

POWER TO INNOVATE. FLEXIBILITY TO ADAPT.



A HALMA COMPANY

# FIRETRACE - THE WORLD LEADER IN SPECIAL HAZARD FIRE SUPPRESSION SOLUTIONS.

## POWER TO INNOVATE. FLEXIBILITY TO ADAPT.

Firetrace was the first name in innovative fire suppression solutions and is the first to adapt to new technologies. Globally accepted as the leader in special hazard fire protection, Firetrace International supplies powerful, flexible fire management solutions worldwide. Firetrace Aerospace, a wholly-owned subsidiary of Firetrace USA, applies the Firetrace core product line to the aviation and defense markets.

Since inception in 2000, Firetrace International has been headquartered in Scottsdale, Arizona, USA. Growing from a modest 2,000 ft<sup>2</sup> (185 m<sup>2</sup>) facility, Firetrace has now expanded to occupy over 80,000 ft<sup>2</sup> (7500 m<sup>2</sup>) of office and warehouse space in its current facility. Firetrace European operation are headquarted just outside Gatwick airport in London, with offices and warehouse operations to serve the region.

To ensure timely, effective support around the world, Firetrace also maintains sales offices in Sydney, Singapore, New Delhi, Dubai and Johannesburg.





## FIRETRACE HISTORY

Firetrace systems were developed in the 1980's as a solution for fires in farm harvesting equipment. This equipment suffered from fires regularly due to mechanical failures and buildup of plant materials in the engine areas. There was a clear need for a solution, however the dirt, vibration and temperature variations made traditional automatic solutions impractical.

The simplicity of Firetrace's tubing-based detection systems offered the ideal robust yet reliable solution. The pneumatic tube actuation proved to be tolerant of the dirt, grime, and vibration associated with the equipment, while providing fast, reliable detection of a growing fire.

In 2000, Firetrace International was founded to market Firetrace's unique systems worldwide. Since that time these systems' unique properties have proven themselves in CNC machines, buses, electrical control panels, fume hoods, engine and generator compartments, hazardous storage cabinets and countless other applications.

To date, more than 250,000 systems have been installed around the world, and reports of successful suppression come in several times each week.

In 2011, Firetrace introduced a range of clean agent engineered systems. These systems gained rapid acceptance globally, and facilitated the development of Firetrace's E4, the next generation of engineered systems designed specifically for the unique properties of 3M™ Novec™ 1230 Fire Protection Fluid.

E4 sets a new standard in design flexibility and performance for engineered systems without the high cost of nitrogen driver systems. Engineers and architects universally appreciate the decreased limitations and simplified pipe networks achieved by E4.

In 2015, Firetrace was acquired by Halma plc, to be part of their Infrastructure Safety sector. In doing so, Firetrace joins a group of global leaders in the design and manufacture of flame and smoke detectors, fire detection systems, security sensors and audible/visual warning devices.



## FIRETRACE PRE-ENGINEERED SYSTEMS: THE ORIGINAL IS STILL INNOVATING

Designed for simple installation, often very near the source of a potential fire, Firetrace is a self-activating suppression system that reliably suppresses fires in seconds. We provide a low maintenance, cost-effective solution to the problem of “micro-environment” fire protection.

Micro-environments are applications where the hazard is typically contained within a critical enclosure, such as equipment, machines, vehicles, or storage compartments. Firetrace systems can be installed in virtually any enclosed space where high-value assets are located or where an increased risk of fire could be mitigated by an automatic fire suppression system.

## THE FIRETRACE ADVANTAGE

The effectiveness of a genuine Firetrace system comes from our proprietary, polymer tubing that will rupture when exposed to the heat and flame of a growing fire. This specialized Firetrace Detection Tubing is UL component listed, combines leak resistance, flexibility, durability and precise temperature sensitivity, allowing it to react quickly when the heat from a fire is present. Our detection tubing connects to one of our custom engineered valves and a Firetrace cylinder that contains the best fire suppression agent for a particular hazard. Firetrace systems operate without the need for any power source – external or battery - and require no releasing panel to operate.

## INTERNATIONAL APPROVALS

Firetrace has more than 20 international approvals and listings including;












\*Listings and approvals vary by system type, suppression agent and application.

