



SLOVENSKI STANDARD
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Poenoteni preskusni postopki za preskušanje po EN 3-7

Unified tests procedures for the tests of EN 3-7

Vereinheitlichte Prüfverfahren für die Prüfungen nach EN 3-7

Modes opératoires unifiés pour les essais de l'EN 3-7

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Ta slovenski standard je istoveten z: CEN/TR 15642:2008

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English Version

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Vereinheitlichte Prüfverfahren für die Prüfungen nach EN 3-7

This Technical Report was approved by CEN on 2 July 2007. It has been drawn up by the Technical Committee CEN/TC 70.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (CEN/TR 15642:2008) has been prepared by Technical Committee CEN/TC 70 “Manual means of fire fighting equipment”, the secretariat of which is held by AFNOR.

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Part 1 – Compaction procedure

1 General

This procedure describes the method to perform the COMPACTION when required.

2 Scope

This procedure is applicable to:

2.1 The powder extinguishers for testing, before the 24 h storage period at $(20 \pm 5)^\circ\text{C}$ prior to the following tests:

- the duration of operation tests;
- the control valve tests;
- the fire performance tests.

2.2 The water based extinguishers for testing, before the 24 h storage period at $(20 \pm 5)^\circ\text{C}$ prior to:

- the duration of operation tests.

3 Normative references

EN 3-7:2004 (Clause 5 and Annex K), *Portable fire extinguishers Part 7: Characteristics, performance requirements and test methods* <http://standards.iteh.ai/catalog/standards/sist/8152b515-bbe1-4897-839d-dd1bd79c669b/sist-tp-cen-tr-15642-2008>

4 Equipment

Apparatus:

The compaction machine shall be designed to accept only one extinguisher at a time, which shall be raised by a rod and guided by castors. The plate supporting the extinguisher shall be steel, (300 ± 5) mm square and (60 ± 1) mm thick. Compaction machine shall be mounted to prevent movement and absorption of energy due to the impact.

The compaction machine shall conform to the following:

- the rod shall be adjustable to adjust to the extinguisher base;
- the rod shall be able to move freely;
- the extinguisher shall be guided without constraint in the guide castors;
- the impact shall take place on the steel plate and not on the rod;
- the cam to be used is shown in Figure K.1 of EN 3-7:2004. and shall rotate at uniform angular speed;
- equipped with a counter, which automatically stops at 500 cycles.

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

5 Tests conditions – Number of tests samples

- Compaction procedure is carried out at ambient temperature (20 ± 5)°C.
- Number of test samples:
 - 3 specimens of powder extinguishers for the duration of operation tests;
 - 2 specimens of powder extinguishers for the control valve tests;
 - all specimens of powder extinguishers for the fire performance tests;
 - 3 specimens of water based extinguishers for the duration of operation tests.

6 Test method

Procedure:

The extinguisher, in the condition in which it is used, and conditioned (20 ± 5) °C shall be subjected to the compaction procedure.

The extinguisher shall be held in the vertical position in the compaction machine and dropped vertically 500 times, from a height of (15 ± 1) mm, at a frequency of $1 \text{ Hz} \pm 10 \%$, onto the rigid horizontal steel plate.

The extinguisher shall not be shaken nor inverted after the compaction and prior to the test.

7 Requirements – Acceptance criteria

The compaction procedure is a pre-conditioning procedure. The requirements are specified in the subsequent tests (see SCOPE in clause 2 above).

Personal from the laboratory shall take care that the operability of the extinguisher is not affected by the compaction. If operability of the extinguisher is affected this shall be reported.

Part 2 – Resistance to extinguishing medium of extinguishers using water based media

1 General

This procedure describes the method to perform the test of **RESISTANCE TO EXTINGUISHING MEDIUM OF EXTINGUISHERS USING WATER BASED MEDIA**.

2 Scope

This procedure is applicable to water based extinguishers.

3 Normative references

EN 3-7:2004 (14.2 and H.2), *Portable fire extinguishers - Part 7: Characteristics, performance requirements and test methods*

4 Equipment

Required:

- Air temperature conditioning chamber(s) (oven, refrigerator, cooler,...).
- A continuous time and temperature recorder.
- An equipment to cut the extinguisher's body.

All the equipment shall be able to have a stability and uniformity in the defined testing volume with a tolerance less than ± 2 °C (empty).

The equipment(s) shall work between T_{\min} and T_{\max} .

Liquid bath shall not be used.

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

5 Test conditions – Number of tests samples

Extinguishers for testing shall prior to the test be stored for at least 24 h at (20 ± 5) °C.

- Number of test samples:
 - 2 complete extinguishers + 1 complete extinguisher for reference for the extinguishing media sampling.

6 Test method

Procedure:

Two glass containers of the media shall be taken from the reference extinguisher (without operating it).

Two extinguishers in the upright position and one glass container shall be subjected 8 times to the temperature cycling given in the table below.

The second glass container shall be stored at $(20 \pm 5) ^\circ\text{C}$ during the whole cycling duration.

Table 1

STAGE	DURATION (H)	TEMPERATURE ($^\circ\text{C}$)
1	24 ± 1	$T_{\min} \pm 2^a$
2	≥ 24	$+20 \pm 5$
3	24 ± 1	$T_{\max} \pm 2^b$
4	≥ 24	$+20 \pm 5$

^a For water based extinguishers with protection against freezing T_{\min} shall be $+5 ^\circ\text{C}$, $0 ^\circ\text{C}$, $-5 ^\circ\text{C}$, $-10 ^\circ\text{C}$, $-15 ^\circ\text{C}$, $-20 ^\circ\text{C}$, $-25 ^\circ\text{C}$, $-30 ^\circ\text{C}$, or lower.
For water based extinguishers without any protection against freezing T_{\min} shall be $+5 ^\circ\text{C}$.

^b T_{\max} for all extinguishers shall be $+60 ^\circ\text{C}$ or higher.

The duration of any complete cycle shall not exceed 120 h.

Before putting the extinguishers into the conditioning chamber, it shall be checked that the required temperature is achieved and stabilised.

When the 8 cycles are finished the operator shall pour every extinguisher into a clean container without operating it (stored pressure extinguishers shall be depressurised before pouring).

The body of each extinguisher will be cut into two sections by the operator.

The operator shall examine the internal surface of the bodies.

The operator shall also examine colour changes in the extinguishing media in comparison with the reference sample, which was submitted to the thermal cycles.

The operator shall then record the results.

7 Requirements – Acceptance criteria

- 1) The internal surface of the body or the surface of any metallic part inside the extinguisher shall show no visible sign of corrosion.
- 2) There shall be no detachment, cracking or bubbling of any protective coating.
- 3) The colour of the extinguishing agent inside the glass container subjected to the temperature cycling shall be similar to the colour of the extinguishing media removed from the extinguishers.

If all the checked points are satisfactory for both extinguishers, then the test shall be reported as passed.

Part 3 – Duration of operation and residual charge

1 General

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

2 Scope

This procedure applies to all types of portable extinguishers.

3 Normative references

EN 3-7:2004 (3.13, Clause 5, 7.1, 7.2, 7.3 , *Annex A and Annex K*), *Portable fire extinguishers - Part 7: Characteristics, performance requirements and test methods*

4 Equipment

— Stopwatch with at least 3 splits.

— Scale.

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

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5 Tests conditions – Number of tests samples

— Number of test samples : 3

— Powder and water based extinguishers samples shall prior to the storage period be submitted to the compaction procedure. 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.

6 Test method

6.1 General

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