

AON SPRINKLER CERTIFICATION



Aon New Zealand

Aon Sprinkler Certification
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Aon Sprinkler Certification Technical Note		
Note Number: TN17-34	Issue: 1	Date: 18/17/2017
Subject	System documentation guidance	
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.		

Quality documentation, that is accurate and complete, results in the SSC being able to certify the works promptly. We have noticed that there is significant inconsistency in application documentation between contractors in terms of what and when documentation is required and the minimum acceptable standard of that documentation. Quality documentation avoids delays as the process is not deferred while the contractor prepares further documents. Additionally, when modifications to the building are proposed at a later date, contractors can gain a better understanding of the installed systems.

What projects need documentation lodged with the SSC?

Clause 112.7 sets the minimum acceptable quantum of work that a sprinkler contractor can carry out without having to lodge a design application with the SSC. In the event that the contractor has overlooked the need to lodge documents, we expect that the sprinkler system inspector will draw the contractor's attention to the requirement. We note that inspectors should not issue final inspection letters when documentation has not been lodged with the SSC.

There are also cases where the project does fall within the parameters of clause 112.7 but the client or the Building Consent Authority still require a certificate of compliance. In such cases, we normally do not expect the full suite of documents outlined in NZS4541:2013, rather the submission should include:

- The consented fire report;
- As-built drawing of the sprinkler head layout;
- Clean inspectors letter;
- Most recent survey.

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As-built documentation

Clauses 112.1 and 112.2 set out comprehensive lists of documentation that the contractor is required to lodge with the SSC. As-built documentation fulfils two primary purposes. Firstly, it serves to demonstrate the installed system complies with the numerous requirements of NZS4541:2013. Secondly, the as-built documentation forms part of the documents of record for the building which parties in the future may refer back to. As such, it is important that these documents are accurate and reflect the system as installed.

Specifically with reference to 112.2b, as-built drawings must show how the system has been installed to meet the seismic resistance provisions of NZS4541:2013. It is our expectation that every brace is marked on the as-built drawings. Unless the pipework is clamped hard to the structure, we require loading calculations that show the braces are of sufficient strength for the piping it is bracing. This is also the case when an engineer has issued PS1 and PS4 for the bracing system. Furthermore, we require bracketing and bracing about fire pump rooms to be shown on pump room drawings and supplied with supporting calculations. We note that the forces generated by the discharge pipe of large pumps can be very high and may not be able to be imposed onto lightweight pump structures. Inspectors should challenge pump house designs with lightweight timber framing, if the pipes are supported from the pump house framing.

Block plans capture a substantial amount of information regarding the sprinkler system and form the most basic of reference documents that surveyors and testers refer to when carrying out their tasks. We are often presented with block plans that are incomplete and inaccurate (refer clauses 210 and 211). In the case of a system with a fire pump, the suction, discharge, installation pressure and the RPM at each flow point needs to be recorded on the block plan.

Clause 1006.2 lists all of the required details that hydraulic calculations are required to have. We point out that the hydraulic calculation print out from the software programmes does not meet clause 1006.2 on its own and the automatically generated node plans from many of the software systems are incomprehensible. A plan showing the areas in the building that have been calculated is required as this enables the SSC to verify that the worst case area(s) have indeed been chosen and encompass the minimum required design area. Additionally, a proper node plan is required to enable the SSC to track and review that all relevant pipes, fittings and sprinklers have been loaded into the calculation.

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Finally, in respect of as-built drawings, we have noticed a trend of presenting the 'for construction' drawings with an 'as-built' stamp or just having the amendment history updated to as-built. These do not qualify as as-built drawings. As-built drawings need to have extraneous notes and instructions either removed and the tense updated. For example, a construction note that says, "Install sprinkler beneath duct if required. Liaise with mechanical contractor", should either be deleted or changed to, "Sprinkler fitted beneath duct". As pdf print files do not print to scale, dimensions also need to be shown on as-built drawings to facilitate the reading and use of the as-built drawing.

To assist contractors, attached is our documentation checklist we use when preparing the certificate.

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

Stephen Ridder
Fire Protection Consultant