How does Water Mist work?

IWMA UK Water Mist Seminar

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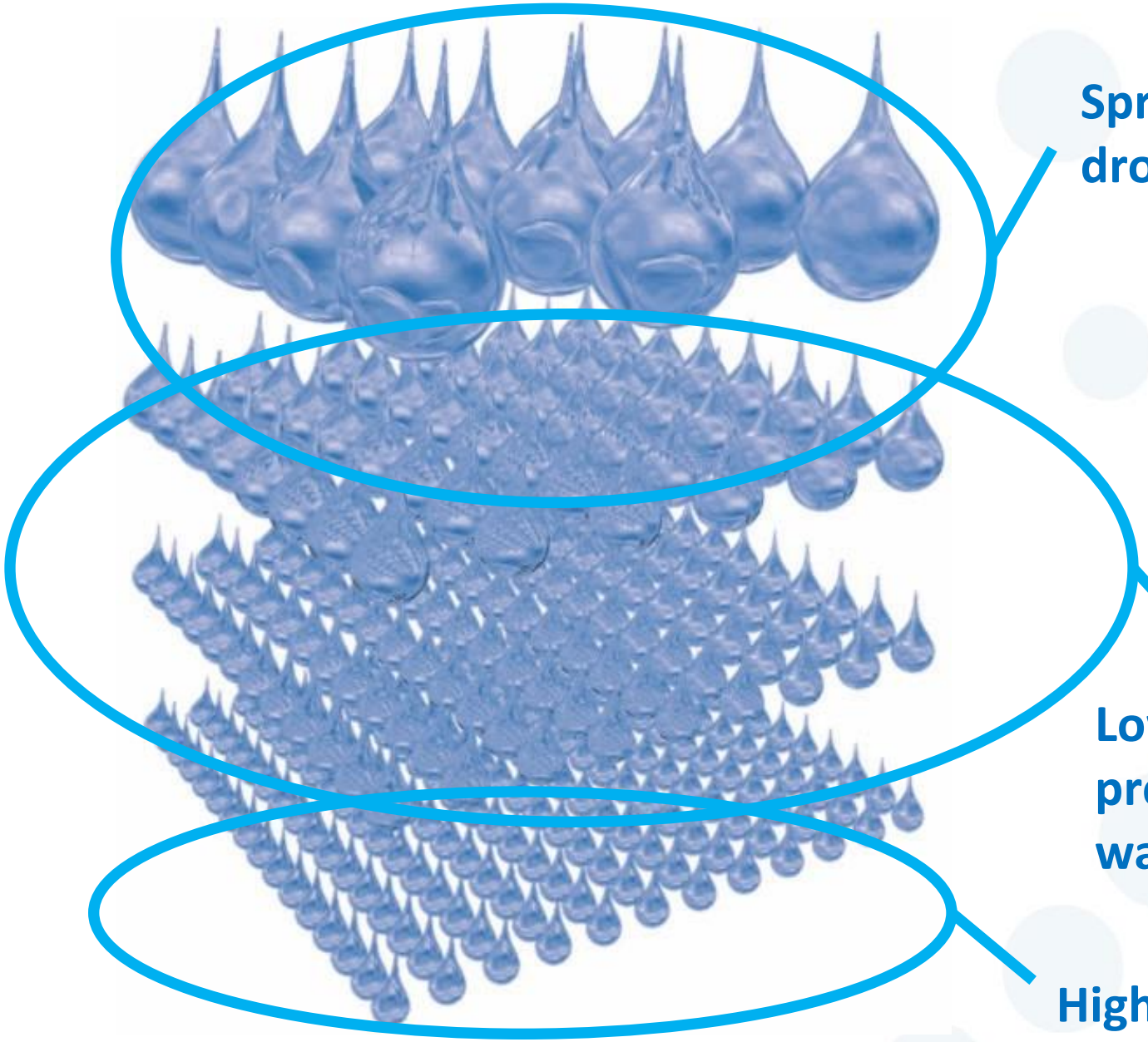
PREVENT SYSTEMS

What is water mist?

