BRITISH STANDARD

BS EN
12094-10:2003

Fixed firefighting systems — Components for gas extinguishing systems —

Part 10: Requirements and test methods for pressure gauges and pressure switches

The European Standard EN 12094-10:2003 has the status of a British Standard

ICS 13.220.20

BSI
British Standards

National foreword

This British Standard is the official English language version of EN 12094-10:2003.

This European standard is the subject to transitional arrangements agreed under a Commission mandate which is intended to lead to CE marking in support of the Construction Products Directive. In order to allow for any changes in national regulations, the Member States have agreed a transition period of DAV plus 36 months before CE marking becomes effective.

The UK participation in its preparation was entrusted by Technical Committee FSH/18, Fixed firefighting systems, to Subcommittee FSH/18/6, Gaseous extinguishing media and components, 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 the 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.

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

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This European Standard was approved by CEN on 13 February 2003.

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 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 Management Centre 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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Contents

Foreword

This document (EN 12094-10:2003) has been prepared by Technical Committee CEN /TC 191, "Fixed firefighting systems", the secretariat of which is held by BSI.

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 October 2003, and conflicting national standards shall be withdrawn at the latest by April 2006.

This document 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 document.

This part of EN 12094 is one of a number of European Standards prepared by CEN/TC 191 covering components for gas extinguishing systems.

They are included in a series of European Standards planned to cover:

- gas extinguishing systems (EN 12094)
- sprinkler systems (EN 12259 and EN 12845)
- powder systems (EN 12416)
- explosion protection systems (EN 26184)
- foam systems (EN 13565)
- hose systems (EN 671)
- smoke and heat control systems (EN 12101)
- water spray systems[1)]

This European Standard has the general title "Fixed firefighting systems – Components for gas extinguishing systems" and will consist of the following parts:

- Part 1: Requirements and test methods for electrical automatic control and delay devices
- Part 2: Requirements and test methods for non-electrical automatic control and delay devices
- Part 3: Requirements and test methods for manual triggering and stop devices
- Part 4: Requirements and test methods for container valve assemblies and their actuators
- Part 5: Requirements and test methods for high and low pressure selector valves and their actuators for CO_2 systems
- Part 6: Requirements and test methods for non-electrical disable devices for CO_2 systems
- Part 7: Requirements and test methods for nozzles for CO_2 systems

1) under preparation

- Part 8: Requirements and test methods for flexible connectors for CO_2 systems
- Part 9: Requirements and test methods for special fire detectors
- Part 10: Requirements and test methods for pressure gauges and pressure switches
- Part 11: Requirements and test methods for mechanical weighing devices
- Part 12: Requirements and test methods for pneumatic alarm devices
- Part 13: Requirements and test methods for check valves and non-return valves
- Part 16: Requirements and test methods for odorizing devices for CO_2 low pressure systems
- Part 17: Requirements and test methods for pipe hangers
- Part 20: Requirements and test methods for compatibility of components

This document includes a Bibliography.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

It has been assumed in the preparation of this European Standard that the execution of its provisions is entrusted to appropriately qualified and experienced people.

All pressure data in this European Standard are given as gauge pressures in bar, unless otherwise stated.

NOTE 1 bar = 10^5 N m^{-2} = 100 kPa.

1 Scope

This European Standard specifies requirements and describes test methods for pressure gauges and pressure switches.

This European Standard is applicable for pressure gauges for monitoring of pilot, control, alarm and storage containers of fire extinguishing systems filled with non-liquefied inert gases or pressurized halocarbon gases.

This European Standard is applicable for pressure switches for monitoring of pilot, control, alarm and storage containers of fire extinguishing systems filled with non-liquefied inert gases or pressurized halocarbon gases and remote indication of leakage.

This European Standard does not cover discharge indicating pressure switches.

