

# PROTECT YOURSELF *TODAY!*

## **PHIREX AUSTRALIA**



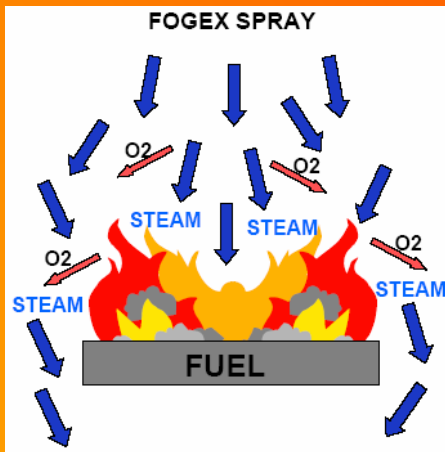
Certified ISO9001, JAS-ANZ, AS9001, NZS9001 and EC Council Directives 96/98/EC accreditation systems.

### **FOGEX WATER MIST FIRE PROTECTION SYSTEMS**

**Ma'A ref Technologie (Pvt) Ltd.**

[www.MaArefTech.com](http://www.MaArefTech.com)

The IMO MSC/Circ. 913 fire test protocol requires the extinguishment of 1.0 megawatt and 6.0 megawatt Diesel spray fires within 5.0 minutes from ignition time. The spray fires are arranged under one nozzle, between two nozzles and under four nozzles. The manufacturer chooses his nozzles and selects the maximum possible nozzle spacing, selects the water mist system



operating pressure, and sets the lower and upper limits of the nozzle distance to the fire source. The effectiveness of the water mist system is then determined by fire testing.



Above is a 6.0 MW Diesel spray fire moments after ignition



Above is 6.0MW Diesel spray fire approx. 3 seconds after Fogex has been activated.



Above is 6.0MW Diesel spray fire getting extinguished within 12 seconds from Fogex system activation.



**Fogex extinguished 6.0MW Diesel spray fire located between 4 nozzles within 23.0s using F11 nozzles 3.0m above ground level**

#### **WITNESSING OF TESTS**

All fire testing in done in accordance with IMO Guidelines has been witnessed by Lloyd's Register of Shipping, Det Norske Veritas, American Bureau of Shipping, Bureau of Veritas and Factory Mutual.

All fire for Factory Mutual test protocols for machinery spaces, industrial hazards and combustion & gas turbine enclosures has been witnessed by FMRC.

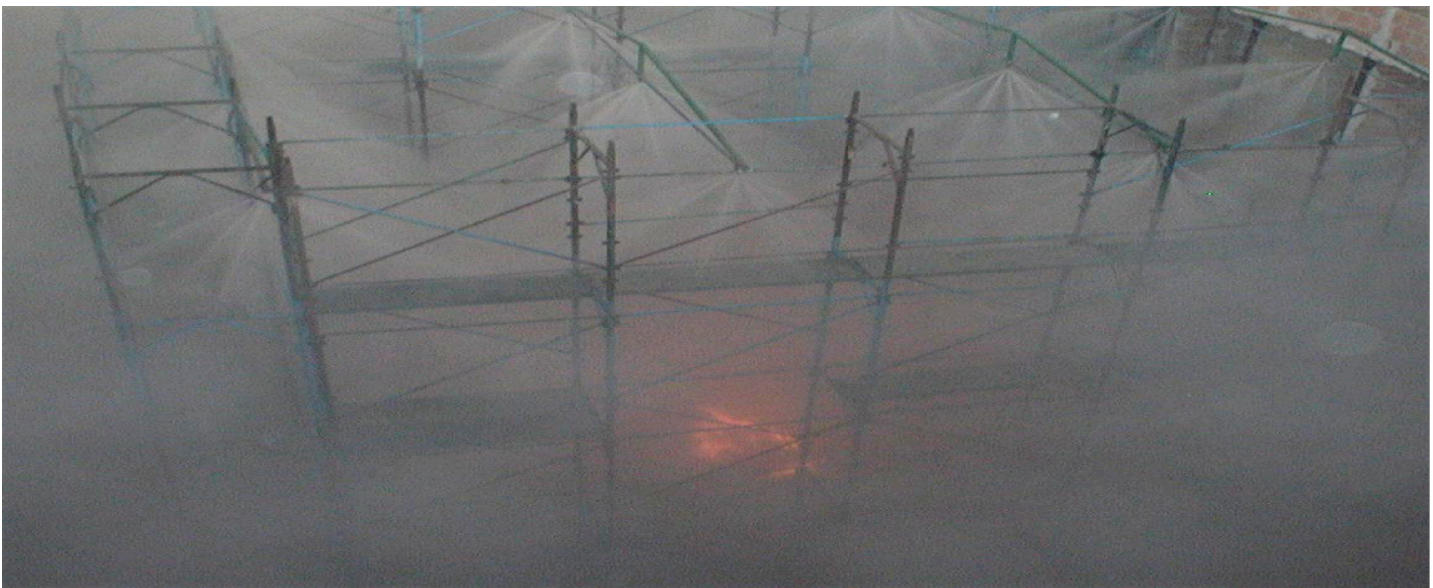
#### **REGULATIONS MET & STANDARDS ACHIEVED**