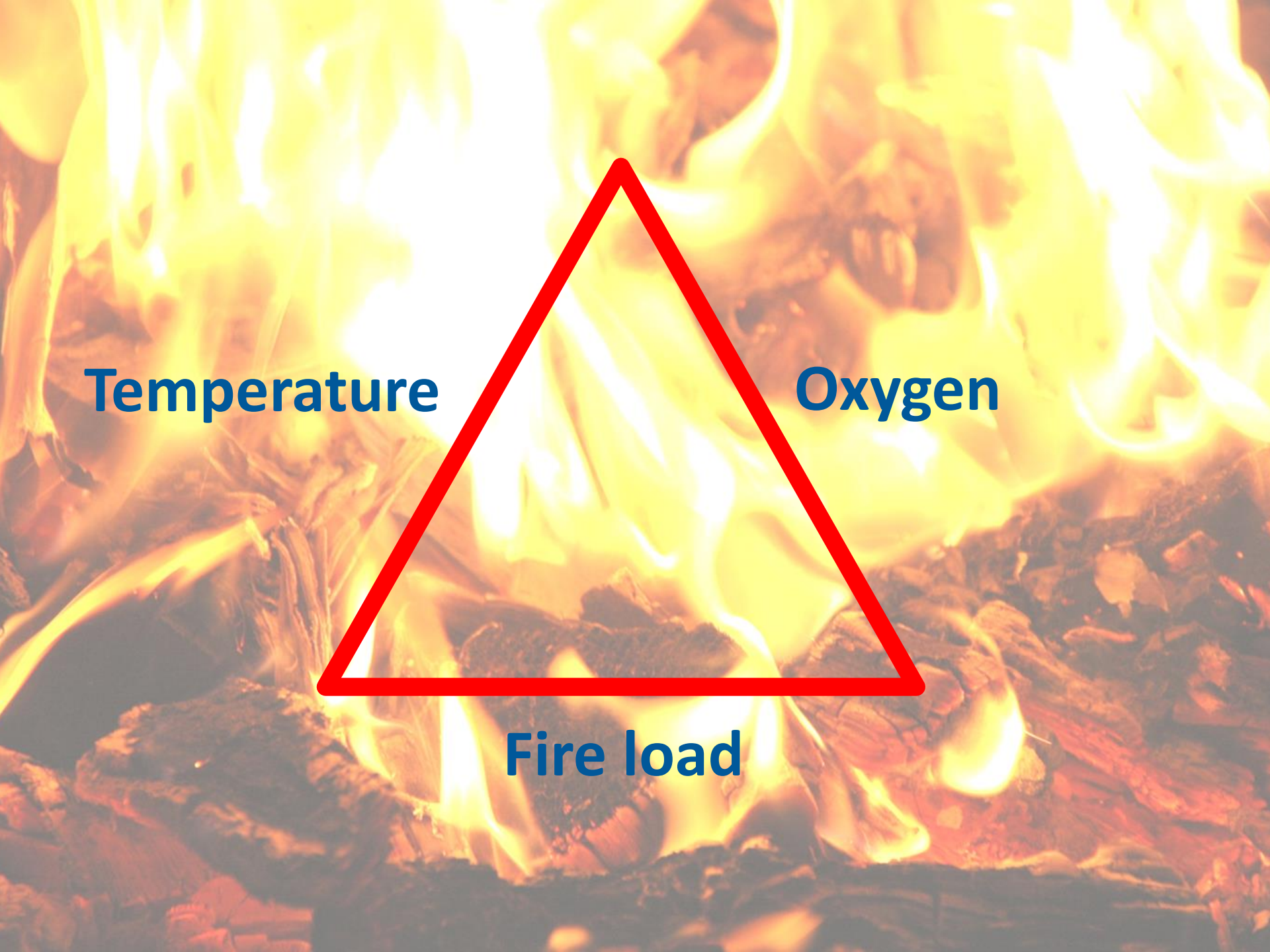
- Water mist is defined by droplet size less than 1mm – 1000 microns
  - NFPA says 99% of droplets less than 1mm
  - CEN says 90% of droplets less than 1mm
- The droplet size is a result of the water pressure and type of nozzle used
- Generally defined, there are two major types of water mist;
  - High pressure >60 bar with droplet sizes 50-200 microns
  - Low pressure <16 bar with droplet sizes 200-350 microns

PREVENT SYSTEMS


Sprinkler droplets
Low pressure water mist
High pressure Water mist

How does it work?

- Small droplets have a larger total surface area than larger droplets
- The small droplets absorb the heat from the fire faster, resulting in a significant cooling effect
- The droplets in and around the fire will evaporate or ”cook” over from water to steam, which is inert gas. The process will create a huge expansion in the water, up to 1640 times, thereby displacing the oxygen in the proximity of the fire
- Droplets that don’t evaporate wet down the surrounding area
- In addition, the smaller droplets will reflect and reduce the radient heat


Temperature
Oxygen
Fire load

Fire videos

- Diesel fire
- Barn fires
- Residential fires
- Outside spray nozzles

Now that we know…

… How it works … in general terms

… That it works … for many applications

The more interesting question in my view is:

How do we effectively communicate the advantages of the technology to the «sprinkler world»?

Key words to answer that question will be «standards», «testing» and «certification»

Topics that will follow this presentation

Thank you for your attention!