BRITISH STANDARD

BS EN
12094-3:2003

Fixed firefighting systems — Components for gas extinguishing systems —

Part 3: Requirements and test methods for manual triggering and stop devices

The European Standard EN 12094-3:2003 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 12094-3:2003.

This European Standard is the subject of 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 30 months before CE marking becomes effective.

The UK participation in its preparation was entrusted by Technical Committee FSH/18, Fixed fire fighting systems, to Subcommittee FSH/18/6, Gaseous extinguishing systems, 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.

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This European Standard was approved by CEN on 7 November 2002.

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
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Contents

Foreword

This document (EN 12094-3:2003) has been prepared by 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 September 2003, and conflicting national standards shall be withdrawn at the latest by September 2005.

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 high pressure 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*

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1) Under preparation.

- Part 7: *Requirements and test methods for nozzles for CO_2 systems*
- 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: *Pipe hangers*
- Part 20: *Requirements and test methods for the compatibility of components*

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 manual triggering and stop devices of CO_2-, Inert Gas- or Halocarbon Gas fire extinguishing systems.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to 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 54-11:2001, *Fire detection and fire alarm systems - Part 11: Manual call points.*

EN 60068-2-6:1996, *Environmental testing - Part 2: Tests - Tests Fc: Vibration (sinusoidal) (IEC 60068-2-6:1995 + Corrigendum 1995).*

3 Terms and definitions

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

3.1
control device
component which receives a signal from a fire sensor, a fire detector, a fire detection installation or a manual triggering device and processes and transmits signals for actuation and auxiliary functions

3.2
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

3.3
CO_2-low-pressure installation
fire extinguishing installation in which the CO_2 is stored at low temperature, normally – 19 °C to – 21 °C

3.4
electrical control device
component using electrical means

3.5
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

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

3.7
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

3.8
inert gas installation
fire extinguishing installation in which the inert gas is stored at ambient temperature

3.9
manual stop device
electrical device which allows a person to initiate the emergency stop function of the electrical control of the fire extinguishing system

NOTE The stop function is described in prEN 12094-1.

3.10
manual triggering devices
non-electrical or electrical device which allows a person to trigger the control device of the fire extinguishing system

3.11
non-electrical control device
component operating by mechanical or pneumatic means

3.12
working pressure
pressure at which the component is used in the system

4 Requirements

4.1 Electrical triggering and stop devices

4.1.1 Electrical triggering devices

Electrical triggering devices (with the exception stated under 4.1.3) shall comply with the technical requirements of EN 54-11:2001, type B (excluding 4.1, 4.2 and 4.7.2.3 of EN 54-11:2001) with clear indication of the function. This means that the component shall be permanently marked, in the format of 4.7.3.2.1 of EN 54-11:2001, on the front face with ”MANUAL RELEASE - Gas extinguishing system" (or in the national language(s) acceptable in the country of use[2)]). The colour of the component shall be yellow.

NOTE A suitable yellow colour is specified in ISO 3864.

4.1.2 Electrical stop devices

Electrical stop devices (with the exception stated under 4.1.3) shall comply with EN 54-11:2001, type B (excluding 4.1, 4.2 and 4.7.2.3 of EN 54-11:2001) except they shall be self-resetting, with clear indication of the function. This means that the component shall be permanently marked, in the format of 4.7.3.2.1 of EN 54-11:2001, on the front face with ”EMERGENCY STOP - Gas extinguishing system”, (or in the national language(s) acceptable in the country of use[2)]). The colour of the component shall be blue.

NOTE A suitable blue colour is specified in ISO 3864.

The component shall function correctly when tested in accordance with 5.3.

4.1.3 Other designs

Triggering and stop devices, which do not follow the design requirements of EN 54-11:2001, shall have the same electrical function, performance and marking as specified in 4.1.1 and 4.1.2 respectively.

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2) A list with equivalent words in all languages accepted by each CEN member is under preparation.

4.2 Non-electrical triggering devices

4.2.1 General design

Pressurized parts of components except seals shall be made of metal.

Non-metallic materials and elastomers shall not alter, so that the operation of the device is impaired, during any of the tests.

The working pressure of a component shall be specified by the manufacturer.

The component shall be permanently marked with ”MANUAL RELEASE - Gas extinguishing system” (see footnote 2 in 4.1.1).

The component shall be specified by the manufacturer either for installation on walls only or for installation on both walls and machinery.

4.2.2 Pressure

The correct function of a component shall not be impaired, when pressurised to 1,5 times the working pressure, as described in 5.2.4.

4.2.3 Strength

Components shall not burst, when pressurised to three times the working pressure, as described in 5.2.5.

