FOGTEC™ FIRE PROTECTION

IWMA International Water Mist Association

IWMA Seminar at Dubai Convention Centre

Water Mist System Recognition in the Middle East Region

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System Benefits of Water Mist

- Effective cooling and inerting effect
- No requirement for enclosures
- Suitable for Class A and B fires
- Minimal water usage
- Small pipe sizes / Small water storage tanks
- Environmentally friendly
- Safe for people

→ Interesting alternative to conventional gas and water based systems

System Equipment for Water Mist

Nozzles

- Nozzle spray pattern must be adapted to the risk
- Open nozzles in dry pipe systems
- Glass bulb operated nozzles in wet pipe, pre-action or dry pipe systems
- Filtration is of great importance

System Equipment for Water Mist

Pipework

- Small diameter pipes (12 to 50 mm)
- High durability due to stainless steel pipes and fittings (AISI 316)

Section Valves

- Section valves for wet, deluge dry pipe and pre-action systems

System Equipment for Water Mist

Cylinder Systems (HPWM)

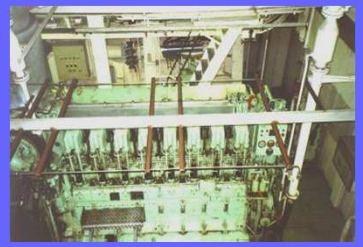
- Filled with demineralised water
- Nitrogen as propellant at 200 bar
- Water cylinders with internal lining
- 50 l and 80 l cylinders
- Stand alone system
- Low refilling costs

System Equipment for Water Mist

Pump Systems (HPWM)

- Compact design
- Pressure ranges between 100 and 140 bar
- Low water flow rate requirements
- Water supply to wet, deluge and pre-action systems
- Small break tank sizes
- Electrically and diesel driven units

Application Fields of Water Mist



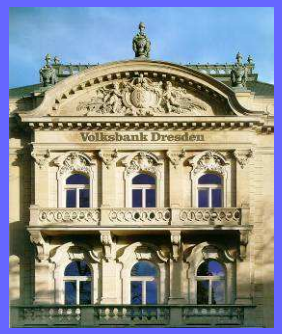
Marine / Off-Shore

- Accommodation areas
- Machinery spaces
- Local protection for high risk areas

Industrial Risks

- Machinery areas
  - Generators
  - Turbines
  - Engine test facilities
- Cable tunnels
- Food processing areas
- Flammable liquid storage and processing areas

Application Fields of Water Mist



Buildings and Property

- Archives and libraries
- Museums
- Heritage buildings
- Hospitals / Laboratories
- Retirement homes
- Data centers
- Clean room areas
- Special buildings / High rise buildings