2 Normative references

This European Standard incorporates by dated or undated references, 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 this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 837-1 : 1996, *Pressure gauges - Part 1: Bourdon tube pressure gauges - Dimensions, metrology, requirements and testing.*

EN 60529, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989).*

3 Terms and definitions

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

3.1
CO_2-high-pressure installation
fire extinguishing installation in which the CO_2 is stored at ambient temperature. For example, the pressure of the CO_2 in storage is p_{abs} = 58,6 bar at 21 °C

3.2
CO_2-low-pressure installation
fire extinguishing installation in which the CO_2 is stored at low temperature, normally –19 °C to –21 °C

3.3
halocarbon gas
extinguishing agent that contains as primary components one or more organic compounds containing one or more of the elements fluorine, chlorine, bromine or iodine

3.4
halocarbon gas installation
fire extinguishing installation in which the halocarbon gas is stored at ambient temperature

3.5
inert gas
non liquefied gas or mixture of gases which extinguish the fire mainly by reducing the oxygen-concentration in the protected zone, e.g. Argon, Nitrogen or CO_2 or mixtures of these gases

3.6
inert gas installation
fire extinguishing installation in which the inert gas is stored at ambient temperature

4 Requirements

4.1 Pressure gauges

NOTE The range of a pressure gauge should be greater than the pressure developed in the container at 50 °C or the maximum pressure given by the manufacturer, but not higher than the next highest standard range of EN 837-1.

4.1.1 General

The component shall comply with the technical requirements of EN 837-1.

4.1.2 Accuracy class and nominal size

The component shall have at least accuracy class 1,6 and at least nominal size 40 as given in EN 837-1.

4.1.3 Corrosion

The component shall meet the same accuracy requirements of EN 837-1 after being subjected to the corrosive atmosphere as described in 5.2.8 with the inlet sealed during conditioning.

4.2 Pressure switches

4.2.1 Design

The switching accuracy of the component at the designated setting point shall not exceed ± 2,5% of the pressure developed in the container at 50 °C or shall not exceed ± 2,5% of the maximum pressure expected at the place of use in the system.

The component shall be specified by the manufacturer for a working pressure of at least the pressure developed in the container at 50 °C.

The manufacturer shall specify the switching capacity.

The component shall incorporate self-resetting contacts.

The component shall be designed to have at least class IP 54 of EN 60529.

4.2.2 Function

When tested in accordance with 5.2.4 the component accuracy shall be in accordance with 4.2.1 and the electrical connection(s) shall function correctly.

4.2.3 Internal pressure

When tested in accordance with 5.2.5 the component shall not leak. The component shall operate satisfactorily when tested in accordance with 5.2.4 after being tested in accordance with 5.2.5.

4.2.4 Operational reliability

There shall be no deterioration of performance when the component is tested as described in 5.2.6.

4.2.5 Temperature

When tested in accordance with 5.2.7 at – 20 °C and + 50 °C the component accuracy at the designated setting point shall not exceed ± 5% of either the pressure developed in the container at 50 °C or the maximum pressure expected at the place of use in the system. The electrical connection(s) shall function correctly.

4.2.6 Corrosion

The component shall operate satisfactorily when tested in accordance with 5.2.4 after being subjected to the corrosive atmosphere as described in 5.2.8 with the inlet open.

4.3 Documentation

4.3.1 The manufacturer shall prepare and maintain documentation.

4.3.2 The manufacturer shall prepare installation and user documentation, which shall be submitted to the testing authority together with the sample(s). This documentation shall comprise at least the following:

a) a general description of the component, including a list of its features and functions;

b) a technical specification including:

   1) the information mentioned in 4.1 and 4.2, if applicable;

   2) sufficient information to permit an assessment of the compatibility with other components of the system (if applicable e.g. mechanical, electrical or software compatibility);

c) installation instructions including mounting instructions;

d) operating instructions;

e) maintenance instructions;

f) routine testing instruction, if appropriate.

4.3.3 The manufacturer shall prepare design documentation, which shall be submitted to the testing authority together with the sample(s), except where the conditions of supply to the manufacturer make this impossible. This documentation shall include drawings, parts lists, block diagrams (if applicable), circuit diagrams (if applicable) and a functional description to such an extent that compliance with this standard may be checked and that a general assessment of the design is possible.

5 Test methods

5.1 Pressure gauges

5.1.1 Test conditions and tests

NOTE See 5.1.3 and EN 837-1.

5.1.2 Compliance and conformity

A visual and measurement check shall be made with one sample to determine that the component corresponds to the description in the drawings, parts lists, description of functions, operating and installation instructions.

5.1.3 Corrosion

One sample shall be conditioned in accordance with 5.2.8 followed by an accuracy check in accordance with EN 837-1.