## CHOOSING THE RIGHT AGENT

Firetrace's systems are compatible with most commercially available fire suppression agents, including:

- |                             |                     |
|-----------------------------|---------------------|
| ✚ 3M™ Novec™ 1230 Fluid     | ✚ Chemours™ FM-200™ |
| ✚ Dry Chemical (ABC, BC, D) | ✚ Foam              |
| ✚ Black Widow               | ✚ CO <sub>2</sub>   |

## FIRETRACE ADVANTAGES

-  - Highly reliable in harsh environments – tolerant of dirt, debris and temperature extremes
-  - Requires no electricity offering uninterrupted service 24/7
-  - Initiates shut down or sends an alert to your monitoring system
-  - Eliminates concern for false alarm or false discharge
-  - Provides immediate detection and delivery
-  - Allows for inexpensive installation, maintenance and recharge
-  - Horizontal or vertical cylinders available giving more flexibility in system placement
-  - Tubing can easily be routed to virtually any location on the vehicle to provide fast accurate detection
-  - P-Mark approved

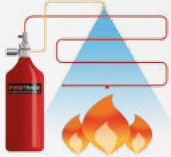






## DIRECT RELEASE SYSTEMS

In Direct release systems, the tubing nearest the hottest point of the fire ruptures, forming an effective discharge “nozzle”. The agent contained in the cylinder is then released in the immediate proximity of the fire.



## INDIRECT RELEASE SYSTEMS

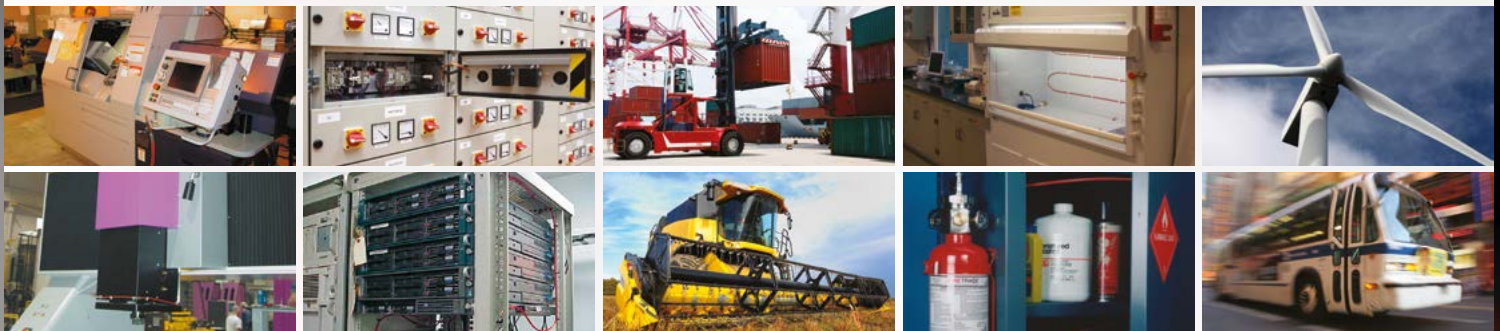
With an Indirect release system, the Firetrace tubing is used only for detection. When a fire causes the tubing to burst, a valve opens and the suppressant is discharged via a traditional distribution network and fixed nozzles.

## FIRETRACE DETECTION TUBING

Firetrace Detection Tubing is ideal for fast, reliable detection of heat and flame even in the toughest applications.



**FIRETRACE FEATURES SELF-ACTUATING SYSTEMS FOR SMALLER “SPECIAL HAZARDS”. THESE PNEUMATICALLY OPERATED PRE-ENGINEERED SYSTEMS PROVIDE TARGETED FIRE SUPPRESSION FOR SMALLER ENCLOSURES.**



### CNC MACHINES

Enclosed automated milling machines; EDM machines; robotic welding machines; plastic injection molding machines.

### ELECTRICAL CABINETS AND CONTROLS

Computer racks; PLC & process automation control cabinets; critical data processing equipment; UPS cabinets; medical equipment; switchgears.

### PLANT EQUIPMENT

Forklifts; machinery engine protection; paper pulping machines; farming equipment.

