



Fight and extinguishing of fires

Nozzles

Fight and extinguishing of fires



Effective spraying angle - 60°

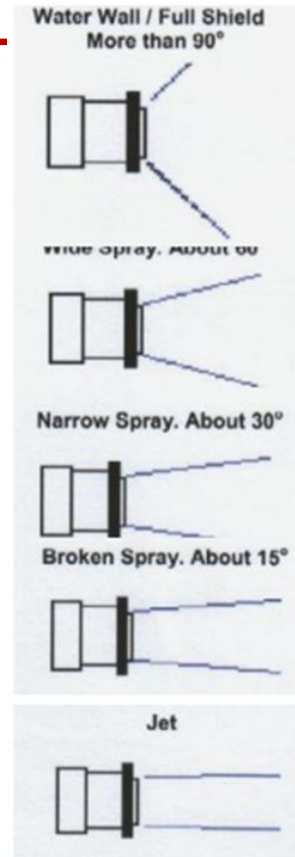


Jet length - 20-25m

Nozzles

Fight and extinguishing of fires

- Water shield (spray, more than 90°) Creates a water curtain, protects the fireman from the heat radiated by the fire. Used to indirectly attack or extinguish
- Widespread spraying (about 60 °) For indirect attacks and attacks near the fire. It is given in short “shots” into the heated area of air above the fire center. liquids.
- Narrow spraying (about 30 °) To control the fire, "kicking" the flame back. To disperse smoke, vapor, heat; bordery cooling, etc.
- Polished jet (about 15 °) For cooling surfaces at a distance.
- Compact jet. For a direct attack from a long range, breaking the burning debris. **Do not use to extinguish burning liquids!**



Water Jet 20-25m



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Foam



CHEMICAL FOAM



POWDER+WATER

(AR)AERO FOAM



3-L-15
15-M-150
150-H-1000



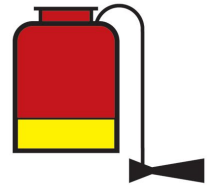
AIR



Foam applicators

3-L-15

Manual foam applicators are designed to form low-expansion fire extinguishing foam and then send it to the source of ignition.

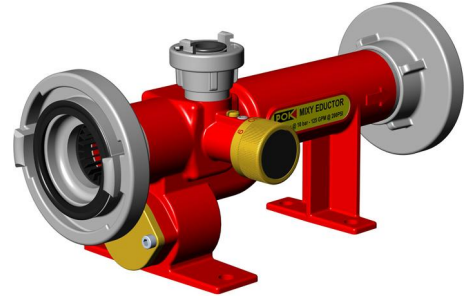


LALZAS



Foam applicators

Fight and extinguishing of fires



High foam system

Fight and extinguishing of fires

150-H-1000(1cm) 30m.



Foam monitors

Fight and extinguishing of fires



Fire hoses

The length of the fire hoses for water and foam at the cranes installed on the open decks should be 15-20 m, for the cranes in the rooms, as well as on the open decks of ships with a gross tonnage of less than 500 per. t. - about 10 m.



When working with fire hoses should be:

- Avoid bending the fire hoses and grabbing sharp objects;
- The fire hoses should be moved slowly,
- It is necessary to leave the fire place facing the fire.



Portable extinguishers

Fight and extinguishing of fires



Safe for wood, paper etc.

*Not for: electrical
equipment, flammable
liquids, metal fires*

Portable extinguishers

Fight and extinguishing of fires



*Safe for wood, paper,
liquids*

*Not for: electrical
equipment, metal fires,*



Warning

Don't use Water or Foam to extinguish burning Electric Devices/Gear



Portable extinguishers

Fight and extinguishing of fires



Safe for wood, paper, liquids, electrical equipment, gases.

Portable extinguishers

Fight and extinguishing of fires



Safe for liquids, electrical equipment.

Not for wood, paper, textiles, metals

Portable extinguishers

Fight and extinguishing of fires



Class D Fire Extinguishers

spray dry powder on combustible metals like magnesium, titanium, aluminum, sodium, and potassium.

