NATSPEC FOR GOVERNMENT PROJECTS

NATSPEC is owned by the following organisations:

- Air Conditioning and Mechanical Contractors Association of Australia
- Australian Elevator Association
- Australian Institute of Architects
- Australian Institute of Building
- Australian Institute of Building Surveyors
- Australian Institute of Quantity Surveyors
- Construction Industry Engineering Services Group
- Consult Australia
- Department of Housing and Public Works (QLD)
- Department for Infrastructure and Transport (SA)
- Department of Finance (Federal)
- Department of Finance (WA)
- Department of Logistics and Infrastructure (NT)
- Department of Treasury and Finance (TAS)
- Department of Treasury and Finance (VIC)
- Engineers Australia
- Infrastructure Canberra
- Master Builders Australia
- Public Works Advisory (NSW)
- Standards Australia

NATSPEC is a national not-for-profit organisation owned by the design, build, construct, and property industry through professional associations and Government property groups. NATSPEC's objective is to improve the construction quality and productivity of the sustainable built environment through leadership of information.

Government as an Informed Client

NATSPEC helps Government departments to become well-informed clients of the construction industry.

When delivering Government projects, it is important to meet both client and public expectations. This includes appropriate management from beginning to end, delivering projects on time and on budget, and meeting the end users' objectives.

> *"A good client with a mission to deliver a quality project needs, at the earliest possible stages of a project, to be fully aware of the risks to design quality that can arise. It also needs to be understood that, if it is not there from the outset, it is extremely difficult to add good design later in the project. Good design should underscore all decisions in the process of delivering a quality outcome."*
>
> Office of the Victorian Government Architect

For best possible results, Government departments must become well-informed clients, making well-informed decisions to achieve the appropriate level of quality and obtain value for money.

As well-informed clients, Government departments can improve construction quality, promote fair competition, increase productivity and create economies of scale.

Good quality construction specifications, life cycle costing strategies, and the national harmonisation of regulations and processes will all help Government departments to become well-informed clients.

Economic Benefits of NATSPEC

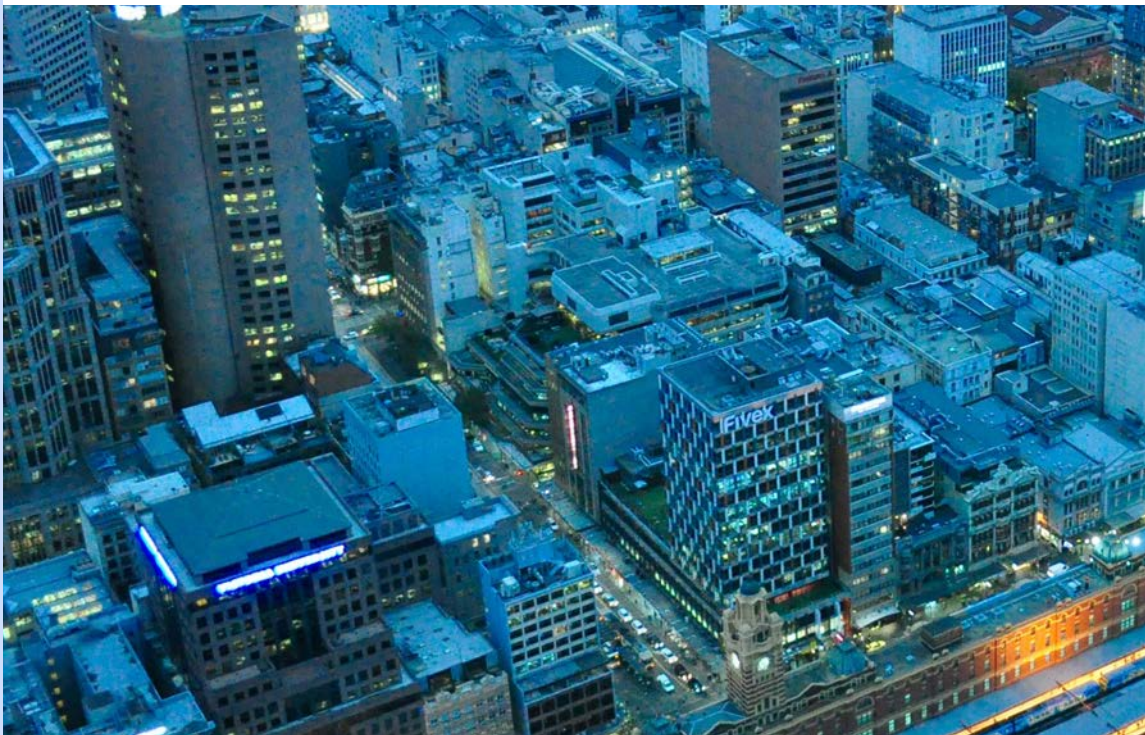
"Good design is a smart investment."