Metros

- Escape routes (Platforms and escalators)
- Technical rooms / Cable tunnels

Application Fields of Water Mist

Rolling Stock

- Locomotives (Electric and diesel driven)
- Passanger compartments

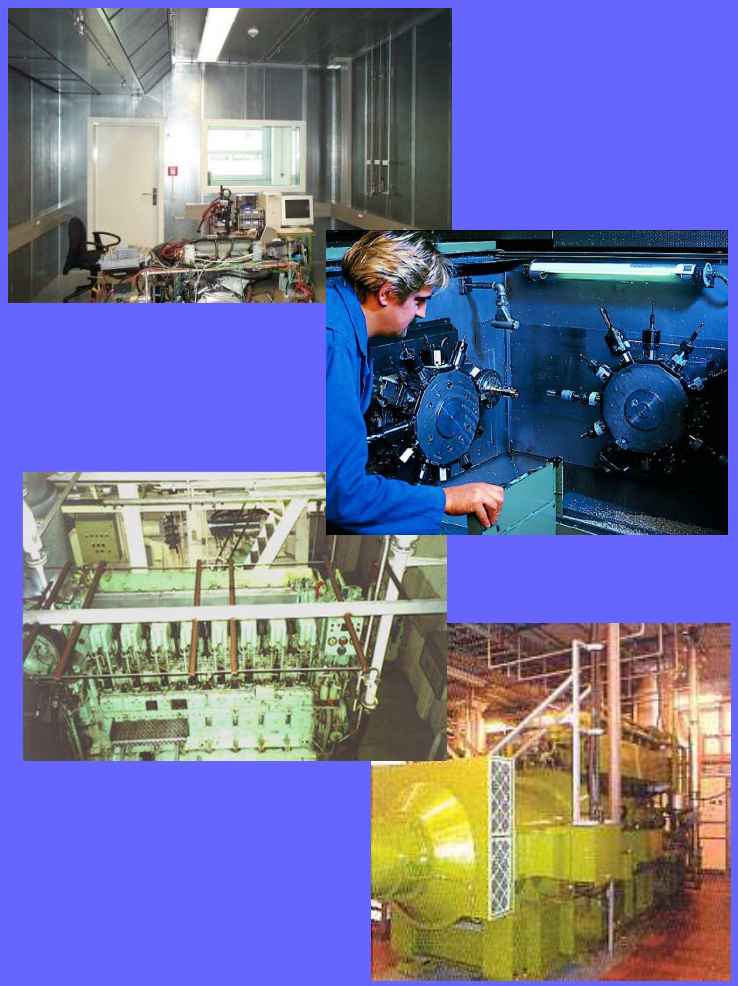
Tunnels

- Road tunnels
- Rail tunnels

Active Fire Fighting

- Fast intervention units on pick-up‘s
- Stand alone units for industriel use

Industrial High Risk Applications

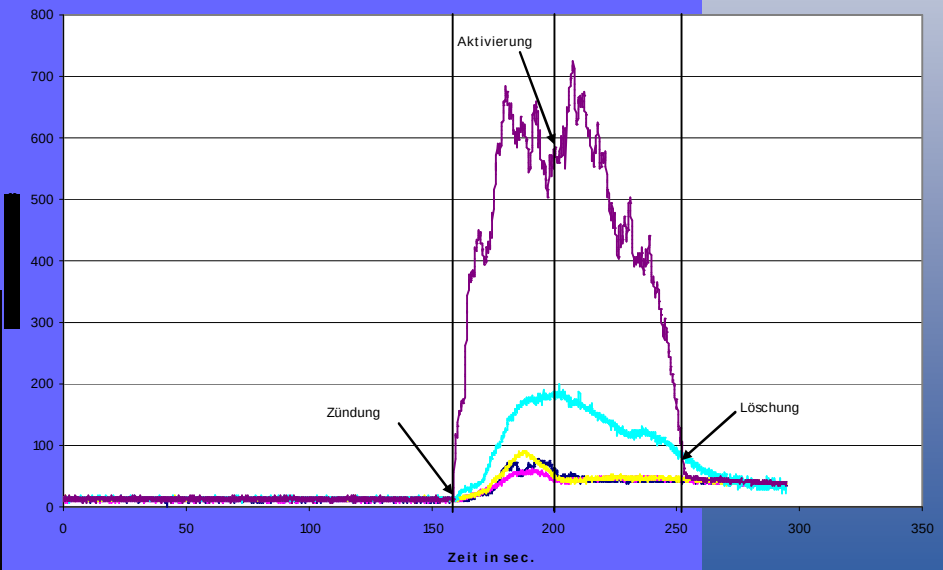


System Advantages

- Fast extinguishment
- No pre-warning time / Safe for operators
- Rapid cooling of surrounding area, thus preventing re-ignitions
- Uniform cooling of hot surfaces
- Negligible effect on electronic and electrical components
- Easy to retrofit
- Minimal down time

Industrial High Risk Applications

System design based on application related full scale fire tests in accordance to water mist standards (NFPA 750, FM 5560, EN TS 14972)



Industrial High Risk Applications

Metro in Mekka, Saudi Arabia

- Installation of a water mist system for elevator technical room protection (700 nozzles in 170 cylinder systems)
- Fast extinguishment and effective cooling, thus prevention of re-ignitions
- No pre-warning times / safe to personnel
- Deluge system with cylinder water supply
- Easy and space saving installation of pipework and nozzles
- Minimal down times in case of activation

