Water Mist Technology Standards & Approvals

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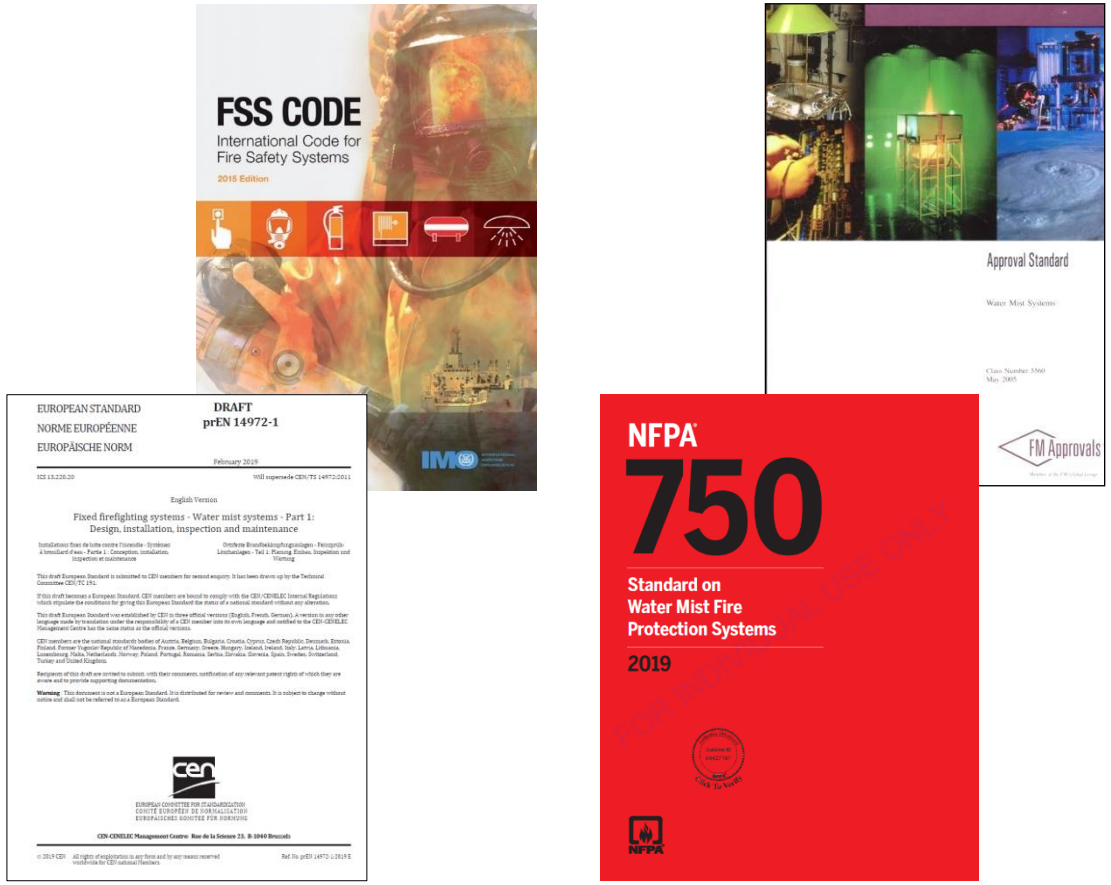
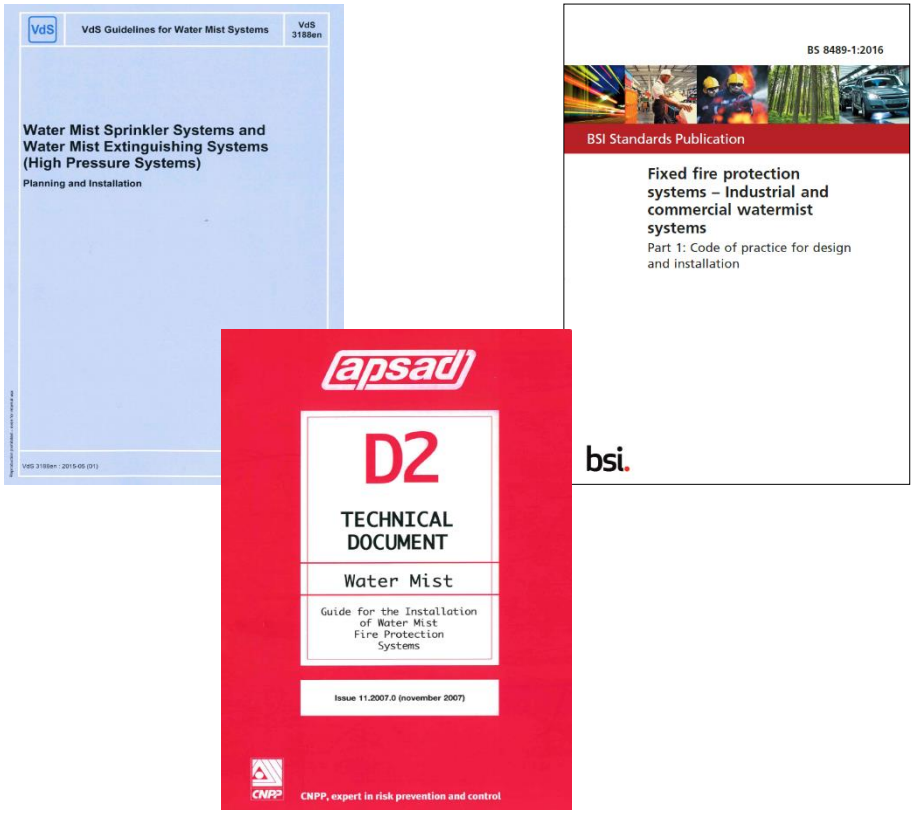
Water Mist Guidelines & Standards