4.2.4 Function and ambient temperatures

The components shall function, when tested as described in 5.2.6 and 5.2.7.

4.2.5 Operational reliability

There shall be no deterioration of performance, when a component is tested as described in 5.2.8.

4.2.6 Corrosion

Components shall operate satisfactorily after being subjected to the corrosion test as described in 5.2.9.

4.2.7 Stress corrosion

Any copper alloy part used in the component shall not crack, when tested as described in 5.2.10.

4.2.8 Vibration

Where assessment of the drawings and technical data shows that the components may be adversely affected by vibration, the component shall not operate or be damaged, when tested as described in 5.2.11 and it shall function correctly, when subsequently tested as described in 5.2.6.

The sample shall not operate during the test as a result of the vibrations. No deterioration or detachment of parts shall occur. The samples shall be able to function after the vibration test.

4.2.9 Operating force

The force required to operate the component shall not exceed:

a) 150 N for hand operation; or

b) 50 N for finger pull operation; or

c) 10 N for finger push operation;

when tested as described in the 5.2.6 and 5.2.7.

The component shall function correctly during and after this test.

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 4.2.1;

   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 instructions if appropriate.

4.3.3 The manufacturer shall prepare design documentation, which shall be submitted to the testing authority together with the sample(s). 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 European Standard can be checked and that a general assessment of the design is possible.

5 Tests

5.1 Electrical triggering devices

5.1.1 Test conditions and tests

The test conditions and tests are given in EN 54-11:2001.

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.

5.2 Non-electrical triggering devices

5.2.1 Test conditions

The components shall be tested assembled as recommended for installation by the manufacturer. The tests shall be carried out at a temperature of (25 ± 10) °C, except when otherwise stated.

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.

The replacement of parts as set out in the manufacturer's operation and maintenance manual shall be carried out during testing. Such parts shall be provided with the test samples.

Table 1 — Order of tests

Tests	Order of tests for		
	Sample A	Sample B	Sample C
5.2.3 Compliance	1	1	1
5.2.4 Pressure	2	-	-
5.2.5 Strength	5	-	-
5.2.6 Function	3	2 and 4	4
5.2.7 Temperature	4	-	-
5.2.8 Operational reliability	-	-	2
5.2.9 Corrosion	-	3	-
5.2.10 Stress corrosion	-	-	5
5.2.11 Vibration	-	-	3

5.2.3 Compliance

A visual and measurement check shall be made to determine whether the test samples correspond to the description in the technical literature (drawings, parts lists, description of functions, operating and installation instructions).

5.2.4 Pressure

This test relates to the requirements specified in 4.2.2.

The inlet of the test sample shall be connected to a suitable hydraulic pressure supply and the outlet shall be blocked. The system shall be vented of air and the pressure shall be increased at (2 ± 1) bar s^{-1} up to the test pressure $^{+5}_{0}$ %.

This pressure shall be maintained for a period of (10^{+1}_{0}) min. At the end of this period the hydraulic pressure shall be released and the component shall be subjected to the function test as described in 5.2.6.

5.2.5 Strength

This test relates to the requirements specified in 4.2.3.

The inlet of the test sample shall be connected to a suitable hydraulic pressure supply and the outlet shall be blocked. The system shall be vented and the pressure shall be increased at (5 ± 1) bar s^{-1} up to the test pressure $^{+5}_{0}$ %.

This pressure shall be maintained for a period of (10^{+1}_{0}) min. At the end of this period the hydraulic pressure shall be released.

5.2.6 Function

This test relates to the requirements of 4.2.4 and 4.2.9.

The component shall be operated under normal working conditions. The correct function shall be observed and the force needed to operate the component shall be measured.

5.2.7 Temperature

5.2.7.1 This test relates to the requirements of the 4.2.4 and 4.2.9.

5.2.7.2 Condition the sample at -20_{-2}^{0} °C for (2 ± 0,5) h.

The component shall be operated at the test temperature under normal working conditions. The force needed to operate the component shall be measured.

5.2.7.3 Condition the sample at 50^{+2}_{0} °C for (2 ± 0,5) h.

The component shall be operated at the test temperature under normal working conditions. The force needed to operate the component shall be measured.

5.2.8 Operational reliability

This test relates to the requirements of 4.2.5.

The component shall be operated under normal working conditions 100 times.

5.2.9 Corrosion

The test relates to the requirements of 4.2.6.

The sample shall be exposed to a salt spray within a fog chamber.

The essential composition and properties of the reagents and the test configuration are:

- solution consists of NaCl in distilled water;

- pH Value: 6,5 to 7,5;

- concentration of the solution: (5 ± 1) %;

- spray pressure: 0,6 to 1,5 bar;

- spray volume: 1 to 2 ml h^{-1} on an area of 80 cm^2;- temperature in test cabinet: $35^{+1,0}_{-1,7}$ °C;

- position of the sample: 15° to the vertical axis;

- spray time: (240 ± 2) h;

- drying time: (168 ± 5) h at a humidity of maximum 70 %.

5.2.10 Stress corrosion

The test relates to the requirements of 4.2.7.

Use a suitable container of known capacity fitted with a capillary tube vent. The aqueous ammonia solution shall have a specific weight of 0,94 kg/l ± 2 %. The container is filled with (10 ± 0,5) ml of the solution for each litre of container volume.

Degrease the sample for test and expose for (10^{+1}_{0}) days to the moist atmosphere of ammonia and air, at a temperature of (34 ± 2) °C. The samples are positioned (40 ± 5) mm above the level of the liquid.

After testing, the samples are cleaned and dried and subjected to careful visual examination. Any apparent cracking shall be recorded.

5.2.11 Vibration (sinusoidal)

This test relates to the requirements of 4.2.8.

The drawings and the technical data shall be checked to determine whether vibration could have an adverse effect on the performance of the component.

The sample is attached to a vibration table using fixing materials provided by the manufacturer.

The test apparatus and procedure shall be as described in EN 60068-2-6:1995, Test Fc.

— Frequency range: 10 Hz to 150 Hz

— Acceleration amplitude for components which are intended to be attached to machinery:

  - 10 Hz to 50 Hz: 1,0 g_n
  - 50 Hz to 150 Hz: 3,0 g_n

— Acceleration amplitude for components which are intended to be attached to walls:

  - 10 Hz to 50 Hz: 0,2 g_n
  - 50 Hz to 150 Hz: 0,5 g_n

— Sweep rate: 1 octave per 30 min

— Number of sweeps: 0,5 per axis

— Number of axes: 3 mutually perpendicular.

5.3 Resistance to overload for stop devices

The component shall be mounted in accordance with the manufacturer's mounting instructions. A force shall be applied to the push button of the component and shall be raised from 10 N to 50 N in not less than 3 s. The force shall be maintained for not less than 5 s and then released.

6 Marking

Each component shall be marked in a non-detachable, non-flammable, permanent and legible manner with the following information:

a) the name or trademark of the manufacturer or supplier;

b) the model designation (type / environment category, i.e. indoor/outdoor or special environmental conditions (as defined in EN 54-11:2001));

c) the wiring terminal designations, if relevant;

d) 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 the version number(s) of any software, contained within the component.

e) working pressure (only for manual triggering devices for pneumatic triggering pipework)

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 54-11, 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 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 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 be 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 the 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 over all 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 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 (CREATE, accessed through http://europa.eu.int/comm/entreprise/construction/internal/hygiene.htm).

Construction product: **Manual triggering and stop devices**

Intended use(s): Components for use as part of a gas extinguishing system 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
Operational reliability	4.1*, 4.2.1, 4.2.2, 4.2.3, 4.2.5, 4.2.8	-	* for electrical devices only
Performance parameters under fire conditions	4.2.4, 4.2.9	-	-
Durability of operational reliability against corrosion	4.2.6, 4.2.7	-	-

ZA.2 Procedure for the attestation of conformity of manual triggering and stop devices

Manual triggering and stop devices 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
Manual triggering devices	Fire safety	-	1
Stop devices	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 as specified in clause 6, except d). 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
- the last two digits of the year in which the marking was affixed, and
- the appropriate number of the EC-certificate of conformity, and
- the number of this European Standard (EN 12094-3), and
- the product, i.e. manual triggering device, manual stop device; electrical or non-electrical, and
- the marking as specified in clause 6 (except d)), and
- the wording "wall mounting only" (see footnote 2 in 4.1.1), if subjected to limited vibration testing.

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

CE

0123

Any Co Ltd, P.O. Box 21, B - 1050
01
0123-CPD-001

EN 12094-3
manual triggering device, electrical
type: xyz
indoor
[wiring terminal designations in appropriate format]

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 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 product (type, identification, use), and a copy of the information accompanying the CE marking;
- provisions to which the product conforms (i.e. annex ZA of this EN);
- particular conditions applicable to the use of the product [if necessary];
- name and address (or identification number) of the certification body;
- 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:

- the name and address of the certification body;
- the 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

prEN 12094-1, *Fixed firefighting systems – Components for gas extinguishing systems – Part 1: Requirements and test methods for electrical automatic control and delay devices.*

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

EN ISO 9001, *Quality management systems - Requirements (ISO 9001)*.

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

ISO 3864, *Safety colours and safety signs.*

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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