Industrial High Risk Applications

Doehler in Darmstadt, Germany

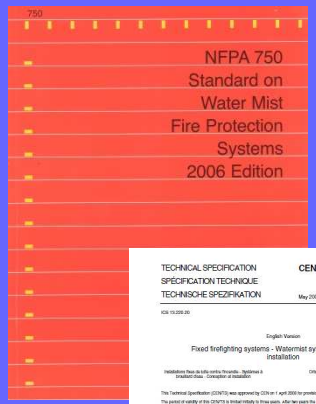
- Fast extinguishment and effective cooling, thus prevention of re-ignitions
- No pre-warning times / Safe for personnel
- Deluge system with centralised pump system
- Minimal water consumption / water retention
- No enclosure requirements
- Minimal down times in case of activation
- Foam additive to cover a broad range of different flammable liquids

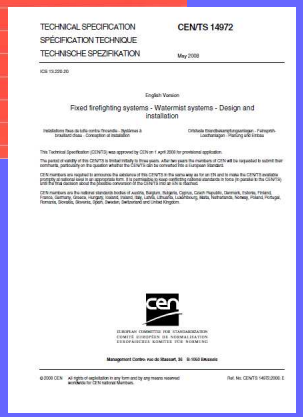
Cable Tunnel Applications

System advantages

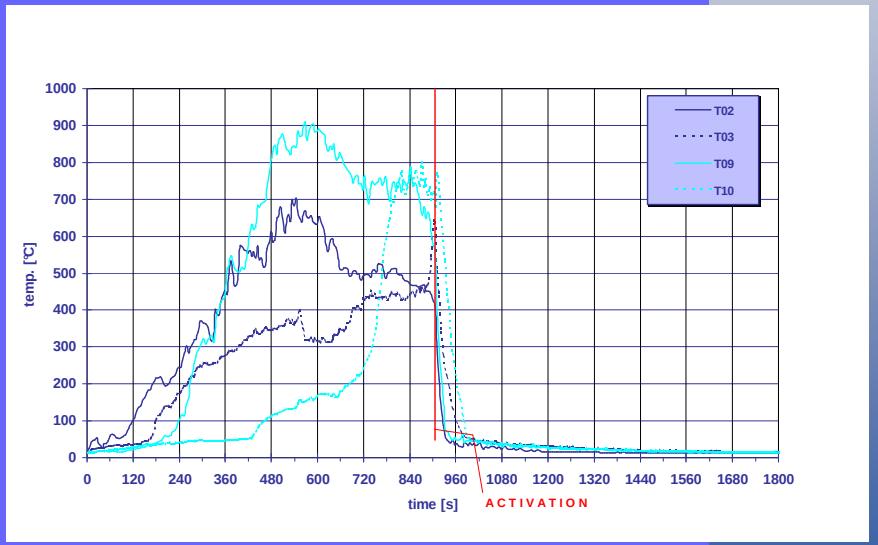
- Rapid cooling / reduction of potential fire damages
- Partly washing of corrosive gases and smoke particles
- No structural separation measures required
- Low water consumption
- Easy installation at cable tunnel ceiling

Cable Tunnel Applications




TECHNICAL SPECIFICATION CEN/TS 14972
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION
May 2008
English Version
Fixed firefighting systems - Watermist systems - Design and installation

System design based on application related full scale fire tests in accordance to water mist standards (NFPA 750, EN TS 14972)



Cable Tunnel Applications

Discovery Gardens in Dubai, UAE

- Installation of a water mist system to protect Service Tunnel 1, 2, 4 and 5 (1200 nozzles; 82 section valves)
- Reduction of potential fire damages and water discharge to a minimum
- Improvement of access conditions for fire brigade
- Easy and space saving installation of pipework and nozzles at cable tunnel ceiling
- Small space requirement for pump and break tank