### FUME CABINETS

Chemical storage; research and development labs; chemical production; pharmaceutical labs; university and school labs.

### ON-ROAD VEHICLES/MASS TRANSIT

Buses; electric trains; school buses; paratransport vehicles; emergency vehicles; shredder trucks.

### INDUSTRIAL ENVIRONMENTS

Ports and intermodal facilities; mines and quarries; oil and gas refineries; airport systems

## FIRETRACE E4: THE 4TH EVOLUTION OF ENGINEERED CLEAN AGENT SYSTEMS

Firetrace's new E4 systems break the mold of engineered systems by smashing the design limitations found in most clean agent systems thanks to a 500 PSI (35 bar) system pressurization using 3M Novec 1230 Fire Protection Fluid.



**MORE**  
**PERFORMANCE**

**MORE**  
**DESIGN FLEXIBILITY**

**MORE**  
**SAVINGS**

E4 total flooding systems are tested and approved by UL (Underwriters Laboratory).

E4 Engineered Clean Agent systems are the newest evolution in total flooding fire suppression solutions from Firetrace, a longstanding innovation leader in the fire suppression industry. The E4 systems are shattering traditional design limitations using 500psi/35 bar pressure in lower-cost, low pressure equipment while achieving the performance of more costly high-pressure or "nitrogen driver" systems.

### WHY 500 PSI?

For years most engineered systems have been charged at 360 PSI (25 bar). It started with common Halon systems and carried over to the first Halon alternative gas systems. Cylinders for these systems were designed to accommodate the pressure and volatility of these gases. With the widespread acceptance of Novec 1230, most manufacturers continued this trend.

However, Novec doesn't share the same characteristics as other agents and with its lower volatility it can be safely pressurized to 500 PSI in the same cylinder that could only accept older agents at 360 PSI.

Firetrace developed its systems around the properties of Novec, rather than simply changing out the agent in existing systems. The result is a system that performs significantly better using the cleanest, most environmentally friendly clean agent without a significant cost impact!

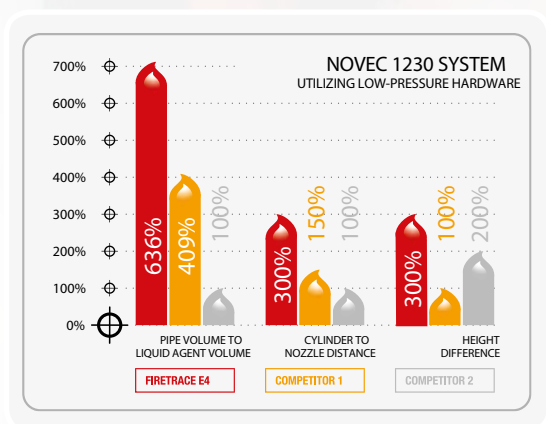


## WHAT DOES E4 DO FOR ME?

Firetrace's E4 systems were designed from the beginning to optimize the equipment for the unique properties. As a liquid, the flow characteristics of Novec are very different than a gas. Through its design and testing, Firetrace was able to achieve new levels of performance from the E4 system. Long held design limitations and conventions are a thing of the past – enabling new levels of flexibility in system design, including:

- ✦ Largest single tank capacity in the industry – 1300lbs!
- ✦ Superior tee splits - Bull T's up to 90/10 split, side T's up to 53/47 & 95/5 split!
- ✦ 2.5" nozzle and nozzle throws at 40 ft (12.19m) x 40ft (12.19m) (Radial throws at equivalent)
- ✦ Height differential and distance from cylinder to nozzle – both up to 300% greater than traditional systems!
- ✦ 636% agent volume to pipe volume

## E4 PERFORMANCE VS. COMPETITIVE LOW PRESSURE SYSTEMS



NFPA 2001, 2012 Edition Compliant Actuation Supervisory

## CLEAN AGENT DECISION CRITERIA

Clean	✓	Safe for Equipment	✓
Effective	✓	Economical	✓
Fast Acting	✓	Space Efficient	✓
Broad Spectrum Fire Effectiveness	✓	Ability to Retrofit Halon Systems	✓
Safe for People	✓	Commercially Available	✓
Safe for the Planet	✓	Long-Term Sustainability	✓

## SYSTEM SIZES

E4 system cylinders are available in eight capacities with fill volumes ranging from 8 to 1300lbs. (4 to 590kg). Filled in one pound/one-half kilogram increments.