5.2 Pressure switches

5.2.1 Test conditions

The components shall be assembled for test as specified in the technical documentation. The tests shall be carried out at a temperature of (25 ± 10) °C, except when otherwise specified for a particular test.

The tolerance for all test parameters is 5 %, unless otherwise stated.

5.2.2 Test samples and order of tests

For the tests three samples are needed. The order of tests is shown in Table 1.

Table 1 — Order of tests

Tests	**Test order for**		
	sample A	sample B	sample C
5.2.3 Compliance	1	1	1
5.2.4 Function	3	2	2 and 4
5.2.5 Internal pressure	2		
5.2.6 Operational reliability	4		
5.2.7 Temperature		3	
5.2.8 Corrosion			3

5.2.3 Compliance

A visual and measurement check shall be made to determine whether the test sample corresponds to the description in the drawings, parts list, description of functions, operating and installation.

5.2.4 Function under normal conditions

This test relates to the requirements of 4.2.2.

The following test cycle shall be carried out 10 times:

a) A pressure of 1,1 times the pressure at the designated setting point shall be applied using air or Nitrogen;

b) The pressure to the switch point shall be decreased by a rate calculated to reach the pressure at the designated setting point in (1 ± 0,5) min;

c) The switch point pressure shall be recorded.

5.2.5 Internal pressure

This test relates to the requirements of 4.2.3.

The sample shall be connected to a suitable hydraulic pressure supply. Provision for venting shall be available.

Vent the system of air and increase the pressure to (1,2 ± 0,05) times the specified working pressure. Maintain this pressure for a period of (5 ± 1) min. After this period release the hydraulic pressure.

5.2.6 Operational reliability

This test relates to the requirements of 4.2.4.

The test cycle shall be carried out 100 times as described in 5.2.4.

5.2.7 Temperature

This test relates to the requirements of 4.2.5.

The test shall be carried out according to 5.2.4 at $(-20^{\ 0}_{-2})$ C and $(+50^{+2}_{\ 0})$ °C after conditioning at the test temperature for (2 ± 0,5) h.

5.2.8 Corrosion

A specimen shall be suspended freely in its normal installation attitude.

The test set-up comprises a container 5 l in volume, made of heat-resistant glass and with a corrosion-resistant cover which is shaped to prevent condensate dripping onto the specimen. (If a container 10 l in volume is used, the quantities of chemicals given below shall be doubled.) The container is heated electrically and the side walls are cooled with water. A thermostat regulates the heating so as to maintain a temperature of approximately 45 °C inside the container. During testing water is passed through a cooling coil wrapped around the container, it shall flow fast enough that its temperature at the discharge point is below 30 °C.

The combination of heating and cooling is designed to ensure that vapours will condense on the surface of the specimen. The sulphur dioxide atmosphere is generated in the 5-litre container with a solution of 20 g of sodium thiosulphate ($Na_2S_2O_3 \times 5H_2O$) in 500 cm^3 of distilled water, to which 20 cm^3 of dilute sulphuric acid is added daily. The dilute sulphuric acid comprises 128 cm^3 of one molar sulphuric acid (H_2SO_4) dissolved in 1 l of distilled water. The test specimen shall be removed from the container after 8 days; the container shall be cleaned. Then the procedure described above is repeated for a further period of 8 days.

After a total of 16 days, the specimen is removed from the container and allowed to dry for seven days at a temperature of (20 ± 5) °C at maximum relative humidity of 70 %.

6 Marking

Pressure gauges shall be marked in accordance with EN 837-1:1996, 9.6.7.

Pressure switches shall be marked with:

a) name or trademark of the manufacturer or supplier;

b) model designation (type);

c) some mark(s) or code(s) (e.g. serial number or batch code), by which, at least, the date or batch and place of manufacture (if several places of manufacture) can be identified by the manufacturer; and

d) set-point pressure.

The markings shall be non-detachable, non-flammable, permanent and legible.

Where the requirements of ZA.3 give the same information as above, the requirements of this clause 6 have been met.

7 Evaluation of conformity

7.1 General

The compliance of the component with the requirements of this European Standard shall be demonstrated by:

— initial type testing,

— factory production control by the manufacturer.