IT and other HighTech Applications

System Advantages

- No pre-warning time requirements
- Protection of valuable equipment
- Minimal water discharge / water damage
- No enclosure requirements
- No overpressure
- Partly washing of corrosive gases and smoke particles
- Fast and cost effective re-commissioning after an activation

IT and other High Tech Applications

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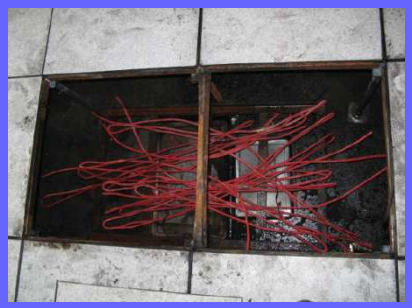
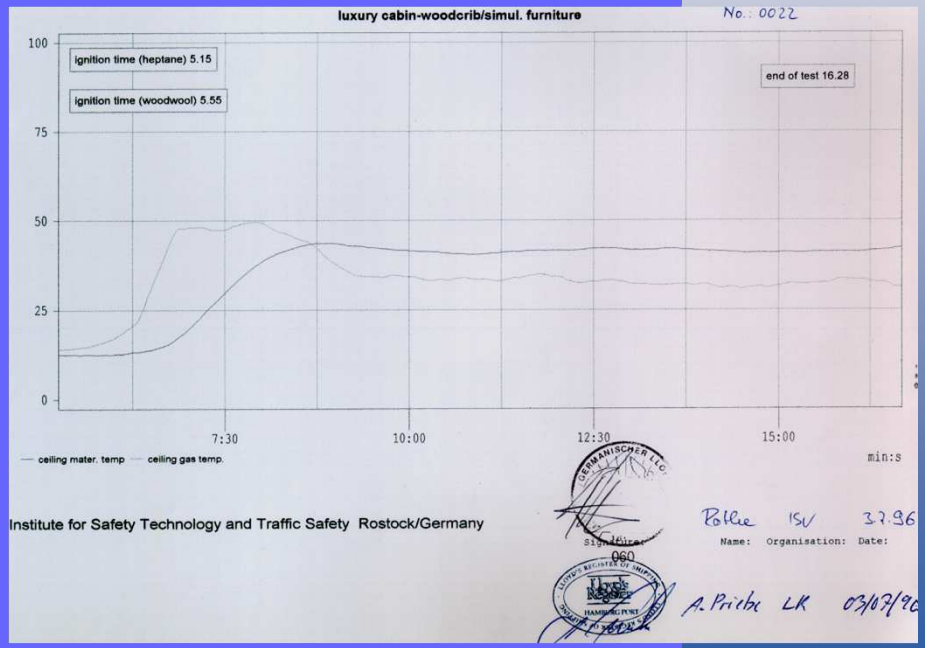


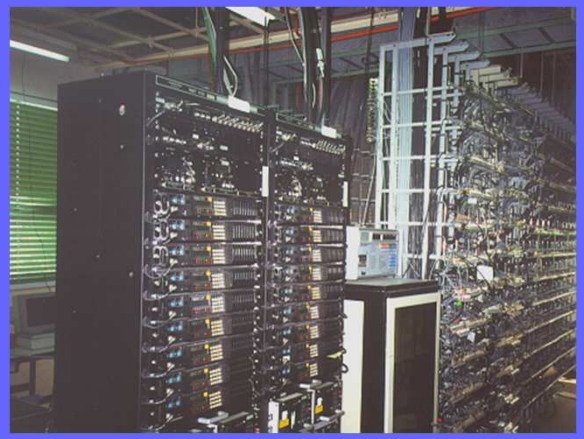


IT and other High Tech Applications

Goldman Sachs in Dubai, UAE

- Installation of a deluge system to protect the entire data centre (125 nozzles)
- Sectional detection by early warning smoke detection system
- Limitation of the damage to the source of fire
- Small space requirement for pump and break tank

