

European Committee for drawing up Standards in the field of Inland Navigation
(CESNI)

Edition 2019/1

**European Standard
laying down
Technical Requirements
for
Inland Navigation vessels
(ES-TRIN)**

This is a summary of ES-TRIN for K₂CO₃ either FirePro.



Article 13.05***Permanently installed firefighting systems for protecting engine rooms, boiler rooms and pump rooms*****1. Extinguishing agents**

For protecting engine rooms, boiler rooms and pump rooms, the following extinguishing agent may be used in permanently installed fire-fighting systems:

FirePro / K₂CO₃ (potassium carbonate) / condensed dry aerosol.

2. Ventilation, air intake

- a) Combustion air for the propulsion engines shall not be extracted from rooms that are to be protected by permanently installed fire-fighting systems. This shall not apply where there are two mutually independent and hermetically separated main engine rooms or if next to the main engine room there is a separate engine room with a bow thruster, ensuring that the vessel can continue to make steerageway under its own power in the event of fire in the main engine room.
- b) Any forced ventilation present in the room to be protected shall switch off automatically if the fire-fighting system is triggered.
- c) There shall be devices available with which all apertures which can allow air to enter or gas to escape from the room to be protected can be quickly closed. It shall be clearly recognisable whether they are open or closed.
- d) The air escaping from pressure relief valves in the compressed-air tanks installed in engine rooms shall be conveyed to the open air.
- e) Over- or under-pressure resulting from the inflow of extinguishing agent shall not destroy the components of the surrounding partitions of the room to be protected. It shall be possible for the pressure to equalise without danger.
- f) Protected rooms shall have a facility for extracting the extinguishing agent and the combustion gases. Such facilities shall be capable of being operated from positions outside the protected rooms and which must not be made inaccessible by a fire within such spaces. If there are permanently installed extractors, it shall not be possible for these to be switched on while the fire is being extinguished.

3. Fire alarm system

The room to be protected shall be monitored by means of an appropriate fire alarm system. The alarm shall be noticeable in the wheelhouse, the accommodation spaces and the room to be protected.

4. Piping system (*not applicable*).**5. Triggering device**

- a) Fire-fighting systems with automatic triggering shall not be permissible.
- b) It shall be possible to trigger the fire-fighting system from a suitable place outside the room to be protected.

- c) Triggering devices shall be installed in such a way that they can be operated even in case of a fire and in the event of damage by fire or explosion in the room to be protected the necessary quantity of extinguishing agent can still be conveyed.
Non-mechanical triggering devices shall be powered from two different mutually independent power sources. These power sources shall be located outside the room to be protected. Control lines in the room to be protected shall be designed so as to remain functional for at least 30 minutes in the event of fire. This requirement shall be fulfilled in the case of electric wiring if it complies with the International Standard IEC 60331-21 : 1999.

If triggering devices are installed in such a way that they are out of sight the panel covering them shall be identified by the 'fire-fighting installation' symbol as shown in Figure 6 of Annex 4, having a side length of at least 10 cm, and the following text in red lettering on a white background:

'Feuerlöscheinrichtung
Installation d'extinction
Brandblusinstallatie
Fire-fighting installation'.

- d) If the fire-fighting system is intended for the protection of several rooms, the triggering devices for each room have to be separate and clearly identified.
- e) Next to each triggering device operating instructions in one of the languages of the Member States shall be posted up visibly and indelibly. They shall contain, in particular, instructions regarding:
- aa) triggering of the fire-fighting system;
 - bb) the need for checking to ensure that all persons have left the room to be protected;
 - cc) action to be taken by the crew when the firefighting system is triggered and when accessing the protected room after triggering or flooding, in particular with regard to the possible presence of dangerous substances;
 - dd) action to be taken by the crew in the case of failure of the fire-fighting system.
- f) The operating instructions shall point out that before the fire-fighting system is triggered combustion engines drawing air from the room to be protected are to be shut down.

6. Warning system

- a) Permanently installed fire-fighting systems shall be provided with acoustic and optical warning systems.
- b) The warning system shall be set off automatically as soon as the fire-fighting system is first triggered. The warning signal shall sound for an appropriate time before the extinguishing agent is released and it shall not be possible to switch it off.
- c) Warning signals shall be clearly visible in the rooms to be protected and outside the accesses to them and clearly audible even under operating conditions producing the loudest inherent noise. They shall be clearly distinct from all other acoustic and optical signals in the room to be protected.
- d) The acoustic warning signals shall be clearly audible in the adjacent rooms even when connecting doors are closed and under operating conditions producing the loudest inherent noise.
- e) If the warning system is not self-monitoring as regards short-circuits, wire breaks and voltage drops, it shall be possible to check that it is working properly.

- f) At every entrance to a room that can be supplied with extinguishing agent, a clearly visible notice shall be put up bearing the following text in red lettering on a white background:

‘Vorsicht, Feuerlöscheinrichtung!
Bei Ertönen des Warnsignals (Beschreibung des Signals) den Raum sofort verlassen!

Attention, installation d'extinction d'incendie !
Quitter immédiatement ce local au signal (description du signal) !

