

# Procurement of Construction Products

A guide to achieving compliance

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ISBN: 978-0-9925423-1-3

Suite D, 2 Geils Court

DEAKIN ACT 2600

Phone: +61 2 6285 2255

Fax: +61 2 6282 3787

Email: [info@apcc.gov.au](mailto:info@apcc.gov.au)

Website: <http://www.apcc.gov.au>

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- Australian Constructors Association (ACA)
- Australian Engineered Fasteners and Anchors Council (AEFAC)
- Australian Institute of Architects (AIA)
- Australian Institute of Building (AIB)
- Australian Institute of Building Surveyors (AIBS)
- Australian Steel Institute (ASI)
- Australian Technical Infrastructure Committee (ATIC)
- Australian Window Association (AWA)
- Building Products Innovation Council (BPIC)
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- Fire Protection Association Australia (FPAA)
- Housing Industry Association (HIA)
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# 1 Introduction

## 1.1 Purpose of the Guide

The Australian construction industry operates in a global marketplace and utilises a vast, increasingly complex and innovative range of construction products<sup>1</sup> – many of which are manufactured overseas.

As there are hundreds of thousands of building and construction products on the market – produced both domestically and internationally – it is extremely difficult to ascertain whether or not they all comply with the National Construction Code (NCC) and/or conform to the requirements of the relevant Australian or international standards, where they exist.

The compliance and durability of construction products are major risk factors which need to be managed as they impact significantly on the service life and quality of building and construction projects.

Evidence suggests that the market penetration of non-conforming products in several key construction product sectors in Australia may be up to 50%<sup>2</sup>. This is a sobering and alarming statistic.

In Australia, there have been numerous instances in which non-compliant construction products have caused failure or damage to buildings, such as the collapse of buildings and motorway signs, and failure of key building elements, such as glass panels, steel fixings and more.

The most concerning consequence of construction product failure is its impact on safety. In the most extreme cases, such failure can lead to serious injury or loss of life. The potential risks to the community and construction industry workers are immeasurable and should not be underestimated. Without doubt, the use of faulty construction products puts lives at risk.

It is, therefore, vital that the industry works together to create an environment in which all stakeholders in the building and construction process, including the community, are confident that construction products meet a minimum acceptable level of quality and compliance, and are fit for the purposes for which they are intended.

It is important to understand the responsibility to determine whether or not a construction product is fit for its intended purpose and the profound consequences in the event that the product is found to be defective. However, the procurement of construction products has become increasingly complex, and information and guidance to assist the procurement process is scarce. In particular, for many 'safety critical' products, there is often a lack of credible and accurate information available in Australia to assist stakeholders involved in construction projects to verify construction product compliance and conformance, in order to determine whether or not a product is fit-for-purpose.

This Guide seeks to assist in the decision-making processes for the procurement of construction products in Australia, with a view to elevating levels of compliance and providing a level of confidence to all parties in the supply chain.

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<sup>1</sup> In this Guide, the term 'product' also includes materials (and vice versa), unless otherwise stated.

<sup>2</sup> The Australian Industry Group, *The quest for a level playing field, The non-conforming building product dilemma*, 2013.

Appendix 1 provides examples of a number of conformity assessment schemes or guides. By its nature, Appendix 1 is dynamic and will change, therefore it is designed to be updated regularly. Reference should be made to the appropriate industry associations and conformity assessment bodies for that particular product sector and other references provided in Appendix 1 for the most up-to-date information for particular products. For an up-to-date listing of accredited conformity assessment bodies, readers are advised to consult the JAS-ANZ Register ([www.jas-anz.org/register](http://www.jas-anz.org/register)) and the NATA website ([www.nata.com.au](http://www.nata.com.au)).

## 1.2 Context

Productivity in the construction industry is critical to Australia's growth and the economy. The building and construction industry accounts for 7.8% of Australia's gross domestic product (GDP), and employs 9.1% of the workforce. The industry contributed \$99.4 billion to the Australian economy in the 2011–12 financial year.

At the end of June 2012, the building and construction industry generated \$305 billion in total income, incurred \$275.4 billion in total expenditure, and employed 950,000 persons<sup>3</sup>. Construction products are estimated to comprise 30% of project costs; therefore, approximately \$82.62 billion dollars was spent on their procurement in 2011–12.

Reports<sup>4</sup> indicate the costs associated with rework can be a significant portion of the profit margin of a project. One major builder estimated the average cost of rework due to non-conforming products was between 0.25% and 2.5% of the overall contract value. The industry is characterised by profit margins between 3% and 12%, and company insurance does not cover product failure and rework costs. A specific rework case to replace plastic water pipes in a high-rise residential development will cost a builder \$3 million (2%) on a project valued at \$150 million. The “leaky homes” crisis in New Zealand has been estimated to cost NZ \$11.3 billion<sup>5</sup> in repairs and replacement costs, which could have been avoided.

Lower productivity in the construction industry leads to higher construction costs and prices. As both the private and government sectors are significant users of commercial building and engineering construction, these cost increases are borne across the economy, flowing through to households in the form of higher consumer prices. As Australia's population continues to grow and age, and with fewer people paying taxes, the resultant effect of ongoing lower productivity will be a huge impost for the Australian economy.

As construction products are the key components of building and construction projects, their durability is significantly impacted by their quality which, in turn, impacts on the lifespan of buildings and infrastructure assets. Replacement costs and environmental impacts can be profound if the life expectancy of building and construction assets is compromised or reduced. Furthermore, the reliable performance of building products is critical to achieving the safety objectives established by all Australian and New Zealand governments for the community and to meet community expectations for safety.

The normal design life of a building or infrastructure asset is regarded as 50 years. However, for specific projects, the design life can be as long as 100 to 150 years. The durability of a building and its components in their environment should be such that it remains fit for use throughout its design life (provided it is appropriately maintained).

It is also important to recognise that sustainability is now a key element in achieving business success in the construction industry.

Clients want to see sustainable outcomes for their projects, the supply chain needs to compete profitably and on a level playing field, and the community expects that the industry will deliver project outcomes that have due regard for the environment and other related factors. The industry itself needs to operate in a sustainable way to ensure a safe construction environment, maintain profitability, increase employment and productivity while providing economic benefits to the nation.

The development and use of sustainable construction products is a key factor in achieving the deliverables expected by all industry stakeholders.

<sup>3</sup> Australian Bureau of Statistics, 27 June 2013.

<sup>4</sup> The Australian Industry Group, *The quest for a level playing field, The non-conforming building products dilemma*, 2013

<sup>5</sup> *The New Zealand Herald*, 22 December 2009, “Leaky homes will cost \$11.3 b to fix – report”.

## 1.3 Scope of the Guide

This Guide aims to assist procurers gain a more informed understanding and exercise improved decision-making with respect to the procurement of construction products. As the quality and performance of construction products is critical in providing certainty and assurance to building and construction quality, durability and longevity, and ensuring safety, understanding these performance expectations is an essential precursor to an effective procurement process.

By assisting readers to understand the current environment in Australia with respect to construction product conformity and conformance assessment, the Guide is intended to reduce confusion and provide greater clarity for all stakeholders involved in building and construction project delivery. In the absence of regulatory guidance, or where an industry specific issue is not addressed by this Guide, the recommendations of the relevant recognised Australian industry body for a particular product sector should be considered. This Guide provides assistance in this regard by including relevant references, where appropriate.

### 1.3.1 Exclusions

The Guide is not intended to provide a comprehensive manual for the procurement of construction products.

Additionally, the Guide is not designed to address the issues of forgery, counterfeit goods, counterfeit certification, falsified marks, reports, certificates, misleading claims (without evidence) and misrepresentation. These are matters addressed by a range of existing Australian laws. Procurers who encounter these issues should pursue these matters through the relevant legal avenues.

## 1.4 Who Should Use this Guide?

This Guide has been prepared to assist architects, engineers, building designers, specifiers, procurers, builders, project managers, contractors, sub-contractors, building surveyors, certifiers and asset and building owners.

For the purposes of this Guide, all such entities are referred to as ‘procurers’, unless otherwise stated.

## 1.5 Abbreviations

The following abbreviations and acronyms are used in this Guide.

ABCB	Australian Building Codes Board
ACL	Australian Consumer Law, which for the purpose of this Guide includes State and Territory fair trading and similar legislation
ACM	Acceptable Construction Manual
ACP	Acceptable Construction Practice
BCA	Building Code of Australia
EESS	Electrical Equipment Safety System
ERAC	Electrical Regulatory Authorities Council
JAS-ANZ	Joint Accreditation System of Australia and New Zealand
NATA	National Association of Testing Authorities, Australia
NCC	National Construction Code (published by the Australian Building Codes Board) comprising the Building Code of Australia, Volume One and Two; and the Plumbing Code of Australia, as Volume Three
PCA	Plumbing Code of Australia
SA	Standards Australia

## 2 Principles for Procurement and Conformance of Construction Products

The following principles have been developed to guide procurers on matters relating to the conformance of construction products. By applying all of these principles to their decision-making, procurers can help to ensure the products they select meet the appropriate standards and are fit for purpose.

- **Principle 1:**

All relevant legislation must be complied with including, but not limited to, building, workplace health and safety, and consumer laws.

- **Principle 2:**

Contract documentation should clearly specify product standards and the required evidence of conformity. Product standards should refer to relevant Australian Standards. Where there are no relevant Australian Standards, relevant international standards or authoritative industry sources should be utilised.

- **Principle 3:**

All construction products procured should conform to the requirements in the contract documentation.

- **Principle 4:**

The selection of the required evidence of conformity should be based on the intended use and risk exposure (likelihood and consequence of failure) of each construction product.

- **Principle 5:**

Construction product conformity requirements should refer to relevant Australian Standards. Where there are no relevant Australian Standards, appropriate international standards or authoritative industry sources should be utilised.

- **Principle 6:**

Evidence of construction products meeting specified standards should be demonstrated by conformity assessment including, but not limited to, product certification, testing or inspection, as set out in the contract documents.



- **Principle 7:**

Evidence of the source of construction products and their authenticity should be obtained and retained.

- **Principle 8:**

Project managers should obtain and retain contemporary and credible documentary evidence to demonstrate conformity of all construction products.

- **Principle 9:**

Responsibility for managing conformity assessment outcomes at each stage of the project should be appropriately allocated in the contract documentation.

- **Principle 10:**

Where third party conformity assessment bodies are relied upon to provide evidence of conformity, they should be accredited by:

- Joint Accreditation System of Australia and New Zealand (JAS-ANZ) – for product certification, management systems, certification and inspection bodies
- National Association of Testing Authorities, Australia (NATA) – for testing and calibration laboratories and inspection bodies
- Accreditation bodies that are signatories to relevant international multilateral/mutual recognition arrangements and have the relevant scope associated with the conformity assessment activity.

- **Principle 11:**

Where construction products are supplied without required evidence of conformity, or where doubt exists about product conformity, product testing to an appropriate level may assist in ascertaining construction product quality.

- **Principle 12:**

Without adequate evidence of product conformity, the product should not be used in construction.

## 3 The Regulatory Environment

### Summary

- All building work in Australia is subject to meeting the performance requirements in the National Construction Code (NCC) which sets out the minimum standards for a broad range of building products and systems.
- The NCC has legal effect through its reference in State and Territory Building Acts and Regulations.
- The NCC seeks to quantify risk through the process of assessing compliance to a set of performance requirements for buildings.
- The NCC calls up 'referenced documents' such as Australian Standards and some industry developed standards to provide technical details for the performance of construction products.
- The NCC provides guidance about the types of evidence that can be used to show that a building product meets the minimum standards. The NCC is a performance-based document, however, in many cases the prescriptive provisions of the NCC refers to specific Australian, international or industry standards which provide greater detail about the minimum level of performance required.
- Construction work not covered by the NCC, such as infrastructure and unique structures, are subject to the standards nominated by the relevant designer/engineers and contract documentation.
- In all cases, the relevant designer/engineer should nominate, through plans and specifications, those standards that must be met by the construction products used. The relevant designer/engineer should also specify what level of evidence should be accepted as proof that a building product meets the specified standard.
- In addition to the NCC and contractual responsibilities, the Australian workplace health and safety laws set out additional responsibilities for various types of procurers (e.g. designers, builders and all associated contractors and workers) with respect to product conformance and safety.

### 3.1 Overview

The standards for the performance of products used in building work across Australia are set out within the legal framework of State and Territory legislation relating to building, planning, plumbing, electrical work, and workplace health and safety.

In addition to these requirements, the Australian Consumer Law (ACL) guarantees that construction works and services must be provided with due care and skill within a reasonable time.

Under the ACL, there are also obligations for parties in the supply chain to deliver to the customer (in this case, a building owner) a finished product that is fit-for-purpose. However, Section 61(4) of the ACL provides that the statutory guarantee as to fitness for particular purpose does not apply where there has been a supply of professional services by a qualified architect or engineer.

## 3.2 Planning and Building Legislation

State and Territory planning and building legislation:

- establishes the requirements for obtaining building approvals for certain building work
- sets out the requirements for building work that may not require approval
- references the NCC, including State and Territory variations, which describe the technical standards for building work, including by direct reference to the building products used in construction
- establishes the legal basis for referencing the NCC and other relevant standards in State and Territory building legislation.

**Table 1:** State and Territory Building Legislation Referencing the National Construction Code

State	Act/Regulation	Section of Act	Regulation No.
Australian Capital Territory	<i>Building Act 2004</i>	Section 136 Plus Section 49 which describes the Building Code of Australia as a minimum standard.	Issued from time to time, e.g. Building (Publication of Building Code) Notice 2010 (No 1)
New South Wales	<i>Environmental Planning and Assessment Act 1979</i>	Section 80A	
	<i>Home Building Act 1989</i>	Section 7E and Section 16DE	
	<i>Environmental Planning and Assessment Regulation 2000</i>	Clause 7 and 98	Clause 7 and 98
	<i>Home Building Regulation 2004</i>		Clause 12, and Schedule 2 Part 1 Clause 2(1)(a)
Northern Territory	<i>Building Act 1989</i>	Section 52	
	<i>Building Regulations</i>		Regulations 2 and 4
Queensland	<i>Building Act 1975</i>	Sections 12, 14 and 30	
South Australia	<i>Development Act 1993</i>	Section 36	
	<i>Development Regulations 2008</i>		Regulation 4
Tasmania	<i>Building Act 2000</i>	Sections 55	
Victoria	<i>Building Act 1993</i>	Section 9	
	<i>Building Regulations 2006</i>		Regulation 109
Western Australia	<i>Building Act 2011</i>	Section 37	
	<i>Building Regulations 2012</i>		Regulation 31A

### 3.2.1 National Construction Code

The NCC is developed and published by the Australian Building Codes Board (ABCB). The NCC details the minimum necessary standards of performance for all buildings in relation to health, safety (including structural safety and safety from fire), amenity, and sustainability.

The NCC series currently comprises the following three volumes:

- Volume One: Building Code of Australia Class 2 to Class 9 Buildings
- Volume Two: Building Code of Australia Class 1 and Class 10 Buildings
- Volume Three: Plumbing Code of Australia.

