

شرکت NK در زمینه
طراحی و تامین سیستم های
اطفاء حریق بر پایه فوم و
آب با ضریب انبساط پائین
(Low Expansion Foam)
فعالیت دارد.

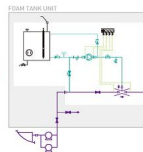
- High Pressure
CO2

- Low Pressure CO2

- High Expansion
Foam

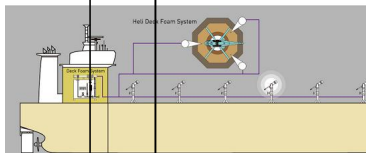
LOW EXPANSION FOAM

A foam system consists of a foam supply liquid stored in a tank, the material of which can be mild steel with painting, stainless steel or GFRP. The tank must be completely full, level, gauged and access available. The foam is delivered by a centrifugal foam pump to a foam proportioner that mixes 3% to 6% of foam liquid and 94% to 97% of water. Foam solution is supplied to fire-draw members, hand-held and portable foam branch pipes.



Features

- Extensive independent testing according to IMO MSC/Circ.362 & 799 & 1312.
- Compliance with SOLAS requirements and approval by major class societies.



- Low Expansion
Foam

- INERGEN

- Dry Chemical
Powder

- Water Mist

- FM-200

FOAM PROPORTIONER

MC's balanced foam proportioner is designed to introduce foam concentrate into the firewater at a pre-determined rate. Flow injection is adjusted in the range of 2:40 using an adjustable nozzle.

There are three basic models, with 100A, 150A and 200A water connection and water type, installed between pipe connection.

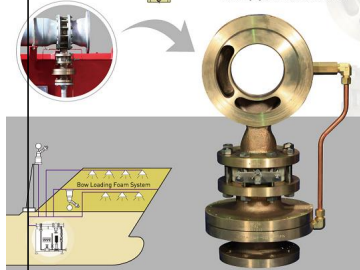
Balanced Pressure Proportioner Data

| TYPE | CONNECTION | | CAPACITY (LPM) | | WEIGHT (kg) | MATERIAL | PROPORTIONING | | SIZE (mm) | |
|-----------|-------------|--------------|----------------|--------|-------------|----------|---------------|-----|-----------|--|
| | WATER | NOZZLE | MIN | MAX | | | A | B | | |
| PPS 50700 | JIS 10K-50A | JIS 10K-100A | 0 | 3,000 | 25 | BRONZE | 3.4 | 210 | 70 | |
| PPS 50700 | JIS 10K-50A | JIS 10K-150A | 0 | 4,500 | 32 | BRONZE | 3.4 | 260 | 70 | |
| PPS 80700 | JIS 10K-80A | JIS 10K-200A | 0 | 13,000 | 48 | BRONZE | 3.4 | 470 | 82 | |



Product Features

- Easy adjustable integrated foam regulation
- Accurate proportioning over the range
- Maintenance free construction
- Compact size
- Water-type water connection
- Flanged-type foam connection
- Made of high-grade corrosion resistant bronze



FOAM MONITOR

The foam monitor is designed with a trigger discharge with blow benefits.

Fixed Foam Monitor and Nozzle Data

| SIZE | NOZZLE (mm) | WEIGHT (kg) | EJECTION RANGE (m) | EJECTION ANGLE | DISCHARGE RANGE (m) | CONNECTION FLANGE | WEIGHT (kg) | MATERIAL | |
|------|-------------|-------------|--------------------|----------------|---------------------|-------------------|--------------|----------|-----------------|
| | | | | | | | | BODY | NOZZLE / FLANGE |
| 100A | 14 | 380 | 4,000 | 340 | -45 ~ +45 | Star at 0.3m | JIS 10K-100A | SS304 | BRONZE / BRONZE |
| 150A | 14 | 420 | 11,000 | 340 | -45 ~ +45 | Star at 1.7m | JIS 10K-150A | SS304 | BRONZE / BRONZE |



MC's Low Expansion Foam System can be discharged manually or remotely (hydraulic or electric) or by an oscillating monitor, depending on the circumstances. The flow loading area is protected by foam nozzle.

Advantages

- Wide flow range
- Adjustable flow
- Compact balanced design
- Low weight
- Easily maintained due to low friction bearings
- Long throw length
- Adjustable stream pattern
- Corrosion resistant construction of stainless steel and bronze

Type

- Fixed Foam Monitor
- Oscillating Monitor
- Remote Operated Monitor



Foam Liquid

The principal use of foam is to smother burning flammable or combustible liquid spills. A foam blanket covering a liquid surface is capable of preventing vapor transmission for some time. Foam is used to diminish or halt the generation of flammable vapours from non-burning liquids or solids, and to cut off access to air for combustion.

FOAM LIQUID DATA

| DESCRIPTION | PROTEIN | SYNTHETIC |
|---------------------------------|----------------------------|------------------------------|
| Concentration | 3% | 3% |
| Density (20°C) | 1.14 g/cm ³ | 1.07 g/cm ³ |
| pH (20°C) | 7.0-8.5 | 7.0-8.5 |
| Viscosity (20°C) | 8.0-2.0 mm ² /s | 3.0 x 2.0 mm ² /s |
| Expansion ratio | ~7.0 | ~8.0 |
| Drain time 20% | ~3.00 (min) | ~2.00 (min) |
| Pour point | -12 (°C) | -10 (°C) |
| Recommended storage temperature | -10 to +45 (°C) | -10 to +45 (°C) |

* The ICAO certificate for ball deck foam liquid is required as to CAP437 regulation.

Design Figures

Oil tanker : Covering the entire cargo tank deck with 0.4L/m²/min, or the largest cargo tank with 4L/m²/min, whichever is larger, in 20 min.

Chemical Tanker : Covering the entire cargo tank deck with 2L/m²/min, or the largest cargo tank with 20L/m²/min, whichever is larger, in 10 min.

Ball Deck Foam : ABEA x 4L/m²/hr x 2% x 5min x 1.15

