

Chapter 2

Examples of non-conforming building products

2.1 The issue of non-conforming building products affects a range of sectors—construction, manufacturing and retail. Some specific issues were covered in the interim reports on products containing asbestos and the non-compliant use of aluminium composite cladding. This chapter presents a range of examples from other sectors where non-conforming building products have been identified, including electrical, lighting, plumbing/water, wood, steel, and vinyl/PVC.

2.2 The Ai Group's report, *The quest for a level playing field: The non-conforming building product dilemma*, was based on the survey responses from 222 participants and interviews/discussions with a similar number of stakeholders. The report found that:

...92% of all respondents to Ai Group's survey reported NCP in their supply chains. Local producers conforming to relevant standards and regulations can be at a competitive disadvantage when the price at which a competing product is sold reflects lower levels of attention to the quality that is required under Australia's conformance framework. Immediate business impacts of this uneven playing field are usually in the form of eroded margins and reduced revenues. According to this survey, that is happening to 45% of companies in this sector.¹

2.3 The Australasian Procurement and Construction Council (APCC) highlighted the importance of the construction industry, noting that productivity in this industry is critical to Australia's growth and the economy.² In 2016–17, the building and construction industry accounted for 7.4 per cent of Australia's gross domestic product (GDP), and employed 9.2 per cent of the workforce.³

2.4 The APCC informed the committee that it is 'increasingly concerned about the compliance and durability of construction products as the potential risks to the community and construction industry workers are immeasurable and should not be underestimated'.⁴

Electrical

2.5 The National Electrical and Communications Association (NECA) raised concerns about the impacts of non-conforming products for the electrical contracting

1 Ai Group, *Submission 46*, p. 7.

2 Australasian Procurement and Construction Council (APCC), *Submission 1*, p. 1.

3 Office of the Chief Economist, *Industry Insights: 1/2018 Flexibility and Growth*, 2018, p. 26, <https://publications.industry.gov.au/publications/industryinsightsjune2018/globalising-australia.html> (accessed 1 November 2018).

4 Australasian Procurement and Construction Council (APCC), *Submission 1*, p. 3.

sector. Of particular concern was the presence of counterfeit and non-conforming products in the supply chain, manifesting as threats to:

- the risk of electrical fire and shocks;
- property damage;
- legal liability issues;
- serious injury and death;
- cost to businesses operating with the supply chain of the electrical sector;
- industry reputation; and
- consumer confidence.⁵

2.6 An example of counterfeit products was provided by HPM Legrand. It informed the committee that it had discovered counterfeit versions of its socket outlets had been manufactured in China and were being sold in Australia without its approval. It noted that although the source had been tracked down and 'with the help of the New South Wales office of fair trading they were successfully prosecuted and fined because they were [using] the RCM mark without a licence. Unfortunately the fine was relatively small at \$8000, which was not much of a deterrent'.⁶

2.7 Master Electricians Australia (MEA) pointed out a number of circumstances where the cost of faulty products may be passed on to consumers. For example, in circumstances where a contractor is not in a financial position to remove and replace the faulty product without charge, the customer may be left to pay for the work to be completed out of their own pocket.⁷ In addition, there could be financial repercussions when homeowners come to sell their properties if they only become aware of faulty products upon inspection. There may also be adverse consequences for homeowners who do action a recall, noting that in circumstances such as with Infinity cable:

...the ACCC [Australian Competition and Consumer Commission] recall did not apply to the funded removal and replacement of cable located in the inaccessible areas of a home. Should these inaccessible areas include the cable a sign must be attached to the switchboard notifying anyone to the presence of the cable. Informing potential buyers about the presence of dangerous cable is likely to deter many purchasers and make the property virtually unsaleable. Alternatively, it could cost the homeowners a large sum of money to pay a contractor to enter these inaccessible areas to remove and replace the cable.⁸

2.8 Ms Leigh Evans' submission to the inquiry outlined her serious concerns surrounding non-conforming building products in the SmartSpace Kit Home which she had purchased from Bunnings in 2013. Ms Evans documented the 'severe financial