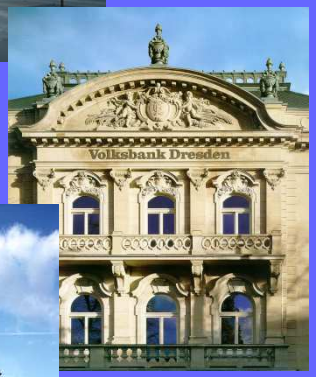
IT and other High Tech Applications



Telekom Egypt in Cairo, Egypt

- Installation of a pre-action system into an existing telecommunication building without disturbing the IT infrastucture (780 nozzles)
- Limitation of the damage to the source of fire
- Small space requirement for pump and break tank

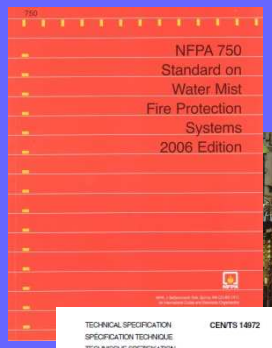
Public Building Applications



System Advantages

- High cooling effect, thus potential compensation of structural fire protection
- Effective prevention of fire spread
- Minimal water discharge / water damage
- Protection of valuable goods
- Small pipe sizes / Small water storage tanks
- System can easier be integrated into architecture of the building

Public Building Applications



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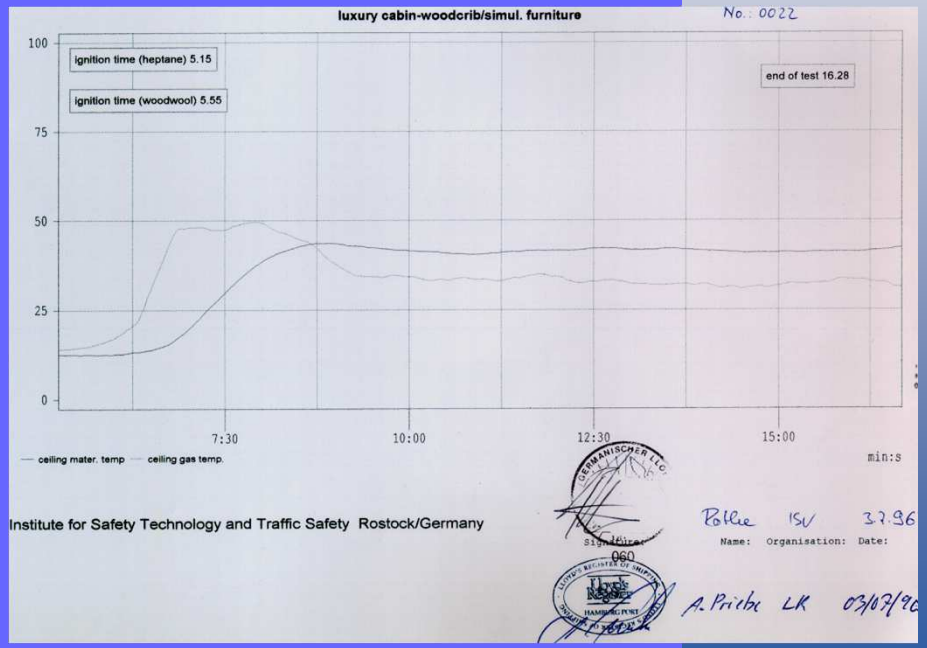

Public Building Applications

SQU Library in Muscat, Oman

- Installation of an automatic fire fighting system in line with the architectural appearance of the building (650 nozzles)
- Reduction of potential fire damages and consequential damages to a minimum
- Maintaining escape ways
- Small diameter stainless steel pipes and nozzles
- Small space requirement for pump and break tank

Public Building Applications

Clock Tower in Mekka, Saudi Arabia

- Installation of an automatic fire fighting system for the upper 200 m of the building (2700 nozzles; 83 high pressure wall hydrants)
- Protection of exposed steel and glass structure
- Maintaining escape ways
- Small diameter stainless steel pipes / Hydraulic flexibility
- Small space requirement for pump and break tank / Less weight

Thank you for your attention!