The Australian Government and all State and Territory Governments are signatories to an Intergovernmental Agreement which commits them to supporting the ABCB, and commits them to the adoption of the NCC through their respective building and plumbing legislation.

## The Building Code of Australia and Building Product Conformance

In respect to building product conformance, the BCA provides a framework for procurers to use by:

- setting an objective for the performance of a building
- setting out the relevant performance requirements for a building and its construction materials
- referencing relevant minimum technical standards for product performance
- identifying a range of methods for verification of performance of both a building and its construction materials.

For building Classes 2 to 9 (NCC Volume One), Part A2.1 of the BCA requires that:

Every part of a building must be constructed in an appropriate manner to achieve the requirements of the BCA, using materials that are fit for the purpose for which they are intended.

For building Classes 1 and 10 (NCC Volume Two), Part 1.2.1 of the BCA requires that:

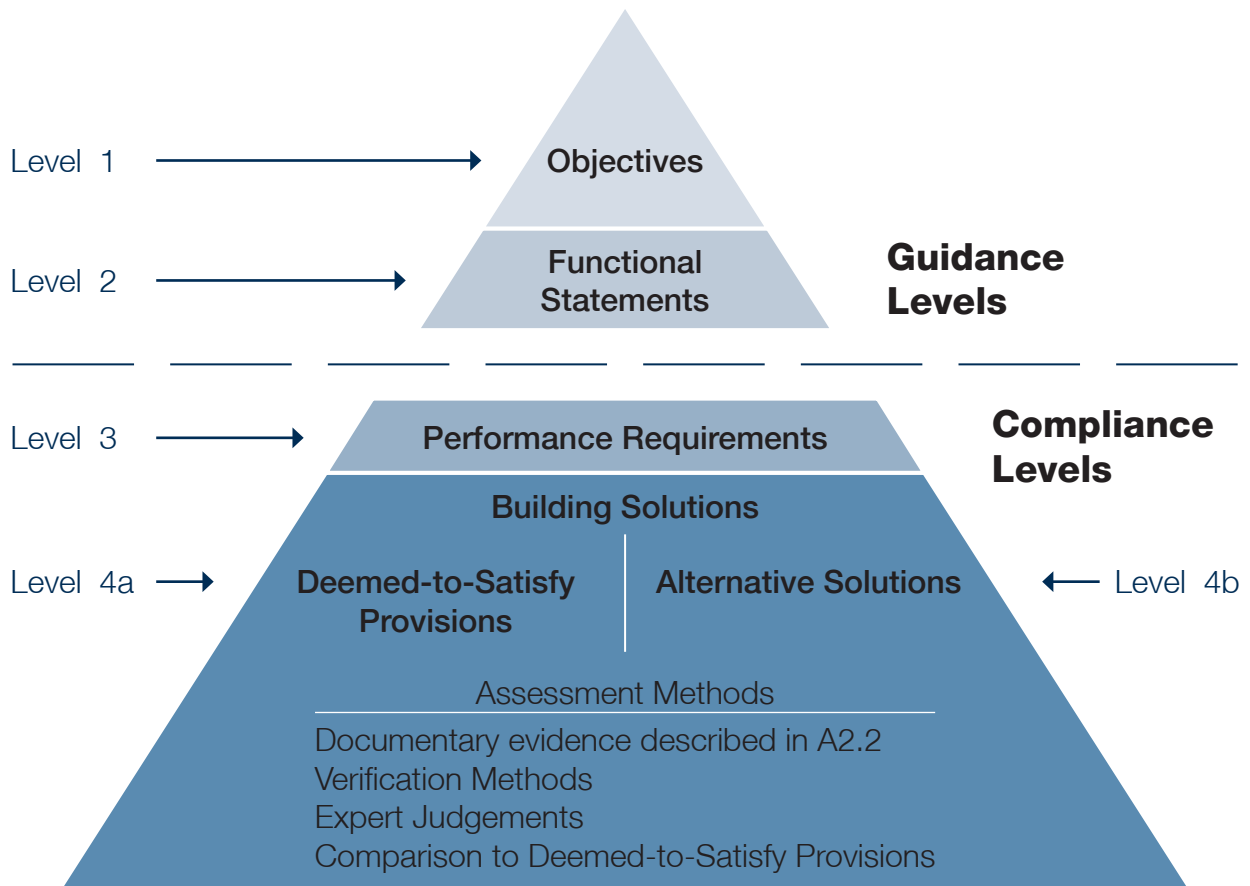
Every part of a building must be constructed in an appropriate manner to achieve the requirements of the Housing Provisions, using materials that are fit for the purpose for which they are intended.

The BCA is referred to as a performance-based document in that it provides flexibility when designing a building. The performance requirements set out the minimum standards a building must achieve in relation to such things as the structure, damp and weatherproofing, fire safety, health and amenity, safe movement, access and egress, and energy efficiency.

The flexibility allowed under the performance-based BCA means that constructors are not locked in to a specific construction method and are able to achieve compliance in several ways. To that end, the NCC allows for a number of methods to achieve a building solution, provided the method adopted complies with the performance requirements set out for each aspect of the design.

The structure of the BCA is shown in Figure 3.1.

**Figure 3.1:** Hierarchy of the Building Code of Australia (BCA)



Source: ABCB (2012).

Below is a short overview of the key terms used in Figure 3.1 and their meanings.

- **Level 1 (Objectives)** – Statements that outline the reason/driver for the requirements of the Code.
- **Level 2 (Functional Statements)** – Statements which describe how a building, in a functional sense, could fulfil the Objectives.
- **Level 3 (Performance Requirements)** – Descriptions of the level of performance to be achieved by building products, design and construction, in order to satisfy the Functional Statements and Objectives.
- **Level 4 (Building Solutions)** – An outline of two methods (the ‘Deemed-to-Satisfy Provisions’ and the ‘Alternative Solutions’) that can be followed to demonstrate compliance with the Performance requirements in the BCA.

## Achieving a Building Solution

In designing and constructing an appropriate building solution that complies with the performance requirements in the BCA, one of two options must be followed:

- **Option 1 – Deemed-to-Satisfy Provisions**

The most common method to achieve a Building Solution is to adopt the Deemed-to-Satisfy Provisions which represent accepted compliance options for each Performance Requirement. Deemed-to-Satisfy Provisions are provided in both Volumes of the BCA. In Volume One, there is only one option setting out the technical requirements as Deemed-to-Satisfy Provisions. In Volume Two, there are generally two options – an ‘Acceptable Construction Practice’ (ACP), which is the technical information specified in the BCA or an ‘Acceptable Construction Manual’ (ACM), which generally includes reference to an Australian Standard for the particular building element (e.g. Part 3.4.3 Timber Framing refers to AS 1684.2–2010 *Residential timber-framed construction – Non-cyclonic areas*).

Meeting the Deemed-to-Satisfy Provisions will guarantee compliance with the BCA performance requirements. If the manufacturer or supplier of a building product can show that the product meets these requirements, a building surveyor is unlikely to require any further evidence that the product is fit for purpose.

- **Option 2 – Alternative Solutions**

A Building Solution can also be achieved by way of an ‘Alternative Solution’ which meets the Performance Requirements. This performance-based concept allows for increased design scope and acknowledges that, while the objectives of the BCA need to be consistently met, there are multiple ways to do this. It is critical that any Alternative Solutions which rely on the procurement of construction products are clearly documented.

If a design or element of a design does not meet the Deemed-to-Satisfy Provisions, it can still comply with the BCA if it can be demonstrated that the Alternative Solution complies with the relevant Performance Requirements. This method, known as an Alternative Solution, is permitted to demonstrate conformance.

Evidence must be supplied to support the Alternative Solution, and that evidence must show how the use of a product or form of construction will meet the BCA performance requirements. There are a variety of assessment methods which can be used to determine the suitability of the alternative solution. These are set out in the BCA and include:

- providing evidence to support that the product, form of construction or design meets a Performance Requirement (such as reports from Registered Testing Authorities)
- providing Verification Methods such as a test, inspection, calculation or other method that determines whether a Building Solution complies with the Performance Requirements
- making comparisons with the Deemed-to-Satisfy Provisions that may be issued by the appropriate authority
- providing an Expert Judgement about the Alternative Solution.

When used, the Alternative Solution design, including how it purports to meet the relevant Performance Requirements, must be documented and included as part of the building permit application. It must be approved by the building surveyor or approving authority before work commences.

## Information Requested during the Approval and Construction Process

A building permit generally states that the work, if carried out in accordance with the approved plans and specifications, will conform with the BCA. The relevant approval body will require information to verify this conformance as part of the building permit application. During and after construction of a building, the approval body will then require further information to verify that the building work, including products, has been completed in accordance with the approval.<sup>6</sup>

<sup>6</sup> Some products (mostly minor building elements, e.g. cupboard handles) may not be captured by the BCA but will still be governed by the provisions of the ACL

In respect to the building products used, the approvals process will require the provision of appropriate documentation, potentially at both the design and construction stages (including installation and commission), to verify conformance with the BCA. Therefore, a designer must decide what option to use in the building design. In doing so, the designer must use the Deemed-to-Satisfy Provisions or an 'Alternative Solution'. Compliance with Deemed-to-Satisfy provisions may be used as documentary evidence to demonstrate that a product complies, or a product that forms part of an Alternative Solution, achieves the required performance outcome, individually or as part of a system.

The onus is then on the builder to ensure they have ordered and used products that conform to the BCA and to retain appropriate evidence of conformance.

Where an Alternative Solution is sought, appropriate verification of suitability will need to be obtained by the builder in order to demonstrate how the Alternative Solution as a whole, or products that form part of the Alternative Solution, meet the relevant Performance Requirements.

## Evidence of Suitability

Part A2 (Volume One) and Part 1.2 (Volume Two) of the BCA set out the requirements for acceptance of design and construction for building products (excluding plumbing and electrical products). These provisions explain how to provide evidence of suitability for 'a material, form of construction or design', specifying the types of evidence that are required to demonstrate that a product meets a Performance Requirement. These can also be referred to as conformity assessment paths and may include one or a combination of the following.

- *"A report issued by a Registered Testing Authority, showing that the material or form of construction has been submitted to the tests listed in the report, and setting out the results of those tests and any other relevant information that demonstrates its suitability for use in the building.*
- *A current Certificate of Conformity or a current Certificate of Accreditation.*
- *A certificate from a professional engineer or other appropriately qualified person which:*
  - *certifies that a material, design or form of construction complies with the requirements of the BCA*
  - *sets out the basis on which it is given and the extent to which relevant specifications, rules, codes of practice or other publications have been relied upon.*
- *A current certificate issued by a product certification body that has been accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ).*
- *Any other form of documentary evidence that correctly describes the properties and performance of the material or form of construction and adequately demonstrates its suitability for use in the building."*<sup>7</sup>

Section 4 of this Guide provides more details on the selection of conformity assessment paths that can be used to obtain some of these types of evidence. For more information on those assessment pathways not covered, procurers are recommended to refer to the NCC directly and to consider other reference documents such as *Using the Product Assurance Framework to Support Building Code Compliance – A Guide for Manufacturers and Suppliers of Building Products*.<sup>8</sup>

The BCA provides additional detailed information on the types of evidence and certification considered acceptable for different types of building products. However, the BCA does not specify exactly which type of evidence should be provided for any given building product (apart from plumbing products). This is a matter for the procurer and the building approval authority to determine.

Where building products rely on compliance with Deemed-to-Satisfy Provisions and referenced Australian Standards to demonstrate acceptable performance, these provisions and standards can prescribe the documentary evidence that must be provided to verify conformance. For example, some Australian Standards include requirements for marking or labelling of conformance e.g. AS 2047: 1999 *Windows in buildings – Selection and installation* and AS 1684.2: 2010 *Residential timber-framed construction - Non cyclonic areas*. This may take a number of forms including conformance labelling, stamping and certificates. In the absence of a requirement for marking or labelling of conformance, separate evidence of suitability should be obtained and retained.

Section 5 of this Guide provides more information about selecting the appropriate conformity assessment path.

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<sup>7</sup> Extract from Part A2 and Part 1.2 of the *Building Code of Australia*, Volumes One and Two.

<sup>8</sup> Department of Housing and Works New Zealand, *Using the Product Assurance Framework to Support Building Code Compliance: A Guide for Manufacturers and Suppliers of Building Products*, April 2010.

### 3.3 Plumbing Legislation

State and Territory plumbing legislation either makes reference to the Plumbing Code of Australia (PCA), which is published as Volume Three of the NCC, or makes direct reference to the AS/NZS 3500 – *Plumbing and Drainage Series*, giving legal effect to the requirements of that standard as the minimum product requirements.

The PCA sets out the technical standards for how to undertake plumbing and drainage work, and makes reference to the product standards associated with that work.

Part A2.1 of the PCA sets out requirements for verifying that materials and products are suitable based on where they are used. The PCA takes a similar approach to the BCA in relation to product performance by requiring that:

*Every part of a plumbing or drainage installation must be constructed in an appropriate manner to achieve the requirements for the PCA, using materials and products that are fit for the purpose for which they are intended.*

Unlike the NCC Volumes One and Two, Part A2 of the PCA includes mandatory requirements for the evidence of suitability of plumbing products. The PCA sets out that certain plumbing or drainage installations must be certified and authorised. Product certification and authorisation must also comply with the procedures set out in Part G1 of the PCA (the WaterMark Certification Scheme). Plumbing products must meet the requirements of the scheme, and plumbers should refuse to install products that do not carry the WaterMark.

Where a material or product is exempted from certification under the PCA, it can be authorised for use:

- if it is certified as complying with the appropriate Australian Standard(s).
- or*
- if an appropriate Australian Standard does not exist, other evidence of suitability is provided in accordance with A2.2 of the PCA.

Furthermore, certain materials or products can be authorised for use if they are certified by a recognised body as complying with the relevant Australian Standard(s) for the specific application.

### 3.4 Electrical Legislation

State and Territory electrical legislation make reference to the Australian Standard series which includes AS/NZS 3000: 2007 *Electrical installations* (known as the Australian/New Zealand Wiring Rules) and supporting Australian Standards such as AS/NZS 3820 *Essential safety requirements for electrical equipment*. These standards, as well as specific product standards, provide the minimum requirements for electrical equipment (products) and installations.

The Electrical Regulatory Authorities Council has recently established the Electrical Equipment Safety System (EESS) scoped to include all electrical equipment that is not exclusive for commercial and industry use. Under the new scheme, all suppliers of “in-scope” equipment as well as higher risk products must be registered before being placed onto the market. Suppliers must declare that all equipment they supply to the market conforms with the relevant Australian Standard (or international standard or AS/NZS 3820 if no specific Australian Standard exists) and all “in-scope” equipment must be marked with the Regulatory Compliance Mark (RCM) in accordance with the rules laid out in AS/NZS 4417 series, *Regulatory compliance mark for electrical and electronic equipment* to indicate compliance with regulations. The use of the RCM on equipment is only permitted if the equipment is in conformance with the EESS.

Queensland and Tasmania adopted the EESS on 1 March 2013. At the time of publication, most jurisdictions are negotiating in good faith towards an intergovernmental agreement on the EESS.

