

AON SPRINKLER CERTIFICATION



Aon New Zealand

Aon Sprinkler Certification
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Aon Sprinkler Certification Technical Note		
Note Number: TN21-54	Issue: 1.0	Date: 9 June 2021
Subject	Scheme A and in rack storage mode head placement	
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.		

We have had some queries from contractors of late seeking clarify on the placement of fire sprinklers within racking systems to the Scheme A rules from NZS4541. Please note the criteria in clause 9.4.2.7.3 of 2020 is unchanged from 2013. Additionally, clauses 9.4.3 and 9.4.4 of 2020 edition has introduced some further special design solutions using large K factor sprinklers in racks which do not require the in rack design to be run concurrent with the roof level design.

We do note that the diagrams for Scheme A and the new special sprinkler designs in some cases do not dimension what can be key criteria. This is leading some designers applying the clauses for one specific design solution to another. This is not the correct approach.

When the diagram shows a single row of sprinklers that row shall be central in the rack. The standard does not provide a tolerance to how close to the centre the sprinklers must be. It is reasonable to apply a tolerance of 200mm either side of the centre line when it is necessary to avoid structural features of the rack, such as braces.

When the diagram shows sprinklers, be it Scheme A, clause 9.4.3 or 9.4.4 solutions, at the face of the rack these sprinklers need to be between the face of the rack, or storage overhang, but no more than 450mm back from said face. The face sprinkler may not be outside the body of the racking system unless permitted by figure 9.30 (c). Figure 9.30 (c) is only applicable to single rack designed to clause 9.4.3; this figure cannot be applied to scheme A designs or 9.4.4 designs.

When the standard does not state a minimum distance that an upright sprinkler must be below the solid deck the distance needs to be at least enough to allow replacement of the fire sprinkler but not less than 25mm.

The diagrams nor text states a maximum distance the Scheme A sprinkler or clause 9.4.4 sprinkler can be down from the solid deck. In the normal course of events this is self-policing as warehouse operators normally seek to

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maximum storage volumes and minimise dead space. As the standard is silent on the minimum distance below the solid deck that the sprinkler is to be installed beneath our best advice is to remain within 150mm to the underside of the solid deck.

A handwritten signature in blue ink, consisting of a stylized 'S' followed by a long horizontal line.

Stephen Ridder
Fire Protection Consultant