survitec

DECK FOAM FIRE EXTINGUISHING SYSTEM

USING LOW EXPANSION FOAM

Extinguishing fires in open deck 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. Survitec Deck Foam Fire Extinguishing system is a fixed, low expansion foam system that uses foam concentrate, water and air to effectively extinguish fires in open areas. The system provides safe and effective protection which is harmless to people.

FEATURES

- THE LOW EXPANSION FOAM QUICKLY BLANKETS THE FIRE AND PREVENTS FURTHER OUTBREAK
- A BALANCED PRESSURE PROPORTIONER GUARANTEES RELIABLE FOAM MIXING FROM 1-3 % RATIO
- FOAM MONITORS AND PORTABLE APPLICATORS CAN BE USED INDIVIDUALLY OR IN CONJUNCTION
- FIXED FOAM MONITORS ARE USED TO FIGHT FIRE FROM A PREDETERMINED SAFE DISTANCE, WHILE PORTABLE APPLICATORS AND NOZZLES COVER SHADOW AREAS NOT REACHABLE BY THE MONITORS
- STURDY AND COMPACT FOAM MONITORS ARE ADJUSTABLE AND CAN BE USED IN TWO MODES: JET OR FOG
- IT COMES IN TWO OPERATING OPTIONS: MANUAL OR REMOTELY CONTROLLED WITH HYDRAULICS



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Applications

The Survitec Deck Foam system is predominantly designed for installation and use for open deck areas on oil and chemical tankers. Portable foam equipment is normally used in addition to Survitec total flooding system in enclosed spaces such as machinery space. The system can also be installed on offshore installations for the protection of helidecks and other open areas.

The system can be applied to:

- Cargo tank deck areas
- Tanker stern loading areas
- Tanker bow loading areas
- Helicopter facilities
- Floating storage facilities and offshore structures
- Car deck dangerous goods area

Solution benefits

The Survitec Deck Foam system is a high quality fire extinguishing system which is easy to operate. Modular skid units provide easy installation and reduced footprint. Corrosion resistant components and coatings provide a robust, low maintenance system. To prevent foam contamination, a polyester tanker reinforced with glass fibres is used. The system can use both fresh or sea water.

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

Extinguishing fire using foam

The fire fighting foam concentrate is a collection of bubbles that consists of water, air and special chemicals. The bubbles float on top of flammable liquids and work to extinguish flammable liquid fires.

Fire fighting foam extinguishing mechanism:

- The foam blankets on the fuel surface smothering the fire.
- The foam blanket separates the flames/ignition source from the fuel surface.
- The foam cools the fuel and any adjacent metal surfaces.
- The foam blanket suppresses the release of flammable vapour that can be mixed with air.

Survitec Deck Foam system uses either fluoroprotein or synthetic foam concentrates. Depending on application, it can be alcohol resistant for polar solvent fires or regular ones for hydrocarbon fires. Foam concentrates offered are MED, IMO MSC.1/Circ.1312 approved. Some foam liquids are HOCNF and ICAO approved. Based on extreme applications, foam concentrates can be freeze protected down to -45°C.

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System description

The Survitec Deck Foam Fire Extinguishing system consists of a fibre glass foam tank, foam pump, proportioner, sturdy and compact foam monitors and portable foam applicators or foam spray nozzles meeting the latest IMO regulations. The system can be delivered as either a central system or independent modular skid units. In a modular design, foam tank, foam pump, proportioner, valves and control panels can be delivered on skid units. All components are constructed in corrosion resistant materials. The control station is suitably located outside the protected area, adjacent to the areas protected and readily accessible and operable in the event of fire.

On deck

The foam monitors are located along the deck, with two foam monitors installed on the poop deck. They can be operated manually or as an option with remote hydraulics. The number of and distance between the monitors, foam tank capacity and system pressure/capacity is dependent upon vessel type and the area to be protected. For maximum effectiveness, a balanced pressure proportioner guarantees reliable foam mixing.

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

In machinery spaces

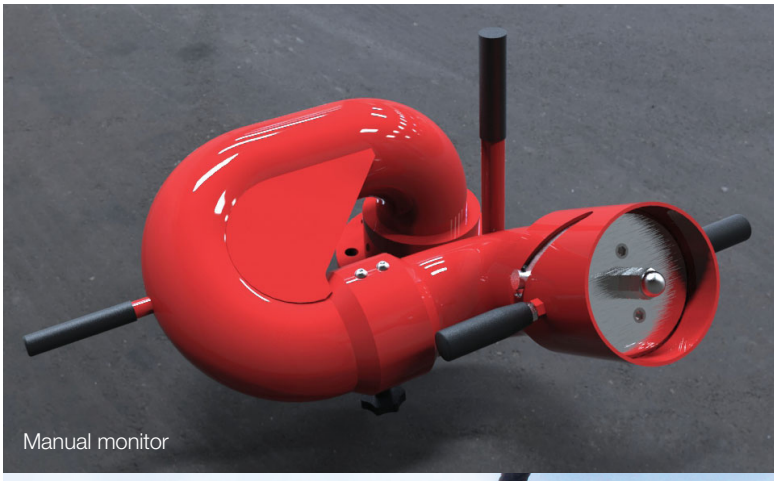
In machinery spaces fixed low expansion foam system are not commonly used. Usually, foam is applied from portable low expansion foam applicators with a self-inducting function.

On helidecks

Survitec fixed low expansion foam system can be used for any size of helidecks and helicopter landing areas. It can be a combination of deck integrated pop-up nozzles or fixed foam monitors. In addition, the system consists of hose reels fitted with foam-making branch pipe and non-collapsible hose.