### 3.5 Work Health and Safety Legislation

Building work is also subject to the requirements of State and Territory workplace health and safety laws.

The Commonwealth, States and Territories, apart from Victoria and Western Australia, have all adopted mirror Acts and Regulations based on the model *Work Health and Safety Act* to manage workplace health and safety matters.

Victoria and Western Australia have yet to adopt the new model legislation. Instead, their existing health and safety legislation continues to operate – namely, the *Occupational Health and Safety Act 2004* (Vic), *Occupational Health and Safety Regulations 2007* (Vic), *Occupational Safety and Health Act 1984* (WA), and *Occupational Safety and Health Regulations 1996* (WA).

Section 19 of the model *Work Health and Safety Act* specifies that all persons conducting a business or undertaking owe a duty of care to all other persons to ensure that, so far as reasonably practicable, they do not expose those persons to health and safety risks. As well as the primary duty of care, there are more specific duty of care provisions aimed at designers or manufacturers of plant, substances or structures, which are contained in Sections 22 and 23, respectively. Broadly speaking, these duties require designers and manufacturers to consider the health and safety of all users of the plant, substance or structure when designing or manufacturing the plant, substance or structure.

The designer's duty at Section 22 and manufacturer's duty at Section 23 requires a person conducting a business or undertaking who designs<sup>9</sup> or manufactures plant, substances or structures that are to be used at a workplace – or could reasonably be expected to be used at a workplace – to ensure, so far as is reasonably practicable, that the plant, substance or structure is designed and manufactured without risks to the health and safety of certain persons.

The persons to whom the duty is owed include: anyone at the workplace who uses the plant, substance or structure for the purpose for which it was designed or manufactured; persons who handle the substance; persons who store the plant or structure; persons who construct the structure at the workplace; and anyone in the vicinity of the workplace who are exposed to the plant, substance or structure. Basically, the designer or manufacturer owes a duty of care throughout the whole lifecycle of the plant, substance or structure.

## 3.6 Other Legal and Statutory Obligations

Procurers have a range of obligations to use 'conforming building products' in order to ensure construction work meets the minimum requirements of the BCA, PCA and other relevant legislation (including consumer law obligations in the ACL), along with any guarantee obligations and contractual requirements.

Meeting these obligations assists in protecting a procurer's professional reputation, delivering a quality job, reducing the chance for call backs to rectify works, and minimising the risk of legal proceedings.

### 3.6.1 Statutory Warranties

In relation to domestic building work or housing work, almost all Australian States and Territories have specific building legislation that requires warranties concerning the products and materials used to be stated in contracts for the building work. Although the legislation is highly variable as to specifics, it is generally the case that a builder must warrant that all products supplied for use in the building work will be "good" and "suitable or proper for the purposes for which they are used". This also applies to materials and products supplied by subcontractors on the builder's behalf.

A builder is able to exclude liability for products and materials supplied under a separate building contract where the building owner supplies items and/or engages their supply directly. However, it is not possible for a builder to exclude liability for products and materials within their responsibility and control, or to install a product or material that does not meet legal requirements – refer to Section 3.6.4 in this Guide.

In the ACL, there is also a guarantee of fitness for purpose where the purpose is disclosed to the supplier by the purchaser. In the domestic building/housing context, this guarantee applies in parallel with the specific building legislation noted above. This guarantee applies where the consumer has informed the builder or supplier of the purpose, expressly or impliedly. Liability for this cannot be excluded unless the builder or supplier can show that the consumer did not rely on the skill or judgement of the builder or supplier in providing a fit-for-purpose product or material, or that it was unreasonable for the consumer to have relied on the builder's or supplier's skill and judgement in the circumstances.

### 3.6.2 Contractual Agreements

In an ordinary contractual arrangement between a builder and client, the builder has an obligation to construct works and supply products and materials in accordance with any contractual specifications that underpin a building contract. It is possible for contract specifications to exceed the NCC requirements but they must, at a minimum, meet the prescribed standards set out in the NCC. To reduce the incidence of disputes, it is recommended that contracts stipulate whether there are any items that will exceed the NCC requirements or are subject to an alternative solution.

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<sup>9</sup> Design also includes redesign or modification.



### 3.6.3 Supply and Install Contracts

Where a builder engages a subcontractor for the supply and installation of a product as part of the contract, the principles remain the same, i.e. the product should be fit for purpose and meet the NCC requirements. The onus is on the builder to ensure the product conforms to the NCC, and in the domestic building/housing context, the ACL.

### 3.6.4 Installation of Supplied Products

Even in circumstances where a builder is provided with a product or material to install by the client and this is detailed in the contract, the builder is still required by law to ensure the product or material conforms to the NCC prior to installing the product.

The builder should explain to the client that they will need to obtain proof such as certificates, reports or test results that verify the product or material conforms to the NCC in order for it to be installed. Ideally, that position should be established in the contract documents.

If conformance cannot be verified, then the builder should advise the client (in accordance with any procedures in the contract) that the work in relation to that product or material cannot progress until the situation is rectified and adequate information on demonstrating conformance is obtained.

## 4 Standards and Conformance

### 4.1 What is Product Conformity and Conformity Assessment?

Not being part of everyday speech, the use of the term ‘conformity assessment’ is primarily the domain of standards and conformance infrastructure bodies and regulatory authorities. This section seeks to explain what it is and what it means for the construction industry when seeking to ensure that the construction products used meet the necessary standards for performance.

For the purposes of this Guide, the following definitions are used.

- **Product conformity** is used to convey that a product meets specified requirements. The threshold at which product conformity is deemed to have been demonstrated is determined by a risk assessment process which considers the likelihood and consequences of product failure. For products where the risk of failure is considered high and/or consequences have health and safety impacts, third party certification is recommended. Using a standardised conformity assessment regime raises the level of confidence that product conformity has been achieved.
- **Conformity assessment** is the determination that a product, process, service or system conforms to specified requirements. These requirements can be described in a standard, other normative document, certification scheme or customer specification, e.g. contract documentation.
- **Conformity assessment bodies** (frequently called CABs) provide attestations that products, processes and systems are doing what they are supposed to do. CABs may be utilised at various points of the supply chain. CABs include test laboratories, inspection bodies and certification bodies. CABs may be first, second or third parties. Third party CABs are required to be independent of the producer or supplier of the product.
- **Standards** are voluntary consensus documents setting out specifications and procedures to ensure products, services and systems are safe, reliable and consistently perform the way they are intended to. Standards are developed by agreement and their application is by choice unless their use is mandated by government or called up in contract. Where the means of demonstrating compliance is absent or is included as an advisory or informative part of a standard, the need for conformity assessment needs to be decided by the procurer. A risk assessment will guide such decision.

See also ISO/IEC 17000 *Conformity assessment – Vocabulary and general principles*, which is a source of information on what is meant by conformity assessment and a range of other related terms.

While a number of standards have been cited in this Guide, it is recommended to check the SAI Global website ([www.saiglobal.com](http://www.saiglobal.com)) to ensure that the most recent standard is referenced.

### 4.2 Which Bodies Support Conformity Assessment Processes?

Four bodies collectively make up Australia’s standards and conformance infrastructure: the Joint Accreditation System of Australia and New Zealand (JAS–ANZ); the National Association of Testing Authorities, Australia (NATA); the National Measurement Institute (NMI); and Standards Australia (SA).

JAS–ANZ and NATA are concerned with the accreditation of conformity assessment bodies (CABs) and operate in accordance with ISO/IEC 17011: 2004 *Conformity assessment – General requirements for accreditation bodies accrediting conformity assessment bodies*.

NMI is concerned with the maintenance of measurement standards and is the peak reference body for calibration in Australia.

SA is concerned with the development and maintenance of national Standards and other normative documents.

An overview of each of the four bodies and their particular roles and functions is provided below.

#### 4.2.1 Joint Accreditation System of Australia and New Zealand

JAS–ANZ is the government–appointed accreditation body for Australia and New Zealand, which is responsible for providing accreditation of CABs that undertake management system, personnel and product certification and inspections. JAS–ANZ accreditation is built upon a competency-based assessment process, and provides confidence in CAB’s capability to deliver reliable certification and inspection services.

More information about JAS-ANZ is available on the following website: [www.jas-anz.org](http://www.jas-anz.org)

#### 4.2.2 National Association of Testing Authorities, Australia

NATA is recognised by governments as Australia’s national authority for the accreditation of laboratories and reference material producers. NATA is also recognised as a peak body for the accreditation of inspection bodies and proficiency testing scheme providers. NATA accreditation is based on a process of peer assessment of a facility’s competence and its capability of producing reliable results.

More information about NATA is available on the following website: [www.nata.com.au](http://www.nata.com.au)

#### 4.2.3 National Measurement Institute

The NMI is responsible for Australia’s national infrastructure in terms of physical, chemical, biological, and legal measurements. Under the *National Measurement Act 1960*, the NMI is responsible for coordinating Australia’s national measurement system and for establishing, maintaining, and realising Australia’s units and standards of measurement which, in turn, provide measurement traceability.

More information about the NMI is available on the following website: [www.measurement.gov.au](http://www.measurement.gov.au)

#### 4.2.4 Standards Australia

Standards Australia is recognised by governments as Australia’s peak voluntary standards body. It coordinates standards development activities (referred to as ‘standardisation’), develops internationally-aligned Australian Standards for public benefit and in the national interest, and facilitates the accreditation of other standards development organisations.

From the perspective of the construction industry, conformity assessment – and the standards and conformance infrastructure bodies that underpin it – provides a high degree of confidence in the products used and the services delivered.

More information about SA is available on the following website: [www.standards.org.au](http://www.standards.org.au)

### 4.3 What Conformity Assessment Paths are Available?

A number of conformity assessment options are available, providing a range of measures to help manage risk. An overview of these is located in Appendix 1. Some of these may be augmented by accreditation systems, which offer increased confidence through a process of peer assessment of a CAB’s competence and processes.

Some approaches rely on a single pre-market conformity assessment process, while others utilise several processes pre- and post-market.

#### 4.3.1 Testing

The different types of tests that may be undertaken to support the assessment of conformance are described below. Notwithstanding which type is selected, all testing should be performed in accordance with ISO/IEC 17025: 2005 *General requirements for the competence of testing and calibration laboratories*.

## Type (approval) testing

Testing of a product at prototype or 'first-off-the-line' stage (initial type testing - ITT) demonstrates that the product, as designed, conforms to the requirements of the relevant standard and/or specification. A 'type test report' is sometimes used as the basis for supply to the market, or it can form the basis of a supplier declaration, approval by a regulatory authority, or product certification by a certification body operating under an appropriate scheme.

Type testing may also be used as a post-market tool to verify that a product still meets the standards or specifications, as was previously demonstrated when the product was first placed on the market.

## Proof testing

Proof testing is used to demonstrate the ongoing fitness-for-purpose of a product.

It may be applied to a single unit for the purpose of assessing only that unit or, where the unit tested can be reliably regarded as being a representative sample of a batch or consignment, the result may be used to "pass" the entire batch or consignment.

Such a test may involve verifying performance above that expected in actual use in order to demonstrate performance and/or safety margins but not to the level that would be associated with a type test. Indeed, proof testing is not intended to compromise the use of the unit or sample tested and, as such, is not intended to be destructive. Because of this, failure under a well-designed proof test shows that the product probably falls well short of its design specifications.

## Production testing

Production testing can comprise either 100% testing of production, or can be undertaken by way of batch testing where a sample is selected for testing from a batch or lot. It may, therefore, be used on an entire consignment, or applied to a particular batch or series of batches. Production testing may or may not involve verifying performance above that expected in actual use, but as a minimum it is intended to demonstrate that production continues to comply with the relevant standards.

### 4.3.2 Inspection

Various inspection options are available to support the conformity assessment process, as described below. Regardless of which option is selected, inspection activities should be undertaken in accordance with ISO/IEC 17020: 2012 *Conformity assessment – Requirements for the operation of various types of bodies performing inspection*.

#### Design verification

This is a comprehensive, systematic examination and review of a design to evaluate its compliance with specified requirements, and to identify any perceived deficiencies. While a manufacturer could be expected to undertake this type of verification as part of any design process, it can also be performed as a stand-alone conformity assessment process by a third party that possesses the relevant engineering experience and competence.

#### Fabrication inspection

Fabrication inspection, which applies more to large and complex assemblies than materials and simple construction products, can be conducted throughout the manufacturing process to ensure that the product is true to the design, and is free from faults or omissions introduced during the assembly/construction phase.

#### Installation inspection

Even a fully compliant product can have its efficacy or safety compromised during installation. Installation inspection is used to provide confidence that conformity is maintained during the installation process.

#### In-service inspection

This type of inspection involves verifying compliance of products or structures in-situ, and provides confidence that the product or structure continues to comply with specified requirements while in service.

### 4.3.3 Product Certification

Product certification is an independent attestation of compliance by a certification body (CB). The CB is a type of CAB specialising in certification, and which may have been accredited to demonstrate its impartiality and competence. It provides a third party service in areas where there is trade in relevant goods and services.

The CB attests to the conformity of the product based on its evaluation of the product. This evaluation can be conducted by the CB itself or may be outsourced to laboratories, inspection bodies or auditors/assessors.

A number of types of product certification exist to assist procurers in reducing the risk of unpredicted product failure (that is, failure that occurs during a product's expected life). The certification type(s) is usually selected according to the degree of assurance it provides. The product certification may rely on simple type test schemes, where certification is provided based on the outcomes of an initial test report and design review. Alternatively, the certification may be more complex, involving type testing and design evaluation, supplemented by initial and ongoing audits of manufacturing quality control systems and periodic re-testing of actual production.

For products captured by the NCC, the evidence of suitability requirements (Part A2.2 Vol 1, Part 1.2 Vol 2, and Part A2.2 Vol 3) provide scope for other types of product certification to be provided including certificates from a professional engineer or other appropriately qualified person. These types of certification must:

- certify that a material, design or form of construction complies with the requirements of the NCC; and
- set out the basis on which it is given and the extent to which relevant specifications, rules, codes of practice or other publications have been relied upon.

Depending on the product type and the risk associated with its use, these types of certification may be also be considered acceptable. Chapters 5 and 6 of this Guide provide more guidance on selecting the right conformity assessment pathway.

### 4.3.4 Quality Management Systems (QMS) Certification

QMS certification involves the auditing of a supplier against a management system model. Such models usually promote the use of the 'plan-do-check-act' cycle in all relevant processes within the supplier organisation. This encourages the organisation to analyse its operations in detail to identify opportunities for standardisation and improvement, with the aim of enhancing efficiency, reducing rejects and maintaining customer satisfaction. The most commonly-used QMS model in Australia is AS/NZS ISO 9001: 2008 *Quality management systems – Requirements*. Many CBs offer third party certification to this standard.

QMS certification provides confidence that the organisation is responsive to customer needs and capable of consistently meeting customer expectations. However, it does not provide independent attestation that the organisation's product complies with a particular standard. QMS certification should, therefore, be seen as complementary to, rather than as a replacement for, product certification.

As a result of the complementary nature of QMS and product certification, many product certification schemes incorporate all or parts of AS/NZS ISO 9001 to provide confidence in consistent quality, especially in relation to products for which the risk of premature failure is considered too high.

