



Prévention et maîtrise des risques

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Performance test Certificate

I undersigned A. Muller, Fire and Environmental Laboratory Director of CNPP certifies that **EXXFIRE** Company carried out tests in our laboratory to assess the performances of its **EXXFIRE 1500** protection system designed for protection of electrical and server cabinets. Tests were performed using an enclosure of 2.4 m³ (maximum protected volume for EXXFIRE 1500).

Considering CNPP test procedure DFE 17 026-1, the following tests have been performed:

- **Detection tests;**
- **Discharge tests;**
- **Early fire growth suppression tests;**
- **Developed fire suppression tests.**

These tests are fully described in the following test reports:

- IN 17 10670, dated 7th April 2017.

The main results are the following:

- The system shows the ability to detect fumes from an overheating surcharged cable, even with high ventilation rate. The system can thus perform gas emission during the early growth stages of the fire;
- Without ventilation and with the same settings, the system even managed to detect APSAD R7 rated “high precocity” test fire (two 12 ohm resistor overcharged during 80 s);
- The system managed to quickly suppress electrical cable fires (about 10 s after gas discharge) during early fire growth and with a developed fire;
- Target nitrogen concentration (IG100 design concentration for A class surface fire - 40.3%) was reached during all the tests, except early fire growth suppression test 2 (nitrogen leakage in the piping network). In this case, nitrogen concentration was still higher than the extinguishment concentration as defined in ISO 14520-13 or APSAD R13 for A class surface fire (31%). CNPP yet recommends to address this leakage issue to ensure a sufficient safety factor on nitrogen concentration;
- Nitrogen concentration was evenly distributed in the cabinet when a fire was set in the enclosure;
- Design concentration (when reached – i.e. in every tests except early fire growth suppression test 2) is set in less than 120 s, which is acceptable for inert gases;



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- Gas discharge generated a rise in CO concentration (maximum of about 500 ppm) in the test enclosure;
- CO₂ concentration stayed under detection limit in the test enclosure;
- Sound level during discharge reach a maximum of 98.7 dB in test configuration.

Vernon, the 07th april 2016

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