Let op, brandblusinstallatie!
Bij het in werking treden van het alarmsignaal (omschrijving van het signaal) deze ruimte
onmiddellijk verlaten!

Warning, fire-fighting installation!
Leave the room as soon as the warning signal sounds (description of signal)!

7. Pressure tanks, fittings and pressure pipes (*not applicable*).

8. Quantity of extinguishing agent

If the quantity of extinguishing agent is intended for protecting more than one room, the total amount of extinguishing agent available does not need to be greater than the quantity necessary for the largest room to be protected.

9. Installation, inspection and documentation

- a) The system shall be installed or converted only by a firm specialising in fire-fighting systems. The requirements specified by the extinguishing agent manufacturer and the system manufacturer (product data sheet, safety data sheet) are to be complied with. Maintenance, in particular of the condition of the spray nozzles, shall be carried out regularly in accordance with the instructions of the system manufacturer or producer of the extinguishing agent (data sheet).
- b) The system shall be checked by an expert:
- aa) before being put into service for the first time;
 - bb) before being put back into service after it has been triggered;
 - cc) before being put back into service after any major modification or repair; and
 - dd) regularly, at least every two years.
- Inspections as referred to in (dd) may also be carried out by a competent person from a competent firm specialising in fire extinguishing systems.
- c) In the inspection the expert or competent person shall check whether the system meets the requirements of this Article.
- d) The inspection shall cover at least the following:
- aa) external inspection of the entire installation;
 - bb) tightness check on pipes;
 - cc) functional checking of control and triggering systems;
 - dd) checking of tank pressure and content;
 - ee) checking of tightness and facilities for locking the room to be protected;
 - ff) checking the fire alarm system;
 - gg) checking the warning system.

- e) An inspection attestation shall be issued, signed by the expert and showing the date of the inspection.
- f) The number of permanently installed fire-fighting systems shall be entered in the inland navigation vessel certificate.

15. FirePro / K2CO3 - fire-fighting systems

In addition to the requirements laid down in (1) to (7) and (9), fire-fighting systems using K2CO3 (FirePro) as the extinguishing agent shall comply with the following provisions:

- a) The fire-fighting system shall have a type-approval pursuant to MSC/Circ. 12701 or another Standard recognised by one of the Member States. Type-approval shall be carried out by a recognised classification society or an accredited testing institution. The accredited testing institution shall comply with the European Standard EN ISO/IEC 17025 : 2005.
- b) Each room shall be provided with its own firefighting system.
- c) The extinguishing agent must be stored in specially provided unpressurised tanks in the room to be protected. These tanks must be fitted in such a way that the extinguishing agent is dispensed evenly in the room. In particular the extinguishing agent must also work underneath the deck plates.
- d) Each tank is separately connected with the triggering device.
- e) The quantity of extinguishing agent relative to the room to be protected is at least 120 g per m3 of the net volume of this room. This net volume is calculated according to MSC/Circ. 1270, items 11.2 to 11.4. It shall be possible to supply the extinguishing agent within 120 seconds.



EC Type Examination Certificate

This is to certify that: FirePro Systems Ltd
6 Koumandarias Street & Spyrou
Araouzou Tonia Court No.2
Limassol
3036
Cyprus

Holds Certificate Number: BSI/A.1/3.46/560436

In respect of:

MED/3.46 - Equivalent fixed gas fire extinguishing systems for machinery spaces (aerosol systems), Product Description - Aerosol Fire Extinguishing Units with dry condensed extinguishing agent, Fire Class A & B Models - FP205, FP205E, FP405, FP805, FP1905, FP2005, FP5005, FP1200, FP1200S, FP2000, FP2000S, FP3000, FP3000S, FP5700 & FP5700S. Specified standard: IMO MSC/Circ 1270 incl Corr.1 as amended.

On the basis that BSI carried out the relevant EC type examination procedures for the equipment identified above which was found to be in compliance with the Marine Equipment Directive (MED) 2014/90/EU, subject to any conditions in the schedule attached hereto. The attached schedule of approval forms part of this certificate.

For and on behalf of BSI, a Notified Body for the above Directive (Notified Body Number 0086):

Chris Lewis - Certification Director, Product Certification

First Issued: 2010-08-20 Latest Issue: 2017-11-16 Expiry Date: 2022-11-15



Page: 1 of 13

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EC Production Quality Assurance Certificate

This is to certify that: FirePro Systems Ltd
6 Koumandarias Street & Spyrou
Araouzou Tonia Court No.2
Limassol
3036
Cyprus

Holds Certificate Number: BSI/MED/PC/560437

In respect of:

MED/3.46 - Equivalent fixed gas fire extinguishing systems for machinery spaces (aerosol systems)

On the basis that BSI carried out the relevant Production Quality Assurance procedures for the equipment identified above which was found to be in compliance with the Marine Equipment Directive (MED) 2014/90/EU, subject to any conditions in the schedule attached hereto. The attached schedule of approval forms part of this certificate.

For and on behalf of BSI, a Notified Body for the above Directive (Notified Body Number 0086):

Chris Lewis - Certification Director, Product Certification

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Page: 1 of 3

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