



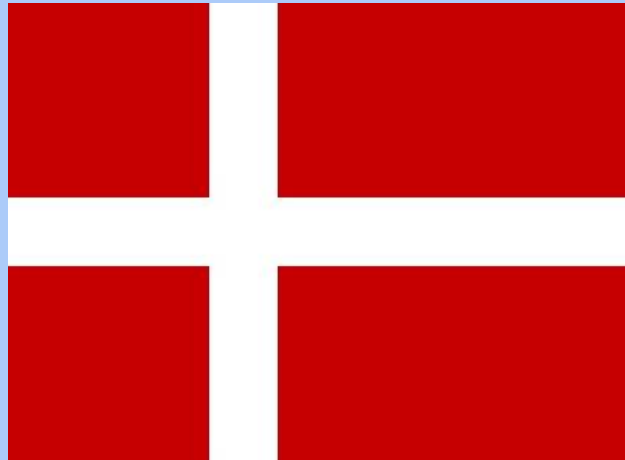
Showcasing Low Pressure Water Mist Benefits in real Projects

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Title: CEO of VID Fire-Kill
Date: Jan 21, 2018
Place: Dubai

Why are we here?



Introduction



Agenda

1. Watermist – a justification of its place in the market
 - Justification in regards to fire fighting capabilities
 - Justification in regards to creating other values
2. Examples
 - Building
 - Industry

Watermist – a justification of its place in the market



“Conventional” fire fighting technologies

Fire Sprinklers



Waterspray Systems



Gas Systems



Foam system

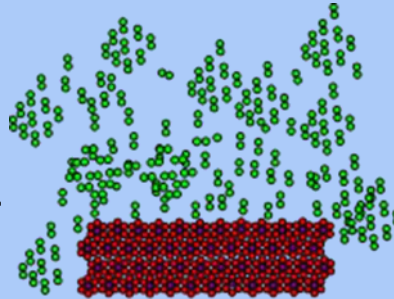


Justification: Must be better to fight fire or generate other value to stakeholders.

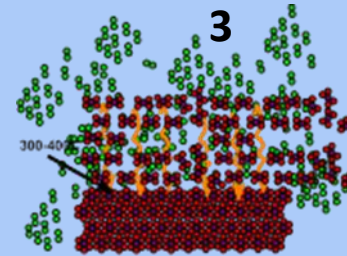
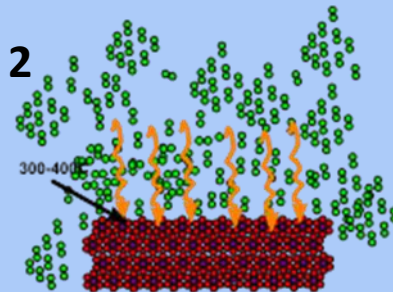
What is a fire?

Air: 21% O₂+78,8% N₂ + ?

Fuels: Carbon + Hydrogen + ? **1**

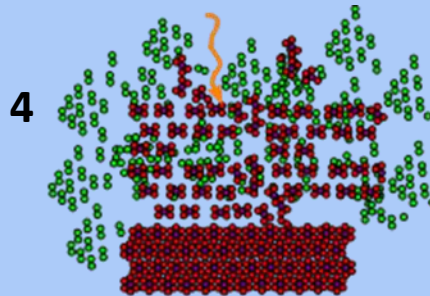


Energy to Fuel (heat)

