Quality Considerations:

Conformance & Compliance in Building Projects

CAROMA LiveWell

Introduction

In recent years, the use of non-conforming building products has become a nationwide issue. In a 2013 Australian Industry Group survey, over 200 companies reported the use of non-conforming products in their market.[1] Recent reports suggest this problem continues to be widespread in Australia,[2] a situation worsened by the influx of imported products into the local market.

In Australia, building construction work must comply with the *National Construction Code* (NCC), Australian Standards and other relevant laws. The products specified for a building project must be "fit for purpose" and meet all performance requirements. This regulatory framework ensures our buildings are safe, healthy and durable.[3] It also ensures that public spaces meet the needs of a wide variety of users.

Whether it be in large buildings or small-scale bathroom renovations, the use of non-conforming building products can contribute to building compliance failure and poor operational performance. It also comes with a range of risks for designers, installers and builders – from financial losses and long-lasting reputational damage to regulatory investigations and potential litigation.[4]

This risk is increased in projects requiring large quantities of product with high requirements for performance, functionality and durability such as hospitals, aged-care facilities and commercial buildings.

In this whitepaper, we discuss how Australian architects and designers can take a leading role in a coordinated approach to product conformance across all stages of construction. We also present a range of high quality, code-compliant bathroom solutions designed to deliver an efficient path to code compliance.

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Non-Conforming and Non-Compliant Building Products in Australia: Background

After several high-profile product recalls and safety incidents,[5] public confidence in the built environment has wavered. Recently, a national recall in 2013 was initiated for over 4,000km of faulty Infinity Cable due to safety risks involving electric shock and fires. In 2014, Melbourne's Lacrosse tower fire highlighted the dangers of using non-compliant, combustible cladding on high-rise residential buildings.

Only two years ago, the Master Plumbers and Gasfitters Association of Western Australia and the Plumbing Products Industry Group reported the growing use of cheap taps and other non-compliant parts that leached toxic metals into drinking water.[6] A major example of this was the problem-plagued Perth Children's Hospital where a 2017 report found brass fittings to be the likely cause of lead contamination in the facility's drinking water, which required major remedial work to address.[7]

The Housing Industry Association notes that product sectors such as plumbing and sanitary ware, electrical fittings, windows, engineered wood and steel reinforcing are rife with examples of fraudulent certification and product marking.[8]

Despite recent calls for regulatory reforms and stricter oversight,[9] there are several factors that contribute to ongoing issues with product conformance and compliance in Australian construction.

GLOBAL SUPPLY CHAINS AND IMPORTED BUILDING PRODUCTS

Due to the emergence of global supply chains, building products can be sourced from virtually anywhere around the world. In the realm of bathroom specification, WaterMark-certified plumbing products are solutions compliant with Australian building standards and regulations. Australian-designed products will typically be engineered to meet Australian requirements but non-certified products can be purchased and brought into the country, sometimes by the container load.[10]

PRODUCT SUBSTITUTION

Even if the architect has carefully specified or requested building products during the design phase, it is common for products to be substituted during construction.

Cheaper, lower quality building products tend to be substituted in place of the specified product due to cost-cutting, time pressures and difficulties in sourcing the specified product.

Product substitution is an inherently risky practice, especially if done without proper evaluation. Substituted products may not comply with Australian building code requirements or lack the required documentary evidence of compliance, invalidate warranties and contract conditions, and expose stakeholders to heavy liabilities for building failure or non-compliance.

The substitution process can also be complex and time consuming such that the risks and rectification costs may outweigh the potential benefits. In the best-case scenario, product substitution can save a project time and money, but unforeseen results causing poor building performance can still occur.

LIMITATIONS WITH PRODUCT TESTING AND CERTIFICATION

While product testing and WaterMark certification helps architects and designers identify products that are fit-for-purpose, the process is not foolproof and product substitution can still take place. Australian brands with local fully-equipped testing capabilities are often in a better position to develop products that meet Australia's stringent quality and performance requirements.

A FRAGMENTED APPROACH TO REGULATORY ENFORCEMENT

The inconsistent approach to implementing the Shergold-Weir reforms should also be considered. The *Shergold-Weir Report* provided an assessment of the effectiveness of compliance and enforcement systems in the Australian building and construction industry along with a set of 24 recommendations relating to the design, construction and operation of buildings.

While the States and Territories have indicated support for many of the recommendations set out in the report, many are only partially implemented or under consideration depending on jurisdiction. The Association of Consulting Architects notes that it is unlikely that full nationwide implementation will occur by the original deadline.[11]

Design professionals can influence industry behaviour by emphasising product conformance throughout all stages of the supply chain.

The Role of Design Professionals

QUALITY, DESIGN INTENT AND USER EXPERIENCE

Against this backdrop, design professionals are uniquely placed to address the use of inferior or substitute products in Australian building projects. Given the nature of their involvement at the outset of building projects, design professionals have intimate knowledge of the standards of performance the building design is intended to achieve and the operational impact of each design choice.

Design professionals are tasked to work through the interrelated effects of environmental conditions, user expectations and local regulations. In bathroom design, this means balancing user requirements alongside new standards for accessibility, environmental laws and the National Plumbing Code – all of which require careful consideration of each design element to ensure compliance. In settings such as hospitals, aged-care facilities and commercial spaces, requirements for occupant health and wellbeing and accessibility are heightened, placing greater emphasis on product reliability and performance.

