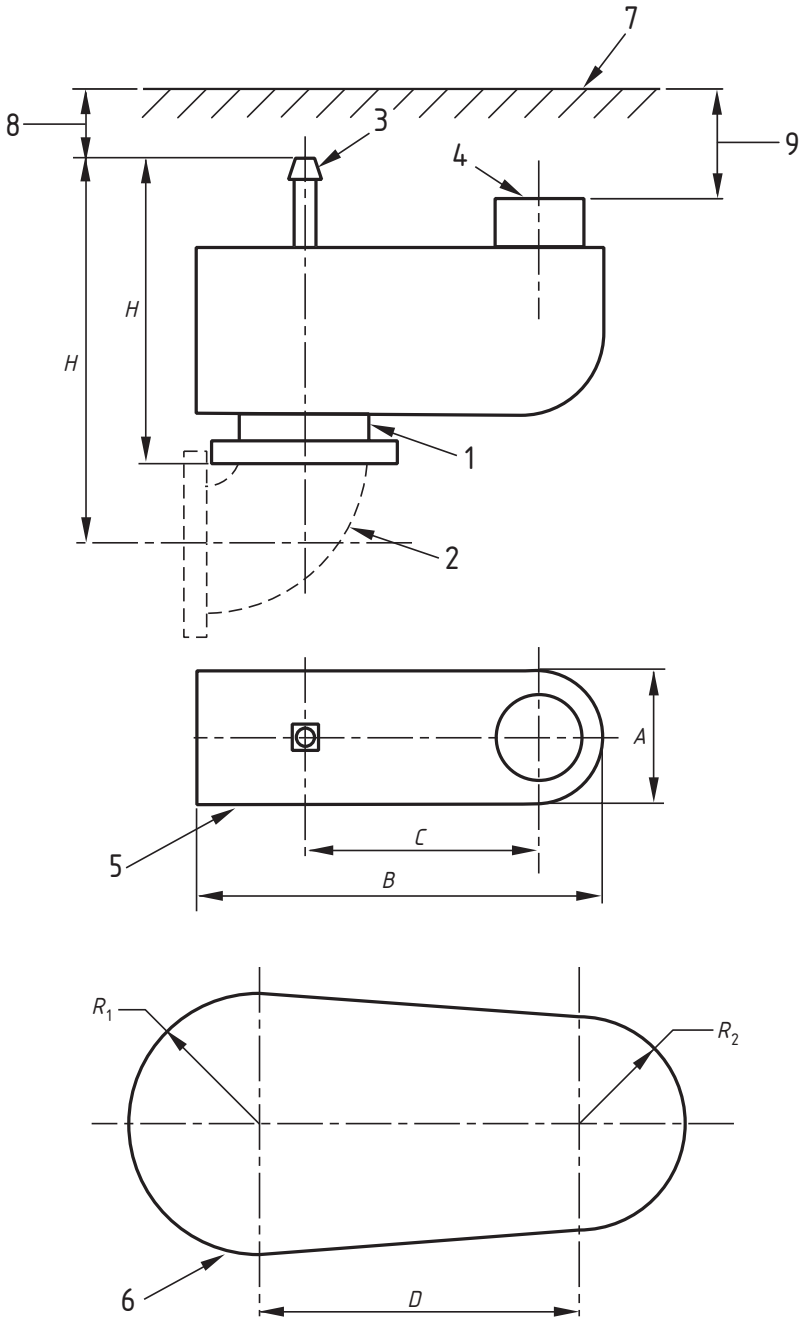
All elastomeric seals within the hydrant shall comply with EN 681-1. They shall be either type WA for cold potable water use or suitable for the fluid with which they come into contact (see 4.6).

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.

Table 2 — Pressures

PN	PFA MPa (bar)	PMA MPa (bar)	PEA [a] 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)
[a] 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.

4.7.3 Obturator

4.7.3.1 Leaktightness

When tested in accordance with Annex B of EN 1074-1:2000, using the values of 1,1 × PFA from Table 2 and the appropriate MOT values from Table 3, 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.

4.7.3.2 Mechanical strength

Having successfully passed the leak tightness test 4.7.3.1, there shall be no other sign of defect.

4.7.4 Endurance

The requirements and test method shall be according to EN 1074-6:2004, 5.5.1.

4.7.5 Endurance of the non-return device (where fitted)

The requirements and test method shall be in accordance with EN 1074-6:2004, 5.5.2.