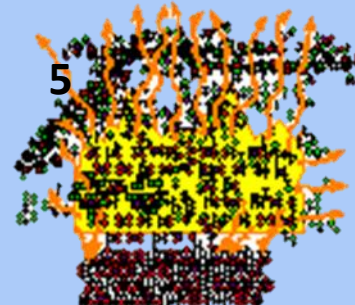


Pyrolysis process
 Fuel => Pyrolysis gasses
 Example: CH₄

Energy to Pyrolysis gas + Atmosphere => **Oxidation process**



Fire ignition



Fire example:
 CH₄+2O₂
 =>2H₂O+CO₂ + **E**

Example



1. Pyrolysis gasses are created.
2. Oxidation process happens.
3. Energy is released (seen as flames).



Justification in relation to fire fighting capabilities



Technology

Fire Sprinklers

Waterspray Systems

Gas Systems

Foam system

Watermist

Fire fighting method

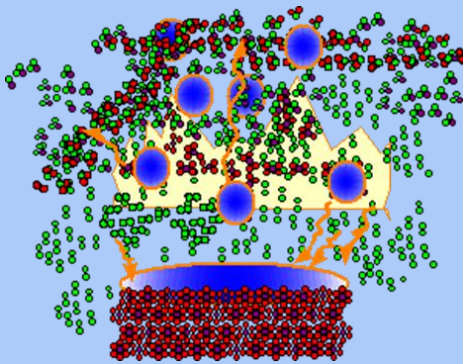
Fighting the PYROLYSIS process on the fuel surface.

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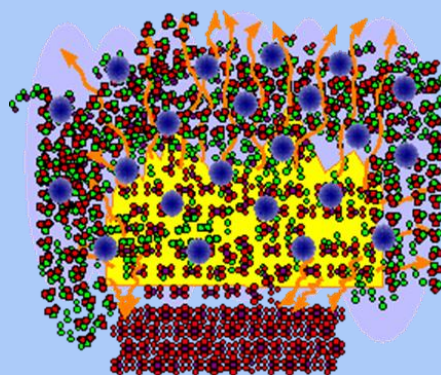
Fighting the OXIDATION process in the volume.

Fighting the PYROLYSIS and the OXIDATION process on the fuel surface.

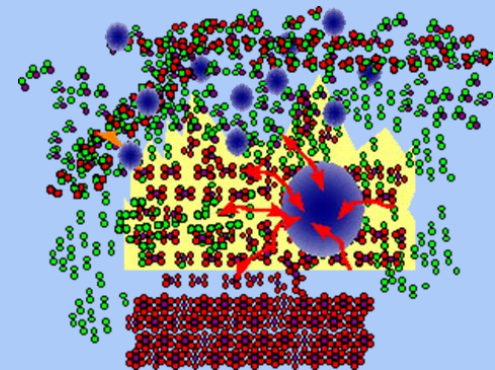
Fighting the PYROLYSIS and the OXIDATION process on the fuel surface and in the volume.



Wetting surface = No Pyrolysis gasses



Reducing O₂ = No Oxidation



Cooling in fire = Reduce fire energy
+ Create inert gasses

Justification in relation to creating other values



Some values compared to Sprinklers / Waterspray:

- Use less water “green technology” (typical between 60%-90% saving).
- Smaller pipe dimensions.
- Systems weigh less.
- Less water damages in case of (false) activation.
- Faster activation in case of fire due to lower RTI values.
- Less corrosion problems due to non-corrosive systems.
- Esthetic better looking (innovative designs) on visible parts.

Justification in relation to creating other values



Some values compared to Gas Systems:

- No use of chemicals or gasses which harms people or equipment.
- No noise harming equipment.
- No re-filling costs after tests / false activations / real activation.
- Works also if the room is not tight, if doors/windows are open etc.
- Shorter laydown time as the fire is fought locally at the fire origin and not in the entire volume.
- Does not kill people in case of false activations such as CO2 does.
- Can help create a “green profile” for the owner.

Justification in relation to creating other values



Some values compared to Foam Systems:

- Use less water “green technology” (typical between 60%-90% saving).
- No corrosion and less damage in the environment / equipment located in the room where the fire is.
- Faster and cheaper clean up in case of fire.
- No harm for people compared to foam agents.
- Fights the fire locally and does not need to fill the entire room.

Examples

Watermist vs. Sprinklers



Application example: High-end hotel requiring architectural features

Conventional solution: Concealed Sprinklers.

