



Credit: Øyvind Hagen - Statoll

## HYDROPHORE SYSTEMS

The Firenor hydrophore system is a safety system designed to prevent pressure surges in the firewater distribution piping that occur when a deluge system or any other water consuming systems release water before fire water pumps are up and running. When a high flow firewater consumer starts before the fire water pumps, water is drained from the highest points of the ring main. This drain results in a vacuum in the upper levels of the ring main. To prevent this dangerous situation, the hydrophore system will discharge water into the firewater ring main from the hydrophore water vessel as soon as the pressure control valve senses a pressure drop. This pressurizes the pipes and practically preventing the risk of a pressure surge by preventing the vacuum from ever forming.

### SYSTEM DESIGN

The water vessel for the Firenor hydrophore system has a standard water capacity that is capable of functioning for up to 30 seconds, long enough to prevent pressure surges in standard fire protection systems. Pressure in the water vessel are maintained by an air cylinder rack with a booster pump that refills after each use. The release and reset mechanisms for all parts of the hydrophore system are fully automatic. Furthermore, the entire system also includes all valves and instrumentation necessary for standard operation, maintenance, and testing. All design parameters of the Firenor hydrophore system can be customized as needed in order to meet specific project requirements.

### VERIFICATION

Every system can be customized, upon request, for compliance with both applicable rules or regulations and project specific requirements. Full documentation for any tailor-made products are available and include all necessary certifications, third party verifications such as DNV/GL, BV, ABS, etc., and full scale test reports, if required.



*Hydrophore Water Vessel*



## ◀ HYDROPHORE SYSTEMS

### FEATURES

- Flexible Design
- Quick response to inquiries and requests (Quick response system that doesn't require manual signals.)
- Cover all sections of piping with a single system

### MATERIAL

Every Firenor system is available in the following materials:

- Galvanized carbon steel
- Duplex
- Copper nickel
- SS316
- Super duplex
- 6Mo
- Titanium
- GRE

### OPERATION SEQUENCE

- Standby  
No fire water consuming systems are in operation.
- Automatically Activated  
Hydrophore system fills water into firewater ring main in order to avoid a vacuum.
- Fire pumps running  
While fire pumps are running at full capacity, pressure surge is prevented.
- Automatically reset  
Once the firewater pump is running and pressure in ring main is above minimum required, the system will automatically reset. At this point the air booster pump will fill the air cylinder rack and the

system will enter into standby mode, once again ready for operation. After use air is also vented from the water vessel until the correct water level is reached.

### DOCUMENTATION

The engineering department produces documentation relevant to all phases of the project. Documentation normally includes the following:

- Quality plan
- ITP
- Drawings
- Data sheets
- Indexes
- Procedures
- Calculations
- Certificates
- Reports
- User manual
- MRB



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