



**Fire Protection
Association**
Special Projects Group

Fire Testing Laboratory

- Fire performance testing and research
- Flame and heat detector tests
- Sprinkler head testing
- Proof of concept testing
- Novel devices and new technologies

THE UK'S NATIONAL FIRE SAFETY ORGANISATION
Protecting people, property, business and the environment

Technical Expertise

The **Fire Protection Association** (FPA), founded in 1946, is the UK's national fire safety organisation, providing authoritative advice and information on all aspects of fire safety and prevention including research, training, publications, risk surveying and auditing.

The **Technical Division** of the FPA includes a team of highly experienced and qualified professionals offering a comprehensive range of fire safety advisory and consulting services tailored to the clients' needs.

Operating nationwide, we are able to offer our complete range of high integrity cost-effective services that will add value to your fire safety management programme.

We provide services to the:

- Ministry of Defence and their agents
- Defence supply chain
- Insurance industry
- Legal profession
- Fire protection industry
- Forensics
- Fire and rescue services
- Oil and gas sector
- Commerce and industry

How the FPA can help

Our team of experienced scientists and engineers can undertake a wide range of bespoke fire testing at our facilities in Moreton-in-Marsh.

Our range of services can assist risk managers, insurers, facility owners, manufacturers and end-users who may wish to prove aspects of the performance of products or protection systems. Examples of our work include post fire investigation work, fire reconstruction, fire investigation and real world suitability investigations, all of which utilise our extensive range of measurement and data capture instrumentation, and can be supported by thermal imaging, video and photographic evidence.

We are independent of all product suppliers, installers and manufacturers, so we can guarantee a confidential and impartial service, provide the client with reliable objective information and, where appropriate, advice to help ensure that appropriate levels of fire safety are preserved.

Services offered include:

- Fire performance testing and research
- Sprinkler head testing
- Flame and heat detector tests and evaluation
- Proof of concept testing
- Novel devices and new technologies



Fire performance testing and research

The FPA has a number of experimental research facilities, which enable it to undertake world class fire testing and research. In addition there is a 'mobile fire laboratory' consisting of sensors, measurement and data logging equipment allowing us to conduct testing on-the-road and at clients' premises.

Combined with our first class technical staff, from a variety of engineering, physics and other technical backgrounds we are one of the UK's leading and renowned fire test and research establishments.

Flame and heat detector tests and evaluation

The FPA is able to undertake bespoke testing of various types of detector tests, including proof of concept of innovative applications, product development and real world performance evaluation.

All tests are undertaken by experienced scientists and engineers and our independence ensures our testing will be impartial and our advice will be purely to ensure appropriate levels of fire safety are preserved.

Smoke movement

It is possible to capture data on smoke movement which can be used to evidence smoke control designs, validate or build Computational Fluid Dynamics (CFD) models.

In-service sprinkler head testing

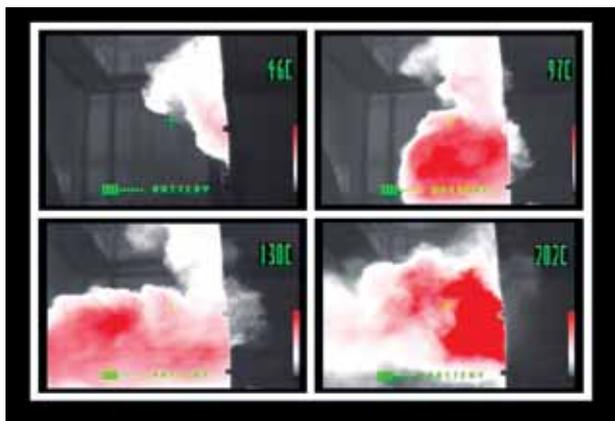
The FPA is able to provide testing of old sprinkler heads removed from an installation. This testing will be undertaken by our experienced staff as required by various installation standards including LPC Rules for Automatic Sprinkler Installations, BS EN 12845 Annex K and to the requirements of BS EN 12259-1 for sprinkler heads. The legislative framework in the UK increasingly requires end users to ensure they have appropriate and well maintained fire safety provisions in place. This service is a cost effective way to demonstrate that steps have been taken to ensure fire sprinklers continue to be fit for purpose.

System testing

The performance of suppression and extinguishing systems can be tested against real and challenging fire scenarios. This can be useful in demonstrating performance capability, interaction with other systems or fire protection measures, adjusting performance capabilities to mitigate various hazards or capturing/validating Computational Fluid Dynamics (CFD) modelling data.

Proof of concept testing

For innovative products and applications, FPA can help by offering an affordable route, without compromising on quality, to verification of product performance.



Fire characteristics

Where greater understanding of specific issues of fire behaviours is required, our facility is perfectly equipped to quantitatively study such phenomena. Improved understanding of fire hazards can often lead to more honed and cost effective mitigations being possible.

Crime re-enactments

Our versatile laboratory space has proven well suited to reconstruct a variety of scenarios whether they involve fire or not. A variety of cause-and-effect issues can be studied in a controlled manner to better understand events.

Ad-hoc testing

From providing footage of fires for film production, to assessing the performance of devices to prevent frozen water pipes bursting, to investigating the combustion properties of Christmas trees, FPA staff have a broad range of experience in devising and conducting unusual research projects.

Passive fire protection

Efficacy of passive fire protection elements can be studied as individual elements or as part of a system of measures. Interaction between active and passive systems can be considered.

Novel devices and new technologies

Our uniquely staffed and resourced laboratory is ideally equipped to respond to the measurement and evaluation challenges posed by innovation. We can help in the R&D process or at later stages by evaluating actual capability.

As always, all scientific work is delivered with meaningful analysis and commentary on real-world implications of findings.



Facilities and Capabilities

Facilities

- Large volume still-air fire test hall
- Burn hall
- Hospitality facilities
- Presentation and observation room
- Wi-Fi, teleconference, webcam
- Smoke and dust control systems
- Pumped high capacity water supplies
- Tanked water storage and run-off water collection systems
- Adjustable height fire hardened ceiling
- Firefighting foam proportioning systems
- Water collection and automatic weighing systems
- IMO test rig
- ISO containers
- Fire hardened rooms
- Compressed air supply
- Mobile fire laboratory

Capabilities

- Test facility construction – design, procurement, project management, build/fabrication and disposal
- Provisions to create almost any conceivable fire load (gaseous, liquids, solids)
- Provision to undertake off-site testing
- Calorimetry
- Toxic materials and products handling capabilities
- Gas measurement
- Door fan integrity testing
- Temperature measurement
- Heat flux measurement
- Chemical species measurement
- Pressure measurement
- Liquid flow measurement
- Gas velocity measurement
- Deformation measurement
- Stress measurement
- Weighing platforms
- Surveying / distance measurement
- Thin film measurement
- Data collection & analysis





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INVESTOR IN PEOPLE

The FPA Technical Division offers a unique blend of engineers, scientists and consultants with extensive experience in all sectors, providing a comprehensive range of practical, high integrity services tailored to your requirements.

