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Senate inquiry into non-conforming building products

Questions on Notice

10 August 2017



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Engineers Australia responses

1. Could you please explain the 'deemed-to-satisfy' and 'performance based' provisions in the National Construction Code? How difficult would it be to develop a definitive guide and interpretation of what is allowed?

The Australian Building Codes Board (ABCB), on its website, states that “a Performance Solution is unique for each individual situation. These solutions are often flexible in achieving the outcomes and encouraging innovative design and technology use. A Performance Solution directly addresses the Performance Requirements by using one or more of the Assessment Methods available in the NCC.”

The ABCB explains that a Deemed-to-Satisfy Solution “follows a set recipe of what, when and how to do something. It uses the DTS Solutions from the NCC, which include materials, components, design factors, and construction methods that, if used, are deemed to meet the Performance Requirements.”

A definitive guide might be possible for following the performance solutions process, but verification of a performance solution is part of the project's certification process and may not be recognisable without a comprehensive review of each building's design documentation (including the certification documents). What's right for one project may be wrong for another.

2. The Australian Building Codes Board has issued a series of bulletins, brochures, practice notes and clarifications on the contents of the BCC/NCC and the interpretations thereto pertaining to “deemed-to-satisfy” and “performance based” methods of construction provisions of the code. What is your view on the work being done by the Australian Building Codes Board?

Supporting information is generally quite good and seems to be more accessible. However, more input is needed. The Australian Building Codes Board (ABCB) should be addressing specific questions by practitioners to avoid issues of misinterpretation that led to the mistakes of the past. This is quite common in the United States and has led to a very high level of safety and quality of building construction.

The ABCB has also published a number of new handbooks.

These documents are however informative only and not always of suitable or consistent quality. The words written in the National Construction Code are those that must be adhered to. If further guidance is found to be necessary, then clarification of the Code itself is required. The ABCB has a Proposal for Change process allowing feedback to encourage these changes.

3. The National Construction Code currently has a pathway which permits the use of Polyethylene core composite panels equivalent to that used on the Grenfell Tower, under the 'deemed-to-satisfy' provisions. Are there legitimate uses for such materials in some building projects, or should they be banned?

There may be legitimate uses and the performance based Code would permit this, provided the application is assessed in accordance with Clause A0.5 (which may include a certificate from a "professional engineer").

Banning materials or products could inhibit innovation and improvement in other areas, while missing limitations on equally dangerous applications of other (or new) products. The focus must remain on the Performance Requirements and then improvement on the regulatory approvals processes. It is likely that under Construction Types (NCC Part C1), the existing Performance Requirements already prohibit the use of these composite panels in some applications.

4. What do you consider to be the primary factor leading to the use of non-compliant external cladding materials? For example, is the issue with importation, fraudulent certification or just product substitution?

As explained by various witnesses in evidence to the committee, it would be difficult to isolate a single issue that leads to the use of non-compliant external cladding materials. As noted by Engineers Australia and others, cladding could be compliant for one type of building but non-compliant for another. A material may be compliant but installed incorrectly, making it a risk to the building. Material may be substituted with product which is non-compliant or has not been tested to Australian Standards.

In each of these instances, however, ensuring that the material is compliant, correctly installed, tested and not substituted requires a transparent set of compliance rules and checks from design through ordering, amendments to plans, installation and final certification for occupancy. The critical issue is to identify where these processes fail.

Much of this can be solved, in the short to medium term, by enforcement of state and territory regulations.

There is an associated discussion about non-conforming systems. These systems may be made up of fully conforming products, but be poorly designed, installed, commissioned or maintained and therefore a risk to the building occupants and the community.

5. Would you consider that the enforcement and audit regime has failed? Could this be addressed with a nationally consistent approach across jurisdictions?

Engineers Australia encourages the creation of a more nationally consistent approach to enforcement and auditing.

6. Should it be mandatory that testing of imported products be conducted in Australia? What would be the implications of such a move?

The largest issue facing any mandatory testing of imported products will be cost in terms of slower product delivery and the cost of testing itself.

Engineers Australia recommends that a product testing regime be examined in a cost benefits analysis and in conjunction with other mechanisms such as better enforcement of building regulations. This may include controlled and monitored testing in countries of origin, which has been shown to be economical and effective.