NFP750 Water Mist Standards, 2010 edition.

FM Class 5560 standards  
IMO 1165 and IMO668/728  
NORSOK Standards  
IEC Standards  
NFPA20 standards



Above is a Fogex cold discharge test revealing very fine mist droplets with nozzles



## PUMP SYSTEM

**Fogex Pump Systems** comprise of either electric high pressure piston pump(s) or Diesel high pressure piston pumps .

High pressure piston pumps are connected to the water supply and to the Stainless steel distribution pipe work that contains the water mist nozzles. Pumps have local automatic and manual start/stop panels and are supplied complete with RX3 unloaders, pressure gauges, pressure sender switches, ammeters, electric (or Diesel) motors, mounted onto a heavy duty Galvanized steel base or frame with anti-vibration mounts . Pump cabinets are IP rated for the specific hazards. Phirex 's pumps ranges from 25L1min to 316L1min.



Electric Pump unit



Diesel driven Pump unit

**Diesel pump** sets are supplied with over-speed regulators , batteries and leads, RX-3 unloaders, ammeters , local auto start/stop panel, fuel tank, radiators for engine cooling (if water cooled engines are used), exhaust manifold all mounted onto a heavy duty Galvanized steel frame or base with anti-vibration mounts.

High pressure pumps are heavy duty design and manufactured with strict Quality Assurance procedures . We offer an extensive range of high pressure piston pumps to suit any sized project. When more than one pump is supplied on a project, the pumps are manifold together to deliver the correct quantity of water and pressure under continuous flow. Pumps can be either automatically or manually started and stopped.

## CYLINDERS SYSTEM (SELF CONTAINED / PRESSURE SKID MODULE)

**Fogex Water Mist Fire Protection System** can be supplied as self contained Pressure Skid Modules (PSM's). The quantity of water contained is determined by hydraulic calculations based on type and quantity of nozzles installed and the desired system running time . High pressure lined steel cylinders are used to avoid the possibility of corrosion and internal discolouration of water. Dry Nitrogen gas is used for system pressurisation .



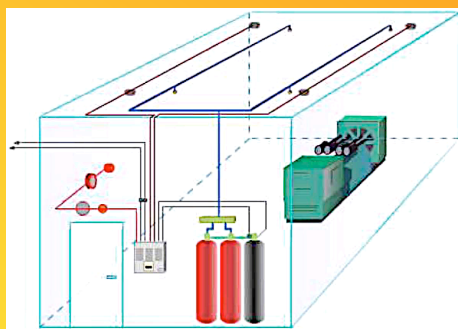
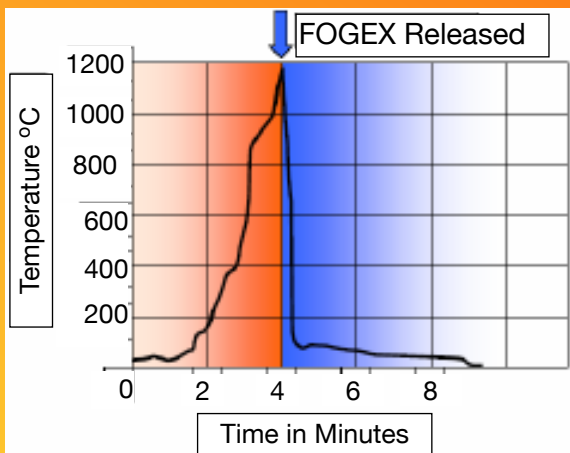
MISTEX

