

Brand och räddning – Mobila släckaggregat –
Del 1: Egenskaper, utförande och provningsmetoder

Mobile fire extinguishers –
Part 1: Characteristics, performance and test methods

Europastandarden EN 1866-1:2007 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 1866-1:2007.

Denna standard ersätter SS-EN 1866:2006, utgåva 1.

The European Standard EN 1866-1:2007 has the status of a Swedish Standard. This document contains the official English version of EN 1866-1:2007.

This standard supersedes the Swedish Standard SS-EN 1866:2006, edition 1

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1866-1

August 2007

ICS 13.220.10

Supersedes EN 1866:2005

English Version

Mobile fire extinguishers - Part 1: Characteristics, performance and test methods

Extincteurs d'incendie mobiles - Partie 1 : Caractéristiques, performances et méthodes d'essai

Fahrbare Feuerlöscher - Teil 1: Eigenschaften, Löschleistung und Prüfungen

This European Standard was approved by CEN on 30 June 2007.

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EN 1866-1:2007 (E)**Foreword**

This document (EN 1866-1:2007) has been prepared by Technical Committee CEN/TC 70 "Manual means of fire fighting equipment", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by February 2008, and conflicting national standards shall be withdrawn at the latest by February 2008.

This document supersedes EN 1866:2005.

This standard consists of the following parts under the general title "Mobile fire extinguishers":

- *Part 1: Characteristics, performance requirements and test methods*
- *Part 2: Additional requirements to EN 1866-1 for the construction, resistance to pressure and mechanical tests for extinguishers with a maximum allowable pressure equal to or lower than 30 bar ¹⁾*
- *Part 3: Additional requirements to EN 1866-1 for pressure resistance of CO₂ extinguishers ¹⁾.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1) In preparation.

1 Scope

This European Standard specifies the rules of design, type testing and inspection during manufacturing, ratings and classification of mobile fire extinguishers and test methods to be used. It applies to mobile fire extinguishers with a total mass above 20 kg for powder, water based and CO₂ extinguishers. This standard applies to mobile fire extinguishers that are manoeuvred by an operator on foot only.

It does not cover fire tests for class C and class F fires, but the used extinguishing media can be effective on these types of fire. Class D fires are considered to be a very specialist application and are not included in this standard, but may be made the object of national specification.

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, *Portable fire extinguishers — Part 7: Characteristics, performance requirements and test methods*

EN ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests (ISO 9227:2006)*

3 Terms and definitions

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

3.1

pressure at maximum operating temperature, PTS_{max}

(pressure experimentally measured)

pressure measured in the extinguisher after stabilisation during at least 24 h at a maximum operating temperature TS_{max} (≥ 60 °C) and for cartridge operated extinguishers, the maximum pressure shall be the maximum pressure recorded for 0,5 s during a period of 3 min, excluding the first 5 s after releasing the propellant gas

3.2

body

shell of the mobile fire extinguisher not fitted with accessories, but fitted with all welded parts

3.3

maximum allowable pressure, PS

(maximum declared pressure)

maximum pressure for which the equipment is designed as specified by the manufacturer and which is in any case, greater than or equal to PTS_{max}

3.4

charge of an extinguisher

mass or volume of the extinguishing media contained in the mobile fire extinguisher

NOTE For extinguishers expressed as a volume (in litres) for water based extinguishers and as a mass (kilograms) for powder and CO₂ extinguishers.

3.5

closure

component, other than a safety device or pressure indicator, subject to the internal pressure and used to close off and seal the body

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3.6
extinguisher body
assembly of parts to comprise the pressure retaining part of a fire extinguisher which can include a body, operating device, filling cap, closure, valve, hose

3.7
duration of operation
time during which the extinguishing media is discharged, without any interruption in the discharge and with the valve fully opened not including the residual propellant gas

3.8
fire extinguisher
appliance containing an extinguishing medium, which can be expelled by the action of internal pressure and be directed onto a fire

NOTE This pressure may be stored pressure (stored pressure extinguisher) or obtained by the release of a propellant gas from a separate cylinder (cartridge extinguisher).

3.9
extinguishing media
substance contained in the extinguisher that causes extinction

3.10
mobile fire extinguisher
extinguisher designed to be transportable and operated by hand and that has a total mass of more than 20 kg

NOTE 1 A mobile fire extinguisher is mounted on wheels. In this standard the mobile fire extinguisher shall be called "Extinguisher"

NOTE 2 Two bodies can be combined to form a single unit subject to the limits given in Table 1.