## 4.4 Supplier Declaration of Conformity (SDoC)

In some instances, the conformity assessment process may take into account a SDoC, which involves the supplier of a product attesting to its conformity with a required standard or customer specification. SDoCs may be used within a regulated environment, or under voluntary sector arrangements.

The basis for the declaration needs an appropriate justification, such as the results of testing or an engineering evaluation of the design. The SDoC process places the responsibility for the product's performance and/or safety on the person signing the declaration.

A conformity assessment scheme may require lodgement of the SDoC with another agency, or it can require the declaration to be available upon request of an authority or customer.

# 5 Determining Whether a Product is Fit for Purpose

The aim of this section is to provide guidance to assist procurers in determining whether particular construction products are fit for the purposes for which they are intended.

## 5.1 What is Fitness for Purpose?

Manufacturers and suppliers generally have an obligation to offer products and materials for sale that are fit for purpose. This arises from common law or legislation or is an express or implied term in most contracts where supply of a product or material is a requisite part of the contract.

Procurers will best serve the client (themselves or others) by facilitating the use of products and materials that comply with both quality expectations and with relevant laws. Procurers also need to recognise that having a low expectation of quality does not mean that a product or material will be fit for purpose nor in compliance with relevant laws. Whilst quality expectations may vary, regulatory requirements are not optional and must be met in all cases.

As set out in Section 3 of this Guide, building legislation in every State and Territory requires new building work to meet a range of technical standards. All structural building products are required to comply with the NCC and be fit for purpose. This obligation extends to products that are not required to conform to the NCC, but are captured by other legal obligations, as also described in Section 3.

Conformance and other compliance information will generally be required to be submitted as part of the building approval process. For larger construction projects where building approval is not required, these requirements will generally be captured in the contract documentation.

Examples of products that would not be covered by the NCC or other regulated building standards include items such as kitchen cupboards, architraves, skirtings, wall and floor tiles, door handles, hinges and basins. However, these products are still governed by the ACL, which means they are still required to be manufactured to a level where they are fit for their intended purpose.

Under the ACL which took effect on 1 January 2011, Australia now has a national product safety system. The Australian Government is able to:

- issue safety warning notices
- ban products, either temporarily or permanently
- impose mandatory standards for products and product-related services
- issue compulsory recall notices, requiring businesses to recall a product
- impose information standards, requiring that certain information about a product be provided to consumers before or at the time of purchase.

Other parties in the construction supply chain have complementary responsibilities, such as selecting products that are fit for purpose (e.g. designers and architects) or checking that the products used are fit for purpose at or after installation (e.g. builders, building certifiers, engineers, etc). The fact that multiple parties have some level of responsibility points to the need for each party to have a clear understanding of their specific obligations.

Fitness for purpose is not just a matter of legal requirement. If a product or material is specified in a supply agreement or a building contract to be of a certain quality, failure to meet the specified quality or performance standard means it is not fit for purpose in the context of that contract, even if it might be fit for purpose according to an applicable law.

There are implied warranties at common law that apply in the context of building and supply contracts. One of these is a warranty of fitness for purpose. These implied warranties are in addition to the guarantees that the ACL sets out, elsewhere described in this Guide. However, the warranty of fitness for purpose may not be implied (other than in ACL governed contracts) where the failure is related to the particular contract specification.

The process of determining whether a product is fit for purpose, including obtaining appropriate evidence of product compliance, can be complex at times. The responsibility to gather such evidence falls to many different people in the building and construction process. It is, therefore, important that everyone involved in the procurement and supply chain is aware of their role in ensuring that the products selected in design, ordered and delivered to site match up to what was intended.

## 5.2 Making Decisions about Fitness for Purpose

To determine whether a product is fit for purpose, it is recommended that procurers consider following the steps in Figure 5.1 and Figure 5.2. This type of methodical process aims to support effective decision-making and reduce the likelihood of non-conforming product that is not fit for its intended purpose being used in building and construction projects.

The steps have been separated into the two distinct stages in the procurement process, which are:

- design and specification stage
- on-site construction stage.

**Figure 5.1:** Decision-making during the Design and Specification Stage

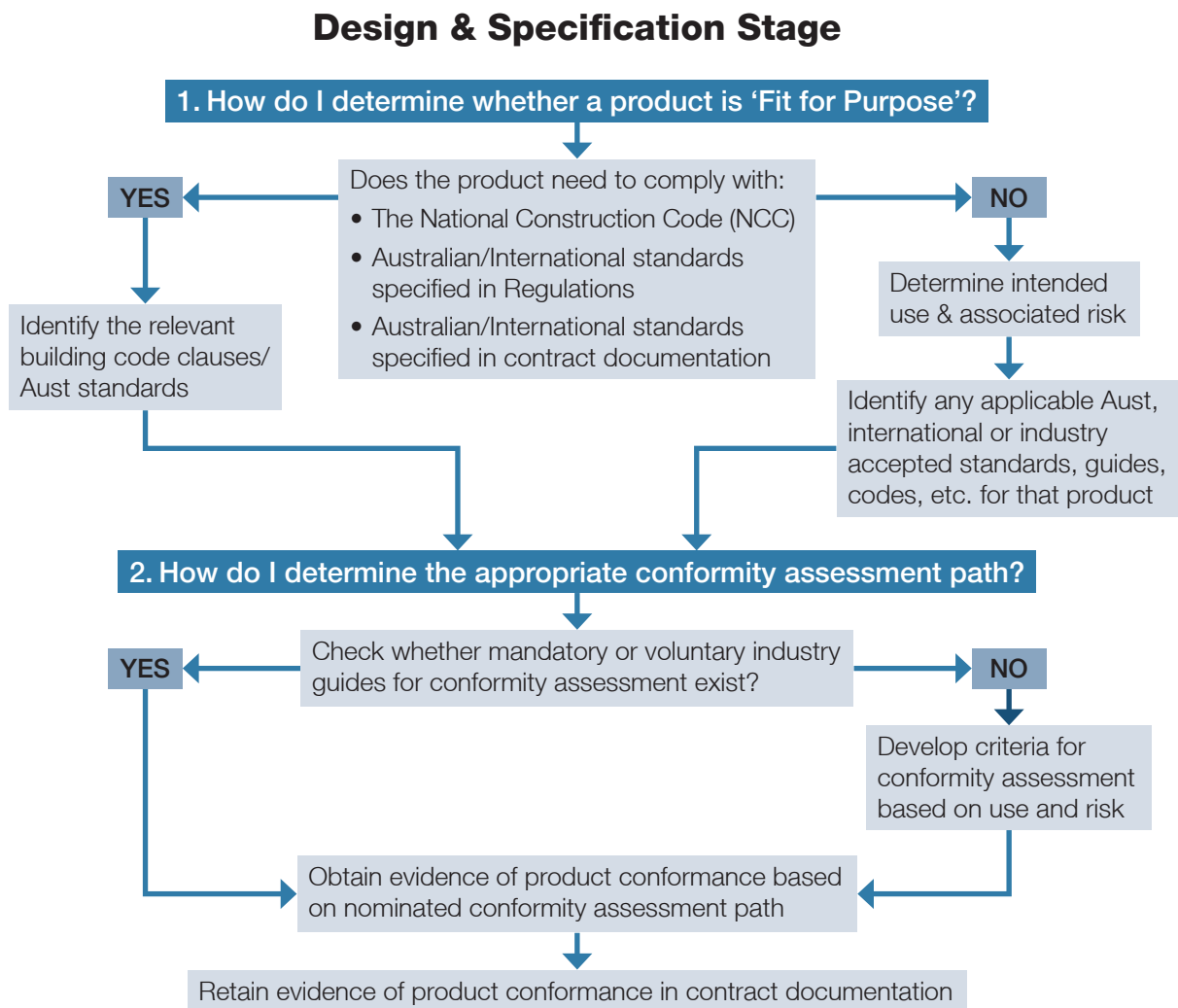
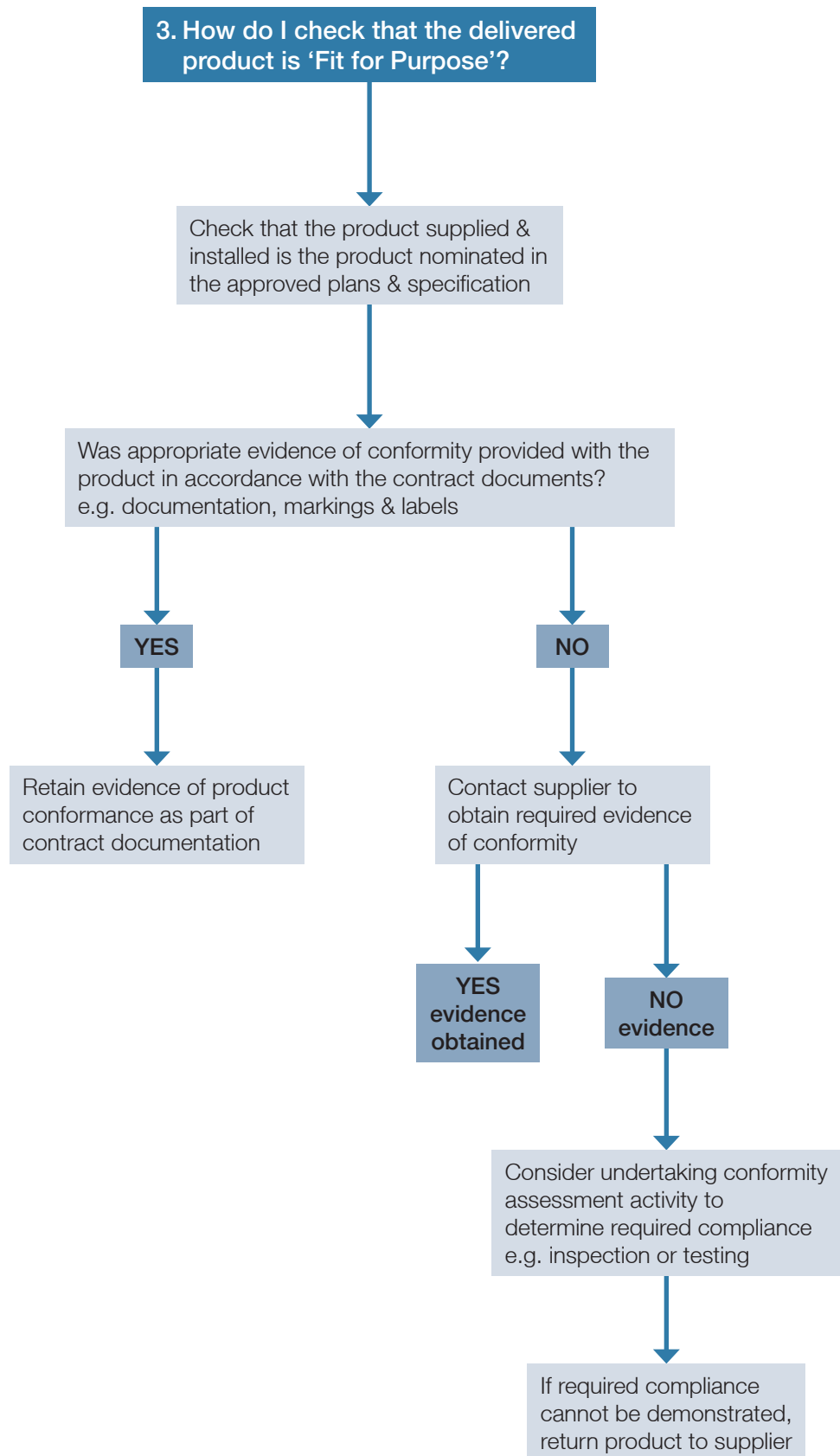


Figure 5.2: Decision-making during the Construction Stage

### On site construction stage (delivery)





# 6 Selecting the Appropriate Conformity Assessment Path

## Summary

- There are four main conformity assessment activities associated with verifying that a product fulfils specified requirements.
- Procurers (particularly builders, designers, and construction certifiers) and suppliers need to choose the appropriate conformity assessment path in order to manage risk.
- Conformity assessment activities may be carried out by first, second or third parties.
- There are internationally agreed standards for carrying out conformity assessment activities.
- Not all combinations of conformity assessment are applicable to, or suitable for, all types of products and not all conformity assessment schemes do the same thing. Different combinations of conformity activities and the parties that undertake them can give rise to different levels of confidence that the product complies with the specified requirements.
- The needs of the stakeholders, risk factors, product type and characteristics, plus the desired level of confidence in product conformity drive the choice of which individual conformity assessment pathway to choose.
- Where multiple options exist, an assessment of the costs and benefits of each would generally be undertaken as part of the decision-making process.

## 6.1 Overview

Procurers, designers, construction certifiers and product suppliers need to choose the appropriate conformity assessment path to manage risk for any products under consideration.

With several different types of certification and accreditation, making the most appropriate conformity assessment choice can mean the difference between a stakeholder fulfilling their duty of care or not.

There are four main conformity assessment activities associated with ensuring that a product fulfils specified requirements (e.g. a standard). These are:

- testing the product or a sample of the products
- inspecting the product or a sample of the product
- auditing the quality management system that covers the production of the product
- assessing the product and production process associated with the product.

These conformity assessment activities may be carried out by the following parties:

- first party (1<sup>st</sup>) – the manufacturer and/or supplier (or related group)
- second party (2<sup>nd</sup>) – the purchaser and/or user
- third party (3<sup>rd</sup>) – an independent party that has no interest in the transaction between the first and second party.

There are internationally agreed standards for carrying out conformity assessment activities by one or more of the above parties as follows.

- Testing can be carried out by laboratories and testing facilities that fulfil the requirements of ISO/IEC 17025: 2005, *General requirements for the competence of testing and calibration laboratories*. Laboratories and testing facilities fulfilling this standard may be 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup>-party laboratories and testing facilities.
- Inspection can be carried out by inspection bodies that fulfil the requirements of ISO/IEC 17020: 2012 *Conformity assessment – Requirements for the operation of various types of bodies performing inspection*. Inspection bodies fulfilling this standard may be 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup>-party inspection bodies.
- Auditing the quality management system that covers the production of the product can be carried out by using ISO 19011: 2011 *Guidelines for auditing management systems* in the case of 1<sup>st</sup> and 2<sup>nd</sup> parties. In the case of auditing by a 3<sup>rd</sup> party, this can be done by management system certification bodies fulfilling the requirements of ISO/IEC 17021: 2011 *Conformity assessment – Requirements for bodies providing audit and certification of management systems*.
- Assessing the product and production process associated with the product can take into account the outputs of the previous conformity assessment activities (i.e. testing, inspection, audit of the quality management system). Assessing the product and production process can result in a Supplier's Declaration of Conformity if it is undertaken by a 1<sup>st</sup> party<sup>10</sup>. In the case of assessment of the product and production process by a 3<sup>rd</sup> party, this can be done by a product certification body fulfilling the requirements of ISO/IEC 17065: 2012 *Conformity assessment – Requirements for bodies certifying products, processes and services*.

