



ENGINEERS
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Engineers Australia Submission

Environmental Planning and Assessment
(Development Certification and Fire Safety)
Amendment (Fire Safety) Regulation 2022
October 2022



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Introduction

Engineers Australia (EA) is the peak member-based professional association for engineers. Established in 1919, Engineers Australia is constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community.

The term 'community' is used in its widest sense, and the issues raised in this submission seek to improve outcomes for everyone. Engineers Australia's contribution is designed to help create a legislative framework to deliver a better-performing engineering sector with clearer accountability of those involved.

Our work is supported by around 100,000 members, including about 25,000 in NSW. Engineers Australia maintains national professional standards, benchmarked against international norms. As Australia's signatory to the International Engineering Alliance, we are responsible for the accreditation of higher education engineering programs and assessment of experienced engineers against international independent practice standards. Engineers Australia also manages Australia's largest voluntary register for engineers, the National Engineering Register (NER).

This submission is informed by the feedback and advice on the draft Regulations provided by Engineers Australia's NSW-based members.

Engineers Australia supports the NSW government's initiative to add more rigour into the design, certification, and maintenance processes for fire safety provisions in buildings in NSW. The independence of the reviews and certification to reduce defects in fire safety systems is essential to better outcomes. It is noted that while stricter regulation may result in additional costs, these are outweighed by the savings arising from getting designs and construction right the first-time including cost savings for owners and occupiers; and improved safety across whole-of-life through improved construction and maintenance of buildings.

Fire Safety Regulations 2022 Recommendation Summary

A system wide approach to fire safety should be adopted

Whether the overall fire safety strategy includes design elements and systems designed to National Construction Code (NCC) Deemed-To-Satisfy (DTS) provisions or utilizes Performance Solutions, the fire safety of occupants and the protection of the building and fire fighters depends on the **integration** of a number of different fire safety measures. This process of checking to ensure all fire safety measures work together effectively is the role for a registered, competent, fire safety engineer. Engineers Australia believes that a system wide approach will lead to a reduction in defects and an improved fire safety performance in buildings.

FRNSW's involvement in the design process is welcomed but the reviewers must have the competence and the capacity to add meaningful review and value to the process.

FRNSW need to give consistent professional advice through the different stages of a project if they are to conduct reviews and provide recommendations. There must be regulatory provisions for when and how FRNSW are involved in review and recommendations for the Performance Based Design Brief (PBDB) and the Performance Based Fire Report (PBFR). FRNSW personnel undertaking these reviews must be suitably qualified and experienced in the associated field of work and must complete their work in a way that is not overly onerous on project timelines and costs.

Further information is required around whether professional engineers need to be registered under the *Building and Development Certifiers Act 2018* as well as the *DBP Act 2020* to provide fire safety certificates.

It is unclear whether the intention of the legislation is to require professional engineers to be registered under the *Design and Building Practitioners Act 2020* (DBPA) as well as registered under the *Building and Development Certifiers Act 2018* to provide fire safety certificates. This extra level of registration will come with associated costs and obligations that may be passed on to consumers. Any increase in costs must be carefully considered by NSW Government.

Engineers Australia also advocates for the registration of all engineers, not just those who work in fire safety or on class 2 buildings.

A System Wide Approach to Fire Safety

There is a thread flowing through this Regulatory Impact Statement (RIS) that fire safety in buildings is simply a set of fire safety systems, which can be listed on the FSS and AFSS, and which can be designed, installed, inspected, and endorsed by a series of accredited assessors. The implication is that the systems are independent of each other. Whilst this is an easier way to think about fire safety in a building, it fails to capture the complexity and interrelatedness of how these fire safety systems work.

Whether the overall fire safety strategy includes design elements and systems designed to NCC DTS provisions or utilizes Performance Solutions, the fire safety of occupants and the protection of the building and fire fighters depends on the integration of a number of different and often co-dependent fire safety measures.

For example, for a smoke hazard management system to work effectively and protect people and fire fighters in either an atrium or a major airport or shopping centre, depends upon:

- The fire detection and alarm system
- Automatic sprinklers
- EWIS and exits signs
- Smoke control mechanical systems
- Provisions for supply air through door openings
- As well as links to the fire brigade and complex controls.

It is the combination of these systems working together effectively that enables occupant protection. Designers need to put in place a cause-and-effect matrix for all systems that is tested in inspection and commissioning prior to Occupation Certificate (OC).

