



Proposal Form – Standards Development Projects

Version: 4.6
Issued: 12 April 2021

Please click [here](#) for guidance on the proposal submission process.

Proposal title	Revision of AS 2118.1
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If you are submitting on behalf of an organisation that is different than your current employer, please fill out the information below.

Nominating organisation	Engineers Australia
Primary contact name	
Primary contact position	
Primary contact email	
Primary contact phone	

Section 1: Scope

1A: Provide details of the proposed documents				
#	Title (e.g. <i>Masonry cement</i>)	Project type (e.g. <i>revision, amendment¹ or new²</i>)	Designation (e.g. <i>AS 1316:2003</i>) ³	Product type (e.g. <i>AS, AS Int, SA TS, etc...</i>) ⁴
1	Automatic fire sprinkler systems	Revision	AS 2118.1: 2017	AS
2				
3				
4				

¹ An amendment is usually only possible for small changes to recently created documents. See Section 4 of Standardisation Guide [SG-003: Standards and Other Publications](#) for more details.

² If you are proposing to create a new document, please provide a suggested Title.

³ Use the [Standards Australia Webstore](#) to obtain the full designation and name of existing documents.

⁴ Standards Australia mainly develops Australian Standards (AS) but it also develops the following Product types: Australian Interim Standard (AS Int), Australian Technical Specification (SA TS), Australian Technical Report (SA TR), Handbook (SA HB), Miscellaneous Publication (SA MP), Supplement (Normative), Supplement (Informative), Australian Standard Certified Reference Material (ASCRM). For guidance, see Standardisation Guide [SG-003: Standards and Other Publications](#).

1B: Write a clear and concise statement of the nature of the issue to be addressed by your proposal.
Describe who is affected e.g. businesses, community organisations or individuals affected by the problem. What are the consequences of no action?
<p>AS 2118.1 deals with Fire Sprinkler Systems, which is a dynamic and constantly evolving technology with a lot of research and development work being performed to both improve understanding of fire protection system performance and develop methodologies to adequately and reliably protect new technologies. All new technology utilising the latest developments in fire and suppression system modelling, together with full scale fire testing, are geared to enhanced life safety through achieving fire control (suppression), property protection and business continuity in a more cost effective and efficient manner to the benefit of society as a whole.</p> <p>Examples of new technologies introducing fire protection hazards that need to be addressed include: lithium-ion battery based Energy Storage Systems (ESS); electric vehicles (EVs) using lithium-ion batteries; high-rise stackers used to house both traditional vehicles and EVs; various types of Automated Storage and Retrieval Systems (ASRS). If these new technologies are not addressed in the Australian Standard for fire sprinklers the need for performance-based solutions will increase significantly, leading to overall increased cost for society. Furthermore, providing guidance on how to provide fire protection for these new occupancies will give industry practitioners, end-users, certifiers, emergency response personnel and others confidence that the fire risk for a particular arrangement is controlled to an acceptable level.</p> <p>Examples of sprinkler system technology advancement and understanding includes research and large-scale testing that: allows relaxation of obstruction rules; provides enhanced guidance on the impact of roof slope and purlins; provides improved understanding of the quantities of in-process storage that can be considered as incidental when providing fire protection for manufacturing style occupancies. Addressing these issues in a revision to the Standard will enable reduction in cost in some instances; more DTS solutions for unique and innovative buildings; and improved clarity and understanding for industry practitioners and end-users as to acceptable levels of fire protection in manufacturing industry.</p>

The revision will also include alignment with other standards including AS 2419.1 and AS 2118.6. Furthermore, the revision will address gaps in the existing standard that various FP-004 members have received queries on from industry including: appropriate design and installation practices for fire protection systems provided in freezers; depth of cover for underground pipe; size of thrust block restraints; securement of pipe hangers into steel purlins; securement into concrete for seismic rating. A detailed list of the items is provided in the attached scoping spreadsheet (refer section 1C).

This revision will also address the issues of 'readability' and interpretation – some sections of AS 2118.1 have been accused of being 'confusing' and 'hard to read' – this revision will aim to improve the readability of the standard and reduce ambiguity, especially through typographical errors that were identified in the 2017 edition. Failure to address these issues will mean parts of the standard will continue to be confusing and there will continue to be misinterpretations, possibly meaning some fire protection systems will not be designed or installed correctly, compromising the effectiveness of the system.

FP-004 met, discussed and agreed on many of the proposed changes at a committee meeting in December 2021 and finalised agreement during a committee meeting in May 2022.

1C: Write a clear and concise proposed scope that will outline how to address the identified issue(s). Unless this is a proposal for a new document, this should not be a scope of the document, but a scope of the work which you propose to undertake.

Include what is going to be changed from the status quo and summarise the specific intent of the change.

If you wish to include proposed revisions as tracked changes in the Standard, or an outline of a new Standard, please summarise the scope and note the attachment here, and include the document as an appendix to this form.