## 3M™ NOVEC™ 1230 CYLINDER FILL RANGE

BASE CYL	NOMINAL CYLINDER	MAX. FILL	MIN. FILL
FTF000015	35lb (15L)	38lb (17kg)	8lb (3.5kg)
FTF000029	75lb (29L)	76lb (34.5kg)	16lb (7.5kg)
FTF000062	160lb (62L)	164lb (74kg)	33lb (15kg)
FTF000103	270lb (103L)	271lb (123kg)	55lb (25kg)
FTF000153	400lb (153L)	406lb (184kg)	82lb (37.5kg)
FTF000227	600lb (227L)	601lb (272.5kg)	121lb (55kg)
FTF000368	975lb (368L)	975lb (442kg)	196lb (89kg)
FTF000490	1300lb (490L)	1297lb (588.5kg)	260lb (118kg)

System temperature limits are 32° F (0° C) to 130° F (54.4° C) and system operating pressure is 500 psi (34.5 bar) at 70° F (21.1° C). The cylinders are UL Listed and are manufactured, tested and stamped in accordance with DOT 4BW500 or DOT 4BA500.

## CHEMOURS™ FM-200™ SYSTEMS

Firetrace also offers 360psi / 25 bar FM-200 systems. These systems are available in seven cylinder sizes:

BASE CYL	NOMINAL CYLINDER	MAX. FILL	MIN. FILL
FTF 35	35lb (16kg)	35lb (16kg)	16lb (7kg)
FTF 70	70lb (32kg)	71lb (32kg)	31lb (14kg)
FTF 150	150lb (68kg)	152lb (69kg)	66lb (30kg)
FTF 250	250lb (113kg)	253lb (115kg)	109lb (49kg)
FTF 375	375lb (170kg)	379lb (172kg)	163lb (74kg)
FTF 560	560lb (254kg)	591lb (254kg)	241lb (109kg)
FTF 1200	1211lb (549kg)	1211lb (549kg)	519lb (235kg)

System temperature limits are 0° F (-17.8° C) to 130° F (54.4° C) and system operating pressure is 360 psi (25.3 bar) at 70° F (21.1° C). The cylinders are UL Listed and are manufactured, tested and stamped in accordance with DOT 4BW500 or DOT 4BA500.



# FIRETRACE®

POWER TO INNOVATE. FLEXIBILITY TO ADAPT.

## OVER 500 AUTHORIZED FIRETRACE DISTRIBUTORS WORLDWIDE

Providing hazard analysis, quotations, installations, service and support on Firetrace systems, to reliably and effectively protect your assets.

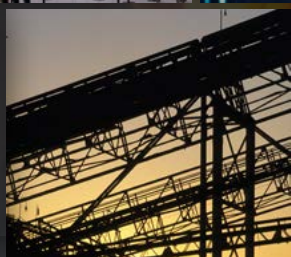
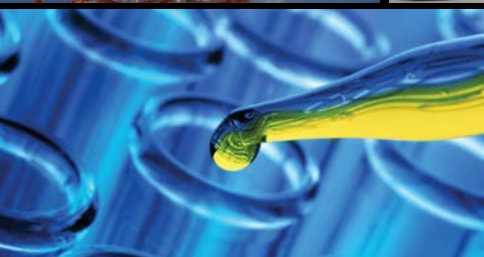
From the adaptable pre-engineered systems using the world-renowned Firetrace Detection Tube to protect critical equipment and enclosures to the innovative new E4 Engineered Systems providing a new level of flexibility in system design, Firetrace leads the world in special hazard protection.

### Airports

### IT Infrastructure

### Mass Transit

### Ports and Intermodal Facilities



### Mining

### Military

### Oil & Gas

### Wind Energy

### Pharmaceuticals

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Firetrace currently has more than 20 international approvals and listings, including UL, CE, FM, ULC & ISO9001. Approvals and listings vary by system type and agent.



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