



AquaMist Low Pressure Water Mist for High Rise Buildings

▲ AquaMist

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Low Pressure Water Mist Case Study: High Rise Buildings

Hans Schipper from Johnson Controls International is based out of Enschede, the Netherlands. Hans, with a background as a mechanical engineer in the process industry started his career with JCI more than 13 years ago as a Technical Service Engineer for fire suppression systems. Through the years he primarily focused on water mist and sprinkler systems and got promoted to Senior Engineer of the Technical Service and Training department for Water Mist Fire Suppression Systems. In this role Hans is the Technical Trainer and Engineering contact for in- and external customers to develop new opportunities for today's and future developments in the water mist industry.



Hans Schipper
Senior Engineer

Hans Schipper is a delegate committee member of the CEN/TC 191 WG10 'Water mist systems'. He also has extensive relationships within the industry and AHJ bodies.

Hans Schipper is a certified engineer for Water Mist Fire Suppression Systems and Sprinkler Systems.

Low Pressure Water Mist Case Study: High Rise Buildings

Dirk Laibach boasts over 30 years of varied global experience in the fire suppression/detection industry, including 23 years related to Water Mist. He has held positions of increasing responsibility with Siemens, KIDDE, FOGTEC Fire Protection, Marioff and currently as Senior Product Manager for Water Mist at Johnsons Control.

Through his involvement and membership in a number of trade associations, codes and standards organizations (CEN) and approval authorities (like VdS, FM) in Europe and USA. He also has extensive relationships within the industry and AHJ bodies.

Dirk Laibach holds a degree in electrical engineering (Dipl.-Ing.) from the University of Applied Sciences Düsseldorf, Germany, and is a VdS-certified engineer for Water Mist Fire Suppression Systems



Dirk Laibach
Senior Product Manager
Global

Topics

- Low Pressure Water Mist System Characteristics
- Project Application
- Project Design Approach
- Project Design challenges
 - Additional live fire testing
- System Approved components

Low Pressure Water Mist System Characteristics

- Objective: Control of Fire
 - Automatic wet pipe systems
 - Class A fires - Ordinary combustibles
 - Flame / smoke cooling
 - 3 D pre-wetting
 - Good visibility
- DIOM, TFP2231
- Min nozzle design pressure 7.6bar
- Nozzle flow 24lpm (pendent)
- Nozzle flow 71lpm (sidewall)
- System demand flow 200 – 400lpm
- Pipe sizes, 54mm and 28mm



Low Pressure Water Mist System Characteristics: discharge

- Building protection
- Tyco AquaMist
- ULF Nozzle: AM29
- Flow: 24lpm



Project Application

- Highrise building
 - 73m
 - 21 floors
 - 100 apartments
- AquaMist low pressure water mist system



Project Design Approach

- Low pressure water mist preferred
- Architects / Consultants / Specifiers
- Distributor / Installer
- AquaMist ULF DIOM
 - Classification NFPA13 LH
- Local AHJ
 - Inspection
 - Fire brigade

Project Design Approach

- Classification NFPA13 LH
- Design: most remote area of operation 84m²
- Water demand: flow 213lpm
- 2 main risers
 - 1 riser up to level 10
 - 1 riser level 10 up to level 21
- 1000pcs low pressure nozzles
- Corrosion resistant piping system