7. The committee heard evidence at its hearing on 14 July 2017 suggesting that there could be thousands of buildings in Australia with non-compliant external cladding materials. Would you agree with that assessment?

Yes. Engineers Australia is aware, for example, that within the Sydney metropolitan area alone, approximately 1,000 properties may be affected by non-compliant cladding materials. This figure was provided by the NSW Government during its program of auditing and advice to owners of buildings that have been identified as likely to have cladding worthy of re-assessment.

8. In what ways could the Australian Building Codes Board improve its guidance information on the types of evidence of sustainability and the building products that should be aligned with each type of evidence based on their risk?

Evidence of where the process has broken down will be required, before changes can be made.

Responsibilities and consequences need to be developed and enforced for those who choose to be involved in work involving fire safety systems without adequate training, knowledge, understanding or experience.

The current process for approval to occupy a building requires a certifier to be satisfied that the performance requirements of the Code have been met. In many cases, a certifier will rely on a statement received from a contractor (paid by the builder), stating that their systems comply. Engineers Australia is unaware of any processes in place to ensure this process delivers the desired safety outcome. Enforcement of this obligation may be outside the scope of the Australian Building Codes Board's current authority, but such a change is worth investigating.

9. In your view, are the current penalties for knowingly selling non-compliant product, installing it, or importing it directly for use in Australia adequate?

It is difficult to ascertain the effectiveness of the current penalties due to lack of data on cases.

10. What is your view on the work of the Building Ministers' Forum and the Senior Officers' Group in addressing non-conforming and non-complying products? Were there any recommendations you would have included in the Senior Officers' Group report, *Strategies to address risks related to non-conforming building products*?

Engineers Australia is of the view that the Building Ministers' Forum (BMF) could address issues of non-compliant products and issues in the industry more effectively. As the BMF is the representative body for Building Ministers across the country, issues that create risk or are of immediate risk could be uniformly dealt with at this highest level forum.

Engineers Australia provided comment to the Senior Officer Group's strategies paper during its consultation phase in April 2016. A copy is available here:

[https://www.engineersaustralia.org.au/sites/default/files/content-files/2016-12/letter - engineers australia - ncbp - 20160415.pdf](https://www.engineersaustralia.org.au/sites/default/files/content-files/2016-12/letter_-_engineers_australia_-_ncbp_-_20160415.pdf).

11. Have you been involved or consulted in the Australian Building Codes Board's work developing a comprehensive package of measures to improve fire safety in high rise buildings?

Yes, Engineers Australia has been consulted, through our representative on the Australian Building Codes Board's (ABCB) Building Codes Committee (BCC), during the development of the comprehensive package of measures to improve fire safety in high rise buildings.

The BCC has had exposure to not only the comprehensive package, but also more detailed input to some of its elements during its development.

Following the Lacrosse fire, industry has had the opportunity to contribute to the work of the ABCB through the consultation Regulatory Impact Statements that have been released on product certification schemes, through which the comprehensive package was derived.

The comprehensive package as a piece of work has also been supported by a board that includes industry representation, but ultimately through the Building Ministers Forum.

Industry has had substantial opportunity for input since early 2016 via the ABCB website and in other forums.

12. Do you consider that fire safety engineers receive sufficient specific training?

As noted in our original submission to the committee, there is lack of specific training for fire safety engineers in Australia that would have international recognition. That is, Australia does not have an undergraduate engineering programme in fire safety engineering, and Australia does not yet have a post-graduate engineering program in fire safety engineering that would be accepted world-wide.

In Australia, education in fire safety engineering is not provided through an undergraduate program. Instead, an engineer first qualifies in another discipline which may or may not be in engineering, and then conducts further specialist studies. There are three universities that provide graduate level programs in fire safety engineering (Victoria University, Western Sydney University and The University of Queensland).

Engineers Australia accredits entry-to-practice engineering programs, which means that those fire safety engineering courses provided at the graduate level are not at present accredited.

The result is that Australian qualifications in fire safety engineering are less well recognised internationally.

