



Fine waterspray system for protection of Atriums

Model FIREKILL™ APS

- a horizontal installed system

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VID

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What is an atrium?

*In modern architecture an **atrium** is a large open space, often several stories high and having a glazed roof and/or large windows, often situated within a larger multistory building.*



Atriums are common in:

- Hotels
- Office buildings.
- Churches
- Shopping malls
- Etc.

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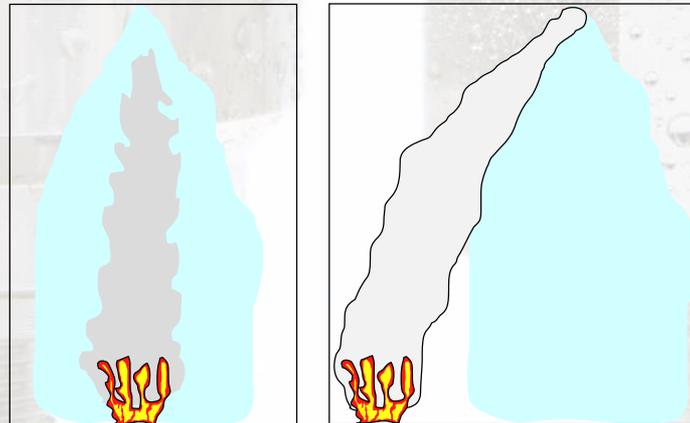


Why use a horizontal installed fine waterspray system? (1)

Minimize water consumption:

	Model APS	Sprinkler open sidewall	Pendent automatic sprinkler(ex.)
Ceiling Height	∞ m	∞ m	Maks 12m
Water density	2.2 mm/min	5 mm/min	5-7,5 mm/min
Design area	144m ² or higher depending on zone sizes and number of adjacent zones	OH2, 144m ² or higher depending on zone sizes and number of adjacent zones	OH2, 144m ²
Operation time	60 min	60 min	60min
Water requirement	144x2.2x60= 19 m³	144x5x60= 43.2m³	144x7.5x60= 64.8m³

Overcome thermals from fire:



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Why use a horizontal installed fine waterspray system? (2)

Architectural designs and easy installation.



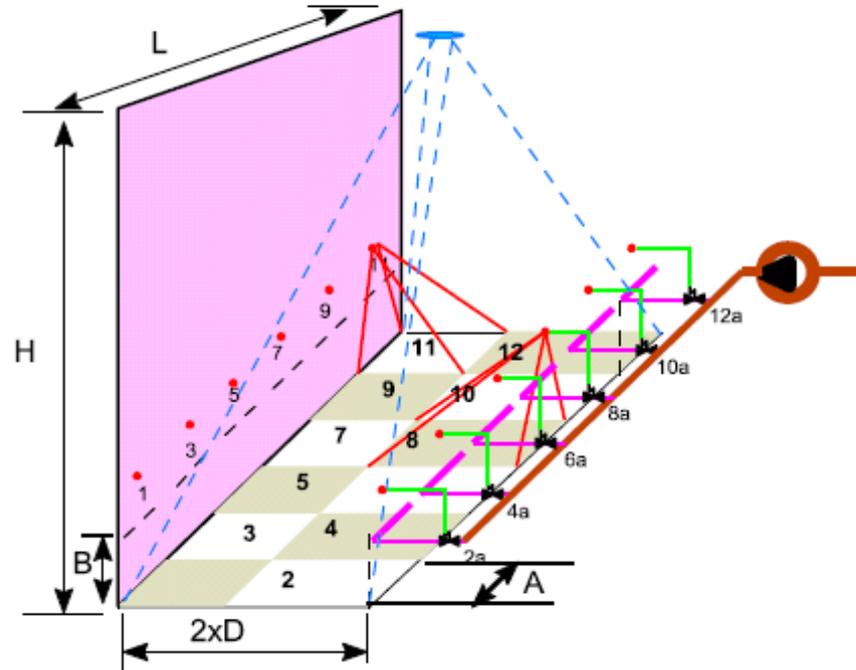
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FIREKILL Model APS System

VID FIRE-KILL Model APS Systems are suitable for fixed installation in atriums with:

Length (L):	unlimited
Height (H):	unlimited
Width (2xD) Type A	max. 16m
Type B	max. 20m
Type C	max. 26m
Nozzle wall height (B):	3,5m – 7m



Water pressure: 6-10 bar

Water density: 2.3-2.5 mm/min

Throw length: up to 13m from horizontal installation.

