



Fire Suppression for HM Prison Service

The HM Prison Service commissioned a set of tests to determine the effectiveness of the traditional hose reels which, to date, had been installed in prisons across England and Wales throughout the 20th century.

Project

During these tests it was observed that the conventional hose reels did not effectively fight the fire and that smoke from the fire presented a greater risk to both the cell occupants and rescuers than the fire itself.

The use of Conventional hose reels also created extensive water damage and extended 'turnaround time' of the affected cell in some cases the cell below as well.

Knowing that Watermist systems offer a far more efficient way of using water to fight fires, the HM Prison Service asked us to participate in a series of evaluation trials to determine the effectiveness of Watermist systems, these were held at the world renowned Buildings Research Establishment (BRE).

The BRE test criteria established were:

- **Maintain a tenable atmosphere for a period of 20 minutes when fire tested in accordance with the specifications**
- **Discharge a relatively small amount of water**
- **Deliver a spray of water mist with sufficient momentum to discharge droplets to the back wall of a cell.**

The Inundation was to last for 5 minutes after pre-burn and operation of internal cell fire detection systems, then a simulated 'rescue' of an inmate involving opening the door for a set period of one minute would occur, followed by Re-closing the door and waiting 10 minutes during which time the fire was not to resume.

Watermist Ltd tested Hydramist® products as follows:

- **Mobile 8 and Hosereel mounted hand held lances**
- **Fixed in cell nozzle with glass frangible bulb operation using a locally mounted pump unit.**

In all tests Hydramist®:

- **Successfully extinguished the fire at the first attempt**
- **Dramatically reduced cell temperature, toxic gases & smoke to 'tenable' levels**
- **Ensured sufficient oxygen was available to sustain life throughout the cell.**



Note: During the 'rescue' and ten minute waiting period after inundation that the fire did not resume; temperatures & toxic gases in the cell continued to fall, remaining well below levels that could be harmful to life.

Since successfully passing these tests Hydramist® systems have become the equipment of choice for The HM prison Service and are installed in over 150 prisons.



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