5 National Electrical and Communications Association (NECA), *Submission 60*, p. 3.

6 HPM Legrand, *Submission 59*, p. 1.

7 Master Electricians Australia, *Submission 4*, p. 3.

8 Master Electricians Australia, *Submission 4*, pp. 3–4.

and personal impacts I have suffered because of the travesty of being supplied noncompliant and defective components in my house'.⁹ Electrical Components in SmartSpace Kit Homes supplied by Bunnings prior to July 2015 have since been the subject of a product recall noting the risk of electrical shock and fire posed by the following defects:

The cables have failed some of the required ageing tests of AS/NZS 5000.2. The insulation could become prematurely brittle with age. If the insulation becomes brittle and the cables are disturbed, the insulation could break and expose live conductors, resulting in possible electric shock or fires.

The circuit breaker and RCD [Residual Current Device] do not pose a safety risk, however these components are not approved for sale in Australia.¹⁰

2.9 MEA highlighted the considerable workplace safety risks that faulty, non-conforming electrical products may carry. As well as the occupants themselves, tradespeople who may come into contact with these items while working in homes and buildings are particularly at risk of direct exposure to faulty electrical products.¹¹

2.10 The Electrical Trades Union also highlighted the risks to tradespeople:

Dodgy imported products represent a risk for workers where issues can lie dormant for years before becoming apparent when regulators must go through significant time and expense of a costly product recall.¹²

2.11 Further, MEA was concerned that faulty electrical products may result in insurance costs to consumers:

Insurers will insure buildings based on an expectation that all electrical installations and equipment in the building comply with the relevant standards. If some of the wiring in the property does not comply with the standard and the insured does not disclose this as a materially relevant fact to the insurer and there is a subsequent claim arising out of, caused by, or contributed to by the defective cable, the insurer is likely to refuse to cover the insured on the basis of nondisclosure of a materially relevant fact.¹³

Lighting

2.12 The Lighting Council Australia noted that its members spend a considerable percentage of their turnover on ensuring their products are conforming, and are concerned that competitors who do not comply with Australian laws and safety

9 Ms Leigh Evans, *Supplementary Submission 143.1*, pp. 1–2.

10 Australian Competition and Consumer Commission, *Bunnings Group Limited—SmartSpace Kit Home Electrical Components*, PRA No. 2018/16768, 10 May 2018, <https://www.productsafety.gov.au/recall/bunnings-group-limited-smartspace-kit-home-electrical-components> (accessed 1 November 2018).

11 Master Electricians Australia, *Submission 4*, p. 3.

12 Electrical Trades Union, *Submission 14*, p. 3.

13 Master Electricians Australia, *Submission 4*, p. 3.

standards are operating with a significant market advantage. It raised a number of concerns arising from reports that non-conforming lighting products are increasingly available in the Australian market:

- Unsafe (not complying with safety standards) lighting products will continue to pose a shock and fire risk to workers, consumers and installations;
- False product claims (lumens output, lifetime, energy efficiency) will continue to result in reduced productivity including energy productivity, non-conformance with building regulations and the need to replace products before their claimed life;
- Reduced professionalism in the industry will continue leading to a further decline in safety outcomes and productivity;
- Non-conforming products are overstating their lumen output resulting in underperforming and unsafe installations—the National Construction Code requires lighting levels and standards to be met so that particular tasks, such as safe movement, orientation and particular work tasks, can be undertaken in a safe and efficient manner;
- Non-conforming new technology products that do not live up to product performance claims are removed and replaced with less efficient technology;
- Lighting Council and our members report an increase in new lighting product suppliers with little or no product knowledge who are purchasing, importing and installing non-conforming products;
- Product certification information has proven to be false and certification logos are used in advertising without agreement or justification.¹⁴

Windows and glazing

2.13 The Australian Window Associations (AWA) reported that the amount of non-conforming imported windows, doors and other glass and aluminium based products including curtain walls, balustrades and balconies products on the Australian market has reached significant proportions. AWA reported that failures due to non-conforming glass products may include 'glass breakage, excessive water damage, gross deflection, hot box effect—often leading to irreparable damage to the building envelope, people getting cut (even fatally) or running costs prohibitively high'.¹⁵

2.14 AWA reported the growth of fraudulent documentation in this industry, as well as flawed testing and reporting being conducted in overseas laboratories, as significant threats to this sector.¹⁶ It stated that:

14 Lighting Council Australia, *Submission 32*, pp. 1–2.

15 Australian Window Association, *Submission 5*, p. 2.

16 Australian Window Association, *Submission 5*, p. 1.

In 2003, with almost 300 member companies the AWA received three requests a year to deal with product or installation issues, in 2013 with more than 600 member companies, the AWA received three requests a week. Year to date 2015, we have received up to six requests a week. The issue is getting worse, not better and more compliant companies are closing as they can't compete.¹⁷

2.15 AWA noted that the nature of the high-rise residential and office market, in which windows and doors tend to be consistent dimensions through all the levels, lends this market to high volume importation, subsequently leading to a higher prevalence of non-conforming products.¹⁸ The Building Products Innovation Council (BPIC) provided an example where non-conforming glass was discovered in a large building project leading to additional costs for the developer:

The replacement of sub-standard glass at the 150 Collins St building project in central Melbourne is estimated to cost \$18 million. Grocon has revealed ...it has to replace half the glass in the \$180 million building. The glass came from Chinese supplier, China Southern Glass.¹⁹

2.16 The Australian Glass and Glazing Association (AGGA) noted that the manufacture of safety glass is one of the main areas of potential risk of non-conforming glass products. Of particular concern is the safety risk for glass processors and installers where glass has not been toughened appropriately and can therefore break more easily when it is handled, thus posing a risk of injury. AGGA also observed:

Of particular concern is the hazard it poses for the 'DIY' market where product can be purchased 'off the shelf' and installed by unskilled labour. General consumers are unlikely to understand the standards required for safety glass and thus it is easier for non-compliant product to enter the market through these channels.²⁰

2.17 The AGGA also pointed to the risks associated with non-conforming double glazed products:

Insulated glass units, commonly known as double glazing, can also fail if they are not manufactured correctly. Failures typically happen over time and result in the seal being compromised, leading to internal condensation ('fogging') that reduces performance and visual amenity. Whilst such failures do not present major safety issues the costs of replacement can be substantial when they are part of a building façade.²¹

17 Australian Windows Association, *Submission 5*, p. 1.

18 Australian Window Association, *Submission 5*, p. 2.

19 Building Products Innovation Council, *Submission 83*, p. 1.

20 Australian Glass and Glazing Association, *Submission 24*, p. 3.

21 Australian Glass and Glazing Association, *Submission 24*, p. 3.

Plumbing

2.18 Plumbing Products Industry Group Inc. (PPI Group), highlighted the potential public health risks relating to plumbing products and the importance of ensuring product conformance. It provided a number of examples to demonstrate the public health risks associated with the failure of plumbing systems:

- Loss of life through the outbreak of severe acute respiratory syndrome (SARS) in Hong Kong;
- Spread of the infectious organisms, *Cryptosporidium* and *Giardia*, through the Sydney water supply;
- Reported cases of water borne disease outbreaks in the USA causing some 443,000 reported cases of illness; and
- The World Health Organisations (WHO) concerns with respect to substandard plumbing leading to legionellosis and other water borne illnesses.²²

2.19 An area of escalating public concern is the potential level of lead in taps. The opening of the Perth Children's Hospital was delayed by nearly three years due to lead contamination in drinking water caused by brass tap fittings,²³ and in 2017, the Queensland Building and Construction Commission (QBCC) raised concerns about lead levels in taps sold at Aldi.²⁴ Subsequently, Aldi informed the ACCC that it had undertaken testing of its tapware through a NATA accredited laboratory which showed the taps to be within normal lead levels.²⁵

2.20 BPIC reported instances where plumbing products have failed in regards to heavy metal contamination in sanitary grade products.²⁶ As well as products that fraudulently claim to meet the requirements under the Water Efficiency Labelling and Standards (WELS) scheme:

The WELS Regulator has noted the increased supply of non-conforming showers into the Australian market from overseas manufacturers. These instances of non-conformance include showers supplied without flow controllers, with substituted flow controllers or flow controllers supplied