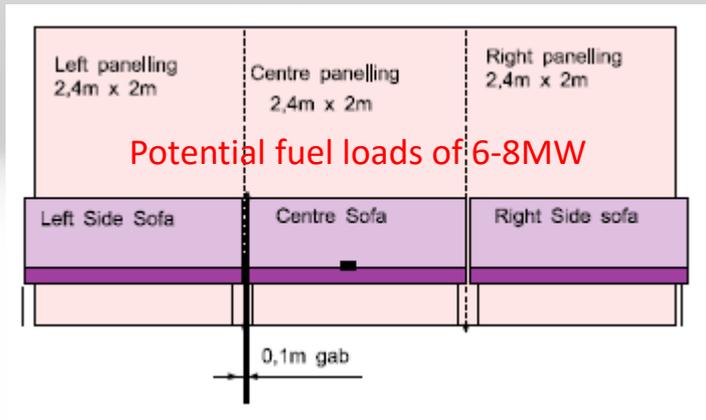
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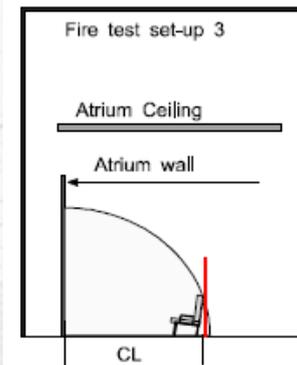
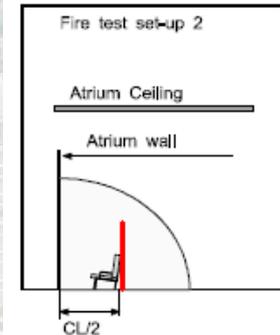
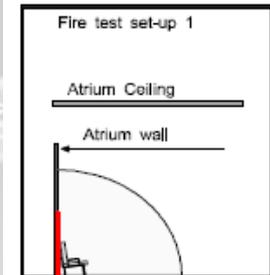
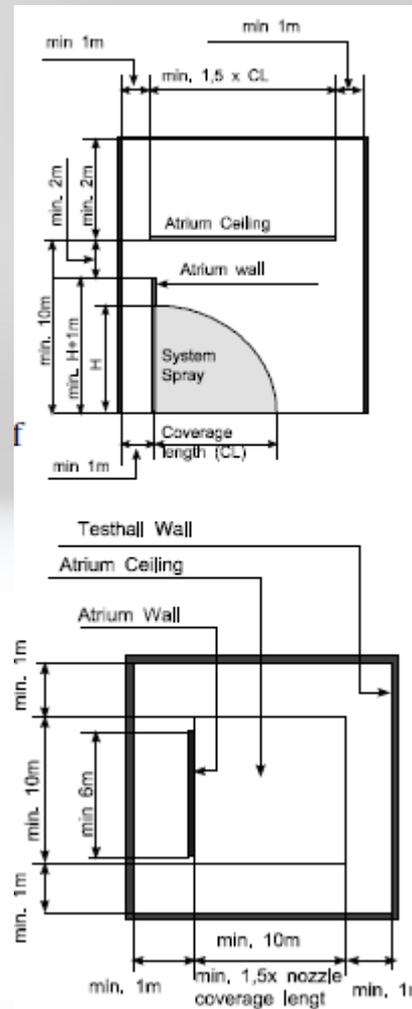
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Test and acceptance

Model APS successfully tested to DFL test method 80717-004 designed accordingly to CEN/TS 14972 Appendix B.



The DFL protocol will be a part of first EN14972



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Some test results



Test no: 070115-01
Fuel against Atrium Wall



Test No: 070116-05
Fuel 4m from atrium wall



Test No: 070115-02
Fuel 8m from atrium wall

7.2 Fire test data form tests conducted with VID Model APS Type B N-Pipe (6m long).



Fire test 070117-08
Fuel against Atrium wall



Fire test 07117-09
Fuel 5m from Atrium wall



Fire test 07117-07
Fuel 10m from Atrium wall

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Test 1 - No system installed.



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Test 2 - Sprinkler reference test



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Test 3 - Watermist system Model APS Type B.



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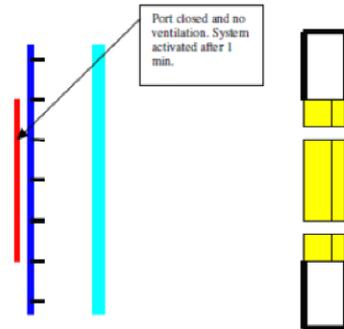


What about ventilation?

2.2 Fire designs.

Test 90109-01 Active system without ventilation.

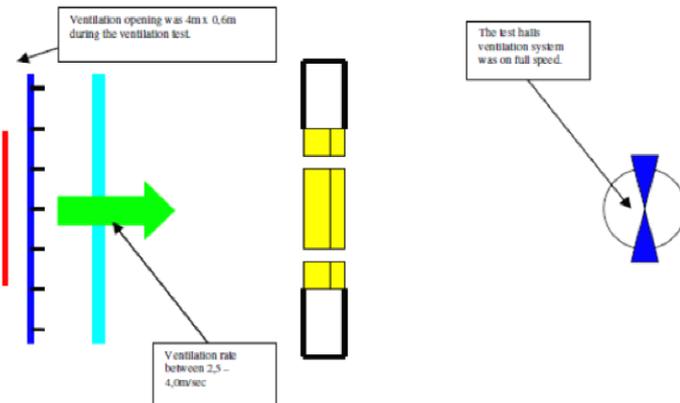
This test was conducted with active system and no ventilation. The system was activated after 1 min. The test was arranged as described as in 2.1 but the port was closed. Water pressure and Water flow see appendix A.



Rate:
2.5 - 4 m/s

Test 90109-02 Active system with ventilation.

Port opening ca. 0,6m, ventilation in test hall started and the ventilation rate measured 0,5m from the opening. The system was activated after one min. The ventilation was between 2,5-4,0 m/s. Water pressure and Water flow see appendix A.



Comparison of damages between test 90109-01 and 90109-02.

Damages test 90109-01.



94% damage on backrest on centre sofa, the fire jumped to the right target sofa, this resulted in 1% damage on the backrest. Seat mattress had 3% damage.

Damages test 90109-02.



97% damage on backrest on centre sofa. The fire did not jump to target sofas. Seat mattress had 5% damage.

Special verifications (example)



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Project example – Arla (office)



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Project example – Lalandia (amusement park)





Project example – Rosengårdscenteret (mall)





Project example – Vestre Kirke (Church)



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Thank you for your attention.

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