The overall effect of this situation is that career paths for fire safety engineers is not as well defined as in other nations, and Australia will continue to be quite reliant on skilled migration to meet workforce needs.

The issue of accreditation of training programs can be resolved, and Engineers Australia is capable of developing a suitable accreditation scheme if there is demand from providers.

13. Is there a nationally consistent licensing and registration regime for fire safety engineering? How can this be improved?

No. Despite the urging of Engineers Australia and other bodies over many years, governments have largely failed to implement a registration system suitable for engineers. Engineers Australia is filling this gap with the voluntary National Engineering Register (NER), though a statutory basis for registration for engineers is still necessary.

Australia, as a whole, does not have any prescriptions to protect the qualification of engineer. Other Organisation for Economic Co-operation and Development (OECD) nations such as Canada, the United States and New Zealand have enacted legislation that preserves and protects the term engineer to those members of the profession who have qualifications in engineering.

Due to the fact that Australia does not recognise engineers in legislation, persons with either no qualifications in, or little experience in, engineering may call themselves engineers. In Victoria, for example, regulations have been passed that will allow a person with no previous qualifications in engineering, who completes a post graduate certificate in knowledge of the building code with relation to fire, to register with the government as a fire safety engineer.

As noted in evidence to the committee by Engineers Australia, fundamental to fire safety engineering is knowledge, experience and qualifications in a variety of engineering fields such as structural, civil, mechanical and chemical engineering.

Engineers Australia has been advocating for many years for better registration of engineers, however these calls have not resulted in positive action. This led to Engineers Australia establishing the NER.

This register allows for all engineers to be benchmarked against relevant standards and provides a transparent service to the community.

Although there is movement towards registration in some states and territories, it remains the view of Engineers Australia that there is a lack of consistent activity and a lack of urgency to progress legislation which will create a suitable registration scheme.

14. The VBA External Cladding Audit Report observed that ‘There are many types of external cladding material in use throughout the Victorian building industry but whether one is “fit for purpose” over another is not always properly understood by architects, designers, engineers, building surveyors and builders.’ What measures should be introduced to address this issue?

Better education of professionals on which types of materials are fit for purpose. Additionally, better enforcement and monitoring of that education would assist in ensuring that the industry is up to date with changes in innovations in materials and use of those materials. Enhanced and targeted guidance from the Australian Building Codes Board would assist in this process, along with structured guidance from regulators and industry associations

15. How important are third party certification schemes and should they be mandatory?
How could the CodeMark system be improved?

These should exist and be encouraged to streamline some aspects of the design and approvals process, supporting cost savings, consistency and improved consumer protection. However, there needs to be third party review and oversight as the current system often allows inappropriate products to be certified for the incorrect use and application.

16. At the committee's hearing on 14 July 2017, Mr Neil Savery of the Australian Building Codes Board, observed that the industry had changed dramatically in recent decades, with deregulation and globalisation, making it harder to ensure buildings were built to certain standards. Mr Savery also noted that a sophisticated performance-based code of regulation was introduced in the early 1990s, which needed highly qualified people to understand how it works. At the same time, former government-run building certification was privatised, and the industry underwent a process of deregulation, for example a reduction in things like mandatory inspections.

- Do you consider that the current regulatory regime needs to be reviewed to reflect the changes in the industry resulting from trends towards deregulation and globalisation?
- Do you consider the incremental introduction of private certification has had an effect on building safety and standards?
- Do you consider that certification services should be run by local and state governments again?

Engineers Australia considers that a review of the current regulatory system is required.

Much has been stated about the role of certifiers in the construction sector, specifically in regards to the devolution of certifiers from local government to private certification.

The cost and regulatory savings that this move has brought to the construction sector has been very significant. The savings have primarily been from speeding up the approval process. However, it would be difficult to gauge whether the transfer from a fully government operated certification system to a private certification system is a root cause to changes in safety and standards.

While, in the short term, a transfer back to local government certification may bring about change, over the longer term ensuring that regulatory systems are functioning correctly and properly enforced is the fundamental change that must occur.

Tightening up the certification system in line with industry and public expectations operating in a regulatory environment that is regularly updated, tied in with industry standards of practice, and enforcement mechanisms that are robust and accountable will be a better formula both for the industry and the public.



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