Motivation to change to watermist: Concealed sprinkler use too much water & risk of detection-air-gap gets painted/closed, plate drops down or corrosion inside the sprinkler.



Watermist vs. Sprinklers



Plaster closing air gap



Corrosion inside sprinkler

Solution



Pressure: 8 bar

Density: 2.3 l/min/m² (46% watersaving)

Fire fighting medium: Pure water

Approval: FM Approved



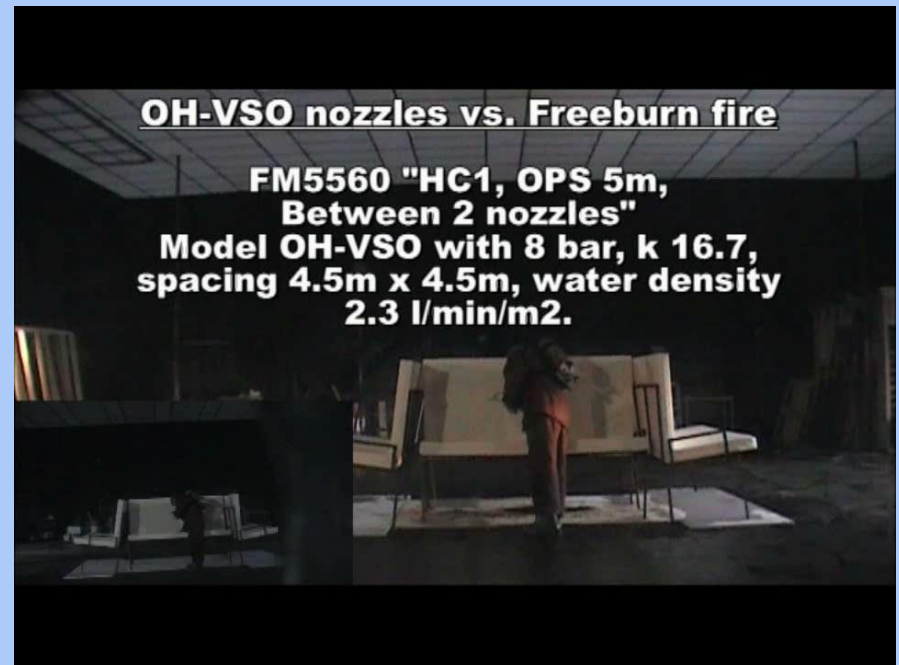
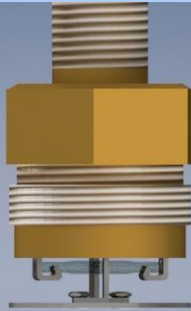
Verification of the solution



Pressure: 8 bar

Density: 2.3 l/min/m² (46% watersaving)