NOTE The manufacturer is a natural or legal person, who places the component on the market under his own name. Normally, the manufacturer designs and manufactures the component 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:

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

He shall always retain the overall control and shall have the necessary competence to take the responsibility for the component.

The manufacturer shall be fully responsible for the conformity of that component 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 led to such conformity. Where the manufacturer uses components not already shown to conform, it is his responsibility to undertake the necessary evaluation to show conformity.

7.2 Initial type testing

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

All characteristics given in clause 4 (except 4.3) shall be subject to this initial type testing, except as described in 7.2.3 to 7.2.5.

7.2.2 In the case of modification of the component or of the method of production (where these may affect the stated properties), initial type testing shall be performed. All characteristics given in clause 4 (except 4.3), 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 Tests previously performed in accordance with the provisions of this 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 component or components of similar design, construction and functionality, such that the results are applicable to the component in question.

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

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

7.2.5 Where the characteristics of the component have previously been demonstrated according to the requirements of EN 837-1 and EN 60529, no further evaluation of the component, in respect of these characteristics, is required to show conformity with this European Standard.

7.2.6 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.

NOTE In the case of prototypes and third party certification, this means that it is the manufacturer not the third party who is responsible for selecting the samples. During the initial inspection of the factory and of the factory production control (see 7.3), it is verified that the component continuously complies with the initial type testing samples.

7.2.7 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.

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

7.3 Factory production control (FPC)

7.3.1 General

The manufacturer shall establish, document and maintain an FPC system to ensure that the components placed on the market conform with the stated performance characteristics.

If the manufacturer has the component designed, manufactured, assembled, packed, processed and labelled by subcontracting, FPC of the subcontractor may be taken into account. Where subcontracting takes place, the manufacturer shall retain the overall control of the component and ensure that he 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 in no circumstances discharge himself of his responsibilities to a subcontractor.

FPC is the permanent internal control of production exercised by the manufacturer.

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 component with 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 components, including material properties in components, 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, where applicable:

- 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 Component specific requirements

7.3.3.1 The FPC system shall

— address this European Standard; and

— ensure that the components placed on the market conform with the stated performance characteristics.

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

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

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

If the manufacturer uses finished components, the operations under b) shall lead to an equivalent level of conformity of the component 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 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 component 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 component as on manufacturing machines and their adjustment, and measuring equipment etc. These controls and tests and their frequency are chosen based on component type and composition, the manufacturing process and its complexity, the sensitivity of component 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 and shall be available at least for ten years. Where the component fails to satisfy the acceptance measures, the provisions for non-conforming products shall apply, the necessary corrective action shall immediately be taken and the components 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 component 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 European Standard, 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 component) shall be indicated in the records.

7.3.3.3 Individual components or batches of components and the related manufacturing documentation 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 to verify that the requirements of 7.3.2 and 7.3.3 are fulfilled:

— the 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 component characteristics required by this European Standard are or will be (see 7.3.4.1) available; and

b) that the 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 component 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, who is recognised by an accreditation body which is member of the "European Co-operation for Accreditation" and which has signed the “Multilateral agreement” (MLA) there.

7.3.4.3 All factories of the manufacturer, where for the relevant component final assembling or at least final testing is performed, shall be assessed to verify that the conditions of 7.3.4.2 a) to c) are in place. One assessment may cover one or more components, production lines and/or production processes. If the FPC system covers more than one component, production line or production process, and if it is verified that the general requirements are fulfilled then the detailed verification of the component specific FPC requirements for one component may be taken as representative of the FPC of other components.

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

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

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 once a year, except as stated in 7.3.5.2.

In this case each FPC assessment shall verify a different component or production process, where applicable.

7.3.5.2 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 controlled, 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 component, 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 this European Standard addressing the provisions of the EU Construction Products Directive

ZA.0 Scope of this annex

The scope as given in clause 1 is applicable.

ZA.1 Relationship between EU Directive and this European Standard

This European Standard has been prepared under a Mandate 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 European Standard for their intended use.

WARNING — Other requirements and other EU Directives, not affecting the fitness for intended use may be applicable to a construction product falling within the scope of this 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 (CREATE, accessed through http://europa.eu.int/comm/enterprise/construction/internal/hygiene.htm).