Another example is a high-rise building using lifts as well as stairs for evacuation. Safety depends on the design and construction of stairs, lift design and controls, protection around the lifts and stair, stair pressurization, management procedures and other fire safety measures.

While independent certification of each of the fire safety systems is very important, as set out in the regulatory reform package, the revision of the fire safety regulations needs to reflect the need for checking and certification of the **integrated** systems and their system-of-systems effectiveness to deliver safety as per the Performance Based Design Brief (PBDB) and Performance Based Design Report (PBDR).¹

This integrated checking is the role for a registered, competent, fire safety engineer who will need to work closely with all fire systems practitioners to ensure all fire safety measures work together effectively.

For this proposal to work practically, system wide integration thinking must be embedded from the start of the design process and carried out until the issuance of the OC. An independent fire safety inspection and certification conducted just before completing the fire safety certificate, while appealing for time and cost considerations, is an inadequate approach. Competent and ethical engineers are unlikely to be interested in accepting responsibility for works that they were not involved in. It is essential that these independent assessors are involved throughout the entire construction process to avoid builders attempting to conceal defects behind construction.

This integrated and coordinated system wide approach requires further work in order to provide clear guidance of expectations and requirements, but given the identification of fire safety errors in buildings soon after the OC is a current and significant problem, an interim (and much simpler) step, would be to require the first independent annual assessment (for AFSS endorsement) to be carried out before the OC, so the Owners can be confident that their building should be endorsed again 12 months later. This could be an interim course of action the NSW Government can take while a transition to a more complete regulatory solution is developed.

Engineers Australia believes that this system wide approach will lead to a reduction in defects and an improved fire safety performance in buildings. This ultimately benefits the community.

¹ The PBDB and PBDR are both required in the Australian Fire Engineering Guidelines (AFEG) and by the NCC/BCA at Section A2.2 (4) (d), although the NCC/BCA has no definition of the term PBDR at this stage. However, such a definition should be included in the new NSW Regulation.

Regulatory Impact Statement

This section provides feedback on the proposed Regulatory Impact Statement.

Glossary

1. The Glossary identifies the NCC as “the minimum required level for safety, health, amenity accessibility and sustainability of certain buildings...”, however this is incomplete. There are numerous additional mandatory requirements that are called up by other regulations that are not captured by the Regulation’s limited NCC scope.
2. The definition of ‘performance-based design brief’ (PBDB) should be amended to recognize that the PBDB for fire safety is only the first part of a process for defining the fire safety measures on which construction could be undertaken. The PBDB is preliminary and qualitative only and must be followed by appropriate modelling, calculations and other analysis and arguments that should be incorporated in a Performance Based Fire Report (PBFR).
3. There should be another definition added for the PBFR which is the final document in which the design should be acknowledged by relevant stakeholders and approved before the issuing of a Construction Certificate.

Chapter 4: Objectives

Engineers Australia generally agrees with the objectives outlined in the RIS.

Chapter 5: Options for Achieving Objectives

Engineers Australia supports adopting AS 1851 for national consistency (transfer of engineering knowledge, skills, resources, etc). Note however that AS 1851 is about to be revised, so the ‘2012’ edition reference should instead be revised to state the use of the latest edition.

Note also that AS 1851’s reliance on an “Approved Design” enables activities to be applied relative to the requirements of each different building’s approvals, and not only the latest Codes and Standards.

Chapter 6: Consultation with Fire and Rescue NSW

As mentioned in the RIS, FRNSW have long been involved in reviewing development proposals involving fire safety. Whilst their further involvement is welcomed, reviewers must have the competence and relevant experience, in addition to the capacity to add meaningful review and value to the process in a timely fashion, which has not always been the case in the past. FRNSW must complete their work in a way that is not overly onerous on project timelines and costs otherwise this proposal threatens the commercial viability of the building sector. These reforms introduce the opportunity for a more collaborative process going forward.

The remit of FRNSW must be considered and clearly described. The Australian Fire Engineering Guidelines already provides details about stakeholders and notes that only **relevant** stakeholders should be included. It is not practical nor beneficial for the industry to consider FRNSW a relevant stakeholder for every issue. Structural engineers would not be considered a relevant stakeholder for a hydrant location issue, just the same FRNSW are not a relevant stakeholder for a 950 mm path of egress in a bathroom. It is suggested that the relevant (for FRNSW) building work should be tied to Category 2 issues only, or issues that only are relevant to overall fire safety of the building which must clearly outlined.