Different combinations of the above conformity activities and parties that undertake them can give rise to different levels of confidence that the product complies with the specified requirements. Which combination of activities and parties to accept is a risk judgement. One understanding is that for high-risk<sup>11</sup> products, a combination of conformity assessment activities undertaken by independent third parties can give rise to greater confidence in any subsequent claims of conformity.

Combinations of conformity assessment activities and the identification of the parties that can undertake those activities are often prescribed in conformity assessment schemes. When third parties are relied upon, these conformity assessment schemes are called certification schemes, and if those schemes focus on products, then they are known as product certification schemes.<sup>12</sup>

Not all combinations of conformity assessment are applicable to, or suitable for, all types of product and not all conformity assessment schemes do the same thing.

Conformity assessment schemes come in many different varieties and may offer different levels of assessment and risk management, from basic document-based studies through to full independent product assessment with continuing, periodic validation of supplier claims of conformance. The needs of the stakeholders, product types, and the characteristics that are to be assessed, plus the desired level of confidence in product conformity drive the choice of which individual conformity assessment scheme to choose.

There are several basic activities that comprise conformity assessment schemes. Some can be used alone. Others are typically activities that are combined in a complete system. The basic activities of conformity assessment (discussed in Chapter 4 of this Guide) are testing, inspection, supplier's declaration and certification.

The selection of appropriate conformity assessment activities in a system involves consideration of several factors including:

- the perceived risks associated with non-conformity (i.e. the low, medium or high risk of occurrence matched to the low, medium or high consequence of that occurrence);

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10 The relevant international standards for 1<sup>st</sup> party claims of conformity are ISO/IEC 17050-1: 2004 *Conformity assessment – Supplier's declaration of conformity – Part 1: General requirements*, and ISO/IEC 17050-2: 2004 *Conformity assessment – Supplier's declaration of conformity – Part 2: Supporting documentation*.

11 In accordance with ISO 31000: 2009 *Risk management – Principles and guidelines*, risk can be understood through examining the consequences and likelihood of failure of the product.

12 For further information see ISO/IEC 17067 *Conformity assessment – Fundamentals of product certification and guidelines for product certification schemes*.

- the practical means of evaluating key characteristics;
- the scale and type of manufacture and/or production operation or delivery;
- the effectiveness of marketplace mechanisms to remove non-conforming products from the market;
- the effectiveness of penalties for placing non-conforming regulated products in the market; and
- the effectiveness of systems to recall non-conforming regulated products from the market.

Broadly speaking, the lower the level of risk of occurrence of product failure and the lower the consequence of such a failure, the lower the necessity for a product-specific full validation of a supplier's claims of product conformity to a given construction products standard.

These principles are detailed in the governing international conformity assessment systems standards noted above.

Where appropriate, assessing the product and production process associated with the product can take into account the outputs of previous conformity assessment activities (e.g. testing, inspection, audit of the QMS). Assessing the product and production process can also result in an SDoC, if it is undertaken by a first party.<sup>13</sup> In the case of assessment of the product and production process by a third party, this can be achieved by a product certification body fulfilling the requirements of ISO/IEC 17065: 2012 *Conformity assessment – Requirements for bodies certifying products, processes and services*.

## 6.2 Which Conformity Assessment Path is Correct?

Not all conformity assessment schemes are applicable to, or suitable for, all types of products, and not all conformity assessment schemes do the same thing.

Where there is more than one conformity assessment pathway that may be applicable, selecting the most appropriate combination of activities and assessing parties is a process of risk evaluation, and requires judgment. For example, for high-risk products<sup>14</sup> required for a particular application, a combination of conformity assessment activities undertaken by independent third parties will typically give rise to greater confidence in any subsequent claims of conformity.

With a wide range of conformity assessment paths available, how does the procurer identify the path that best addresses its needs, while remaining cost-effective? Where such decision is not already dictated by regulators, scheme requirements or the market, then a range of factors such as stakeholder needs, risk, the product type and its characteristics, and the desired level of confidence in product conformity will need to be considered in choosing which assessment pathway is preferable. In circumstances where there are multiple options, an assessment of the costs and benefits of each conformity assessment path should be undertaken.

Risk-related considerations and matters relating to product characteristics are often considered the most difficult to ascertain and as such, they are discussed in more detail below.

### 6.2.1 Risk Assessment

Risk assessment involves identifying all the possible foreseen and unforeseen hazards affecting the functions the product is intended to perform, and relating these to the characteristics specified in the standard or other normative document. The likelihood of the hazards emerging prior, during and after installation of the product (including under normal and abnormal conditions) is estimated and the consequences of each hazard determined.

For example, where the consequence is severe and the likelihood is moderate or high, the procurer may consider that the risk is too high to accept a product solely on the basis of an SDoC. As such, the procurer is likely to consider using product certification as a mechanism to reduce the risk to acceptable levels. The choice of product certification scheme will depend largely on the severity of those risks that are not capable of being managed by the use of an SDoC alone.

An evaluation of the range of relevant risk factors will help to clarify the path that is appropriate for the item in question.

<sup>13</sup> The relevant international standards for first party claims of conformity are ISO/IEC 17050-1: 2004 *Conformity assessment – Supplier's declaration of conformity – Part 1: General requirements*, and ISO/IEC 17050-2: 2004 *Conformity assessment – Supplier's declaration of conformity – Part 2: Supporting documentation*.

<sup>14</sup> In accordance with ISO 31000: 2009 *Risk management – Principles and guidelines*, risk can be understood through examining the consequences and likelihood of failure of the product.

A starting point could be the implications of getting the decision wrong. That is, what are the risks associated with using a product on the basis of incorrect testing, measurement, inspection or certification? For example:

- Are there health and safety risks associated with a non-conformity:
  - to people using the product?
  - to personnel at the site in which the product is used?
  - to the general public?
- What are the liabilities of use?
- Are there consumer protection issues (apart from safety), e.g.:
  - purchase cost to the consumer?
  - existence of other consumer protection legislation?
- Is there potential for significant economic loss to:
  - people using the product?
  - the owner of the construction work in which the product is used?
  - the general public?
- What product-specific factors come into play, e.g.:
  - operational (installed) life?
  - product market life?
- Are there issues of international trade, such as:
  - testing or inspection requirements of the purchaser?
  - potential for non-acceptance of test data to be cited as a discriminatory trade barrier?
- Are there potential downstream costs that could arise from longer-term failure?

Generally the lower the level of risk of product failure and/or consequence of such a failure, the greater discretion a procurer can use to obtain product specific validation of a supplier's claims of product conformity to a particular standard.

## 6.2.2 Product Types and Characteristics

Some conformity assessment processes are simply not appropriate to many construction products.

In many instances, manufactured products have to be treated differently from raw materials. Further, serially produced products and material have to be treated differently from customised products.

For example, the conformity assessment options chosen would be expected to be quite different, such as:

- a window assembly custom-manufactured for a large construction project – fabrication inspection would be an appropriate element
- high tensile bolts – type certification would be an inferior choice when compared to a scheme that includes periodic proof testing from production
- cementitious materials – chemical analysis and physical testing performed as part of production quality assurance would be essential.

## 6.3 Existing Conformity Assessment Schemes and Guides

There are existing schemes and/or guides for construction products operating in Australia and internationally that provide guidance to procurers on industry best practice. A number of public and industry specific schemes or guides are included in Appendix 1. By its nature, Appendix 1 will change and is designed to be updated regularly. Reference should be made to the appropriate associations and product certification bodies for that particular product sector and other references provided in Appendix 1 for the most up-to-date information for particular products.

A number of these industry-developed schemes have been in place for some time and have been effective, however, it should not be interpreted that they are endorsed by government.

## 6.4 What Level of Evidence is Appropriate?

### 6.4.1 Verification, Certification and Reports

In most cases the information relied upon to verify that a product is fit for purpose will be documentation of some type. This will range from testing certificates and reports issued by testing authorities to product technical information produced by the manufacturer of the product.

As discussed in Section 3.2.1, for building work captured by the NCC there are five types of documentation that can be obtained to provide evidence of suitability.

In some instances, it is also possible for certain design professionals (such as engineers) to provide certification that a product, or more commonly a building system, has been designed in accordance with relevant standards.

For products not covered by the NCC, there are also different levels of assurance that the manufacturer could supply. These include:

- a warranty document that details the warranty period and conditions
- test results describing the level of conformance of the product with respect to a non-referenced Australian Standard, and a certificate of conformance or a report from an industry/product expert confirming compliance with the standard
- technical information supplied by the manufacturer, including specifications and installation instructions
- endorsement by an industry scheme such as the Engineered Wood Products Association of Australasia's 'green label' initiative for promoting low formaldehyde emissions.

Information of this kind can provide suppliers with a point of differentiation in the marketplace, while also delivering peace of mind to procurers.

When the procurer receives any of the above types of evidence, they have a responsibility to satisfy themselves that they are genuine. This process should include the following simple steps such as checking that the document:

- is an original
- specifies the date on which it was generated
- has not been edited or tampered with in any way
- includes the name, signature and contact details of the person making the conformance claim
- specifies the performance standard(s) against which the product has been tested and is claiming conformance
- clearly states that the product passed the relevant tests and meets the standard(s)
- states any exclusions or limitations on the testing or performance of the product.

### 6.4.2 Product Marking

In some cases a product is required to be marked or labelled as part of product-specific schemes, regulation or standard. The aim of the marking or labelling is to provide the procurer with readily identifiable information and assurance that the product meets the relevant performance standards. Where such marking or labelling and appropriate standards requirements apply, the existence of the appropriate mark/label is one measure that can help procurers satisfy themselves that a product is fit for purpose.

Markings may be placed directly onto the product, such as required by the Watermark Scheme for certain plumbing products, or may be placed on the packaging of the product such as permitted under the Water Efficiency Labelling Standard Scheme. If you intend to rely on the marking as the means of verification for a particular product, it is important to ensure that you do cite the marking, particularly if the product will be covered as part of the construction work, hiding the label.

### 6.4.3 Industry-Supported Schemes and Guides

A number of industry-supported product schemes and guides have been established in Australia. These schemes and guides are operated by either industry associations or product certification bodies and provide verification of specific product categories. These schemes and guides range from programs that inspect and verify individual manufacturing plants and the products manufactured, to programs that focus on the product only. These schemes and guides can offer the procurer an alternative verification pathway where there are no regulated requirements for a product's quality or where requirements do exist, they can offer a more reliable means of ensuring compliance has been achieved.

# Appendix 1 Guide to Industry Conformity Assessment Schemes and Information

## Context

There are a number of conformity assessment pathways available to industry, and no one pathway is suitable or possible for the vast array of construction products available. It is also a reality that the various product sectors are at different stages of their journey towards leading practice implementation of conformity assessment schemes.

A number of these industry-supported schemes have been in place for some time and have been effective in lifting the level of information available about product conformity and monitoring the performance of some product sectors. However, it should not be interpreted that they are endorsed by government or that all products in a particular category will be participating in the schemes identified.

Appendix 1 provides an overview of what guidance and conformity assessment schemes are currently available in the different product sectors. By its nature, this will change and this information is designed to be updated over time to include changes or new schemes that become available. For the most up-to-date information for particular products, reference should be made to the appropriate industry associations and product certification bodies for that product sector and other references provided in Appendix 1.

Importantly, readers are advised that for an up-to-date listing of accredited conformity assessment bodies, it is recommended to consult the JAS-ANZ Register ([www.jas-anz.org/register](http://www.jas-anz.org/register)) and the NATA website ([www.nata.com.au](http://www.nata.com.au)).

Appendix 1 is structured under product sectors, which in turn contain a collection of information on available guidance material and product or product sector compliance schemes. The index on the following page provides a convenient first point to identify the product sectors of interest.

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# A Reinforcing & Structural Steel

## Products Covered

- Structural steel – hollow sections to AS/NZS 1163
- Structural steel – flat products to AS/NZS 1594
- Structural steel – plate to AS/NZS 3678
- Structural steel – sections to AS/NZS 3679.1 and 3679.2
- Steel reinforcing materials to AS/NZS 4671
- Steel prestressing materials to AS/NZS 4672

## Introduction

There are several industry groups associated with steel products. The following schedules set out the separate programs operated by these industry groups. More information on each can be found by visiting the relevant webpage or contacting the organisation directly.

The following steps outline the recommended conformity assessment pathway for construction steels:

1. A Chartered Professional Civil or Structural Engineer (CPEng through Engineers Australia, or equivalent) must specify the Australian Standard/s, in accordance with the NCC, to which the steel product shall conform when supplied.
2. These Australian Standards shall be specifically referenced in the contract documentation for each steel product.
3. The contract documentation shall require at least the following:
  - a. For structural steels, test certificates complying with the relevant testing standards, shall only be accepted from an ILAC-accredited laboratory with the correct scope of accreditation for testing to the specific product standard/s concerned. For reinforcing and prestressing steels, documented evidence of compliance shall be provided confirming the requirements of Appendix 1 in AS/NZS 4671 or AS/NZS 4672.2 as appropriate.
  - b. All manufacturers of steel products supplied shall have product certification from a JAS-ANZ accredited product certification body with specific, documented expertise in the products and standards certified.
  - c. Structural steelwork shall be fabricated and erected in accordance with AS 4100 *Steel Structures* or AS 5100.6 *Bridge Standard – Steel*. Reinforcing and prestressing steel shall be processed and installed in accordance with AS 2870 *Residential Slabs and Footings Standard*, AS 3600 *Concrete Structures*, or AS 5100.5 *Bridge Standard – Concrete*.
4. Prequalification of the steel contractor shall be demonstrated based on demonstrated capability and certification commensurate with the level of risk.
5. The Engineer shall review, or have reviewed, the product certification and/or test certificates (as appropriate for the type of steel products procured) and confirm they comply with the requirements of the contract documentation, prior to the issue of the Engineer's certificate.
6. A copy of the Engineer's certificate, product certification body certificates and product test certificates (where required) shall be kept by the project manager.
7. Product should not be used in construction without adequate evidence of product conformity.

## National Construction Code (NCC) Conformance

- Volume One
  Volume Two
  Volume Three
  N/A

## Industry Schemes and Guides for Conformity Assessment

### Product Conformity Guidance

- Australian Steel Institute
- Steel Reinforcement Institute of Australia
- Australian Technical Infrastructure Committee

### Product Certification Schemes

- National Structural Steelwork Compliance Scheme (NSSCS) operated by Steelwork Compliance Australia (SCA)
- Australasian Certification Authority for Reinforcing and Structural Steels (ACRS) for structural, reinforcing and prestressing steels
- Australian Technical Infrastructure Committee ATIC Scheme 10 Requirements for bodies certifying manufacturers of structural steel products
- Shedsafe for cold-formed steel sheds



## Reinforcing & Structural Steel

### Australian Steel Institute

Australian Steel Institute (ASI) is the peak national body representing the steel manufacturing and design chain including manufacturers, fabricators and downstream providers, engineers and builders.

<http://steel.org.au/key-issues/compliance>



AUSTRALIAN STEEL INSTITUTE

### Registered Accreditation Number

Not applicable

### Product Conformity Guidance

The ASI has been working in the compliance space for a number of years. Along with the promotion of awareness and supporting industry compliance initiatives, ASI is currently in the process of developing a holistic compliance scheme for fabricated and erected structural steelwork, which is underpinned by a Code of Practice and upcoming Australian Standard for the fabrication and erection of structural steelwork.