4.8 Closing direction

The hydrant shall be closed by turning the stem in a clockwise direction when viewed from above.

4.9 Opening turns

4.9.1 Total turns

When testing in accordance with 5.3.1, the number of turns "N" required to fully open the valve shall be between 5 and 15 for DN 80 and between 6 and 15 for DN 100.

4.9.2 Start of flow (dead turns)

The maximum number of turns to commence flow shall not exceed 4 and in addition the manufacturer shall declare the number of turns to start the flow.

When tested in accordance with 5.3.2, flow shall occur.

4.10 Resistance of hydrant to operating loads

4.10.1 Maximum operating torque (MOT) for operating loads

When tested in accordance with EN 1074-6:2004, Annex C, the torque required to seal the hydrant shall meet the appropriate value given in Table 2 of EN 1074-6:2004.

4.10.2 Minimum strength torque (mST)

When tested in accordance with EN 1074-2:2000, Annex A, the torque required for the resistance of the hydrant shall meet the appropriate value given in Table 2 of EN 1074-6:2004.

4.11 Stem drive

The stem drive shall comply with national requirements valid in the country of use of the product. Where fitted, the stem cap shall be securely fixed in position during normal use. The means of fixing shall be such as to

permit removal of the cap by authorised users but also to prevent unintentional removal. The design of the stem cap recess shall suit the stem end of the valve.

NOTE 1 The term ‘stem’ is also known as ‘spindle’.

NOTE 2 A future revision of this European Standard will give a list of acceptable provisions, allowing each Member State to choose those provisions they wish.

4.12 Inlet connections

Inlet flanges shall be suitable for connecting to flanges conforming with EN 1092-1 or EN 1092-2, depending on the shell material.

Depending on the customer need, the flanges may additionally accommodate older pattern flanges in accordance with national requirements.

Where the inlet is of a proprietary type the manufacturer shall declare its dimensions.

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

4.13 Outlets

The design of the outlet shall conform to National Requirements valid in the country of use of the hydrant.

4.14 Drainage system

The performance of the draining system, where fitted to the hydrant, shall comply with the requirements of EN 1074-6:2004, 5.6. In addition, the manufacturer shall declare the volume of retained water and the time for draining.

4.15 Internal and external corrosion resistance

4.15.1 General

The internal surfaces which are in continuous contact with the water, and all external surfaces of the hydrant (including bolts) which are in continuous contact with the surrounding soil, water or atmosphere, shall be resistant to corrosion and ageing by appropriate selection of materials.

4.15.2 Coatings

All cast iron components shall be coated to protect against corrosion and protect the quality of the water intended for human consumption contained within the hydrant, if applicable.

NOTE The colour of the coatings may be to technical specifications depending on the conditions of use.

4.15.3 Other components

Other component parts of the hydrant to those in 4.15.1 shall be manufactured from materials that will resist corrosion for the design life of the product under the conditions of use for which it is intended.

4.16 Resistance to disinfection products

Where applicable, the requirement and test shall be in accordance with 5.4 of EN 1074-1:2000.

4.17 Hydrants for non potable water systems

In cases where the hydrant does not transport water intended for human consumption, the manufacturer shall ensure that all materials used in the hydrant (where they come into contact with the fluid) shall not be adversely affected by that fluid.

4.18 Hydraulic characteristics

The hydraulic characteristics of each model of hydrant shall be determined in accordance with EN 1074-6:2004, 5.3.

The manufacturer shall declare the Kv value (with captive or with loose obturator) taking into account the DN of the inlet and the internal diameter of the outlets.

The minimum flow value shall be 60 for DN 80 and 75 for DN 100.

NOTE Higher values are recommended.

5 Test methods

5.1 General

For safety reasons, before applying any hydrostatic pressure, release all air from within the component under test.

5.2 General dimensions

Measure or gauge the general dimensions specified in 4.1.

5.3 Operational characteristics

5.3.1 Number of turns to fully open the hydrant

Close the valve with a torque sufficient to seal the hydrant. Fully open the valve and determine the number of turns, which shall be in conformity with 4.9.

5.3.2 Start of flow

Connect the hydrant to a water supply at the pressure of PFA and close the valve with a torque to seal the hydrant using MOT. Open the valve by the number of turns specified in 4.9.2 and determine if flow has started.