Wheeled extinguishers

Fight and extinguishing of fires



Fire blankets



Fire blanket uses for:

- localization of combustion in the initial stage of the fire;
- extinguishing burning clothing to the victims;
- protection of structures and equipment during hot work;
- extinguishing fire caused by burning combustible materials by stopping the access of oxygen.

Fireman`s outfit

Fight and extinguishing of fires



Fireman suit reflects 70% of heat

Thermo suit shortly protects 800° C

Fireman suit protection against electricity





. Emergency Escape Breathing Devices (EEBD).



Fixed Fire Fighting Systems

- CO2 – precautions!
- FOAM
- Water Mist
- Wet Chemical



Safety regulations:

- The substance used must not form toxic gases;
- The amount of substance used must be adequate;
- Fixed system must be equipped with valves;
- Only manual launch of the system is possible with the permission of the captain.



ENGINE ROOM FIRES

Statistics: 25% of total on board fires

ER fire cause: **heat + air + fuel**

CO2 System precautions, Quick Closing Valves



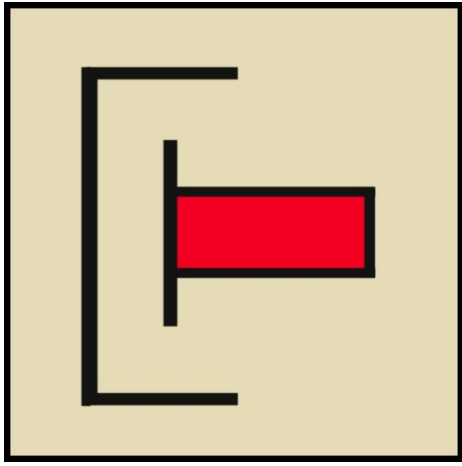
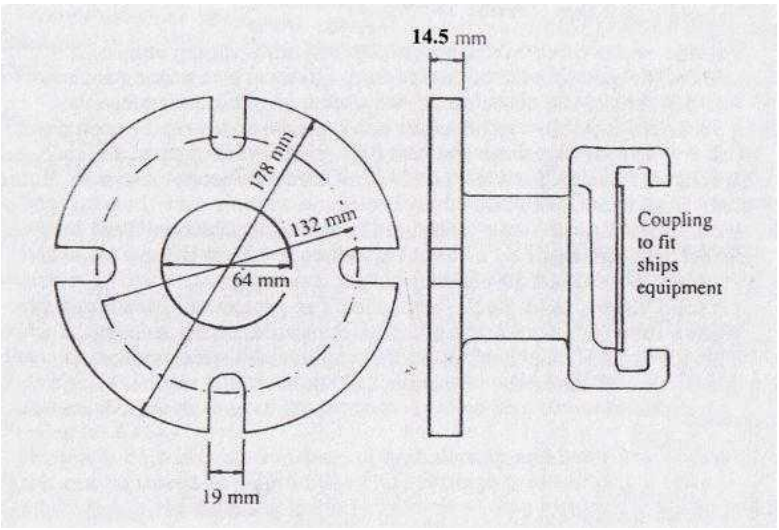
Fire valves

Fight and extinguishing of fires



International shore connection

Fight and extinguishing of fires



Breathing apparatus

SCBA- Self-contained breathing apparatus



Cargo Ships: 2 pcs

Breathing apparatus



**Working time depends on
pressure,
manufacturer,**

breathing frequency

Minimum 30 min/1200lit

Breathing apparatus

Fight and extinguishing of fires



HUMAN BREATHING FREQUENCY

ave breathing frequency

16-18 times/min

FIRE FIGHTING TEAMS

- FIRE FIGHTING SQUAD
- SUBSTITUTES
- ASSISTING SQUAD
- COMMS (Lifeline signals)
- CONTROL OF WATER PRESSURE



Fire inside compartment

Fight and extinguishing of fires



Dangerous $T = 50^{\circ}$

Critical time of
keeping fire under
control - 15 min

Fire on open deck

Fight and extinguishing of fires

Fire on Open Deck

To be approached from wind side



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