The ASI supports a rigorous fit-for-purpose, risk-based compliance approach for structural steel and steelwork as an integral component of construction safety, underpinned by the following principles:

1. use of the relevant Australian Standard where available
2. product certification commensurate with the level of risk associated with the fabrication, erection or use of the structure
3. prequalification of the steelwork contractor based on demonstrated capability, and certification commensurate with the level of risk.

The ASI has underwritten development of the National Structural Steelwork Compliance Scheme which is planned to commence in mid-2014. The Scheme is administered separately by Steelwork Compliance Australia.

### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

### Scheme or Guide Features

Refer to individual scheme information sheets

## Reinforcing & Structural Steel

### Steel Reinforcement Institute of Australia

Steel Reinforcement Institute of Australia (SRIA) is Australia's leading non-profit national organisation providing high-quality technical support and information to the Australian building industry on the use of reinforcing steel in concrete, primarily reinforcing bar and reinforcing mesh.

[http://www.sria.com.au/quality\\_assurance.html](http://www.sria.com.au/quality_assurance.html)



#### Registered Accreditation Number

Not applicable

#### Product Conformity Guidance

SRIA members demonstrate compliance through external independent certification bodies.

*Steel Reinforcing Bar and Steel Reinforcing Mesh:* Steel Reinforcement as defined by steel reinforcing materials standards AS/NZS 4671 and for design and fabrication AS 3600, AS 5100 and AS 2870.

SRIA members comply with the relevant standards that apply to the reinforcement industry. This may be demonstrated through:

- a. Third party Product Quality Certification to AS/NZS 4671 and all associated standards.
- b. ACRS certification will satisfy this criterion but this is not exclusive.
- c. Documented Quality Management System plus Authority Product Approvals.

International Organisation for Standardisation, ISO 9000 family of standards for quality management systems plus multiple product approvals from State and/or Federal Government construction authorities.

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

Refer to individual scheme information sheet

## Australian Technical Infrastructure Committee (ATIC)



Australian Technical Infrastructure Committee (ATIC) is a technical group under the umbrella of the APCC, with endorsement from Austroads.

[www.apcc.gov.au](http://www.apcc.gov.au)

### Registered Accreditation Number

Not applicable

### Product Conformity Guidance

For specifying 'product conformity' requirements for construction products in government projects, ATIC has been progressively producing a suite of master procurement specifications (ATIC-SPEC), which for 'conformity assessment', will reference the complementing 'ATIC suite of schemes' also being prepared. They are all voluntary and are available in the public domain at: [www.apcc.gov.au](http://www.apcc.gov.au).

ATIC-SPEC sections are reference documents and each contains a table of 'project specifics' requirements which are copied, inserted and edited into individual project specifications. It is also noted that ATIC-SPEC operates in parallel with the existing Water Services Specification (WS-SPEC).

The template for the ATIC suite of schemes contains three sections:

- Section 1: Requirements for certification bodies
- Section 2: Requirements for manufacturers/suppliers
- Section 3: Clarification for the consistent application of the standard(s), i.e. product conformity.

ATIC Scheme 10 is the first of the proposed ATIC suite of schemes, being part of the ATIC agenda to coordinate technical issues relevant to infrastructure procurement. Other schemes are proposed, including for reinforcing steel, mechanical fasteners, cementitious materials and execution of steelwork.

### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

### Scheme or Guide Features

Refer to individual scheme information sheet

## Reinforcing & Structural Steel

### National Structural Steelwork Compliance Scheme (NSSCS)

<http://steelworkcompliance.com>



#### Registered Accreditation Number

Not applicable

#### Scope of Scheme

Steelwork Compliance Australia (SCA) administers an independent, third party certification program supporting the National Structural Steelwork Compliance Scheme (NSSCS).

The scheme covers fabricated and erected steelwork supplied to Australian materials and design standards.

SCA certifies fabricators, both Australian and overseas based, to a nominated Construction Category (CC), where the CC varies from 1 for simple structures with low hazard to life to 4 for more complex structures and/or high hazard to life. This fit-for-purpose classification is defined in the ASI Fabrication and Erection Code of Practice and is strongly aligned with the building and structure Importance Level defined in the Building Code of Australia (BCA).

The scope of the NSSCS covers structures designed to:

- AS 4100 – Steel structures
- AS/NZS 5100 – Bridge design
- AS/NZS 4600 – Cold-formed steel structures (selected coverage).

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

- Specialist certification scheme for fabricated and erected steelwork structures to Australian Standards
- Requires fabricators to be certified to a nominated Construction Category
- Supports and simplifies client-based prequalification requirements
- Is open to both Australian fabricators and overseas-based fabricators
- Has strong alignment with compliance requirements implemented in New Zealand

## Reinforcing & Structural Steel

### Australasian Certification Authority for Reinforcing and Structural Steels (ACRS)

[www.steelcertification.com](http://www.steelcertification.com)

#### Registered Accreditation Number

JAS-ANZ – Z5221212AC



#### Scope of Scheme

The Australasian Certification Authority for Reinforcing and Structural Steels (ACRS) administers an expert, independent, not-for-profit, third-party product certification scheme for the manufacture and processing of reinforcing, pre-stressing and structural steels supplied to Australian and New Zealand materials and design standards.

The ACRS output-focused scheme starts where quality management systems (AS/NZS ISO 9001) auditing and mill test certificates stop. ACRS certificates provide ongoing confidence to designers, specifiers and purchasers that materials supplied to the market have been assessed by steel experts as consistently meeting the requirements of Australian/New Zealand Standards and associated specifications.

ACRS currently certifies more than 40 steel companies in 16 countries, covering the majority of construction steels supplied to Australian/New Zealand Standards. ACRS operates to the latest conformity assessment models and regularly benchmarks against international best practice to ensure the scheme's technical competence, industry relevance and cost effectiveness.

ACRS is accredited by JAS-ANZ to ISO/IEC 17065: 2012: *Conformity assessment – Requirements for bodies certifying products, processes and services*, providing assurance that ACRS technical auditing meets international requirements for competence, consistent operation and impartiality.

#### Scope of certification

AS/NZS 1163	Cold-formed structural steel hollow sections
AS/NZS 1594	Hot-rolled steel flat products
AS/NZS 3678	Structural steel – Hot-rolled plates, floor plates and slabs
AS/NZS 3679.1	Structural steel – Hot-rolled bars and sections
AS/NZS 3679.2	Structural steel – Welded I sections
AS 3600	Concrete structures (only those clauses relating to the post-production bending of reinforcing steel)
AS 5100.5	Bridge design – Concrete (only those clauses relating to the post-production bending of reinforcing steel)
NZS 3109	Concrete construction (only those clauses relating to the post-production bending of concrete construction) (only those clauses relating to the post-production bending of reinforcing steel)
AS/NZS 4671	Steel reinforcing materials
AS/NZS 4672	Steel prestressing materials – General requirements

#### Scheme or Guide Type

- |   |  |
|---|--|
| <input type="checkbox"/> Product Management Systems Certification | <input checked="" type="checkbox"/> Product Certification      |
| <input type="checkbox"/> Product Inspection Services              | <input type="checkbox"/> Product Testing and Sampling Services |

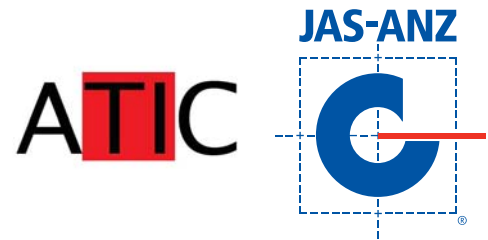
#### Scheme or Guide Features

- Specialist conformity scheme for steel construction products to Australian/New Zealand Standards
- Certifies majority of construction steels supplied in Australia and New Zealand
- Expert auditors all qualified metallurgists with 15-years+ experience
- Endorsed by 18 peak Australasian professional and industry bodies, including Austroads, Engineers Australia and Australian Institute of Building Surveyors (AIBS)
- Internationally recognised; certifies over 40 steel companies in 16 countries

## Reinforcing & Structural Steel

### ATIC Scheme 10: Requirements for bodies certifying manufacturers of structural steel products

[www.apcc.gov.au](http://www.apcc.gov.au)



#### Registered Accreditation Number

Endorsed by JAS-ANZ as a scheme partner, see:

[www.jas-anz.org/index.php?option=com\\_content&task=view&id=164&Itemid=1](http://www.jas-anz.org/index.php?option=com_content&task=view&id=164&Itemid=1)

#### Scope of Scheme or Guide

ATIC Scheme 10 is the first of the proposed ATIC suite of schemes operating under ISO/IEC 17065. It is a third party certification scheme addressing both product conformity and conformity assessment, and is endorsed by JAS-ANZ as a scheme partner.

The scheme presently covers the following structural steel products:

- cold-formed structural steel hollow sections to AS/NZS 1163
- structural steel – Hot-rolled plates, floor-plates and slabs to AS/NZS 3678
- structural steel to AS/NZS 3679, Part 1: Hot-rolled bars and sections
- structural steel to AS/NZS 3679, Part 2: Welded I sections

ATIC Scheme 10 is used in project procurement specifications by being referenced from the associated ATIC–SPEC Section SP60 Structural Steel Products.

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

- Public sector scheme
- Endorsed by JAS-ANZ as a scheme partner
- Product conformity and conformity assessment fully addressed
- Linked to the master specification, ATIC–SPEC, for preparation of project procurement specs

## Reinforcing & Structural Steel

### ShedSafe

[www.ShedSafe.com.au](http://www.ShedSafe.com.au)



### Registered Accreditation Number

Not applicable

### Scope of Scheme

ShedSafe is the industry benchmark for Australian manufactured cold formed steel sheds. It is a third party certification program intended to assist buyers to be able to have confidence in the engineering, steel products and site specification of the steel shed they are purchasing.

Shed manufacturers are required to demonstrate engineering design principles are consistent with the National Construction Code via an independent design review process. Shed manufacturers are required to complete ongoing audits to ensure compliance with current standards.

ShedSafe shed sellers are required to undertake online training for building specification for site classification and building classes.

ShedSafe is managed by the Australian Steel Institute, Australia's peak steel industry body.

### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

### Scheme or Guide Features

- Ensures that members manufacture buildings in accordance with Australian Standards
- Designs are maintained consistent with changes to the NCC and Australian Standards
- Clear identification of compliant designs for project managers, specifiers, builders and building surveyors to meet and enforce compliance with the National Construction Code
- Industry-trained staff to provide advice on correct application and suitability for intended site
- Steel building products conforming to Australian Standards

# B Cementitious Materials for Concrete

## Products Covered

- General purpose and blended cements (as defined in AS 3972-2010)
- Supplementary cementitious materials (as defined in AS 3582, Parts 1, 2 and 3) for use with Portland and blended cement including fly ash, slag and amorphous silica

## Introduction

The cement industry operates under a disciplined regime of testing and analysis to assure customers of the performance and quality of supplied materials. Manufacturers operate NATA-certified laboratories which analyse samples of in-process and despatched product. These analytical methods are generally prescribed in Australian Standards or relevant international norms.

The level of process control necessary to meet these industry standards is particularly high given the nature of the cement manufacturing process. The chemical and mineralogical consistency needed for cement to actually perform to high specifications requires exemplary process control in cement manufacturing, and needs to be ongoing.

The industry also participates in national and international testing proficiency programs, ensuring the accuracy of analysis and information.

A signed compliance certificate (Supplier's Declaration of Conformance – SDoC) covering batches of despatched product, specified as on a volume or time basis, will be issued under the signature of a NATA-registered signatory.

**Supplementary cementitious materials (SCM)** are generally a co-product of other industrial processes. Again, in-process sampling and sampling of product prior to despatch ensure the compliance of the materials with specified requirements and inform the conformance of those materials.

When requested by the purchaser, the SCM supplier shall issue a test certificate.

## National Construction Code (NCC) Conformance

Volume One       Volume Two       Volume Three       N/A

## Industry Schemes and Guides for Conformity Assessment

### Product Conformity Guidance

- Cement Concrete Aggregates Australia
- Australian Technical Infrastructure Committee

### Product Certification Schemes

- Cementitious Materials Registration Scheme (CMRS)



## Cementitious Materials for Concrete

### Cement Concrete and Aggregates Australia

Cement Concrete and Aggregates Australia (CCAA) is the peak national body representing the interests of Australia's \$6 billion a year heavy construction materials industry.

[www.ccaa.com.au](http://www.ccaa.com.au)



#### Registered Accreditation Number

Not applicable

#### Product Conformity Guidance

The cement industry operates a scheme based on testing and calibration laboratories providing product testing and sampling services.

Product conformity is prescribed in Australian Standard AS 3972 – *General purpose and blended cements*.

The method for determining conformity assessment is described in the Introduction.

A certified compliance certificate (Supplier's Declaration of Conformance – SDoC) is available from the supplier describing the compliance of product with the relevant provisions of AS 3972 – *General purpose and blended cements*.

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

- Traceability of manufactured product
- Support of local standards and specifications
- Accuracy and precision of product testing methods through regular proficiency testing
- Industry supply chain ensures regular and timely critique of product performance

## Cementitious Materials for Concrete

### Australian Technical Infrastructure Committee

Australian Technical Infrastructure Committee (ATIC) is a technical group under the umbrella of the APCC, with endorsement from Austroads.



[www.apcc.gov.au](http://www.apcc.gov.au)

#### Registered Accreditation Number

Not applicable

#### Product Conformity Guidance

For specifying 'product conformity' requirements for construction products in government projects, ATIC has been progressively producing a suite of master procurement specifications (ATIC-SPEC), which for 'conformity assessment' will reference the complementing ATIC suite of schemes also being prepared. They are all voluntary and are available in the public domain.

ATIC-SPEC sections are reference documents and each contains a table of 'project specifics' requirements which are copied, inserted and edited into individual project specifications. It is also noted that ATIC-SPEC operates in parallel with the existing Water Services Specification (WS-SPEC).

The Cementitious Materials Registration Scheme (CMRS) is an interim solution for cementitious products and is an important element of the ATIC agenda to coordinate technical issues relevant to public infrastructure procurement. CMRS is maintained for use by government agencies across Australia, and the Registration List is available in the public domain, free of charge.

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

Refer to individual scheme information sheet

## Australian Technical Infrastructure Committee Cementitious Materials Registration Scheme (CMRS)



[www.apcc.gov.au](http://www.apcc.gov.au)

### Registered Accreditation Number

Not applicable

### Scope of Scheme or Guide

The Cementitious Materials Registration Scheme (CMRS) is a second-party, pre-registration scheme for cementitious materials for concrete managed by ATIC. It is currently administered by the Roads and Maritime Services Materials Technology Laboratory (RMS Lab).

CMRS covers:

- General purpose and blended cements to AS 3972
- Supplementary cementitious materials for use with Portland and blended cement
- Part 1: Fly ash to AS 3582.1
- Part 2: Slag – Ground granulated iron blast furnace to AS 3582.2
- Part 3: Amorphous silica to AS/NZS 3582.3.