FOGEX

**Fogex PSMs** are manufactured and supplied in various sizes and arrangements. PSMs can be supplied "loose" meaning that the water and Nitrogen bottles can be bracketed to a nearby wall or Fogex PSMs can be supplied in a steel cradle or skid. Fogex Stainless steel high pressure actuator heads compliment the PSMs. Pressure gauges, pressures ender switches and Fogex high pressure 24V DC electric 1/4-turn actuator ball valves are also supplied and fitted onto the PSM. Fogex high pressure Stainless steel gas manifolds and regulators may also be supplied where desired. Fogex PSM water bottles remain un-pressurised until the system is activated.



**TAIWANESE AIR FORCE F-16 DUMMY IN HANGAR**  
Fire Extinguished in Seconds



## FOGEX & MISTEX APPLICATIONS

- OFF-SHORE & ON-SHORE DRILLING PLATFORMS**
- OUTDOORS ELECTRIC TRANSFORMERS & SUB-STATIONS**
- CHEMICAL DISPENSE CABINETS**
- WAFER FAB PLANTS / CLEAN ROOMS**
- AIRCRAFT HANGARS / F-16 AIRCRAFT HANGARS**
- FLAMMABLE STORAGES (POL, ETC.)**
- SERVER ROOMS / DATA CENTERS**
- OFFICES, RESIDENCES, U/G PARKING LOTS**
- IN-DUCT PROTECTION**
- PAINT KITCHENS / PAINT BOOTHS**
- MACHINERY SPACES / ENGINE ROOMS**
- CARGO PUMP ROOMS**
- ENGINE TEST CELLS**
- ELECTRIC CABLE TUNNELS**
- ELECTRIC SWITCH GEAR ROOMS**
- COMPUTER ROOMS**
- WAREHOUSES**
- HOSPITALS, LABORATORIES**
- HOTELS, MESSES, BOARDING HOUSES**
- MILITARY / NAVAL APPLICATIONS**
- HIGH-RISE BUILDINGS**
- ESCALATOR ROOMS & RAIL SUB-STATIONS**
- RAILWAY LOCOMOTIVE CARRIAGES**
- STANDBY POWER GENERATORS / POWER PACKS**
- ARCHIVE BUILDINGS**
- MUSEUMS & LIBRARIES**

# Benefits of Using FOGEX & MISTEX

- Safe to people & environment
- No decomposition product (HF or HCL gas) which is hazardous to people & equipment
- Safe to electrical & electronic equipment
- **Minimal water usage (<10% of sprinkler)**
- **Effective & rapid in fire extinguishment**
- Tested and Approved fire fighting technology
- No future phased-out or regulated date
- Low clean up & Low refilling cost
- **Minimal maintenance cost**
- Long equipment life span

- **Small water storage tank compare to sprinkler**
- **Pipe sizes are extremely small between 12mm – 32mm (OD), making retro-fitting more convenient**
- **Smoke scrubbing effect** (remove smoke) **Binding of smoke particles by mist droplets**
- Washing out of gases (eg. HCL) via huge reaction surface • Less contamination by smoke
- Fire extinguishing effect not affected by ventilation (with door & window opened) **3-dimensional fire fighting technology.**



NAVAL FIGHTING/SUPPORT PLATFORMS

## • Marine & Off Shore

- Engine rooms
- Combustion & Gas Turbines
- Emergency Generators
- Accommodation Areas on Board
- Machinery spaces
- Water Mist Curtains
- Platforms



OIL RIGS - ON & OFF-SHORE



TUGS, BOATS, TRAWLERS, LINERS, ETC.



FOGEX@WATER MIST FIRE PROTECTION SYSTEM FOR COMBUSTION & GAS TURBINES



ELECTRIC TRANSFORMERS

And there is **NO** Water Damage!



COAL MINING CONVEYER BELT WATER-MIST PROTECTION



WATER MIST FOR UNDERGROUND CABLE & VEHICULAR TUNNELS



Ask for a Presentation today.

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