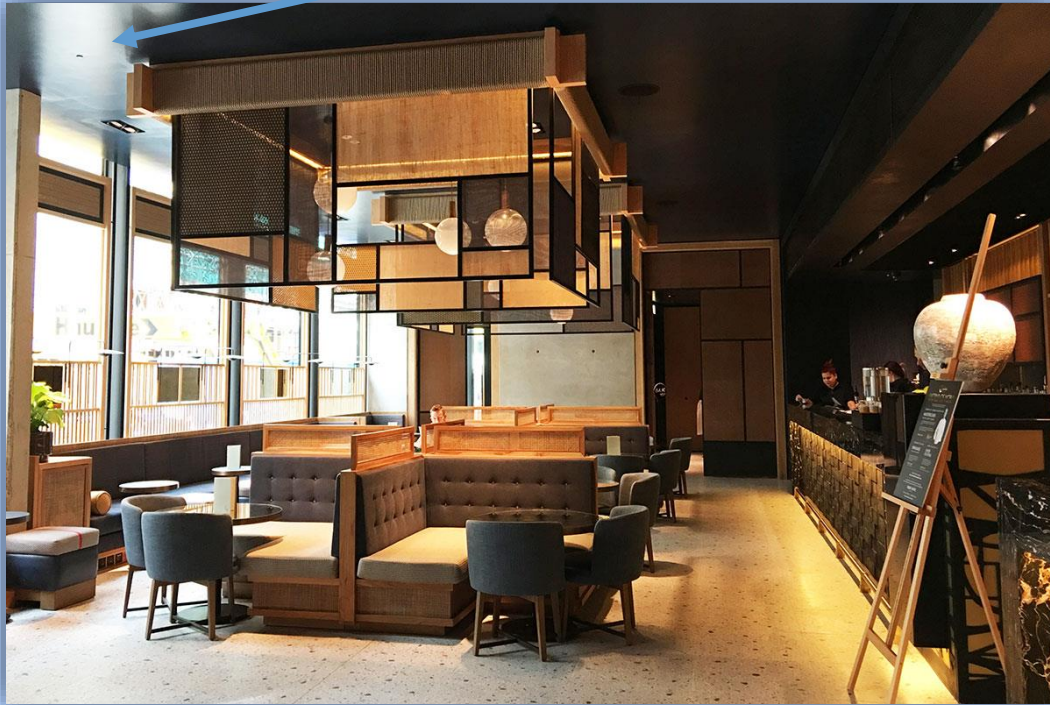
Fire fighting medium: Pure water



How the nozzle operates

Test from FM5560 "HC1"

Installation example



*Installation site:
Nobu Hotel
London*



Watermist vs. Foam System



Application example: Aircraft hangar

Conventional solution: High Expansion Foam System

Motivation to change to watermist: Creates risk of corrosion in airplanes located in the hangar and recent findings (Australia + USA) shows that these systems can generate large environmental problems in the vicinity of the hangar and air field.



Qantas to stop using toxic firefighting foam after Brisbane river spill

Airline will make a national-level switch to foam that does not contain the group of chemicals known as Pfas

● **‘Children are being poisoned’: fury at scandal of toxic firefighting chemicals**

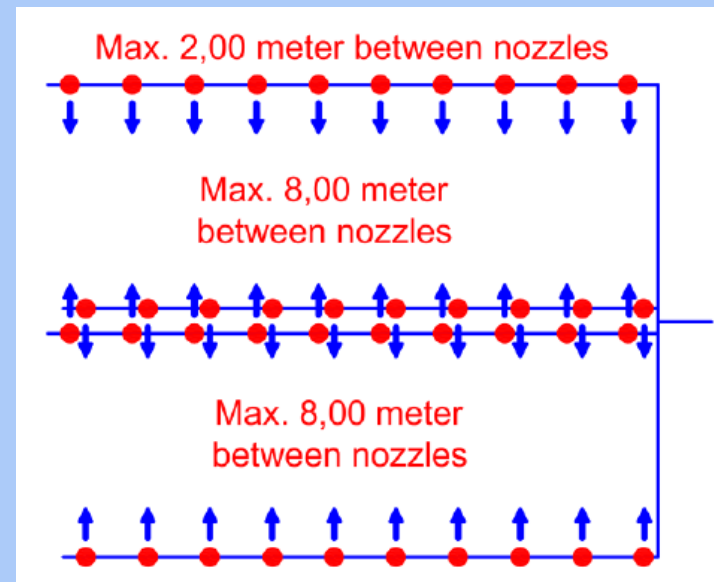
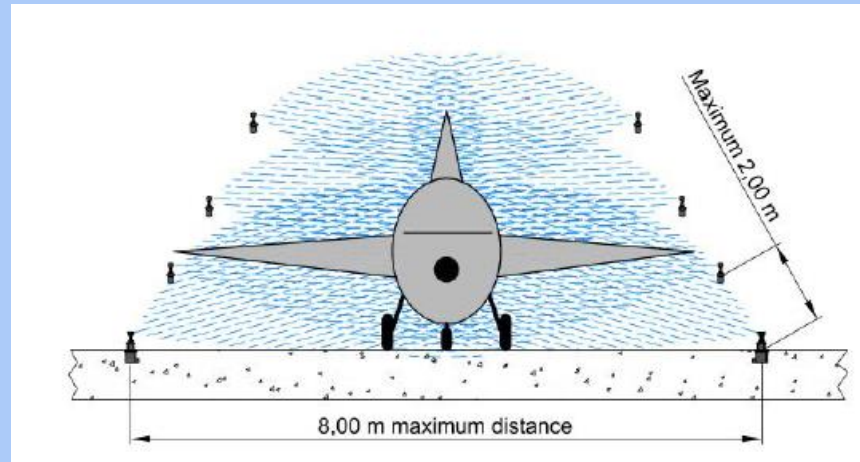