6 Marking and additional data

6.1 Marking

All hydrants shall be durably marked on the upper part with the following:

— direction of opening;

— number of turns to start flow and fully open.

In addition, all hydrants shall be securely and durably marked with the following:

— number of this European Standard, i.e. EN 14339;

— DN;

— PN;

— loose obturator (if applicable);

— manufacturer's mark;

— date of manufacture;

— suitability for the conveyed fluid; If potable water, reference to EN 1074-6:2004.

NOTE Where ZA.3 covers the same information as this subclause, the requirements of this subclause are met.

6.2 Additional hydrant data

The manufacturer's catalogue shall give the information listed in 6.1 and provide the following additional information:

Number of this European Standard i.e. EN 14339

Dimensions:

— according to 4.1, with reference to Figure 1.

Shell material:

— according to Table 1.

Details of obturator.

Approvals of materials for contact with water intended for human consumption (if relevant):

— details of compliance with national regulations in the country of use.

Stem seals:

— details of compliance with national requirements in the country of use.

Stem drive:

— details of compliance with national requirements in the country of use.

Resistance to operating loads:

— MOT value;
— mST value.

Installation and maintenance guide

Inlet flanges:

— EN 1092-1 or EN 1092-2;
— need to accommodate older pattern flanges;
— inlet is of a proprietary type.

Outlet connectors:

— details of conformity to national requirements in the country of use.

Draining (if applicable):

— volume of retained water;
— time for draining.

Hydraulic characteristics: Kv value.

Internal and external corrosion resistance.

Coatings (if applicable):

— details of coating type, colour and thickness.

Resistance to corrosion of other component parts.

Resistance to disinfection products (if relevant).

Compatibility with the conveyed fluid (if relevant):

— hydrant for non potable water systems.

Hydrant for potable water systems, EN 1074-6:2004.

NOTE Where ZA.3 covers the same information as this subclause, the requirements of this subclause are met.

7 Evaluation of conformity

7.1 General

The compliance of an underground hydrant with the requirements of this European Standard shall be demonstrated by:

– initial type testing;

– factory production control by the manufacturer, including product assessment.

NOTE The manufacturer is a natural or legal person, who places the hydrant on the market under his own name. Normally, the manufacturer designs and manufactures the hydrant himself. As a first alternative, he may have it designed, manufactured, assembled, packed, processed or labelled by subcontracting. As a second alternative he may assemble, pack, process, or label ready-made products.

The manufacturer shall ensure:

– initial type testing in accordance with this European Standard is initiated and carried out (where relevant, under the control of a product certification body); and

– that the product continuously complies with the initial type testing samples, for which compliance with this European Standard has been verified.

The manufacturer shall always retain the overall control and shall have the necessary competence to take responsibility for the product.

The manufacturer shall be fully responsible for the conformity of the hydrant to all relevant regulatory requirements. However, where the manufacturer uses components already shown to conform to those requirements relevant for that component (e.g. by CE marking), the manufacturer is not required to repeat the evaluation which leads to such conformity. Where the manufacturer uses components not shown to conform, it is his responsibility to undertake the necessary evaluation to show conformity.

7.2 Initial type testing (ITT)

7.2.1 General

Initial type testing shall be performed to demonstrate conformity with this European Standard.

All characteristics given in Clause 4 shall be subject to this initial type testing, except as described in 7.2.3 to 7.2.5.

7.2.2 Modifications

In the case of modification of the hydrant or of the method of production (where these may affect the stated properties), initial type testing shall be performed. All characteristics given in this European Standard, which may be changed by the modification, shall be subject to this initial type testing, except as described in 7.2.3 to 7.2.5.

7.2.3 Previous tests and families

Tests previously performed in accordance with the provisions of this European Standard may be taken into account providing that they were made to the same or a more rigorous test method under the same system of attestation of conformity on the same product or products of similar design, construction and functionality, such that the results are applicable to the product in question.

NOTE Same system of attestation of conformity means testing by an independent third party under the control of a product certification body.

Products may be grouped into families where one or more characteristics are the same for all products within that family or the test results are representative of all products within that family. In this case not all products of the family have to be tested for the purposes of the initial type testing.

7.2.4 Test samples

Only one product of each model and DN shall be tested to ascertain that the hydrant design meets the stated requirements.

NOTE Requirements for testing individual production units are given in 5.2.