For any project, the goal is to have risk-free construction and operation of facilities, while delivering an optimum user experience. Inferior product selection or substitution can compromise the ability to meet these objectives for the following reasons:

- inferior products will likely need to be replaced and/or repaired more regularly;
- substitutes may appear superficially similar, but not perform to the expected standard; and
- inferior products can be more difficult to operate by users, making critical facilities less accessible.

Unlike other project stakeholders, design professionals are less burdened by short-term construction priorities that may entice consideration of replacement products that are cheaper, more basic in design or easier to source than the specified solution.

DESIGNER'S DUTY OF CARE

Design professionals have a duty of care to ensure the design itself is compliant. The Australian Building Codes Board (ABCB) notes that professionals involved in the planning, design and construction of buildings must ensure that building products, materials or systems approved for use in their designs are:[12]

- appropriately approved;
- fit for purpose; and
- meet the requisite performance requirements.

In some cases, such as large-scale or bespoke designs, architects might reasonably be expected to inspect and/or arrange for a product to be tested.[13]

ASSESSING PRODUCT COMPLIANCE AND CONFORMANCE

The ABCB provides several methods to determine whether a product is genuine and does what it claims it will do.[14] These methods include:

- performance testing of sample products;
- inspection of the design, production, installation or performance of products or materials in place;
- product certification by a designated scheme or assessment body; and/or
- declarations by manufacturers or suppliers as to the quality and performance of the product based on testing conducted by the manufacturer or supplier.

The following are examples of evidence substantiating product conformance:[15]

- CodeMark/WaterMark Certificate of Conformity;
- Certificate of Accreditation from a State and Territory Accreditation authority;
- Certificate from a professional engineer or another appropriately qualified person; and
- Certificate from a product certification body accredited by the Joint Accreditation System of Australia and New Zealand.

The ABCB also suggests several practical steps that will assist professionals in assessing product conformity.[16] Determining which products are critical for compliance is an important first step. Ensuring that evidence of conformity and compliance are provided to the owner on completion of the project will help with transparency and avoid disputes. Lastly, if the manufacturer or supplier cannot provide suitable evidence of conformance, then project stakeholders should undertake independent inspection or testing of the product – or simply not use the product at all.

A Coordinated Approach to Product Conformance

Design professionals can influence industry behaviour by emphasising product conformance throughout all stages of the supply chain.[17] The architect can explicitly state that the building design is based around conformance, encouraging a coordinated approach alongside other stakeholders in relation to verification of building products. In a 2016 article Andrew Heaton discusses this approach with industry experts, explaining that “architects have an important role in terms of influencing behaviour by placing an emphasis upon conformance up-front”[18] thereby influencing every stakeholder downstream.

If the design and specification is expressly based on compliance with Australian building standards and regulations, then this emphasis will flow through the supply chain and engineers, builders and other stakeholders will be more committed to using the products specified. This approach encourages greater focus throughout each stage of a building project on ensuring performance claims are backed up by independent testing and certification.

CAROMA

For more than 75 years, Caroma has advanced Australian design, engineering and ingenuity. By cultivating local craftsmanship and manufacturing, the company stands as a market leader, one forever at the forefront of innovation and sustainability through design and product development.

Caroma's local designers and engineers have a long history of working on site with select industry professionals to aid in resolving issues to thereby develop innovative solutions.

Caroma products are specially designed for Australian plumbing installation and construction practices, which minimises installation confusion and errors during the building process.

The range of products are rigorously tested over and above minimum requirements for compliance. For example, Wall Faced Vitreous China Toilet Pans are tested to 2000 Kilogram load capacity instead of the 400 Kilogram minimum requirement. Toilet seats are subjected to the "Wriggle Test" to help reduce seats coming loose over time, ensuring suitability for heavy commercial use.

Regular batch testing ensures compliance in changing market conditions, with representatives onsite at the factories to ensure strict supervision of production processes and ongoing quality assurance.

Caroma offers a complete range of fully Watermark-compliant plumbing fixtures to ensure compatibility and consistency throughout the bathroom.

Backed by market-leading commercial warranties further demonstrates the company's long-term commitment to delivering high quality, reliable solutions to the Australian construction industry.

Customer support is provided throughout the product lifecycle, which is especially important in busy commercial environments where product wear and tear is unavoidable. The company also offers a range of spare parts, with a National After Sale and Service network that ensures optimum user experience.

CAROMA LIVEWELL

(featured whitepaper collection)

The Caroma LiveWell Collection features solutions that deliver quality, performance and trusted luxury experiences. Ranges within the LiveWell collection are purposefully designed to meet differing needs and reduce challenges across all stages of life.

LiveWell's Care Range offers accessible and ambulant solutions in compliance with Australian AS1428.1 2009 access and mobility standards. The care range represents the latest in modern design and innovation, designed to meet stringent requirements of hospitals, aged-care and commercial applications.

LiveWell's Opal range is a sleek and contemporary selection of bathroom solutions complete with discreet and unique features that blend seamlessly into the bathroom to promote comfort and independence for those who need a little extra assistance, without compromising on style. The Opal range is the trusted Collection for all bathrooms designed with wellbeing in mind.

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All information provided correct as of July 2020

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