Applications for water mist installations

Some general considerations about water mist installations in civil construction and stipulations put forward by every day demands and problems
Agenda

1. Historical development of fire protection
2. Experience gained during disasters
3. Modern times and shift of requirements due to electronics
4. Problems encountered and stipulations derived
5. Solutions
6. Examples
How fire fighting changed
historical development | experience gained | modern times | problems | solutions | examples

• Till 1800 No compartments – fire destroyed big cities nearly completely.
• Since 1840 installations of brick walls compulsory
• Since 1870 industrial revolution made passages through walls indispensable
• Two World Wars showed that measures were successful but not sufficient.
Mist Systems

1. Clean agent – pure water
2. Powerful – directed to fire with screening effect
3. Has a cooling effect without thermal shock
4. No colateral damage
5. No danger for people and equipment
Water mist
basic principles
3 Mechanisms of extinguishing by mist

- Cooling as a result of water evaporation
- Elimination of Free Radicals as a result of extinguishing in contact with Mist particles
- Displacing Oxygen as a result of evaporation water capacity increases 1200 times
Introducing concept of water mist

<table>
<thead>
<tr>
<th>Diameter of droplet</th>
<th># of droplets in 1 liter of water</th>
<th>Total cross section in 1 m³ [m²]</th>
<th>Total surface area in 1 m³ [²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.12 (12 cm)</td>
<td>1</td>
<td>0.0125</td>
<td>0.05</td>
</tr>
<tr>
<td>0.00006 (600 microns)</td>
<td>8,841,941</td>
<td>2.5</td>
<td>10</td>
</tr>
<tr>
<td>0.00001 (100 microns)</td>
<td>1,909,859,317</td>
<td>15</td>
<td>60</td>
</tr>
<tr>
<td>0.000005 (50 microns)</td>
<td>15,278,874,537</td>
<td>30</td>
<td>120</td>
</tr>
<tr>
<td>0.0000025 (25 microns)</td>
<td>122,230,996,295</td>
<td>60</td>
<td>240</td>
</tr>
<tr>
<td>0.000001 (15 microns)</td>
<td>1,909,859,317,103</td>
<td>150</td>
<td>600</td>
</tr>
</tbody>
</table>

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Telesto FEN nozzles
In Action
Extinguishers around the world

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WATER MIST EXTINGUISHER
PLASTIC (bottles, containers)
Telesto Water Mist System
Protecting Lives

Melting Furnace Fire
Surveillance camera recording
Hamburg Holstenwall
... This is the end of my presentation and I do hope I haven’t been any more boring than you expected me to be anyway.

Thanks for your attention
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