22 Plumbing Products Industry Group Inc., *Submission 84*, p. 1.

23 John Rolfe, 'Safe Water's flow-on effect', *Adelaide Advertiser*, 26 November 2018, p. 9.

24 John Rolfe, 'A kitchen tap sold by Aldi has been found to contain dangerous levels of lead', *News Corp Australia Network*, 16 December 2017, <https://www.news.com.au/finance/business/retail/a-kitchen-tap-sold-by-aldi-has-been-found-to-contain-dangerous-levels-of-lead/news-story/bdba66667e0d15fe0e6a9fa0d7c8506d> (accessed 28 November 2018)

25 Australian Competition and Consumer Commission, <https://www.productsafety.gov.au/news/aldi-tapware-test-result-update> (accessed 29 November 2018)

26 Building Products Innovation Council, *Submission 83*, p. 3.

separately. These products use more water than their WELS label indicates, therefore consumers are being provided with fraudulent information.²⁷

Engineered wood products

2.21 Engineered wood products include interior and exterior plywood products, structural plywoods used for formwork, residential and commercial flooring, wind and earthquake bracing, and feature cladding; and Laminated Veneer Lumber and I-beam products used in both commercial and residential structures.

2.22 The Engineered Wood Products Association of Australia (EWPAA) submission stated that the engineered wood products sector is experiencing significant problems with product non-compliance, both in the construction phase (for example, in relation to the structural performance of building and construction materials), through to the impact of materials in completed buildings on occupant health and safety (for example, from structures that do not perform their function to protect against storms and cyclones, through to the risk of formaldehyde emissions exposure).²⁸

2.23 The Furniture Cabinets and Joinery Alliance also raised concerns about the risk of formaldehyde emissions from engineered wood products and board/panelling materials. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) recommends maximum emission levels for exposure to formaldehyde, as it is a known carcinogen. It noted that:

...as it is significantly 'cheaper to manufacture wood product/board from glues that emit higher levels of formaldehyde, there is an economic driver toward non-conformance of branded emission class. This affects the safety during construction (e.g. cabinetry manufacture where workers are exposed to fresh product for long periods of time) and occupants of buildings.²⁹

2.24 The CFMEU noted the example of a NSW apartment block that had to have all cabinets, which had been imported from China, removed as formaldehyde 'emissions were going through the roof'.³⁰

Steel

2.25 In addition to submissions to this inquiry, the committee's inquiry into the future of Australia's steel industry also received evidence relating to non-conforming building products in the steel industry.³¹

2.26 Bureau of Steel Manufacturers of Australia (BOSMA) provided the following examples of non-conforming products that compete with steel products:

27 Building Products Innovation Council, *Submission 83*, p. 3.

28 Engineered Wood Products Association of Australia, *Submission 12*, p. 2.

29 Furniture Cabinets and Joinery Alliance, *Submission 121*, p. 6.

30 CFMEU, *Submission 74*, p. 5.

31 Senate Economics References Committee, *Australia's Steel Industry: forging ahead*, 1 December 2017, Chapter 4.

- Products with lower metallic coating and/or paint film thickness than required by standards (AS 1397 and AS/NZS 2728).
- Paints with lead content above the 0.1% limit specified in the Poisons Standard - Paints and Tinters.
- Products not marked as per standards requirements (AS 1397).
- Products incorrectly described as BlueScope branded products.
- Products with false or non-compliant test certificates.
- There have been significant increases in prefabricated products and/or modular assemblies where demonstrating evidence of compliant steel mill product being used has been variable.³²

2.27 The Australian Steel Institute (ASI) highlighted the risks of quality issues in a whole range of steelwork from portal frames, guard rails, sheds, bridge trusses and building construction projects. It stated:

Observable defects such as substandard welding that needed to be ground out and replaced, laminations in plate that could cause catastrophic failure, substandard corrosion protection affecting the life of an asset and generally poor workmanship were found unfortunately to be commonplace on imported structural steelwork. There also is a price depressing effect from these imports that affects a sector of local fabricators that are forced to chase price at the expense of maintaining their quality systems and procedures. The knock-on effect is that currently many fabricators and steelwork manufacturing SMEs are unable to maintain a reasonable profit that would allow them to reinvest in their businesses.

Testing by the steel industry has also identified metallic coated and pre-painted steels that do not meet Australian Standards and regulations. Examples include substandard metallic coating and paint thicknesses and non-conforming levels of lead in paint.