The revision includes but is not limited to:

- Clarify guidance for independent water supplies, particularly for high-rise buildings.
- Clarify guidance on concealed space sprinklers, particularly spacing and hydraulic design.
- Correct current minimum discharge density for Extended Coverage Ordinary Hazard sprinklers.
- Provide guidance for very high ceilings in Ordinary Hazard occupancies.
- Provide guidance for application of sprinkler protection for incidental and mixed storage in various hazards.
- Update guidance for commodity hazard and classification.
- Provide guidance for new ASRS systems; allowing Deemed-to-Satisfy (DTS) solution for top-load ASRS systems and enhanced guidance for mini-load systems using containers of various materials and properties.
- Incorporate more effective guidance for sprinkler protection for: multi-row rack storage (e.g. drive-in, flow through and pallet shuttle racks); sloped ceilings; ceilings with large beams and purlins; open-top containers; obstructions to sprinkler discharge; storages in buildings over 12 m, including providing DTS solutions for buildings in the 13.7 m to 16.8 m range.
- Inclusion of fire protection guidance for Energy Storage Systems (ESS).
- Extension of existing protection guidance for car-stackers to high-rise units; including addressing EVs.
- Updating of fire protection guidance for process risks to better align with modern society.
- Address alignment issues, in particular with AS 3000 (sprinklers near/above switchboards) and AS/NZS 51949.3 (sprinklers in ammonia plant rooms).
- Correction of all typographical errors and review of clauses for clarity and consistency.

A full scope can be found in the accompanying scoping spreadsheet.



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1D: Are you proposing an adoption of an International Standard (i.e. ISO or IEC)?	
If so answer the following: ⁵	
Is it a Modified or Identical Adoption? Note: if Identical please use the Proposal Form – Identical Adoption	N/A
What is the designation? e.g. ISO 10303.212-2004	

⁵ Use the [Standards Australia Webstore](#) to obtain the full designation and name of existing documents.

1E: Is the existing document referenced in Australian State, Territory or Commonwealth legislation or regulatory framework? For joint documents, also consider New Zealand legislation. ⁶	
Yes (List all legislation or regulation that refer to the existing document. ⁷) Note: For National Construction Code (NCC) and WaterMark proposals, the Australian Building Codes Board (ABCB) needs to be consulted prior to submission.	National Construction Code – Primary Reference
No (Go to 1F)	

⁶ To search for Standards in Australasian legislation, use our search function [here](#), under 'Standards and the Law'.

⁷ Use the full formal designation for the relevant legislation, e.g. Explosives Regulation 2013 (NSW). If more than four items of legislation are affected, provide a list as an attachment to this proposal form.

Note: All relevant regulatory authorities must be consulted in the stakeholder consultation.

1F: Is there an ISO/IEC document that also covers the issues in question?	
Yes (Go to 1G)	
No (Go to 1H)	No

1G: If there is an existing International Standard that covers the scope of this proposal, is it being adopted?	
Yes (Go to 1H)	
No (Please clarify this position explaining why the existing International Standard is not being adopted)	N/A

1H: Will the proposed document include any conformity assessment requirements? ⁸	
Yes	
No	No

⁸ See Standardisation Guide [SG-006: Rules for the structure and drafting of Australian Standards](#). Note that conformity assessment requirements are rarely permitted in a Standard. If you selected "yes," please discuss with the relevant [Engagement Officer](#) prior to submission.

Section 2: Net benefit

<p>2A: What will be the impact of the proposed project in the below categories? Explain this in terms of a positive or negative impact on the following “Net Benefit” criteria.⁹</p>
<p>Public health and safety (max 200 words)</p> <p>AS 2118.1 is a key standard referenced in the NCC as part of the holistic approach to life safety in specified buildings. It is applied to a range of buildings across Australia and as a result of this revision buildings across Australia will be safer and more resilient.</p> <p>The revision will ensure AS 2118.1 remains a fit-for-purpose standard and improves the fire protection of buildings. The revision will improve safety for fire-fighting personnel by providing reliable solutions for a wider range of buildings, meaning fire-fighting efforts will take place in an environment where the fire is largely under control, increasing fire-fighter safety during occupant evacuation and enabling focus on fire mop-up/extinguishment rather than fire control. The revision will enhance the resilience of critical infrastructure/buildings.</p> <p>This standard and in particular the minor changes to fix editorial issues and clarification together with the addition of new much more cost-effective technology will improve fire safety for society.</p>
<p>Social and community impact (max 200 words)</p> <p>Many of the changes proposed will have a direct benefit for the fire and rescue services (fire brigades) of Australia through providing reliable fire protection solutions for the more challenging buildings that are being developed.</p> <p>The community of fire safety engineers and fire protection design engineers will benefit through improved understanding and clarity of the document.</p>
<p>Environmental impact (max 200 words)</p> <p>Buildings destroyed in a fire event represent multiple negative environmental impacts. Buildings destroyed during fires often have catastrophic impacts on the natural environment with debris from burnt/destroyed buildings and manual fire-fighting water often ending up in waterways and killing biodiversity. The greenhouse gases evolved from burning the building’s materials and its furnishings, equipment, storage, etc. have been shown to be significant. Furthermore, replacing the destroyed assets will consume yet more resources.</p> <p>The revision to AS 2118 aims to strengthen the resilience of buildings, meaning many of the environmental impacts mentioned above can be avoided or significantly minimised. A fire controlled by automatic sprinklers will result in much less damage to the environment than an uncontrolled fire that needs to be allowed to burn itself out over several days and/or is fought by manual response only.</p>
<p>Competition (max 200 words)</p> <p>By correcting the typographical errors, updating figures which were previously deemed confusing and providing clearer guidance on installation practices, the standard will be more readable and reduce ambiguity in the interpretation of the standard amongst practitioners. This way, practitioners using the revised standard will be working from a ‘level playing field’.</p>