CMRS is used in project procurement specifications by being referenced from the associated ATIC–SPEC Section SP43 Cementitious Materials for Concrete, Clause 2.3, and is an interim solution for conformity assessment as it only partially specifies the requirements. To assist applying CMRS to projects, simply copy the project specifics from Section SP43 and then insert and edit in each project specification.

Section SP43, Clause 4.8 also gives the designations and a detailed description of the product types in the CMRS Registered Products List.

### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

### Scheme or Guide Features

- Public sector scheme
- Linked to the master specification, ATIC–SPEC for preparation of procurement specifications
- Product conformity is fully addressed and conformity assessment is partially addressed

# C Wood Products

## Products Covered

- Engineered wood products including plywood, laminated veneer lumber (LVL), particleboard, fibreboard and sawn timber
- All wood fibre based products
- Timber used in packaging materials – usually for international transport

## Introduction

The wood products industry has established a number of voluntary product certification schemes and promotes these to members in an effort to maintain a high level of quality and performance of the products supplied.

The engineered wood product schemes are focused on in-mill auditing of quality systems and process control to ensure quality is built into the product, and that the finished product meets the requirements of the AS and AS/NZS product standards in all regards. The schemes also have ongoing monitoring of product properties such as strength, stiffness, bonding and formaldehyde emissions. The plywood, LVL and sawn timber schemes also have routine marketplace surveillance.

## National Construction Code (NCC) Conformance

Volume One

Volume Two

Volume Three

N/A

## Industry Schemes and Guides for Conformity Assessment

### Product Conformity Guidance

- Engineered Wood Products Association of Australasia <http://www.ewp.asn.au>
- Australian Forestry Standard <http://www.forestrystandard.org.au/>

### Product Certification Schemes

- EWPAA Plywood and LVL Scheme
- EWPAA Particleboard and MDF Scheme
- Plantation Timber Certification Scheme
- Australian Wood Packaging Certification Scheme
- Australian Forestry Standard Chain of Custody Scheme

## Wood Products

### Engineered Wood Products Association of Australasia

The Engineered Wood Products Association of Australasia (EWPAA) represents a range of traditional plywood products and a wide range of modern engineered wood products used in both commercial and residential structure.

<http://www.ewp.asn.au>



#### Registered Accreditation Number

Not applicable

#### Product Conformity Guidance

A major activity of the EWPAA is to provide a number of JAS-ANZ Accredited Product Certification services to members including:

- EWPAA Plywood and LVL Scheme
- EWPAA Particleboard and MDF Scheme
- Plantation Timber Certification Scheme
- Australian Wood Packaging Certification Scheme
- Australian Forestry Standard Chain of Custody Scheme.

The EWPAA also applies the requirements of ISO Guides 23, 27, 28 and 44.

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

Refer to individual scheme information sheets.

## Wood Products

### EWPAA Plywood and LVL Product Certification Scheme

<http://www.ewp.asn.au/register>



#### Registered Accreditation Number

Z4351009AN

#### Scope of Scheme or Guide

The EWPAA Plywood and LVL Product Certification Scheme is voluntary.

Any bona fide manufacturer in the Australasian region may enter provided it meets the qualification requirements. However, to use the certification marks, organisations must be certified against the requirements specified in the rules documents. These requirements are mandatory.

The products covered by the EWPAA Plywood and LVL Certification Scheme are:

- plywood - structural (AS/NZS 2269), marine (AS/NZS 2272), exterior (AS/NZS 2271) and interior (AS/NZS 2270)
- blockboard
- laminated veneer lumber (LVL) (AS/NZS 4357)
- formwork plywood (AS 6669)

Bridgewood, I-beams and a range of company specific 'special' products are also to be covered by the scheme using a combination of the requirements of the above Australian/New Zealand Standards and the manufacturing specification provided at the time of certification. Manufacturing specifications for such products are available on request from the EWPAA.

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

- Focuses heavily on in-mill process control to ensure quality is built into the products
- Mills are audited on a six-monthly basis
- Mills are required to submit weekly samples to the EWPAA's NATA-accredited laboratory for ongoing product property monitoring, including stiffness, strength, bonding and formaldehyde emissions
- Market surveillance is conducted as another level of surveillance
- Mills are required to have fully documented and maintained quality and calibration systems

## Wood Products

### EWPAA Particleboard and Fibreboard Product Certification Scheme

<http://www.ewp.asn.au/register>



#### Registered Accreditation Number

Z4351009AN

#### Scope of Scheme or Guide

The EWPAA Particleboard and Fibreboard Product Certification scheme is voluntary. Any *bona fide* manufacturer in the Australasian region may enter provided it meets the qualification requirements. However, to use the certification marks, organisations must be certified against the requirements specified in the rules documents. These requirements are mandatory.

The products covered under the EWPAA Product Certification Scheme are Fibreboard and Particleboard, including moisture-resistant (MR) fibreboard and particleboard manufactured in accordance with AS/NZS 1859 series *Reconstituted wood based panels* and AS/NZS 1860.1: 2002 *Part 1 Particle Board Flooring* and other products and standards as agreed from time to time by the EWPAA.

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

- Focuses heavily on in-mill process control to ensure quality is built into the products
- Mills are audited annually
- Mills are required to submit monthly samples to the EWPAA's NATA-accredited laboratory for ongoing product property monitoring, including stiffness, strength, internal bond, thickness swell, surface soundness and formaldehyde emissions
- The scheme requires fully documented and maintained quality and calibration systems

## Wood Products

### EWPAA Plantation Timber Certification Scheme (PTCS)

<http://www.ewp.asn.au/register>



#### Registered Accreditation Number

Z4351009AN

#### Scope of Scheme or Guide

The Plantation Timber Certification Scheme is voluntary.

Any *bona fide* manufacturer in Australia may enter provided it meets the qualification requirements. However, to use the certification marks, organisations must be certified against the requirements specified in the rules documents. These requirements are mandatory.

Standard products covered by the EWPAA PTCS are structural softwood in accordance with AS/NZS 1748 series *Timber – Solid – Stress grades for structural purposes* and AS 2858 *Timber – Softwood*.

Non-standard products shall be covered at the discretion of EWPAA.

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

- Focuses on in-mill process control to ensure quality is built into the products
- Mills are audited on a six-monthly basis
- Mills are required to conduct annual checks of their grading verification methods. The check shall comply with the requirements of Section 6.3 of AS/NZS 4490 and be performed at least once in each 12-month period
- Market surveillance is conducted every six months as another level of surveillance
- The scheme requires fully documented and maintained quality and calibration systems



## Wood Products

### EWPAA Australian Forestry Standard (AFS) Chain of Custody (CoC)

<http://www.forestrystandard.org.au/certified-organisations>

<http://www.ewp.asn.au/register>



#### Registered Accreditation Number

Z4351009AN

#### Scope of Scheme or Guide

The objective of the Australian Forestry Standard Chain of Custody (AFS CoC) scheme is to provide all suppliers in the wood or forest products certification chain with a credible system for tracking such products originating from forests that have been certified to AS 4708. These products may also be sourced from other forests managed under schemes recognised by AFS Ltd as substantially equivalent to the Australian Forest Certification Scheme.

The scheme covers all phases of ownership such as harvesting, transportation, primary and secondary processing, manufacturing, re-manufacturing, distribution and sales.

The scheme is voluntary – any organisation in Australia may enter provided it meets the qualification requirements. However, to use the certification marks, organisations must be certified against the requirements specified in the rules documents. These requirements are mandatory.

This scheme aims to reassure end-users of timber products that the timber has been sourced from sustainably managed forests and that there is a process of tracking this material from the forest right through the supply chain. This tracking is done via third party certification of each stage along the supply chain.

The scheme requires annual audits of quality systems, processes and records to ensure requirements of the AS 4707 continue to be met.

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

- Annual audits of each organisation's quality systems, processes and records to ensure continuing compliance with AS 4707
- The scheme requires fully documented and maintained quality systems

## Wood Products

### EWPAA Australian Wood Packaging Certification Scheme for Export (AWPCS)

<http://www.daff.gov.au/biosecurity/export/wood-packaging>

<http://www.ewp.asn.au/register>



#### Registered Accreditation Number

Z4351009AN

#### Scope of Scheme or Guide

This scheme ensures that timber products used in wood packaging material have been treated in a manner (usually heat treatment) that removes the risk of pests or diseases being spread through transportation. It involves six-monthly in-mill auditing of quality systems, processes and records to ensure compliance with the ISPM (International Standards For Phytosanitary Measures) 15 standard.

This scheme applies to the certification of wood packaging material for use in export consignments and is intended for use by Australian treatment providers, wood packaging manufacturers and the certification body (EWPAA). The EWPAA only provides AWPCS certification for facilities utilising the heat treatment method.

The scheme is voluntary – any organisation in Australia may enter provided it meets the qualification requirements. However, to use the certification marks, organisations must be certified against the requirements specified in the rules documents. These requirements are mandatory.

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

- Mills are audited on a six-monthly basis which include a complete review of all facility operations and procedures to verify that the certified facility continues to meet the requirements of the AWPCS
- The scheme requires fully documented and maintained quality systems

# D Glazing Products

## Products Covered

- Windows and Glazed Doors (as defined in AS 2047)
- Glass (as defined in AS 1288)
- Safety Glass (as defined in AS/NZS 2208)

## Introduction and Scope of Application

Glazing is defined by the NCC as: “a transparent or translucent element and its supporting frame located in the envelope, and includes a window and glazed door”.

The following steps outline the recommended conformity assessment pathway for windows and glazed doors in all classes of buildings.

1. The purchaser of the systems or products (site engineer, architect, building designer, builder, owner-builder) must specify the Australian Standard/s and appropriate wind loads, in accordance with the NCC, to which the glazing shall be supplied.
2. These Australian Standards shall be specifically referenced in the contract documentation for each glazed product.
3. The contract documentation shall require at least the following:
  - a. test certificates complying with the relevant testing standards; these shall only be accepted from a laboratory accredited by an ILAC MRA signatory with the correct scope of accreditation for testing to the specific product standard/s concerned
  - b. all suppliers/fabricators of steel products supplied shall have product certification body from a JAS-ANZ or NATA-accredited product certification or inspection body with specific, documented expertise in the products and standards certified
  - c. glazed products shall be fabricated in accordance with the details submitted and approved by the testing laboratory and appended to the report.
4. Labels must be placed on all glazed products in housing, and compliance certificates provided for all glazed products in all other residential and commercial buildings.
5. A copy of the compliance certificates, product certification body certificates and product test certificates shall be kept by the project manager.
6. Glazed products should not be used in construction without adequate evidence of product conformity.

## National Construction Code (NCC) Conformance

Volume One       Volume Two       Volume Three       N/A

## Industry Schemes and Guides for Conformity Assessment

### Product Conformity Schemes

- AWA Member Accreditation Scheme
- AWA Window Energy Rating Scheme

## Glazing Projects

### Australian Window Association

Member Accreditation Scheme

[www.awa.org.au](http://www.awa.org.au)



#### Registered Accreditation Number

NATA Accredited Inspection Agency number: 13739

#### Scope of Scheme or Guide

The Australian Window Association administers a Member Accreditation Scheme providing an expert, independent, not-for-profit, third party product inspection scheme for the manufacture and fabrication of type-tested glazed products supplied to Australian materials and design Standards, including assessments and conformity to AS 2047, AS 1288, AS/NZS 2208 and AS 3959. The scheme is available to AWA members as part of their membership.

AWA operates on the latest conformity assessment models and regularly benchmarks against international best practice to ensure the scheme's technical competence, industry relevance and cost effectiveness.

The AWA Scheme is accredited by NATA to ISO/IEC 17020.

The Scheme is voluntary and covers Building Products Fabrication process inspection Code(s): QWA AUD-012, QWA AUD-125A Windows (as defined by AS 2047) for construction to meet types and designs concerning structural properties, glazing, operability, weather performance, bushfire resistance and energy rating.

AWA currently audits and accredits more than 500 glazing/window companies in three countries.

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

- Ensures that members manufacture their products in accordance with the tested product report
- Continuously verifies that product ratings and labelling requirements are maintained to provide meaningful purchaser information for comparison of a product's performance
- Enables architects, specifiers, builders and building surveyors to meet and check compliance with the National Construction Code
- Simplifies the performance selection by a systematic approach
- Shows a purchaser that a quality assurance process was employed on his behalf

## Glazing Projects

### The Window Energy Rating Scheme (WERS) AWA Member Accreditation Scheme

[www.wers.net](http://www.wers.net)

#### Registered Accreditation Number

NATA Accredited Inspection Agency number: 13739



#### Scope of Scheme or Guide

The Window Energy Rating Scheme (WERS) operates a voluntary independent, third party auditing service for members in accordance with the procedures of the Australian Fenestration Rating Council (AFRC). The audit scheme provides third party verification on product assessment and certification of the energy efficiency of glazing products for use in the National Construction Code.

The results of the WERS are supplied through a certified product directory of approved products for WERS members, architects, builders, specifiers and building surveyors for verification of glazing system performance results.

The WERS membership also includes a member accreditation scheme for inspection of glazing products.

The WERS Member Accreditation Scheme is owned and administered by the Australian Window Association. WERS provides an expert, independent, not-for-profit, third party product inspection scheme for the manufacture and fabrication of type-tested glazed products supplied to Australian materials and design Standards, including assessments and conformity to AS 2047, AS 1288, AS/NZS 2208 and AS 3959. The scheme is available to WERS members as part of their membership.

AWA operates on the latest conformity assessment models and regularly benchmarks against international best practice to ensure the scheme's technical competence, industry relevance and cost effectiveness.

The AWA scheme is accredited by NATA to ISO/IEC 17020.

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

- Ensures that members manufacture their products in accordance with the tested product report
- Continuously verifies that product ratings and labelling requirements are maintained to provide meaningful purchaser information for comparison of a product's performance
- Enables architects, specifiers, builders and building surveyors to meet and check compliance with the National Construction Code
- Simplifies the performance selection by providing a systematic approach
- Shows a purchaser that a quality assurance process was employed
- Ensures energy ratings of glazing products are conducted to an internationally recognised, consistent set of procedures and on a level playing field

## Electrical Products

### Products Covered

- In scope electrical products
- Electrical cabling

### Introduction

The Electrical Regulatory Authorities Council (ERAC) is the peak body of electrical safety regulators in Australia and New Zealand. ERAC members act to ensure electrical safety regulatory systems are contemporary and harmonised wherever possible.

Electrical Safety Regulators in Australia and New Zealand, through their participation in ERAC, have created a central portal for identifying all certificates of electrical equipment issued under electrical safety laws in Australia.

It is the intention for this database to list all certificates issued by electrical safety regulators in Australia and New Zealand, as well as certificates issued by private certification bodies that operate in accordance with the Equipment Safety Rules of the Electrical Equipment Safety System.