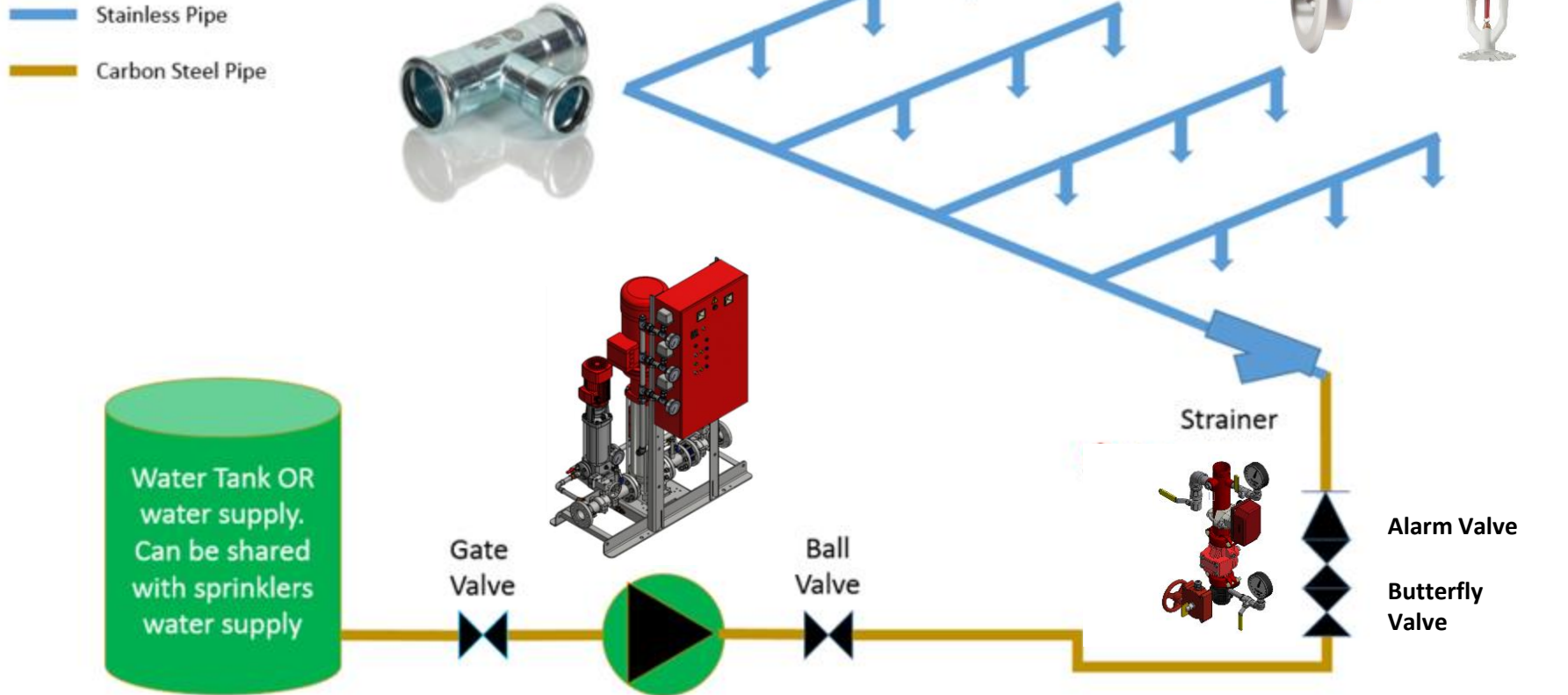
Design Challenges: Fire testing

Obstructions

- Distributor / installer
- AHJ
- JCI



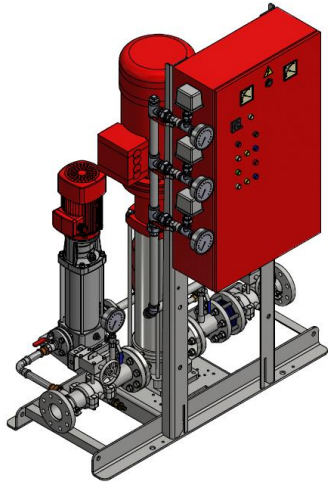
Typical Schematic



Approved Components

- **Pump skid**

- Electric Centrifugal Pump unit
- 250lpm @ 18.5bar, 18.5kW



- **Nozzles**

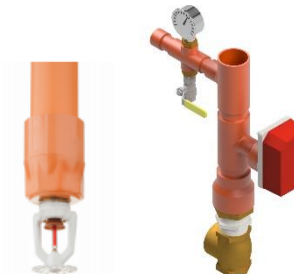
- 500 pendent
- 500 sidewall



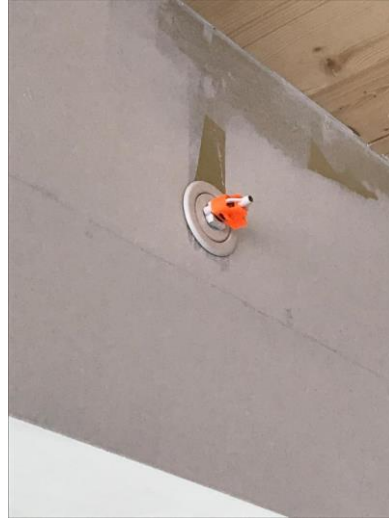
Third party approvals:

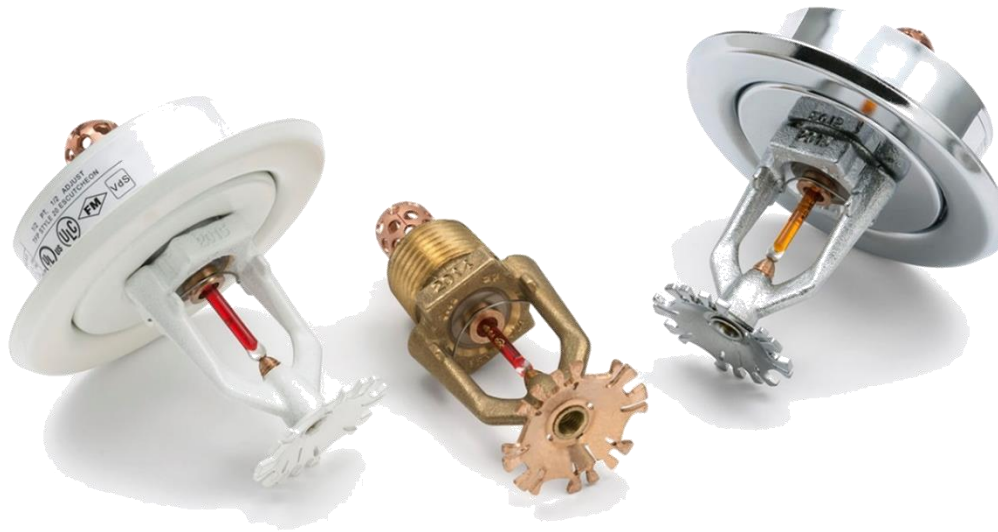


- **CPVC piping system**
- **G-Press Stainless Steel**
- **Alarm valves / Flow switches**



Installation examples





Questions?

Thank you!



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