Economic impact (max 200 words)

There are both positive and negative economic impacts that will flow from the revision. While some changes will result in increased costs for sprinkler protection solutions, it will be because the systems will provide adequate protection for the situation. An example of this is the provision of solutions for more ASRS arrangements – currently these systems may be provided with a fire system using a Performance Based Solution that in actuality is not capable of providing fire control. Incorporating recent test results may mean more sprinklers and/or water is required, increasing the costs, but there will be confidence the solution works and will meet the objectives of the NCC.

Many of the sprinkler technology changes proposed will allow relaxation of existing requirements, reducing costs of sprinkler system installation. Examples include relaxation of the obstruction rules (reducing the number of additional sprinklers required) and allowing increased roof slope (reducing need for false ceilings in some situations).

Provision of new Deemed-to-Satisfy solutions for certain building arrangements will reduce the costs associated with developing a performance-based solution.

The changes proposed will provide clarity and certainty which reduces the chances of costly misinterpretations and mistakes, while the new technology will provide a substantial reduction in cost to protect new automated warehousing which is the trend around the world.

⁹ Add specific facts and examples if possible. Refer to the [Guide to Net Benefit](#). Not all categories may be affected, in which case, leave these blank.

Section 3: Evidence of support — Stakeholder support

3A: Describe the process taken to gain stakeholder support for your proposal (max 100 words)

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3B: Identify the Australian stakeholder organisations that you have consulted with.

Evidence of stakeholder support MUST be provided in a letter (on company letterhead) or email (company email only).

At least two New Zealand-based stakeholders must be included for projects relating to joint AS/NZS Standards. Include those that do, and those that do not, support the proposal.

Key stakeholder groups	Organisation Name	Contact name	Position	Letter or email evidence is attached: Y/N	Interested in membership of standards committee: Y/N
<i>Research and academic organisations</i>					
<i>Manufacturer associations</i>					
<i>Testing bodies</i>					
<i>Certification and auditing bodies</i>					
<i>Supplier associations</i>					
<i>User and purchaser associations</i>					
<i>Employer and industry associations</i>					
<i>Professional and technical bodies</i>					
<i>Unions and employee associations</i>					
<i>Consumer and community groups</i>					
<i>Government and regulatory agencies</i>					
<i>Independent experts</i>					
<i>New Zealand stakeholders</i>					
<i>Other</i>					

Section 4: Declaration

Please check that your proposal is complete and all fields have been filled out. Read and complete the declaration, then forward this proposal and any attached documents to Standards Australia at SEM@standards.org.au. The named proponent is deemed to have approved the information contained within this proposal and this declaration.

This declaration is a mandatory requirement and proposals will not be considered without it.

<p>I consent to Standards Australia making information relating to Standards development projects public, including information contained within a proposal form I have submitted in part or in full. In the event that Standards Australia publishes proposals on its website, proponent details at page 1 and stakeholder contact details provided at Section 3 will not be included. However, with prior agreement, my contact details may be provided to interested parties wishing to contribute or comment on the proposal or the proposed project.</p> <p>The information provided in this application is complete, true and accurate to the best of my knowledge. I believe the proposed document will result in Net Benefit¹⁰ to Australia. I have consulted with, and have the support of, national organisations with a relevant interest in this project.</p>	
Name of proponent	
Date of declaration	

¹⁰ As defined in the [Guide to Net Benefit](#)

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See the Standards Australia [Privacy Policy](#) for more information.

Section 5: Instructions and notices

To submit this proposal for Standards Australia consideration:

1. You must complete every section of this form and then submit your initial proposal draft to an [Engagement Officer](#). Use simple, non-technical and concise language and do not use jargon of any kind. For additional information, visit the "[Submitting a Proposal](#)" page on our website.
2. The Engagement Officer will conduct the preliminary review of this form and then guide you as to the next steps.
3. Final submissions, along with evidence of stakeholder support, have to be provided electronically to Standards Australia (SEM@standards.org.au). Please note: you should circulate your proposal to stakeholders and collect evidence of support before submitting this form to SEM@standards.org.au.

If you have any trouble with the form, you can contact us on (02) 9237 6000, 1800 035 822, or email us at SEM@standards.org.au.

For identical adoptions of International Standards please complete the [Proposal Form – Identical Adoptions](#).