Activation of the system

System is activated from control panel. It can be either an automatically controlled or a manually operated system. For an automatic system two alternatives are available: electric controlled and hydraulic controlled. In case of electric controlled system, valves are electrically actuated, while foam monitors are manually operated. A hydraulically controlled system requires a hydraulic power pack, which is usually installed in the machinery space. Valves and monitors are then hydraulically controlled from a remote location with joystick connected to the control cabinet.



Manual monitor



Remote hydraulic monitor

Approvals

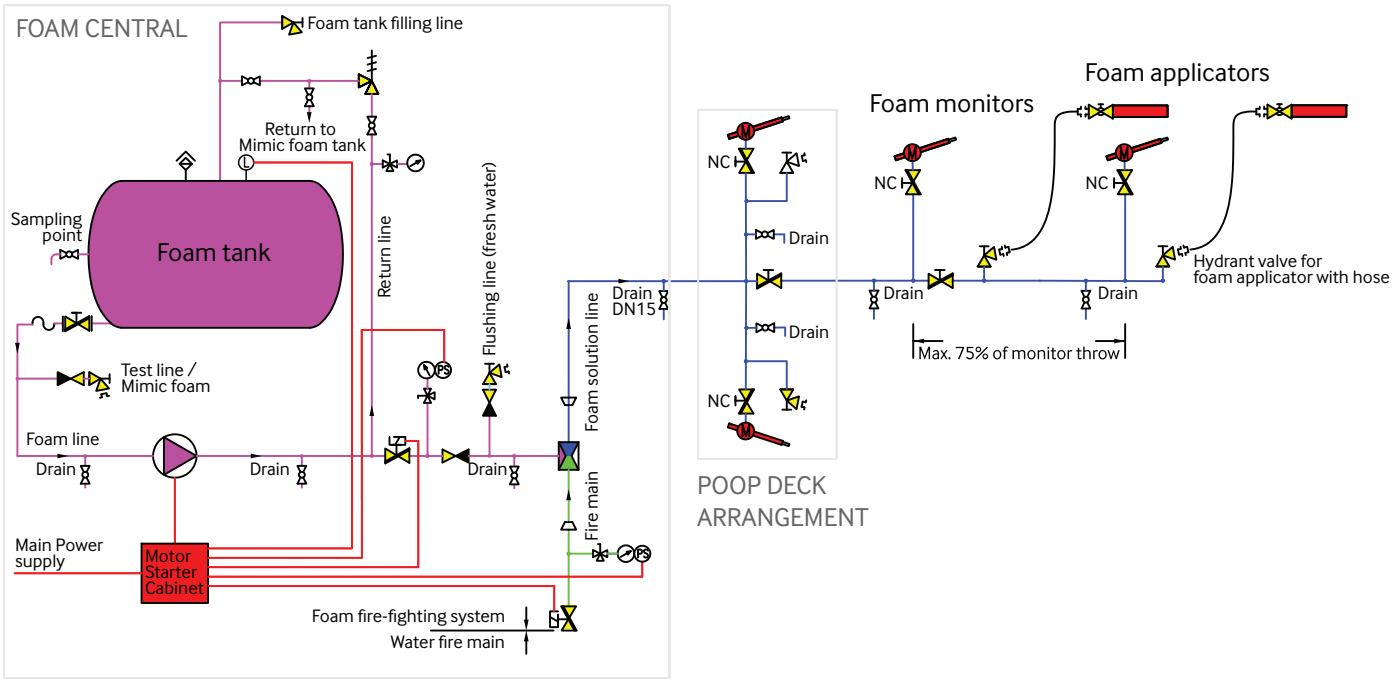
The Survitec Deck Foam system has been tested extensively and is approved by classification societies.

- SOLAS, Chapter II-2, Reg. 10
- FSS Code, Chapter 14
- IBC Code, Reg. 11
- All foam concentrates including alcohol resistant foams, comply with IMO MSC/Circ.1312
- Authorities rules and regulation
- Classification societies rules and regulations
- Other standards (EN, ISO, DOT etc.)

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Standard configuration



Foam monitor

TECHNICAL DATA	
Capacity [l/min]	1,000 - 12,500
Material	stainless steel
Max working pressure	16 bar
Operation	Manual or hydraulic operated

Foam applicator

TECHNICAL DATA	
Capacity [l/min]	200 and 400
Material	stainless steel
Pressure [bar]	3 or 6
Self-inducting applicators available 3 - 6 %	

Pump

TECHNICAL DATA	
Type	centrifugal multi-stage (& positive displacement)
Material	stainless steel
Voltage / frequency [V/Hz]	3 x 400/ 50, 3 x 440/ 60 or on request

Tank

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

Mixing equipment / proportioner

TECHNICAL DATA	
Type	balanced pressure proportioner
Capacity [l/min]	75 to 20,000
Material	stainless steel and bronze
Mixing ratio	1 - 3 %

Foam concentrate

TECHNICAL DATA	
Types	• fluoro-protein foam, FP 3 % • aqueous film-forming foam (synthetic), AFFF 1% or 3 % • fluoro-protein alcohol resistant foam, FP AR 3 - 3 % • aqueous film-forming alcohol resistant foam (synthetic), AFFF AR 1 - 1 % or 3 - 3 %
Approvals	MED, RMRS, ICAO, CCS, IMO MSC.1/ Circ 1312, HOCNF

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