### National Construction Code (NCC) Conformance

Volume One

Volume Two

Volume Three

N/A

### Schemes and Guides for Conformity Assessment

#### Product Conformity Schemes

- Electrical Equipment Safety System
- Approved Cablers Initiative

## Electrical Products

### Electrical Equipment Safety System (EESS)

<https://equipment.erac.gov.au/Public/>

#### Registered Accreditation Number

Not applicable



#### Scope of Scheme or Guide

The Electrical Equipment Safety System (EESS) is currently managed by the Electrical Regulatory Authorities Council (ERAC) and applied by participating electrical safety regulators. The EESS commenced on 1 March 2013 in Queensland and Tasmania and Western Australia have recognised the EESS. Other jurisdictions are currently progressing or considering their implementation of the EESS and New Zealand is considering complementary legislation.

The EESS covers in-scope electrical equipment which is low voltage electrical equipment that is rated at:

- Greater than 50 V AC RMS or 120V ripple-free DC (Extra-low voltage) and
- Less than 1000V AC RMS or 1500V ripple-free DC (high voltage).

In-scope electrical equipment is equipment that is designed, or marketed as suitable for household, personal or similar use. All in-scope electrical equipment is within one of three risk levels (level 1, level 2 or level 3).

Under the EESS all suppliers of “in-scope” equipment (“responsible suppliers”) must be registered before placing equipment onto the market. In addition electrical equipment must be registered with level of detail of registration dependant on the risk level classification of the equipment. Suppliers must also declare that all equipment they supply conforms to the relevant electrical safety standard.

In the EESS level 3 in-scope electrical equipment must have a Certificate of Conformity. This is obtained from an electrical safety regulator or private certifier (accredited by a regulator). Level 2 or level 1 in-scope electrical equipment may also have a voluntary Certificate of Suitability. All Certificates are issued in accordance with the Equipment Safety Rules and rely on accredited laboratory type testing to the relevant standard.

Under the EESS, all Level 1, 2 or 3 electrical equipment offered for sale in Australia and New Zealand by Responsible Suppliers must be marked with the Regulatory Compliance Mark (RCM), as illustrated above.

The RCM should be placed in accordance with AS/NZS 4417.1 (i.e. generally on the external surface of the electrical equipment as near as possible to the model identification). The use of the RCM on equipment is only permitted if the equipment is in conformance with the EESS.

#### Scheme or Guide Type

- |   |  |
|---|--|
| <input type="checkbox"/> Product Management Systems Certification | <input checked="" type="checkbox"/> Product Certification      |
| <input type="checkbox"/> Product Inspection Services              | <input type="checkbox"/> Product Testing and Sampling Services |

#### Scheme or Guide Features

- A template for nationally consistent, electrical equipment safety legislation throughout Australia and New Zealand aimed to increase consumer safety
- A national database where all suppliers and certain types of equipment must be registered prior to being offered for sale. This will allow equipment to be easily traced to its supplier and act as a gateway to the legal supply of electrical equipment in Australia and New Zealand
- Risk-based classification of equipment into three levels (Level 3, Level 2 and Level 1) with different requirements for each level
- A self-funding, user-pays system where registration fees fund improved compliance, surveillance and post-market enforcement activities
- Registration of a ‘Responsible Supplier’, who is a manufacturer or importer of in-scope electrical equipment and who is a legal entity in Australia or New Zealand, and who has the responsibility for ensuring the safety of the electrical equipment it sells in participating jurisdictions
- Technical safety requirements have not changed under the EESS, but there is clearer detail of required evidence of conformity is required for all in-scope electrical equipment.

## Electrical Products

### Approved Cables Initiative (ACI)

[www.australiancablemakers.com/committees/aci-approved-cable-initiative](http://www.australiancablemakers.com/committees/aci-approved-cable-initiative)



#### Registered Accreditation Number

Not applicable

#### Scope of Scheme or Guide

The Approved Cables Initiative was established to address the use of unsafe, non-compliant and counterfeit cable in the Australian marketplace. The ACI is administered by the Australian Cablemakers Association.

With industry and regulator support, the ACI is taking a proactive and hard-hitting approach to monitor and educate the Australian electrical industry supply chain – from manufacturers, importers, wholesalers and contractors to end-users.

The main focus of the ACI is to ensure that electrical cables available in the Australian market are fully compliant with the relevant Australian Standard/s.

Any cable failing to comply with Australian Standards will be reported to the relevant State or Federal authorities who have the power to act against these products in the interest of community safety.

There are various Australian Standards to which electrical cables are required to comply depending upon the application.

Suppliers are required to operate and maintain testing regimes that are defined in the relevant standards that include type tests to ensure the performance of the product meets the requirements defined in the standard, which then have to be supported by ongoing routine and sample test programmes to confirm ongoing compliance.

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

In order to help the Australian electrical industry supply chain to have confidence in the electrical cables that they are using, the ACA has introduced the ACI logo (as shown). Presence of this logo on electric cables gives the purchaser the following assurances:

- the electrical cable is fully compliant to the relevant Australian Standards
- the electrical cable has passed all the relevant electrical and mechanical testing
- the cable has been manufactured in Australia
- the manufacturing facility complies with all work health and safety legislation



# F Fire Safety Services

## Products Covered

- Fire protection equipment

## Introduction

There are numerous Registered Testing Authorities, conformity assessment schemes, JAS–ANZ accredited certification bodies, professional and appropriately qualified engineers and other legitimate bodies operating both in Australia and internationally in relation to providing evidence of product suitability regarding fire protection products. Each of these bodies has varying parameters associated with how they assess a product.

## National Construction Code (NCC) Conformance

- Volume One       Volume Two       Volume Three       N/A

## Industry Schemes and Guides for Conformity Assessment

### Product Conformity Guidance

- Fire Protection Association Australia

## Fire Safety Services

### Fire Protection Association Australia

FPA Australia is the peak technical and educational fire safety organisation in Australia and a national not-for-profit organisation. FPA Australia members design, manufacture, supply, install, commission, inspect, test, certify and maintain fire protection systems and equipment.

[www.fpaa.com.au](http://www.fpaa.com.au)



#### Registered Accreditation Number

Not applicable

#### Product Conformity Guidance

FPA Australia does not currently operate a conformance assessment scheme or any product approval or evaluation processes. However, FPA Australia has invested in providing information and advice to its members and the wider construction industry in relation to obtaining evidence of suitability in the fire protection sector.

This advice is based on applying the compliance pathways available under current legislation and focused on ensuring product is fit for purpose.

This information is provided in the form of technical documents which are available on FPA Australia's website.

FPA Australia advocates the following in relation to product compliance and evidence of suitability for fire protection products used in Australia.

1. Ensure legislation and minimum safety standards are achieved by ensuring products are "fit for the purpose for which they are intended".
2. Testing to relevant Mandatory Standards, Australian Standards or equivalent or more onerous international standards is critical to demonstrating product performance.
3. Products should only be certified if tested in accordance with point 2 above, or if the product only varies to a minor degree from a product that has been tested, where this variation is specifically assessed and documented.
4. Products for use in Australia should be tested or certified by a person or organisation able to demonstrate both product specific technical capacity and testing or certification competence relevant to the product being assessed. Such capacity and competence should be able to be independently confirmed.
5. Documentation provided as evidence of product compliance, should clearly and transparently indicate what recognised compliance pathway has been adopted and what specific performance criteria the product meets or exceeds, including any associated conditions.
6. Products must be demonstrated to be suitable for Australian conditions.

#### Scheme or Guide Type

- Product Management Systems Certification
- Product Inspection Services
- Product Certification
- Product Testing and Sampling Services

#### Scheme or Guide Features

Not applicable

## Plumbing Products

### Products Covered

- Plumbing and drainage products

### Introduction

State and Territory plumbing legislation references the Plumbing Code of Australia (PCA), which is published as Volume Three of the National Construction Code, or makes direct reference to the *AS/NZS 3500 – Plumbing and Drainage Series*, giving legal effect to the requirements of that standard as the minimum product requirements.

The PCA sets out the technical standards for how to undertake plumbing and drainage work, and makes reference to the product standards associated with that work.

The PCA sets out that certain plumbing or drainage installations must be certified and authorised. Product certification and authorisation must also comply with the procedures set out in Part G1 of the PCA (the WaterMark Certification Scheme). Plumbing products must meet the requirements of the scheme, and plumbers should refuse to install products that do not carry the WaterMark.

Where a material or product is exempted from certification under the PCA, it can be authorised for use:

- if it is certified as complying with the appropriate Australian Standard(s).

or

- if an appropriate Australian Standard does not exist, other evidence of suitability is provided in accordance with A2.2 of the PCA.

Furthermore, certain materials or products can be authorised for use if they are certified by a recognised body as complying with the relevant Australian Standard(s) for the specific application.

### National Construction Code (NCC) Conformance

Volume One

Volume Two

Volume Three

N/A

### Schemes and Guides for Conformity Assessment

#### Product Conformity Schemes

- Watermark

## Plumbing Products

### Watermark

[www.abcb.gov.au](http://www.abcb.gov.au)

#### Registered Accreditation Number

Not applicable



#### Scope of Scheme or Guide

The WaterMark Certification Scheme is a mandatory certification scheme for plumbing and drainage products to ensure that plumbing and drainage materials and products are fit for purpose and appropriately authorised for use in plumbing installations.

The Plumbing Code of Australia requires certain plumbing and drainage materials and products to be certified and authorised for use in a plumbing or drainage installation. These materials and products are to be certified through the WaterMark Certification Scheme and listed on the WaterMark Product Database.

In order to achieve Watermark Certification, the subject material or product must:

- be tested by a recognised testing laboratory;
- comply with an approved specification (either a relevant existing standard or an approved WaterMark Technical Specification);
- be manufactured in accordance with an approved Quality Assurance Program; and
- carry a warranty.

Materials and products complying fully with the applicable requirements of the WaterMark Certification Scheme are then eligible to be certified by a WaterMark Conformity Assessment Body (WMCAB) and listed on the WaterMark Product Database.

Certified materials and products are identifiable by the WaterMark trademark, which must be displayed on the material or product upon the granting of a WaterMark Certificate of Conformity.

The WaterMark Certification Scheme provides a nationally consistent, risk based certification scheme for ensuring the quality of certain materials and products used in plumbing and drainage installations.

A comprehensive listing — including product types and application, specifications and exemptions — of predetermined materials and product types is contained on the WaterMark Schedule of Specifications. The ABCB will keep the WaterMark Schedule of Specifications updated as new specifications are approved and old specifications removed. Likewise, the List of Exempt Products lists predetermined materials and products that are not required to be certified under the WaterMark Certification Scheme.

Materials or products not listed on the WaterMark Schedule of Specifications or List of Exempt Products which are proposed to be used in plumbing or drainage installations require risk evaluation in accordance with MP78-1999 *Manual for the assessment of risks of plumbing products* in order to determine a consequence score. Consequence scores less than 3 do not require certification, consequence scores of 3 - 4 require Level 2 certification and consequence scores greater than 4 require Level 1 certification.

One of the approved WMCABs can provide a review of the material and product to determine if WaterMark Certification is necessary.

Watermark is currently the subject of review by the ABCB and changes may occur in the future to its operation.

#### Scheme or Guide Type

- |   |  |
|---|--|
| <input type="checkbox"/> Product Management Systems Certification | <input checked="" type="checkbox"/> Product Certification      |
| <input type="checkbox"/> Product Inspection Services              | <input type="checkbox"/> Product Testing and Sampling Services |

#### Scheme or Guide Features

- A template for nationally consistent, plumbing and drainage products aimed to increase consumer safety
- A national certification scheme where all suppliers of certain types of plumbing and drainage products must obtain certification to permit the products use.
- Risk-based classification of plumbing and drainage products into three levels

# H Insulation

## Products Covered

- Insulated sandwich panels

## Introduction

Insulation sandwich panels are used in a wide range of building and construction projects.

The Insulated Panel Council Australasia Ltd. provides the following guidance in relation to product compliance and evidence of suitability for insulated sandwich panel products used in Australia.

1. Ensure legislation and minimum safety standards are achieved by ensuring products are “fit for the purpose for which they are intended”.
2. Testing to relevant Mandatory Standards, Australian Standards or equivalent or more onerous international standards is required to demonstrate product performance and compliance.
3. Products will only be certified if tested in accordance with point 2.
4. Products for use in Australia should be tested or certified by an organisation able to demonstrate both product specific technical capacity and testing or certification competence relevant to the product being assessed e.g. BRANZ, CSIRO, etc.
5. Documentation provided as evidence of product compliance should clearly and transparently indicate what recognised compliance pathway has been adopted and what specific performance criteria the product meets or exceeds.
6. Products must be demonstrated to be tested to meet Australian regulations.

## National Construction Code (NCC) Conformance

- Volume One
  Volume Two
  Volume Three
  N/A

## Industry Schemes and Guides for Conformity Assessment

### Product Conformity Guidance

- Insulated Panel Council Australasia Limited

## Insulation

### Insulated Panel Council Australasia Ltd



The Insulated Panel Council Australasia Ltd (IPCA) is the industry body for all manufacturers, installers and distributors of insulated sandwich panel products. The Panel Manufacturers Group originally formed in 2007 a sector of PACIA's Expanded Polystyrene Australia (EPSA Inc), incorporated in it's own right the Insulated Panel Council of Australasia Ltd. ACN 152 384 659. IPCA Ltd. is a not for profit and a third party certification body for the industry.

[www.insulatedpanelcouncil.org](http://www.insulatedpanelcouncil.org)

#### Registered Accreditation Number

Not applicable

#### Scope of Scheme or Guide

The IPCA Ltd. Code of Practice (the CODE) incorporating the IPCA Ltd. Panel Certification Scheme is a voluntary conformance assessment scheme including product approval and evaluation processes.

IPCA Ltd. has invested in providing information and advice to its members and the wider construction industry in relation to providing evidence of suitability of materials and installation.

This advice is based on applying the compliance pathways available under current legislation and focused on ensuring product is fit for purpose. This information is provided in the form of the CODE documents which are available on IPCA Ltd. website.

The objectives of the CODE are to:

- increase confidence in building structures using this material should a fire occur
- promote best practice in the design specification and approval for facilities using Expanded Polystyrene Fire Resistant (EPS-FR) Panel.
- establish minimum acceptable benchmarks for manufacturing and installation of EPS-FR Panel.
- promote strategies to address risks of fires.
- promote high levels of maintenance of facilities made of EPS-FR Panel.
- promote environmental and sustainability credentials for EPS-FR Panel.
- provide recognisable 'Code Branding Mark' to distinguish EPS-FR Panel compliant facilities

#### Scheme or Guide Type

- |   |  |
|---|--|
| <input type="checkbox"/> Product Management Systems Certification | <input checked="" type="checkbox"/> Product Certification      |
| <input type="checkbox"/> Product Inspection Services              | <input type="checkbox"/> Product Testing and Sampling Services |

#### Scheme or Guide Features

- Labelling
- Certification to ensure compliance
- Exceeds the requirements of the BCA, i.e. Group 2 areas will be Group 1 + additional CODE measures
- Meet ISO 9705 with the additions noted in this CODE
- Provides an audit system
- Provides identification process for fire fighters

This Guide was developed by the Construction Product Quality Working Group (CPQWG), on behalf of the Australasian Procurement and Construction Council (APCC). The working group comprised representatives from the following bodies:



