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Poenoteni preskusni postopki za preskušanje po EN 3-7:2004+A1:2007

Unified tests procedures for the tests of EN 3-7:2004+A1:2007

Vereinheitlichte Prüfverfahren für die Prüfungen nach EN 3-7:2004+A1:2007

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Procedures d'essais unifiées pour les essais de EN 3-7:2004+A1:2007
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ICS:

13.220.10 Gašenje požara Fire-fighting

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Unified tests procedures for the tests of EN 3-7:2004+A1:2007

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Vereinheitlichte Prüfverfahren für die Prüfungen nach EN 3-7:2004+A1:2007

This Technical Report was approved by CEN on 17 January 2011. It has been drawn up by the Technical Committee CEN/TC 70.

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Contents	Page
Foreword.....	5
1 Scope	6
2 Normative references	6
Annex A Duration of operation and residual charge	7
A.1 General.....	7
A.2 Scope	7
A.3 References.....	7
A.4 Equipment	7
A.5 Tests conditions – Number of tests samples	7
A.6 Test method.....	7
A.6.1 General.....	7
A.6.2 Duration of operation	8
A.6.3 Residual charge	10
A.7 Requirements – Acceptance criteria	11
A.7.1 Minimum duration.....	11
A.7.2 Spread of measurements.....	13
A.7.3 Commencement of discharge	14
A.7.4 Residual charge	14
Annex B Effective range of operating temperature test	15
B.1 General.....	15
B.2 Scope	15
B.3 References.....	15
B.4 Equipment	15
B.5 Test conditions – number of test samples.....	15
B.6 Test method.....	16
B.6.1 General.....	16
B.6.2 Duration of operation	17
B.6.3 Residual charge	19
B.7 Requirements – acceptance criteria	19
Annex C Operation and emission control mechanism /devices and safety devices tests	20
C.1 General.....	20
C.2 Scope	20
C.3 References.....	20
C.4 Equipment	20
C.5 Number of test samples – Test conditions	21
C.5.1 Number of test samples	21
C.5.2 Test conditions-Pre-conditioning of test samples	22
C.6 Test method.....	22
C.6.1 Principle.....	22
C.6.2 Application of the force for the test	22
C.6.3 Devices activated by force (N).....	22
C.6.4 Devices activated by energy (joule).....	23
C.7 Requirements – Acceptance criteria	24
C.7.1 Operation and emission control mechanism/device	24
C.7.2 Safety devices	24
Annex D Control valve	26
D.1 General.....	26
D.2 Scope	26
D.3 References.....	26
D.4 Equipment	26

D.5	Tests conditions – Number of tests samples	26
D.6	Test method.....	26
D.6.1	General.....	26
D.6.2	1 kg and 2 kg powder stored pressure extinguishers	27
D.6.3	1 kg and 2 kg powder cartridge operated extinguishers	27
D.6.4	All stored pressure extinguishers excluding 1 and 2 kg powder and CO ₂ extinguishers.....	27
D.6.5	All cartridge operated extinguishers excluding 1 and 2 kg powder.....	28
D.6.6	CO ₂ extinguishers	28
D.7	Requirements – Acceptance criteria.....	29
D.7.1	For 1 kg and 2 kg powder extinguishers P3 shall not be less than 80 % of P2.....	29
D.7.2	For all extinguishers excluding 1 kg and 2 kg powder and CO ₂ extinguishers P3 shall not be less than 80 % of P2 or P3 shall not be less than 50 % of P1.	29
D.7.3	For CO ₂ extinguishers M3 shall not be less than 80 % of M2	29
Annex E	Hose and coupling systems tests	30
E.1	General.....	30
E.2	Scope	30
E.3	References.....	30
E.4	Equipements	30
E.5	Test conditions – Number of test samples	30
E.6	Test method.....	31
E.6.1	Test at (20 ± 5)°C	31
E.6.2	Test at (Tmax ± 2)°C and at (Tmin ± 2)°C.....	31
E.7	Requirement – Acceptance criteria.....	31
Annex F	Resistance to extinguishing medium of extinguishers using water based media	32
F.1	General.....	32
F.2	Scope	32
F.3	References	32
F.4	Equipment	32
F.5	Test conditions – Number of tests samples	32
F.6	Test method.....	33
F.7	Requirements – Acceptance criteria.....	33
Annex G	Classes A and B fire tests	34
G.1	General.....	34
G.2	Scope	34
G.3	References	34
G.4	Equipment	34
G.5	Test conditions – Number of test samples	35
G.5.1	General Tests Conditions	35
G.5.2	Class A fire test.....	35
G.5.3	Class B fire tests	39
G.6	Test method.....	42
G.6.1	Test procedure for Class A fire tests.....	42
G.6.2	Test procedure for Class B fire tests.....	42
G.6.3	General acceptance criteria.....	42
Annex H	Compaction procedure	43
H.1	General.....	43
H.2	Scope	43
a)	The powder extinguishers for testing, before the 24 h storage period at (20 ± 5)°C prior to the following tests:.....	43
b)	The water based extinguishers for testing, before the 24 h storage period at (20 ± 5) °C prior to:	43
H.3	References.....	43
H.4	Equipment	43
H.5	Tests conditions – Number of tests samples	44
H.6	Test method.....	44
H.7	Requirements – Acceptance criteria.....	44
Annex I	Class F fire tests	45
I.1	General.....	45

I.2	Scope	45
I.3	References.....	45
I.4	Equipment	45
I.5	Test conditions-Number of test samples	45
I.6	Test method.....	46
I.7	Requirement-acceptance criteria	47

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Foreword

This document (CEN/TR 15642:2011) has been prepared by Technical Committee CEN/TC 70 "Manual means of fire fighting equipment", the secretariat of which is held by AFNOR.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN/TR 15642: 2008.

This document is divided in Annexes, corresponding to the following tests in EN 3-7:2004+A1:2007.

Annex A: Duration of operation and residual charge

Annex B: Effective range of operating temperature test

Annex C: Operation and emission control mechanism / devices and safety devices tests

Annex D: Control valve

Annex E: Hose and coupling systems tests

Annex F: Resistance to extinguishing medium of extinguishers using water based media

Annex G: Classes A and B fire tests

Annex H: Compaction procedure

Annex I: Class F fire tests

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1 Scope

This Technical Report specifies the tests procedures for some of the tests required by EN 3-7:2004+A1:2007; it does not cover all the EN 3-7:2004+A1:2007 tests but only the tests requiring more precision in their execution.

These Unified Tests Procedures are in force for all laboratories performing EN 3-7:2004+A1:2007 tests. Those laboratories should be accredited to EN ISO/IEC 17025 for EN 3-7:2004+A1:2007 tests and their accreditation shall be done by an Accreditation Body, member of the European Accreditation.

This document should be included in the list of applicable documents.

NOTE Since results of many tests may be affected by the human factor, this document should be taken as a helpful tool but will not replace experience and knowledge of people."

2 Normative references

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

EN 3-7:2004+A1:2007 *Portable fire extinguishers — Part 7. Characteristics, performance requirements and test methods*

EN ISO/IEC 17025 *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005)*

[SIST-TP CEN/TR 15642:2011](https://standards.iteh.ai/catalog/standards/sist/a1854cde-8553-49a7-8424-2011)

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ISO 657-1, *Hot-rolled steel sections — Part 1: Equal-leg angles-Dimensions*

ISO 4470, *Sawn timber — Determination of the average moisture content of a lot*

Annex A

Duration of operation and residual charge

A.1 General

This procedure describes the method to measure the duration of operation and the residual charge of an extinguisher after discharge.

A.2 Scope

This procedure applies to all types of portable extinguishers.

A.3 References

EN 3-7:2004+A1: 2007, 3.13, 5, 7.1, 7.2, 7.3, Annex A and Annex K.

A.4 Equipment

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- Stopwatch with at least 3 splits.
- Scale. <https://standards.iteh.ai/catalog/standards/sist/a1854cde-8553-49a7-8424-9d0c39e1d5ec/sist-tp-cen-tr-15642-2011>

The measurement equipment shall fulfil the applicable requirements of EN ISO/IEC 17025 regarding calibration.

A.5 Tests conditions – Number of tests samples

Number of test samples : Three

- Powder and water based extinguishers samples shall be submitted to the compaction procedure prior to the storage period. Extinguishers with gaseous extinguishing media are not subjected to this compaction.
- Extinguishers for testing shall prior to the test be stored for at least 24 h at $(20 \pm 5)^\circ\text{C}$.
- Test shall be carried out within 5 min of its removal from storage.

A.6 Test method

A.6.1 General

Record the actual gross weight of all the extinguishers used in the test.

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A.6.2 Duration of operation

A.6.2.1 General

Two technicians are needed to carry out this test: one operates the extinguisher; the other one measures times by stopwatch.

A.6.2.2 Stored pressure extinguishers (all types of media)

- Release the safety device.
- Hold the extinguisher by hand in its normal working position (see label instructions) and keep it immobile for the duration of the test. If there is a hose, hold the nozzle in the other hand in a horizontal position.
- Fully open the control valve and start the stopwatch (t_0).
- Record by split (t_1) on the stopwatch the delay of the beginning of discharge.
- Record by split (t_2) on the stopwatch the end of discharge of the extinguishing medium:
 - For CO₂ extinguisher:
 - The end of discharge can be noticed by a clear visible (from a white to a more transparent colour) and audible (from a deep to a higher hissing sound) modification of the gas jet.
 - Another type of extinguisher : [SIST-TP CEN/TR 15642:2011](https://standards.iteh.ai/catalog/standards/sist/a1854cde-8553-49a7-8424-d0c39e1d5cc/sist-tp-cen-tr-15642-2011)
 - The end of discharge can be noticed at the moment when all the extinguishing agent is discharged. The residual propellant gas is not taken into account.
- Keep the control valve fully open during 1 min after t_2 .
- Calculate and record the duration of discharge (t_2-t_1) for each of the three extinguishers.

The diagram to perform the test is as follow (see Figure A.1):

- Calculate and record the average and the spread of each measurement of the duration of discharge.
- remove safety device;

start stopwatch) (t_0) and open the control valve,



Key

- 1 discharge delay max 4 s
- 2 duration of operation
- 3 1 min release of remaining gas then close the valve
- 4 discharge finishing

Figure A.1

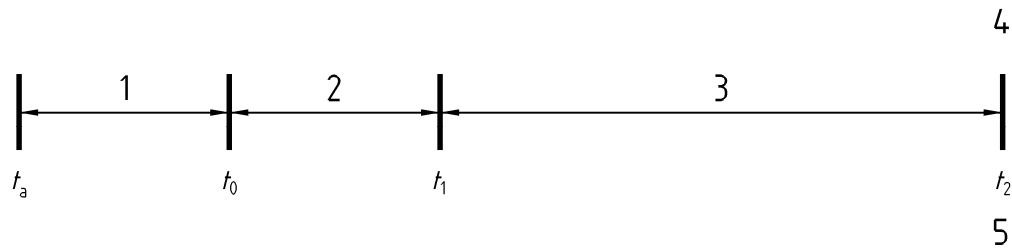
A.6.2.3 Gas cartridge type extinguisher

- Release the safety device.
- If the pressurisation is not achieved by the releasing of the safety device, pressurise the extinguisher according to the instructions of the label.
- Start the stopwatch when the cartridge is opened (t_a).
- Hold the extinguisher by hand in its normal working position (see label instructions) and keep it immobile for the duration of the test. If there is a hose, hold the nozzle in the other hand in a horizontal position.
- Only for extinguisher using a pressurisation device independent of the control valve, after (6 ± 1) s (t_0). (SPLIT on the stopwatch) open the control valve.
- Record by split (t_1) on the stopwatch the delay of the beginning of discharge.
- Record by split (t_2) on the stopwatch the end of discharge of the extinguishing medium.
- The end of discharge can be noticed by the moment when all the extinguishing agent is discharged. The residual propellant gas is not taken into account.
- Keep the control valve fully open during 1 min after t_2 .
- Calculate and record the duration of discharge ($t_2 - t_1$) for each of the three extinguishers.
- Calculate and record the average and the spread of each measurement of the duration of discharge.

Diagram to perform the test is as follow:

- for extinguishers pressurised by a device independent of the control valve (see Figure A.2):
 - remove safety device;
 - pressurise the extinguisher (if not obtained by removing the safety device) and start the stopwatch (t_a),
 - after (6 ± 1) s , split on the stopwatch (t_0) and open the control valve,

CEN/TR 15642:2011 (E)

**Key**

- 1 pressurisation for 6 s
- 2 discharge delay max 4 s
- 3 duration of operation
- 4 1 min release of remaining gas then close the valve
- 5 discharge finishing

Figure A.2

— for extinguishers pressurised by activation of the control valve see Figure A.3:

- remove safety device
- open the control valve (pressurisation) and start the stopwatch (t_0).

**Key**

- 1 discharge delay max 4 s
- 2 duration of operation
- 3 1 min release of remaining gas then close the valve
- 4 discharge finishing

Figure A.3**A.6.3 Residual charge****A.6.3.1 Powder and water based extinguisher**

- Check there is no pressure left in the extinguisher.
- Remove the closure of the extinguisher.
- Record the weight of the residual charge by one of the following method:

- Collect the residual charge of media from the extinguisher and its dip tube, valve and hose (if applicable).
 - Measure the weight of the extinguisher containing residual charge (including medium from dip tube and valve and hose if applicable). Then, empty and reweigh the body.
- Calculate and record the percentage related to the nominal charge.
- Check that the original charge of tested extinguishers fulfilled the filling tolerances required in EN 3-7:2004+A1:2007, 6.2. (Take into account the weight of the propellant gas).

A.6.3.2 Gaseous media extinguisher

- Dry externally the extinguisher and record the weight.
- Reweigh the extinguisher after it is completely empty.
- Calculate the residual charge related to the nominal charge.
- Check that the original charge of tested extinguishers fulfilled the filling tolerances required in EN 3-7:2004+A1:2007, 6.2 (Take into account the weight of the propellant gas where applicable.).

A.7 Requirements – Acceptance criteria

A.7.1 Minimum duration

The duration of operation of each extinguisher shall comply with the requirements of Tables 2 to 7 of EN 3-7:2004+A1:2007 (see Tables A.1 to A.6 hereafter):

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