



Global Risk Consulting
Sprinkler Certification

Aon Sprinkler Certification Technical Note		
Note Number: 16-20	Issue: 1	Date: 11/03/2015
Subject	Hydraulic allowances	
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.		

Background

With reference to NZS4541:2013 clause 1005.4 all parts of the waterway between the point of the final flow test and the fire sprinkler head must be accounted for in the as-built design calculations. Furthermore supervisors and project managers may not appreciate that not all products are hydraulically equal and product selection requires consultation with the system designer to ensure the unit has been correctly allowed for.

We offer specific advice on the following components in common use:-

Flexible droppers

The equivalent length used in the design calculations must correctly reflect the actual length dropper installed on site and use the correct length based upon the combination of bend radius and number of bends used.

To assist field inspectors and supervisors designers are to nominate on their issued 'for construction' and 'as-built' drawings the exact model flexible dropper utilised complete with length, allowable bend radius and number of bends permitted. Installation inspectors are to verify this information during their audit of the installation.

Mechanical Tees and Saddle-let fittings

We draw designers attention to the equivalent length of these fittings and the need to correctly account for these in design calculations when used. The equivalent length of these fitting is considerable more than a normal tee or weld socket and what clause 1005.4.1 assumes when not requiring the tee to be accounted for.

One particular example is a 65x25 saddle-let which has an actual orifice of 20mm and an equivalent length of 2.4m of 25mm pipe. In the case of a K36 sprinkler with an end head pressure of 350 kPa the total losses across the saddle-let is 357 kPa.

Tail end valve sets

Where a system is provided with a tail end valve set the losses across the two isolation valves and the alarm valve must be accounted for. All manufactures publish pressure loss information for their respective products.

Regards

A handwritten signature in blue ink, appearing to read 'S. Ridder', followed by a long horizontal line extending to the right.

Stephen Ridder
Fire Protection Consultant