RAPPORTO DI PROVA - TEST REPORT

JOB No. 180423	Data 21/06/2018	*Vs. rif.: prev. PLREF4IT00180423 ordine del 15/06/2018*

Richiedente	**ESP INTERNATIONAL S.r.l.** Strada per Chieri, 109 – 14019 – Villanova d'Asti (AT) (Italia)
Prodotto *Identificazione e descrizione*	**Dispositivo estinguente portatile monouso ad aerosol condensato FIRE SUPPRESSION SYSTEMS (FSS)**
Prove richieste	Prove di estinzione dei focolari. (classi A – B – C – F)
Norma di riferimento	-
Metodo di prova	-
Periodo di prova	21/06/2018
Risultati	(risultati riportati da pag.2 a pag.6)
Il Tecnico di Laboratorio	Per. Maurizio Biagini
Il Responsabile di Settore	D.ssa Geol. Annarita Sacco

Il presente rapporto di prova, riproducibile nella sua sola stesura integrale, si riferisce al solo prodotto esaminato.
This test report refers only to the tested items and it can be reproduced only in its full version.

Materiale fornito dal cliente c/o campo prove.

MTIC INTERCERT S.r.l. - Via Moscova, 11 - 20017 RHO (MI) ITALY - www.mticert.org - info@mticert.org

Extinguishing Class A Fires (Solid materials)

Test conditions

The 2 tests were carried out in a closed area, in a test room, protected from air currents. The temperature of the surroundings was 26 °C.

Apparatus and materials

A combustible crib, made up of pine or fir with a humidity of 6,7% - 8,3% formed by 10 layers sustained by a metal frame, with strips with a square section of 25mm on each side, with a first layer made up of strips that are 230mm long in the transverse direction overlaying a second layer with strips that are 450mm long in the longitudinal direction. This is repeated in succession until the tenth layer. The stack is suspended from the ground by the metal frame size 700 mm x 550 mm (length x width respectively) under which an ignition tank size Ø 300mm x 100 mm (height) filled with 1,9 L of water + 500ml 95 octane fuel in sufficient quantity to guarantee a period of pre-combustion was positioned.

Test procedure

The combustion crib was assembled with the trigger plate in the centre like indicated in fig. 1, in such a way that the first layer consists of 3 evenly spaced beams, the second layer consists of 5 beams perpendicular to the ones in the first layer, the third layer consists of 3 beams perpendicular to the ones in the second layer, and the fourth layer consists of 5 beams that are perpendicular to the ones in the third layer, and so onwards until the tenth and final layer.

The water was poured inside the ignition tank; then 500 ml of 95 octane fuel were added into the ignition tank, it was triggered and the fire was allowed to burn for 60 seconds (pre combustion).

The ignition tank was extracted and moved away from the stack and the operator immediately activated the unit on the combustible crib (fig. 2), directing the nebulized jet around the combustible crib until the fire was extinguished. After that, the operator continued to discharge the aerosol jet on the combustible crib (fig. 3) whilst keeping a distance of around 1m, in order to envelop it with a cloud of aerosol. The unit was completely discharged on the combustible crib, directing the jet far away from ash and deep embers.

After over 2 minutes of waiting, no more free flames developed, however, incandescence was picked up on a few wooden planks (fig. 4).

At the end of the operation, water was used to inhibit any residual incandescence.

Result of the test: The extinguishing device EXTINGUISHED the class A test fire.

MTIC INTERCERT S.r.l. - Via Moscova, 11 - 20017 RHO (MI) ITALY - www.mticert.org - info@mticert.org

(fig.1)

(fig.2

(fig.3)

(fig.4)

Extinguishing Class B Test Fires (Flammable Liquids)

Test conditions

The 2 tests were carried out indoors in a location protected from air currents. The temperature of the surroundings was 27 °C.

Apparatus and materials

The test vessels were built by a series of 4 trays or plates whose dimensions are indicated below. The trays or plates need to contain water covered by a layer of fuel in the following proportions: 1/3 of water and 2/3 of fuel .

- Recipient: 4 trays or plates size 250mm x 360mm x 25mm height

- Test liquid: Every recipient contains 300ml of water and 600ml of 95 octane fuel (1/3 water and 2/3 95 octane fuel for the 4 recipients for a total of 3.6 litres)

Test procedure

The containers/recipients were placed on a flat surface. The distance between each container was 1m.

- 300ml of water was poured in each container;

- 600ml of 95 octane fuel were added in each container (with attention to not allow any fuel spills). The total height of the mixture was around 12mm.

The fire in the first tray was triggered (fig.1) and immediately after the extinguishing device was activated. The operator directed the jet on the test hearth (fig. 2) at an inclination of 45° to the tray or plate, trying to suppress the fire with the aerosol jet.

Upon having extinguished the fire in the first tray the second tray was immediately lit (fig. 3), the same procedure was followed for all the following recipients (i.e. triggering and then extinguishing the fire).

Result of the test: The extinguishing device EXTINGUISHED the class B test fire.

(fig.1)

(fig.2)

(fig.3)

MTIC INTERCERT S.r.l. - Via Moscova, 11 - 20017 RHO (MI) ITALY - www.mticert.org - info@mticert.org

Extinguishing class C test fires (fires from flammable gases)

Test conditions
The 2 tests were carried out indoors in a location protected from air currents. The surrounding temperature was 27 °C .

Apparatus and materials
- 3kg GPL cylinder with the standard Italian attachment and high pressure adapter (in this case model "Erregi alta pressione");
- Rubber tube x GPL UNI 7140 – CL1 – type A1 DN8 – bar 0,2 – Length of around 3m;
- 0 to 200 mbar variable calibration pressure gauge;
- 60cm metal connecting pipe with final flame dispenser.

Test procedure
The free flame pipe union was turned on (fig. 1), after a few seconds the operator activated the extinguishing device at a distance of about 50 cm from the burner (fig. 2) and extinguished the flaming gas (fig. 3) throughout the working period of the device. The free flame pipe was re-ignited and extinguished repeatedly.

Result of the test: The extinguishing device EXTINGUISHED the class C test fire.


(fig.1)


(fig.2)


(fig.3)

MTIC INTERCERT S.r.l. - Via Moscova, 11 - 20017 RHO (MI) ITALY - www.mticert.org - info@mticert.org

Extinguishing class F test fires (oils and kitchen fats)

Test conditions

The 2 tests were carried out indoors in a location protected from air currents. The temperature of the surroundings was 27 °C.

Apparatus and materials

Circular recipient (pan/pot) Ø 240mm x 110mm height

Test liquid: 2L of vegetable oil (= oil height of 6cm)

Test procedure

The oil was warmed up in the test recipient using a suitable arrangement for the heating process. The test pan was allowed to heat up without the lid, occasionally a thermocouple was used to measure the temperature rise of (5 ± 2) °C/min.

The oil was heated to the point of auto-flammability (detected at a value of around 340 °C). At this point the energy source was turned off.

As soon as the oil ignited (fig. 1) the unit was activated at 1-2 m from the edge of the recipient and the contents of the device were fully discharged (fig. 2).

After having extinguished the fire, the extinguishing device was kept active at a distance of about 50-70cm from the edge, keeping the aerosol aimed at the edge of the recipient until the device was completely out of power.

At the end of the discharge no free flames remained in the pan/ pot.

New oil was used for every test.

Result of the test: The extinguishing device EXTINGUISHED the class F test fire.

(fig.1)

(fig.2)

(fig.3)