Internationally Referred Standards

- IMO A800 / MSC 265
- IMO MSC Circ. 1165
- NFPA 750
- prEN 14972
- FM 5560

Water Mist Guidelines & Standards



Further Standards

- VdS 3188 (VdS 3883)
- UL 2167
- BS 8489 (Industrial)
- BS 8458 (Residential)
- APSAD D2 (France)
- Nordic Standard

Water Mist Guidelines & Standards

Prescriptive based

(Sprinklers / Gas Extinguishing)

- Based on experience
- Limited specific performance evaluation by full scale fire tests
- System dimensioning based on protected floor areas or volumes

Performance based

(Water Mist)

- Performance evaluation based on full scale fire tests for each application
- Documented fire fighting performance by accredited fire laboratories
- System dimensioning based on full scale fire test results

Water mist is the only technology which is 100% fire tested!

System Certification Approach

Full Scale Fire Tests

- Following fire test protocols
- Fire test conducted by accredited laboratories (ISO 17025)

4.1.3 Full scale fire testing procedures

The safe use of a water mist system is limited to applications it has been tested for water mist systems shall be tested in accordance with the applicable fire test protocols of the prEN 14972 series[4]). Parameters used during such tests define the limits of its application, unless scaling of the results is part of the testing.

Extract from prEN 14972-1 / 2019

Component Tests

- Following component test protocols
- Component test conducted by accredited laboratories (ISO 17025)

DIOM Manual

- Manual describing the **D**esign, **I**nstallation, **O**peration and **M**aintenance of the system