3.11
propellant gas
gas in a liquefied or compressed state, which provides the internal pressure used to expel the extinguishing media

3.12
propellant container
gas cylinder that fits into or is attached to the extinguisher and that contains the propellant

3.13
residual charge
mass or volume of the extinguishing medium remaining after continuous discharge including all propellant gas

3.14
water based extinguisher
extinguisher containing only water or water with additives

NOTE This includes foam extinguishers.

3.15
powder extinguisher
extinguisher containing fire extinguishing powder

3.16
bursting pressure P_r
maximum pressure measured during a bursting test

3.17
 TS_{max}
maximum operating temperature declared by the manufacturer

3.18 TS_{min}

minimum operating temperature declared by the manufacturer

3.19**gripping device**

device intended for moving the extinguisher

4 Symbols and abbreviations

For the purposes of this standard, the following symbols and abbreviations apply.

PS Maximum allowable pressure in bar

PT Test pressure in bar

D Nominal external diameter of the body, or the largest external value of the perpendicular section of the axis, in mm

DN Diameter in mm for circular products submitted to pressure or the diameter in mm of the equivalent flow section for non circular parts

Pr Bursting pressure in bar

TS_{max} Maximum operating temperature, in °C

PTS_{max} Pressure at maximum operating temperature, in bar

TS_{min} Minimum operating temperature, in °C

5 Description of an extinguisher**5.1 Type of extinguisher**

An extinguisher is described by the type of extinguishing medium it contains. This standard covers:

- powder extinguishers;
- water based extinguishers;
- CO₂ extinguishers.

Water based extinguishers, including foam, containing different proportions of antifreeze shall be treated as separate and distinct models especially for the purpose of testing the range of operating temperatures (see 6.1.1), electrical conductivity (see clause 7.3), and fire ratings.

EN 1866-1:2007 (E)**5.2 Components of extinguisher**

A wheeled fire extinguisher consists of the following components:

- extinguisher body;
- wheels;
- gripping device;
- body fittings that are attached or screwed to the body, and include the following:
 - cylinder for propellant (not applicable for stored pressure extinguishers);
 - control device;
 - hose assembly;
 - main closure;
 - operating device.

6 Requirements**6.1 Effective range of operating temperatures****6.1.1 General**

Extinguishers shall be able to operate between TS_{max} and TS_{min} :

TS_{max}	for all extinguishers: shall be 60 °C or higher;
TS_{min}	for all powder extinguishers and CO ₂ extinguishers: shall be - 20 °C, - 30 °C or lower;
TS_{min}	for water based extinguishers: shall be + 5 °C, 0 °C, - 5 °C, - 10 °C, - 15 °C, - 20 °C, - 25 °C, -30 °C or lower. For water based extinguishers without any protection against freezing. TS_{min} shall be + 5 °C;
TS_{max} and TS_{min}	claimed by the manufacturer shall be used for the tests.

6.1.2 Requirements

After the test described in A.6, the requirements for all extinguishers are as follows:

- shall operate satisfactorily;
- discharge shall commence within 10 s of the opening of the control valve; cartridge operated extinguishers shall be activated 30 s prior to opening the control valve;
- duration of operation shall be according to A.2 and not be less than the value applicable given in Table 4, Table 5, and Table 6;
- residual charge remaining in the extinguisher after one single and complete discharge including full decompression shall be as given in Table 7.

6.1.3 Additional Requirements for CO₂ extinguishers

For the duration of operation of CO₂-extinguishers the following applies at:

- TS_{max} the duration of operation shall be no more than the value established at 20 °C.
- TS_{min} the duration of operation shall be no more than 2,5 times the value established at 20 °C.

The value established at 20 °C.

6.2 Filling specifications

6.2.1 Nominal charges

Nominal charges of extinguishers shall be equal to one of the values given in the Table 1 depending on to the nature of the extinguishing media.

Table 1 — Nominal charges for extinguishing media

Powder in kg	Water based in l	CO ₂ in kg ^a
25, 50, 100, 150	20, 25, 45, 50, 90, 100, 135, 150	10, 20, 30, 50
^a It is allowed to reduce the charge of the cylinder by 10 % to avoid overpressure in areas with high ambient temperatures.		

6.2.2 Filling tolerances

The actual charge of the extinguisher shall be equal to the nominal charge within the tolerances given in Table 2.

Table 2 — Filling tolerances on nominal charges

Powder	Water based	CO ₂
± 2 %	0 %	0 %
	- 5 %	- 5 %

6.2.3 Propelling agent

Only propellants listed in Table 3 or mixtures thereof, shall be used in extinguishers, whether they are the stored pressure type or cartridge extinguisher type. The maximum proportion of water in mass shall be as specified in Table 3, except when used in stored pressure water based extinguishers. Tracers may be added to the propellant to facilitate leakage detection, but the content shall not exceed 3 % of the propellant content.