Construction product:	Pressure gauges and pressure switches
Intended use(s):	Components for use in gas extinguishing systems installed in buildings as a part of a complete operating system.

Table ZA.1 — Relevant Clauses

Essential characteristics	Clauses in this European Standard	Mandated levels and/or classes	Notes
Nominal activation conditions/sensitivity –pressure switches	4.2.2	-	-
Nominal activation conditions/sensitivity –pressure gauges	4.1.2	-	-
Operational reliability–pressure switches	4.2.1, 4.2.3, 4.2.4, 4.2.5	-	-
Operational reliability–pressure gauges	4.1.1	-	-
Durability of operational reliability of pressure gauges against corrosion	4.1.3	-	-
Durability of operational reliability of pressure switches against corrosion	4.2.6	-	-

ZA.2 Procedure for the attestation of conformity of pressure gauges and pressure switches

The pressure gauges and pressure switches for the intended use listed shall follow the system of attestation of conformity shown in Table ZA.2

Table ZA.2 — Attestation of conformity system

Product	Intended use	Level(s) or class(es)	Attestation of conformity system
Pressure gauges	Fire safety	-	1
Pressure switches	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, 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.

ZA.3 CE marking

The CE marking symbol in the format specified in the EU Directive 93/68/EC shall be shown on the component together with the marking in accordance with clause 6 (except c)). In addition, the CE marking symbol shall appear on the packaging and/or on the accompanying commercial documents, together with the following information:

- identification number of the certification body, and
- last two digits of the year in which the marking was affixed, and

- appropriate number of the EC-certificate of conformity, and
- number of this standard (EN 12094-10), and
- product , i.e. pressure gauge or pressure switch, and
- marking in accordance with clause 6 (except c)), and

  switching capacity and IP code for pressure switches.

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

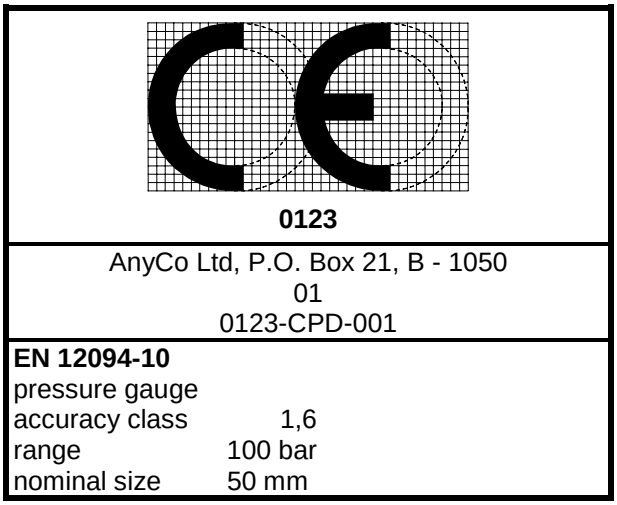

Figure ZA.1 — Example CE marking information

In addition to any specific information relating to dangerous substances shown above, the component 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 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 authorised representative established in the EEA, and the place of production,
- description of the component (type, identification, use), and a copy of the information accompanying the CE marking,
- provisions to which the component conforms (e.g. annex ZA of this EN),
- particular conditions applicable to the use of the component [if necessary],
- name and address (or identification number) of the approved body(bodies),
- name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative.

For characteristics where certification is required (system 1), 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(s) of the Member State of use of the product.

Bibliography

EN 45011, *General requirements for bodies operating product certification systems (ISO/IEC Guide 65:1996).*

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

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:1999).*

EU Directive 93/68/EC, *COUNCIL DIRECTIVE 93/68/EEC of 22 July 1993 amending Directives 87/404/EEC (simple pressure vessels), 88/378/EEC (safety of toys), 89/106/EEC (construction products), 89/336/EEC (electromagnetic compatibility), 89/392/EEC (machinery), 89/686/EEC (personal protective equipment), 90/384/EEC (non-automatic weighing instruments), 90/385/EEC (active implantable medicinal devices), 90/396/EEC (appliances burning gaseous fuels), 91/263/EEC (telecommunications terminal equipment), 92/42/EEC (new hot-water boilers fired with liquid or gaseous fuels) and 73/23/EEC (electrical equipment designed for use within certain voltage limits).*

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