THE WATER MIST TECHNOLOGY

The water mist industry today
Inside views and outside views

The way we think we are – The way they see we are

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The water mist Industry

- There are currently several companies operating in the Water Mist fire protection business.
- Many of them have several approvals obtained by most of the recognized organization operating in that area.

- Nevertheless the water mist technology is presently not always accepted by some of the important players in the market.
- Among the most important players, having a key role for the recommendation and specification of fire protection systems in general, and especially for the acceptance of such systems, are the insurance companies and their technical departments.

The water mist Industry

- Currently the majority of water mist systems are sold in Europe.
- In Europe there is no uniform acceptance process, because in different countries the acceptance is based on different considerations
- The rest of the world is at least puzzled because of this.

- The lack of a uniform and consolidated acceptance process makes the sales of water mist systems difficult and in many instances based more on the “convincing capability” of the sales guy rather than on an open and clear technical and commercial discussion.

Fire protection and Insurance companies

•Historically the Insurance Companies, taking on their shoulders the fire risk (of course they want a “premium” to do it) consider themselves quite involved in the fire protection selection and implementation for a given premises.

•The usual behavior of many engineers, working in Insurance Companies having a technical organization, is to show a great interest toward the water mist technology and their possibilities… but also to consider it too complicate and not enough clear to be recommended and accepted..

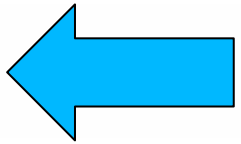
An example taken from the insurances

- Lack of appropriate design standards.
- Lack of third party certification of water mist companies and equipment.
- Limited fire test data and relevance of test compared to premises to be protected.
- Ability to protect all areas of premises, e.g. stock rooms, gym stores, external canopies, kitchens and plant rooms, etc. not proven.
- Ability to provide protection for different methods of construction, or products used in construction, not proven.
- Ability to deal with design features of premises, which may affect performance of systems, e.g. Atriums, areas with ceilings over 5m high, open cell ceilings and plenums etc. not proven.
- Ability to provide the protection against incidents involving deliberate ignition, where doors and windows to protected areas, may well be open, following forcible entry.

•A simple list of items that are suggested by the engineering department of this insurance company to "refuse water mist as fire protection equivalent to that provided by sprinkler systems".

Let’s discuss it a bit in detail

- Lack of appropriate design standards.



•True.

• there is a problem concerning the availability of an “appropriate design standard” – NFPA 750 is a consolidated ones, but it mainly deals with compartment protection; the CEN 14972 is still being developed

•But there is also the problem of the kind of standard: we are probably not ready, in the fire protection field, to deal with a pure “performance based” design because the process is quite complicate and may strongly depends on the parties involved in the development of the design.

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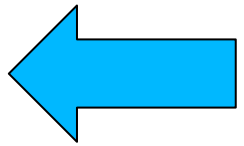

•Each installed water mist systems shall be certified by the qualified installer (4.1.1) that it is installed in compliance with this Document and in accordance with the Design and Installation Manual(s) of the manufacturer. Whereas required by the procedures enforced in the country of installation, the system shall also be certified in conformity to all requirements of this document by a recognized authority.

•This is what has been included in the new draft of the CEN 14972 to take this issue into consideration.

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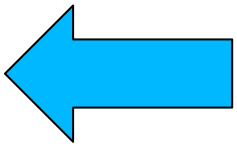

•Also true

•Except for the marine protocols, most of the test procedures that have been proposed by the organizations involved in this field are for specific applications.

•We understand that the insurance world would definitely prefer test procedures based on “hazard classifications”

•Presently the only available test prorocol for Hazard categories are:

•VdS – OH1; FM approval – Light Hazards; UL – OH1 and OH2

•Certainly we need more of them, but also we need more companies to test their systems with these kind of protocols

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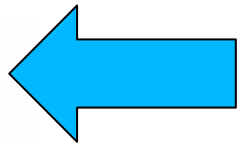
- Ability to protect all areas of premises, e.g. stock rooms, gym stores, external canopies, kitchens and plant rooms, etc. not proven.



•This is again related to the specificity of the proposed protocols

•But are we sure that we are not limiting a bit too much the possibility of a protocol to represent more than one scenario. I am not saying that protocols should be extended without any substantial evaluation, but on the other end, the key parameter should be the fire hazard and not the description of the scenario.

•It is hard to understand, for the designer, what's the difference between a system approved for "machinery spaces" and one approved for "special hazard machinery spaces…"

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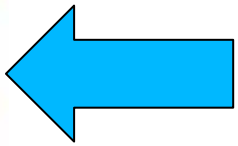

•This is really difficult to argue;

•Most of the tests that have been performed with water mist systems have been performed with flat ceilings, but the same mostly applies to the sprinkler technology

•The way of approaching the various building construction features will probably come with the time only although there are several possibilities already now to study these aspects, also involving fire modeling to avoid too many fire tests to be conducted.

An example taken from the insurances

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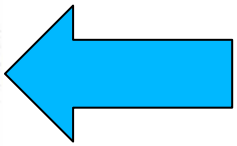

•This last point is really strange.

•The water mist technology has proven in many circumstances to have the capability to suppress compartment fires also with significant openings, and it is one of the success reason versus other technologies that requires strict closure of the compartment.

•If we consider an installation based on water mist sprinklers, than it has been tested in an open environment (one of the conditions for the test halls to be used is the size that shall be "large" with respect to the size of the fire).

Conclusions

- This was just an example, may be also not very updated, of how some of the players of the “fire Protection Business” see the water mist technology.
- It gives an idea of the long pattern we still have to do to get the trust of the insurance world versus our technology.
- It may also suggest how and in which direction to develop the standardization activity to take into consideration the above mentioned critics.

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