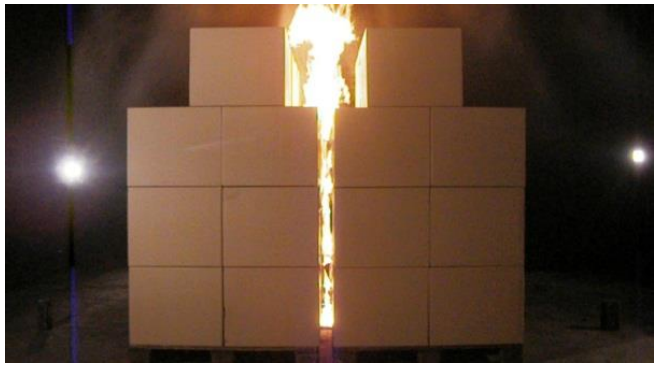
Fire Tests for Ordinary Hazard Risks

Fire Test Protocols

- IMO A800 / MSC 265
- prEN 14972
- VdS 3883
- FM 5560
- BS 8489
- BS 8458







System Certification for Ordinary Hazard Risks

Covered Applications

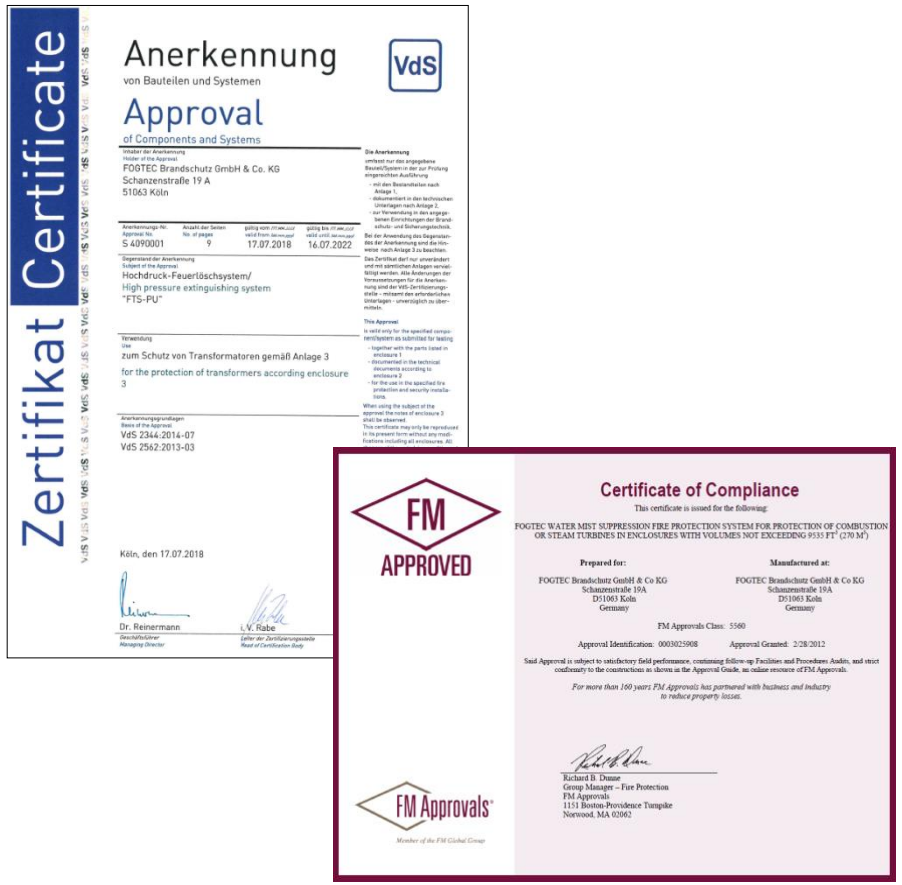
- Offices / Public spaces
- Apartments
- Hospitals / Care homes
- Hotels
- Libraries / Archives
- Heritage buildings
- Museums
- Churches
- Technical areas
- Data centres
- Shops / Storage
- Car parks

Fire Tests for Industrial Risks

Fire Test Protocols

- IMO MSC Circ. 1165
- prEN 14972
- VdS 3883
- FM 5560
- BS 8489

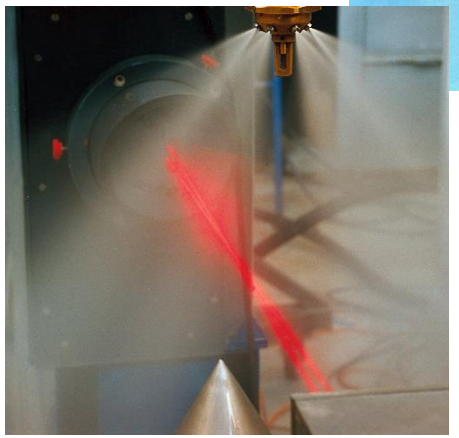
System Certification for Industrial Risks



Covered Applications

- Cable tunnels
- Machinery spaces
- Combustion turbines
- Oil-cooled transformers
- Storage and processing areas of flammable liquids
- Paint booths
- Industrial oil cookers
- Kitchen fryers
- Local protection of machinery

Component Tests



Component Test Protocols

- IMO A800
- IMO MSC Circ. 1165
- prEN 14972
- VdS 3188
- FM 5560
- UL 2167
- BS 8489 / BS 8458

DIOM Manual Content

4.2.2 Content of the DIOM manual

The manufacturer shall prepare a relevant detailed manual to provide a specification of the system.

Design information shall include at least the following if applicable:

a) system type and identification;

b) occupancies with any restrictions;

c) description of hazards and storage;

d) ventilation and ambient conditions;

e) area and room limitations;

f) requirements on separation;

g) all design parameters;

   1) nozzle type and unique identification;

   2) number of operating nozzles or area of operation;

   3) additives (if used);

   4) design pressure (if a pumped system is used);

   5) specific value for the automatic start of the first pump set when the pressure in the water mist system falls;

   6) pressure versus time curve (if a self-contained system is used);

   7) minimum nozzle flow rate;

   8) minimum and maximum ceiling height;

   9) minimum and maximum volume or area;

   10) minimum and maximum nozzle spacing;

   11) requirements concerning obstructions;

h) list of critical components compatible with the water mist system (E.g. nozzles, triggering, signalling and valves);

i) minimum requirement for water and/or atomizing gas quality;

j) hydraulic and pneumatic calculations or other dimensioning methods (pre-engineered systems, accumulator systems);

k) additives (if applicable):

   1) specific type;

   2) specific concentration;

   3) method of mixing the additive with water;

   4) method of handling the mixture of additive and water during the lifetime;

   5) material safety data sheet of additives;

   6) explanation of the effects of additives;

l) any system constraints crucial to the operation.

The operational information shall include at least the following:

m) full functional system description;

n) full installation and commissioning instructions;

o) full operation instructions.

Extract from prEN 14972-1 / 2019

DIOM Manual

Aims of the DIOM Manual Approach

- Systems have to be properly designed!
- Systems have to be properly installed!
- People who may have to operate the system must be thoroughly instructed how to operate it!
- Systems must be properly maintained!

Ensuring the highest reliability and safety!

Thank You for Your Attention