A revolutionary firefighting technology

DSPA.uk

DRY SPRINKLER POWDER AEROSOL

The DSPA range of knockdown and fixed installation firefighting applications

"After 20 years as a front line firefighter I'm certain that most of the 20+ fighters who have died in that time would have survived had DSPAs been available."

Paul Womack

Dry Sprinkler Powder Aerosol (DSPA) is a revolutionary fire suppression technology that:

- Prevents backdrafts and flashovers
- Reduces the room temperature
- Maintains oxygen levels
- Requires less water
- Is harmless to humans and animals
- Does not leave any harmful residues
- Is environmentally friendly
- Speeds up arson detection

Quite simply, DSPA technology will save lives and protect property!

Introduction to the revolutionary DSPA firefighting technology systems

For over 20 years, the AFG Group in Holland, through their subsidiary company DSPA.nl BV, has been developing this aerosol generator technology as a replacement for the now-banned Halon fire extinguishing systems. DSPA works volumetrically, just like Halon.

DSPA.nl is constantly carrying out extensive research in their laboratory, where the products are also tested for quality and ageing. All DSPA systems are manufactured and distributed in accordance with ISO 9001:2000 standards. In addition they have been satisfactorily tested by the following organisations;

- UL/ULC
- RINA
- BRE
- PrCEN/TR 15276-1 and 2
- NFPA 2010
- TNO

DSPA.uk Ltd are privileged to be able to offer these DSPA products into the United Kingdom and Republic of Ireland.

Dry Sprinkler Powder Aerosol Extinguishing systems, DSPAs for short, are developed to replace the halon-like extinguishing systems that were mainly used in marine applications. Halon is forbidden by the worldwide Montreal Protocol, signed in 1987. In 2001 this Agreement was put into force and since 2003 Halon has been completely forbidden. DSPA extinguishing systems have advanced through years of scientific research.

How DSPAs work: characteristics and function

Ignition of the Dry Sprinkler Powder Aerosol Extinguishing systems can be done electrically, thermally or by hand. Once ignited, the reaction cannot be stopped and will continue until the active material has been completely spread in the air.

DSPA extinguishing systems act, similar to Halon, volumetrically. This means that a compartment is filled with a minimum quantity of extinguishing material which acts directly on the ignition mechanism in the flame. The solid material of the DSPA system, as opposed to gas systems, enables interaction with the surface of the burning material. Consequently the flames are rapidly extinguished.

The Dry Sprinkler Powder Aerosol extinguishing system does not affect the ozone layer, lower the oxygen level or augment the pressure in the compartment where it is activated. The process relies upon solids with a high activating energy, brought together in a normal atmosphere.

The systems can be used for fires type A, B, C, and F and are successful in initial and fully developed fires. The active components are even more effective at higher temperatures than at lower temperatures. In this way, it is possible to extinguish a fully developed fire quickly, often within three minutes. Due to the great stability of active components they remain in the air for about one hour, preventing re-ignition. The aerosol generators can be installed in line in order to protect larger areas.

The appropriate use of a DSPA extinguishing system relies on the object,the function and the total area that should be protected.

There are two categories of DSPA products; *Knockdown* and *Fixed installation*

Knockdown

DSPA-5

The **DSPA-5** is a hand-grenade like device; it is a knockdown tool designed for fighting fires in closed or partially ventilated environments.

It is light in weight (5.4 kg.) and is activated by means of a cord, allowing the device to be thrown towards the seat of the fire from a distance.

The round construction makes for a rapid and efficient dispersal of the active material.

They are equally effective regardless of size and intensity of the fire involved.

As an intervention tool they can be deployed on arrival at the scene of the fire as a first attack against the fire. This will fully utilise the time taken accessing the water supply, donning in BA and laying out the hose reels.

When activated, the aerosol gases suppress the flames, lower the temperature in the room and reduce the fire to glowing embers.

This allows the fire brigade personnel to enter the room to fight the fire effectively and search for survivors. The extent of water damage is substantially reduced and the subsequent fire investigation can be completed in good time.

The DSPA-5 is designed for attacking A, B, C and F type fires in rooms of up to 60 m^3, although the units can be combined to operate in larger spaces.

For example, five DSPA-5s will work together for a space of 300 m^3.

DSPA-M5

There are two smaller versions:

- **DSPA-5.4** is suitable for smaller rooms of 18 m^3

and

- **DSPA-5.3** for 6 m^3.

The **DSPA M** systems have been specifically developed for the high demands of maritime use on ships and water transport.
The **DSPA-M5** is resistant to salt water.

Fixed installation

There are various DSPA systems for a variety of applications. Systems can be tailor-made on request; however DSPA.nl has developed a series of standard units, each designed for specific applications.

All are activated electrically and some thermally. For example:

DSPA-2

The **DSPA-2** is suitable for rooms in which cables and electric appliances have been installed.

The **DSPA-4** models have been developed specifically for the transport sector and can be applied in trains, trucks, cars and ships.

The **DSPA-8** series is especially designed for fighting fires of flammable liquids, such as oil products, petrol and organic solvents; however they can also be used against fires of solid materials such as wood, insulation materials and plastics.

All **DSPA-11** units should be installed in closed rooms that are difficult to access, so that in case of fire the DSPA-11 is activated as the first firefighting tool.

DSPA products and applications

DSPA Model	Basically	Thermally	Manually	Applications	Knockdown	Fixed instn	Active substance	Discharge time	Maximum temp	Diameter	Height	Weight	Capacity
							Kgs	Seconds	Note 1	mms	mms	Kgs	Note 2
0.3	■	■		Electrical Cabinets		–	0.015	7		71	22	0.112	0.3
2	■	■		Electric and Cable rooms		–	1.6	45	< 200	175	350	5	21
4				Transport; eg trucks, ships									
4-1	■	■		Recessed		■	1.6	43	< 120	165	180	5.3	21
4-2	■	■		Wall-mounted		■	1.6	43	< 120	165	180	5.3	21
5			■	A, B, C & F	■		3.3	25	< 170	210	110	5.4	60
5-3			■	A, B, C & F	■		0.9	25	75	165	94	2	18
5-4			■	A, B, C & F	■		0.3	20	75	135	72	1.3	6
6	■	■					3.4	35	< 75	165	420	14.3	52
8-1	■			Flammable Liquids, or hard-to-access rooms		■	3.25	80	< 120	220	220	11.5	65
8-2	■					■	6.7	160	< 120	220	350	20	134
11	■	■		A & B plus electric fires									
11-0.5	■	■				■	0.045	35	80	35	65	0.16	1
11-1	■	■				■	0.11	9	75	122	23	0.5	2.2
11-2	■	■				■	0.17	12	75	124	32	0.8	3.4
11-3	■	■				■	0.03	20	75	135	72	1.3	6
11-4	■	■				■	0.9	25	75	165	94	2	18
11-5	■	■				■	1.4	40	120	187	94	4.5	28
11-6	■	■				■	2.4	40	120	187	94	4.7	48
12	■	■		As DSPA-8, but cooler									
12-1	■	■				■	4	60	< 100	165	275	13	80
12-2	■	■				■	6.7	80	< 100	165	360	13	134
D	■			Explosion-sensitive rooms		■	1.6	40		167	180	7	21
M				Maritime purposes									
M1	■					■	3.3	100		178	350	7.5	60
M2	■					■	1.6	40		167	180	5.9	21
M5			■		■		3.3	25		210	101	5.4	60

Note 1: This is the maximum temperature in ºC at 50 cm distance from the seat of the fire

Note 2: This is based on a concentration of 50 grams per m3

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