Test samples shall be representative of the normal production. If the test samples are prototypes, they shall be representative of the intended future production and shall be selected by the manufacturer.

If the technical documentation of the test samples does not give a sufficient basis for later compliance checks, a reference sample (identified and marked) shall remain available for this purpose.

7.2.5 Test report

Any initial type testing and its results shall be documented in a test report.

7.3 Factory product control (FPC)

7.3.1 General

The manufacturer shall establish, document and maintain an FPC system to ensure that the hydrants placed on the market conform to the stated performance characteristics. FPC is the permanent internal control of production exercised by the manufacturer.

If the manufacturer has the hydrant designed, manufactured, assembled, packed, processed and labelled by subcontracting, the FPC of the original manufacturer may be taken into account. However, where subcontracting takes place, the manufacturer shall retain the overall control of the products and ensure that he or she receives all the information that is necessary to fulfil his responsibilities according to this European Standard. The manufacturer who subcontracts all of his activities may under no circumstances pass his responsibilities on to a subcontractor.

All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures. This production control system documentation shall ensure a common understanding of conformity evaluation and enable the achievement of the required component characteristics and the effective operation of the production control system to be checked.

Factory production control therefore brings together operational techniques and all measures allowing maintenance and control of the conformity of the kit with its technical specifications. Its implementation may be achieved by controls and tests on measuring equipment, raw materials and constituents, processes, machines and manufacturing equipment and finished kits, including material properties in products, and by making use of the results thus obtained.

7.3.2 General requirements

The FPC system shall fulfil the requirements as described in the following clauses of EN ISO 9001:2000:

- 4.2 except 4.2.1 a);
- 5.1 e), 5.5.1, 5.5.2;
- Clause 6;
- 7.1 except 7.1 a), 7.2.3 c), 7.4, 7.5, 7.6;
- 8.2.3, 8.2.4, 8.3, 8.5.2.

The FPC system may be part of a Quality Management system, e.g. in accordance with EN ISO 9001.

7.3.3 Product specific requirements

7.3.3.1 The FPC system shall:

– address this European Standard, and

– ensure that the products placed on the market conform with the stated performance characteristics.

7.3.3.2 The FPC system shall include a product specific FPC- or Quality-plan, which identifies procedures to demonstrate conformity of the product at appropriate stages, i.e.:

a) controls and tests to be carried out prior to and/or during manufacture according to a frequency laid down; and/or

b) verifications and tests to be carried out on finished products according to a frequency laid down.

If the manufacturer uses finished products, the operations under b) shall lead to an equivalent level of conformity of the product as if normal FPC had been carried out during the production.

If the manufacturer carries out parts of the production himself, the operations under b) may be reduced and partly replaced by operations under a). Generally, the more parts of the production that are carried out by the manufacturer, the more operations under b) may be replaced by operations under a). In any case the operation shall lead to an equivalent level of conformity of the product as if normal FPC had been carried out during the production.

NOTE Depending on the specific case, it may be necessary to carry out the operations referred to under a) and b), only the operations under a) or only those under b).

The operations under a) centre as much on the intermediate states of the product as on manufacturing machines and their adjustment, and test equipment etc. These controls and tests and their frequency are chosen based on product type and composition, the manufacturing process and its complexity, the sensitivity of product features to variations in manufacturing parameters, etc.

The manufacturer shall establish and maintain records which provide evidence that the production has been sampled and tested. These records shall show clearly whether the production has satisfied the defined acceptance criteria. Where the product fails to satisfy the acceptance measures, the provisions for non-conforming products shall apply, the necessary corrective action shall immediately be taken and the products or batches not conforming shall be isolated and properly identified. Once the fault has been corrected, the test or verification in question shall be repeated.

The results of controls and tests shall be properly recorded. The product description, date of manufacture, test method adopted, test results and acceptance criteria shall be entered in the records under the signature of the person responsible for the control/test. With regard to any control result not meeting the requirements of this document, the corrective measures taken to rectify the situation (e.g. a further test carried out, modification of manufacturing process, throwing away or putting right of the product) shall be indicated in the records.

7.3.3.3 Individual products or batches of products and the related manufacturing details shall be completely identifiable and retraceable.

7.3.4 Initial inspection of factory and FPC

7.3.4.1 Initial inspection of factory and FPC shall generally be carried out when the production is already running and the FPC is already in practice.

It is, however, possible that the initial inspection of factory and FPC is carried out before the production is already running and/or before the FPC is already in practice.

