

LOW EXPANSION FOAM

fire extinguishing system



EFFECTIVE PROTECTION OF OPEN SPACE AREAS



Extinguishing fires in open space areas on vessels can be challenging, as the effects of wind and a constant supply of oxygen allow fires to develop very quickly. The result can be extensive damage to the vessel or structure, the environment and potential loss of life.



Unitor Low Expansion Foam Fire Extinguishing System uses a non-toxic foam concentrate, water and air to effectively extinguish fires in open spaces. The system gives safe and effective protection and is harmless to people and the environment.

The system complies with the design requirements in IMO FSS chapter 14 for fixed deck foam. The foams for these systems are tested and comply with MSC circ1312.

Keeps equipment and personnel safe

The Unitor Low Expansion Foam System is a combination of monitors, portable applicators and foam spray nozzles, installed either individually or in conjunction with each other. Monitors are used and located according to the regulation while portable applicators and nozzles cover shadow areas not reachable by the monitors. The system has a fast and effective release of foam, with monitors that can be used in jet or fog mode.

The foam seals against oxygen and reduce radiant heat. This minimises the damage caused by fire and heat, and protects the equipment and the personnel.

Solution benefits

The Unitor Low Expansion Foam System is a high quality fire extinguishing system which is easy to operate. Modular skid units provide easy installation and reduced footprint. Components are protected against corrosion providing a robust, low maintenance system. To prevent foam contamination, a glassfiber reinforced polyester designed tank is used. The system can use fresh or sea water.

For service purposes, foam concentrate is available worldwide as well as foam testing, service and system upgrades. The solution is designed for optimal system performance, keeping both installation and operational costs low.

System description

The Unitor Low Expansion Foam System consists of a glass fibre reinforced polyester foam tank, foam pump, proportioner, sturdy and compact foam monitors and portable foam applicators and foam spray nozzles. All components are constructed in corrosion resistant materials or properly coated.

The monitors are located along the deck, with two monitors mounted on the poop deck. The number and spacing of the monitors, foam tank capacity and system pressure/capacity is dependent upon vessel type and the area to be protected.

Foam applicators are provided for flexibility during fire fighting on deck areas and to cover areas screened from monitors.

In machinery spaces where a fixed low expansion foam system is fitted together with a total flooding system, the system will discharge through fixed foam spray nozzles. In addition, inductor type portable foam applicators are required.

Starting the fire water pump(s) and foam pump primes the system. The distribution valves are then opened to the monitors on deck. Remotely operated valves, controlled from a central panel, can also be installed. The safest and most flexible remote operating system is achieved when the monitors are hydraulically operated from the same panel.

Extinguishing fire using foam

The Unitor Low Expansion Foam System uses either protein or synthetic foam concentrate. The foam consists of foam concentrate, water and air.

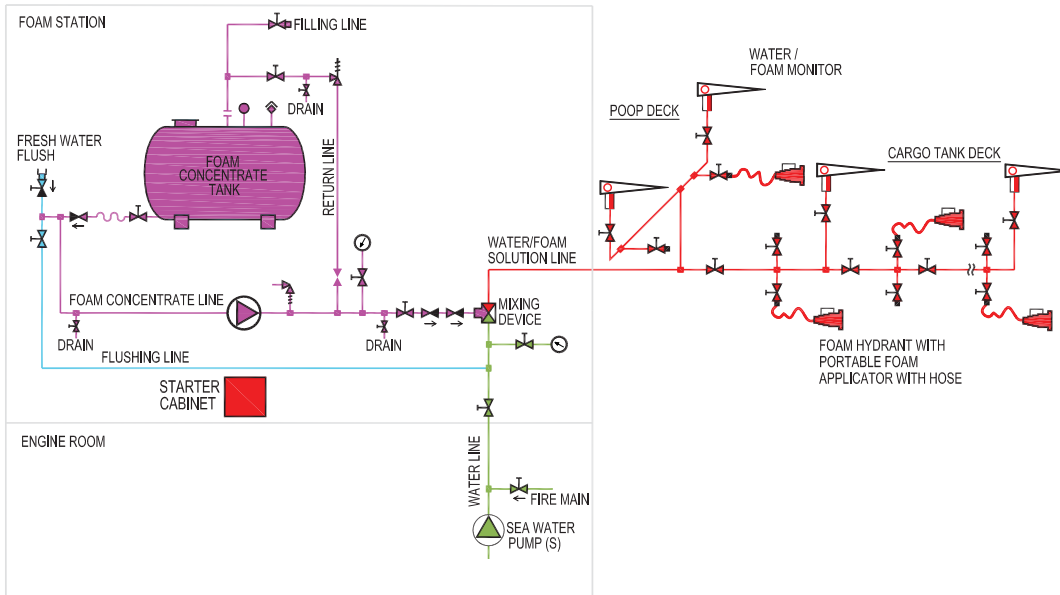
As an extinguishing medium, foam is lighter than combustion materials such as oil or petrol, and consequently forms a stable foam blanket which seals against oxygen and reduces heat radiation. This effectively extinguishes fires of hydrocarbon, polar solvents or mixtures.

The system suppresses fire by covering the surface of the burning liquid, separating the air supply and quickly extinguishing the fire. It also cools down the area which prevents further outbreak of the fire.

The system can be applied to:

- Cargo tank areas
- Tanker stern
- Bow loading areas
- Helidecks
- Bilge areas
- Purifier rooms
- Floating storage facilities and offshore structures

Standard configuration



Technical data

MONITOR

Capacity [l/min]	1,000 - 12,500
Material	stainless steel
Max working pressure	16 bar

APPLICATOR

Capacity [l/min]	400
Material	stainless steel
Pressure [bar]	3 or 6

PUMP

Type	centrifugal multi-stage (& positive displacement)
Material	stainless steel
Voltage / frequency [V/Hz]	3 x 400/50 3 x 440/60 or on request
Insulation and enclosure	Class F, IP55

MIXING EQUIPMENT

Type	balanced pressure proportioner or inductor
Capacity [l/min]	75 to 20,000
Material	stainless steel and bronze

FOAM CONCENTRATE

Types	<ul style="list-style-type: none"> • fluoro-protein foam • aqueous film-forming foam (synthetic) • fluoro-protein alcohol resistant foam • aqueous film-forming alcohol resistant foam (synthetic)
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TANK

Type	cylindrical
Material	glass fibre reinforced polyester (GRP) stainless steel on request
Opening	full size man hole for inspection

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