FRNSW can only be the appropriate body to review non-standard designs, if their engineers are appropriately qualified, registered and have a sufficient level of training and experience. If this is not the case, peer review by a qualified, registered engineer would be more appropriate and beneficial. EA members have experienced situations where FRNSW reject performance solutions due to ‘policy’, with no valid engineering reason provided. This has the potential to stifle innovation. FRNSW need to give consistent and qualified professional advice through the different stages of a project if they are to take on review and provide recommendations.

Regarding Opt-in consultation on performance-based design briefs – this proposal is supported, but there must also be similar regulatory provisions for when and how FRNSW are involved in review and recommendations for the PBFR. Any risk analysis should be transparent and open to all consultants.

Chapter 7: Mandatory Fire Safety Template

Engineers Australia supports the adoption of a standardised fire safety template but would require more detail on what is covered in the template and associated guidance material to ensure that it is adequate for use by practitioners.

Chapter 8: Fire Safety System Certifier

Current Requirements

This section includes the following:

“After installation, the final or interim certificate must certify each essential fire safety measure required in the building (i.e., listed on the Fire Safety Schedule) has been assessed as capable of performing to at least the standard required by that schedule. The assessment process includes inspection and testing.”

There is no current requirement for qualified and/or accredited practitioner (fire safety) to check and endorse that all essential fire safety measures fit and work together effectively in an integrated manner to provide fire safety protection to occupants and fire fighters. This is a crucial omission which must be corrected. That assessor should be a fire safety engineer who will need to work closely with all fire systems practitioners to ensure all systems work together effectively. For further details please refer above to ‘a system wide approach to fire safety’.

New requirements for fire safety assessors

It is unclear whether the intention of the legislation is to require professional engineers to be registered under the *Building and Development Certifiers Act 2018* in addition to the *Design and Building Practitioners Act 2020* to provide fire safety certificates. This extra level of registration will come with associated costs and obligations that may be passed on to consumers. Any increase in costs must be carefully considered by NSW Government.

Further information is required on the timeline of implementation of the phased approach to accreditation.

Further information is also required on the experience, training, audit, and qualification requirements in the scheme.

Independent assessor who is not the installer

The statement is made “The assessor can work in the same company as the installer without creating a conflict of interest.” It is noted that the objective of this 'no conflict' clause is to permit smaller regional companies to survive however there will always be a conflict of interest where there is a linked pecuniary interest. Engineers Australia recommends that the Engineer of Record concept is adopted to avoid this conflict of interest. More information about the Engineer of Record can be found here: <https://www.engineersaustralia.org.au/sites/default/files/2022-06/use-engineers-improve-building-construction-report.pdf>

Chapter 9: Mandatory Routine Servicing

Engineers Australia supports adopting AS 1851 for national consistency.

Chapter 10: Corrections to Fire Safety Schedules

The Fire Safety Engineer may have developed a performance solution initially, but modifications over time to individual subsystems mean that overall system may not work as originally intended. Further clarification is required around how the overall fire safety system is to be tested for compliance with the Performance Solution once a modification has been made. This could be linked back to the process for variations outlined in section 20 of the DBPA.

Proposed Fire Safety Regulation 2022

This section provides feedback on the proposed Regulation.

Schedule 1: Amendment of Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021

Section	Comment
[6]-[9] Section 27 & 28	This is a long timeframe. Small projects, such as an office fit out would normally take this long to do the design and get CDC. Now timeframes may be untenable. Refer response to Chapter 6 for further information.
[19] Section 80 A (5)	Should "principle certifier" be replaced with 'principal certifier'?
[20] Section 81A (3)	Add italicised text: (c) Servicing, <i>including replacement of faulty equipment</i>
[21] – 81B (3)	Commissioner should respond in the negative as well as the positive. If there is no requirement to advise that comments will not be provided within the 10 working days, the project will be on hold for 30 days to no benefit.

Schedule 2: Amendment of Design and Building Practitioners Regulation 2021

No Comment

Miscellaneous

The NSW Government should amend the requirement in Section 40 of the Regulation for the written report provided to the certifier to be the same person who prepared the Performance Solution Report. Whilst it is acknowledged that this is the ideal scenario, due to the familiarity the practitioner would have with the project, EA members have reported difficulties in fulfilling this requirement due to issues with persons being:

- On leave
- Sick
- Retired
- Having changed company

As with other legislation, the written report should, under extenuating circumstances, be able to be undertaken by an appropriately qualified person.



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