7.3.4.2 The following shall be assessed:

– FPC-documentation, and

– the factory.

In the assessment of the factory it shall be verified:

a) that all resources necessary for the achievement of the product characteristics required by this European Standard are or will be (see 7.3.4.1) available, and

b) FPC-procedures in accordance with the FPC-documentation are or will be (see 7.3.4.1) implemented and followed in practice, and

c) that the product complies or will comply (see 7.3.4.1) with the initial type testing samples, for which compliance with this European Standard has been verified, and

d) whether the FPC system is part of a Quality Management system in accordance with EN ISO 9001 (see 7.3.2) and as part of this Quality Management system is certified and has yearly surveillance by a certification body.

7.3.4.3 All factories of the manufacturer where, for the relevant product, final assembling and/or final testing is performed, shall be visited to verify that the conditions of 7.3.4.2 a) to c) are in place. One visit may cover one or more products, production lines and/or production processes. If the FPC system covers more than one product, production line or production process, and if it is verified that the general requirements are fulfilled, then the general requirements for one product may be taken as representative of the FPC of other products. Detailed verification of the product-specific FPC requirements shall, however, always be made.

7.3.4.4 Assessments previously performed in accordance with the provisions of this European Standard may be taken into account providing that they were made to the same system of attestation of conformity on the same product or products of similar design, construction and functionality, such that the results may be considered applicable to the product in question.

7.3.4.5 Any assessment and its results shall be documented in a report.

7.3.5 Continuous surveillance of FPC

7.3.5.1 All factories which have been assessed according to 7.3.4 shall be re-assessed at least once a year, except as stated in 7.3.5.2. In this case each FPC visit shall verify a different product or production process, if applicable.

7.3.5.2 In the case of third party certification, if the manufacturer provides proof of continuing satisfactory operation of his FPC system, the frequency of the re-assessment may be reduced to once every four years.

NOTE 1 Sufficient proof can be the report of a certification body, see 7.3.4.2 d).

NOTE 2 If the overall Quality Management system in accordance with EN ISO 9001 is well implemented (verified in the initial assessment of factory and FPC) and continuously practised (verified in QM-audits), it can be assumed that the integrated FPC-relevant part is well covered. On this basis, the work of the manufacturer is well surveyed, so that the frequency of special FPC-surveillance assessments can be reduced.

7.3.5.3 Any assessment and its results shall be documented in a report.

7.3.6 Procedure for modifications

In the case of modification of the product, the method of production or the FPC system (where these may affect the stated properties), a re-assessment of the factory and of the FPC system shall be performed for those aspects which may be affected by the modification.

Any assessment and its results shall be documented in a report.

Annex ZA
(informative)

Clauses of the European Standard addressing the provisions of the EU Construction Products Directive (89/106/EEC)

ZA.1 Scope and relevant characteristics

This European Standard has been prepared under a mandate M/109 given to CEN by the European Commission and the European Free Trade Association.

The clauses of this European Standard shown in this annex meet the requirements of the mandate given under the EU Construction Products Directive (89/106).

Compliance with these clauses confers a presumption of fitness of the construction products covered by this annex for the intended uses indicated herein; reference shall be made to the information accompanying the CE marking.

> **WARNING:** Other requirements and other EU Directives, not affecting the fitness for intended use may be applicable to a product falling within the scope of this European Standard.

NOTE In addition to any specific clauses relating to dangerous substances contained in this standard, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply. An informative database of European and national provisions on dangerous substances is available at the Construction web site on EUROPA (accessed through http://europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm).

This annex establishes the conditions for the CE marking of the underground hydrants intended for the uses indicated in Table ZA.1 and shows the relevant clauses applicable.

This annex has the same scope as Clause 1 of this standard.

Table ZA.1 — Relevant clauses

Construction product: Underground fire hydrants. **Intended use(s):** Fire fighting.			
Essential characteristics	**Requirement clauses in this standard**	**Mandated levels or classes**	**Notes**
Operational reliability:			
– construction	4.2 to 4.5, 4.11, 4.14		
– pressures	4.7		Pass/fail
– stem drive	4.11		
– direction of closure	4.8		
– number of opening turns	4.9	None	
– resistance of hydrant to operating loads	4.10		Values
– resistance to disinfection products*	4.16		
– hydrants for non potable water systems*	4.17		
– hydraulic characteristics	4.18		Threshold Kv value
Connection dimensioning	4.12, 4.13		
Durability of operational reliability against corrosion	4.15		Coating and thickness, if relevant
Durability of operational reliability; endurance	4.7.4, 4.7.5		Pass/fail
* Where relevant.			

