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Aon Sprinkler Certification
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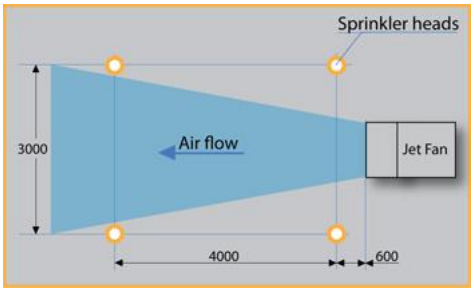
Aon Sprinkler Certification Technical Note		
Note Number: TN17-36	**Issue: 1**	Date: 23 January 2018
Subject	**Jet Fans**	
Notice: Aon Sprinkler Certification Technical Notes provide guidance notes which may be used in certification of sprinkler installations by Aon New Zealand. If sprinkler installations are being certified by any other Sprinkler System Certifier, these Technical Notes may not apply.		

Jet Fans also known as impulse fans are becoming a common method of ventilating car parks without need to install ducting.

As car park ventilation systems, jet fans may operate in response to an increase in detected Carbon Monoxide (CO) levels. Jet fans may also operate in response to the CO produced during fires. The air velocity leaving these fans can be high requiring potentially impacting sprinkler response. As such the sprinkler design needs to be coordinated with the fan locations to minimise any delays to the detection and successful operation of any fire safety system.



One supplier of these units, Fantech produces this figure in their installation guide[1]. With due regard to NZS4541:2013 clause 511.13, and while Fantech assume ideal “4x3” spacing, sprinkler designers should attempt to meet this layout, and must centralise the jet fan in the sprinkler grid.

Fantech recommend that quick response sprinklers are installed, to reduce the potential of any delay in sprinkler operation.

The fans must be arranged to shut down on detection of a fire in the car park, via sprinkler or call point operation, and via any other form of detection system installed within the car park.

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The need to check this interface needs to appear on the Compliance Schedule. We suggest that the interface should be tested quarterly, and verified during the biennial survey.

If modelling shows that the air velocity at any sprinkler head is greater than 1.8m/s, then consideration to some form of detection system shutting down the fans prior to sprinkler operation needs to be considered.

The latest editions of the AS/NZS 1668[2,3] standards include requirements for jet fan installations that should be complied with.

Chris Mak
Manager – Aon Fire Protection

For further reading, please refer to the following documents:

1. Fantech *Car Park Ventilation - Installation, Maintenance & Compliance*

http://www.fantech.com.au/FanRange.aspx?AppID=P2&RangeID=2021

2. AS/NZS 1668.1:2015 The use of ventilation and air conditioning in buildings - Fire and smoke control in buildings

3. AS 1668.2-2012 The use of ventilation and air conditioning in buildings - Mechanical ventilation in buildings

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4. Dr. Tony Enright *Impact of jet fan ventilation systems on sprinkler activation.*

https://ac.els-cdn.com/S2214398X13000034/1-s2.0-S2214398X13000034-main.pdf?_tid=8482ff10-faff-11e7-8a7c-00000aacb35d&acdnat=1516136289_24e208143291e5cecaa7cf81aebdebfc

5. NSW Fire & Rescue *Guideline for impulse fans in carparks*

https://www.fire.nsw.gov.au/gallery/files/pdf/guidelines/impulse_fans_in_carparks.pdf