<https://www.theguardian.com/business/2017/jul/28/qantas-to-stop-using-toxic-firefighting-foam-after-brisbane-river-spill>

Phas = Per- and poly-fluoroalkyl substances (PFAS), also known as perfluorinated chemicals.

Solution

Pressure: 8 bar
Density: 3.5 l/min/m²
Fire fighting medium: Pure water
Approval: NATO approved



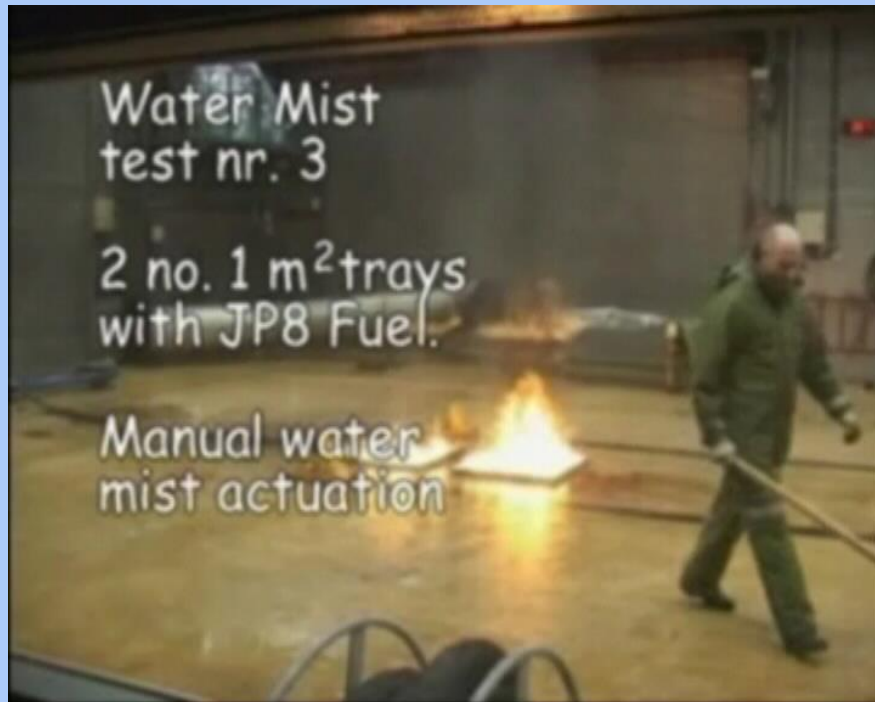
Verification of the solution



Pressure: 8 bar

Density: 3.5 l/min/m²

Fire fighting medium: Pure water



How the nozzle operates



Test with 6m² jet fuel fire

Installation example



Installation site: confidential

Summery

1. Watermist has a place in the fire protection industry because:

- Its firefighting capabilities are unique. Some fires are fought better than “conventional” solutions and some fires are fought equally but with much less water.
- It offers unique values to stakeholders which “conventional” solutions cannot offer.

Questions...

Thank you for your attention