ZA.2 Procedure and system for the attestation of conformity of underground fire hydrants

The system of attestation of conformity for underground fire hydrants indicated in Table ZA.1, as given in Annex III of the mandate, is shown in Table ZA.2 for the indicated intended use.

Table ZA.2 — Attestation of conformity system

Product	Intended use	Level(s) or class(es)	Attestation of conformity system
Underground fire hydrants	Fire safety	–	1
System 1: See CPD Annex iii.2.(I) without audit testing of samples.			

The product certification body will certify the initial type testing of all characteristics given in Table ZA.1, in accordance with the provisions of 7.2, and for the initial inspection of the factory and of the factory production control and for the continuous surveillance, assessment and approval of the factory production control (see 7.3), all characteristics shall be of interest to the approved body.

The manufacturer shall operate a factory production control system in accordance with the provisions of 7.3 and, for further testing of samples taken at the factory, shall perform production tests according to 7.2.

ZA.3 CE marking

The manufacturer or his authorised representative established within the EEA is responsible for the affixing of the CE marking. The CE marking symbol to affix shall be in accordance with Directive 93/68/EC and shall be shown on the hydrant together with the information specified in 6.1. In addition, the CE marking shall appear on the packaging and/or on the accompanying commercial documents, together with the following information:

— identification number of the certification body, and

— name or identifying mark of the producer/supplier, and

— last two digits of the year in which the marking was affixed, and

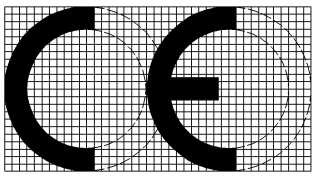
— number of the EC-certificate of conformity, and

— number of this standard (EN 14339), and

— product type (i.e. underground fire hydrant), and

— information required by 6.2, except dimensions required by 4.1 and contact with drinking water required by 4.6.

Figure ZA.1 gives an example of the information to be given on the commercial documents.



0123

AnyCo Ltd, P.O. Box 21, B - 1050

06

0123-CPD-001

EN 14339

Underground fire hydrant, flake graphite cast iron, DN 80

Captive obturator

Stem seal and stem drive in accordance with BS 1234.

PN	10
Opening turns (dead & total)	3 and 10
Direction of closure	Clockwise
MOT and mST	130 and 260
Kv	70
Inlet and outlet connections	EN 1092-2, BS 456

Figure ZA.1 — Example CE marking information

In addition to any specific information relating to dangerous substances shown above, the product should also be accompanied, when and where required and in the appropriate form, by documentation listing any other legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation.

NOTE European legislation without national derogations need not be mentioned.

ZA.4 EC certificate and Declaration of conformity

The manufacturer, or his agent established in the EEA, shall prepare and retain a declaration of conformity, which authorises the affixing of the CE marking. This declaration shall include:

— name and address of the manufacturer, or his authorized representative established in the EEA and the place of production;

NOTE 1 The manufacturer may also be the person responsible for placing the product onto the EEA market, if he takes responsibility for CE marking.

— description of the product (type, identification, use), and a copy of the information accompanying the CE marking;

NOTE 2 Where some of the information required for the Declaration is already given in the CE marking information, it does not need to be repeated.

— provisions to which the product conforms (i.e. Annex ZA of this EN) and a reference to the ITT report(s) and factory production control records as appropriate;

— particular conditions applicable to the use of the product (if necessary);

— name and address (or identification number) of the Notified Product Certification Body;

— name of and position held by the person empowered to sign the declaration on behalf of the manufacturer or of his authorized representative.

The declaration shall contain a certificate of conformity with, in addition to the information above, the following information:

— name and address of the certification body;

— certificate number;

— conditions and period of validity of the certificate, where applicable;

— name of, and position held by, the person empowered to sign the certificate.

The declaration and certificate shall be presented in the language or official languages accepted in the Member State of the use of the product.

Bibliography

[1] EN 736-2, *Valves — Terminology — Part 2: Definition of components of valves*

[2] EN 736-3, *Valves — Terminology — Part 3: Definition of terms*

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