The non-compliances are not limited to poor quality and bad workmanship but extend to deliberate fraudulent behavior with examples such as falsified test certificates, welds made with silicone rubber and then painted, attachment of bolt heads with silicon rather than a through bolt and water filled tube to compensate for underweight steelwork with fraudulent claims that their products meet particular Australian Standards.³³

Access covers and grates

2.28 Nepean Building & Infrastructure, a company that designs, manufactures and supplies stormwater grates, highlighted the risks associated with drainage grates that do not comply with Australian Standards when installed in building projects.

32 Bureau of Steel Manufacturers of Australia (BOSMA), *Submission 18, Attachment 1*, p. 8.

33 Australian Steel Institute, *Submission 19*, p. 6.

2.29 Nepean Building & Infrastructure noted that 'the issue of compliance for what is essentially a load bearing asset is almost completely disregarded by many builders, where grates are sourced and installed based only on price'.³⁴ The consequences of drainage grates failing are 'at best the need for replacement at an inflated reconstruction cost or at worst, serious accident in the public domain due to product failure'.³⁵

Vinyl/PVC

2.30 The Vinyl Council of Australia noted that vinyl, or PVC, is a common building material which is used in pipes, conduit, cables, flooring, permanent formwork, window frames, profiles and membranes. It observed that the growing number of non-conforming PVC products that fail or become subject to product recalls is having a significant impact on:

- the reputation of all PVC products in certain applications;
- the ability of our members to compete with these lower cost, sub-standard products; and
- the safety and sustainability of the built environment.³⁶

2.31 Infinity cables, subject to a recall in 2014, are an example of a non-conforming PVC insulated cable product falsely claiming to have met Australian Standards. The Vinyl Council of Australia noted that the Infinity cables 'were not fit for purpose, did not meet regulatory standards and present a high fire and human safety risk'.³⁷

2.32 It also advised that as PVC is a thermoplastic, one of the issues for the sector is fire safety. It also noted:

In the case of PVC windows, a growing product segment in Australia because of their high energy efficiency performance, there are concerns of non-conforming product failing because of insufficient UV resistance in the PVC formulation. In the case of PVC plumbing and pipe, failures can cause contamination of the water system and be a public health concern. Large scale failure from poorly formulated, cheap product has occurred in other jurisdictions overseas and wiped out virtually the entire market for the product because of damage to consumer confidence.³⁸

34 Nepean Building & Infrastructure, *Submission 9, Attachment 1*, p. 1.

35 Nepean Building & Infrastructure, *Submission 9, Attachment 1*, p. 2.

36 Vinyl Council of Australia, *Submission 11*, p. 1.

37 Vinyl Council of Australia, *Submission 11*, p. 2.

38 Vinyl Council of Australia, *Submission 11*, p. 2.

2.33 Of particular concern to the Vinyl Council of Australia was that, in cases where imported products have been found to be non-conforming, it has fallen on local manufacturers to investigate and pursue the cases. It stated:

Local manufacturers have unfairly borne the cost of bringing these cases to light to ensure public safety, while at the same time have to compete with cheaper, inferior non-compliant products in the market.³⁹

Committee view

2.34 The committee is extremely concerned by evidence to this inquiry that illustrates the growing prevalence of non-conforming building products. Non-conforming building products pose serious risks to the construction industry, workers and the broader community.

2.35 The committee received evidence of products across a range of industry sectors that:

- are not fit for purpose;
- do not conform with the required Australian building regulations and technical standards;
- are counterfeit copies of legitimate conforming products; and
- are supplied with fraudulent certification or documents.

2.36 The costs of non-conforming products are being passed on to consumers through costs of remediation, devaluation of properties, increased insurance premiums, as well as costs associated with reduced energy and water efficiency.

2.37 Further, importers, suppliers and manufacturers of products that conform to Australian building regulations and technical standards are being forced to compete on an uneven playing field with cheaper, inferior non-conforming building products.

2.38 The committee is particularly concerned about the potential safety risks to consumers and construction industry workers including risks of fire, electrocution, exposure to toxic chemicals and water contamination.

2.39 Without urgent and effective action the risk to Australian lives will only increase.

39 Vinyl Council of Australia, *Submission 11*, p. 2.