Department of Industry, Science, Energy and Resources

- Good documentation reduces project costs and allows for more accurate cost estimations.
- Clearly defined quality requirements reduce the likelihood of costly rework, redesign, variations and disputes.
- NATSPEC's clear and concise specifications improve communication between parties.
- Good quality construction increases asset value by extending the asset's life.
- Construction specifications reduce the risk of lengthy and expensive litigation as they are a clear record of the quality required for the project.
- As a quality control tool, NATSPEC helps minimise life cycle costs.
- NATSPEC is a tool to support open market competitive pricing.
- NATSPEC is updated twice yearly to incorporate changes to standards, regulations and industry practices. This is especially important as new products, technologies and practices are actively encouraged through the performance-based NCC.
- As a risk management tool, NATSPEC reduces the additional costs associated with non-compliance.
- As a comprehensive Australian national specification system, NATSPEC supports national harmonisation.

"Value for money does not mean obtaining the lowest price for every project. Rather, it is about adopting a broader, longer term view about the need to drive quality, innovation and cost effectiveness by fostering a thriving and sustainable construction sector."

New South Wales State Government



NATSPEC for Government Projects

Government departments can specify quality by using the NATSPEC National Building Specification for their projects. An up-to-date national specification system provides a baseline level of project quality and gives Government departments a reliable basis for assessing tenders and construction.

The IPWEA has found that the initial investment in construction projects equates to only 20% of the whole-of-life cost. Maintenance and operations represent the remaining 80% of costs. Repairs significantly increase these costs.

The NATSPEC National Building Specification minimises the risk of defects and their associated costs.

As major clients of the construction industry, Government departments must be aware of the value of good quality design and documentation and the positive impact it has on communities.

Adopting a nationally harmonised specification system for all building and construction works across Australia will not only improve overall construction quality, but also create an equitable, competitive environment.

NATSPEC was designed by public works departments to serve the needs of Government and statutory authorities. For this reason alone, NATSPEC is the logical choice as the single national specification system for all public works authorities.

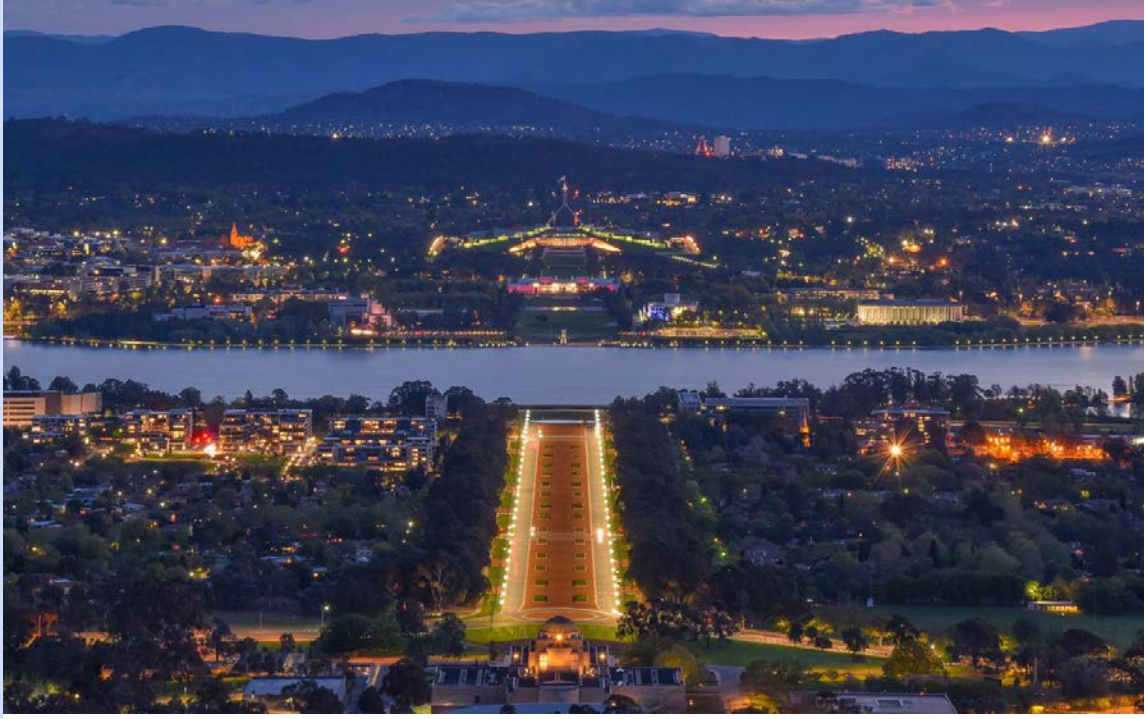
It is your product and you have rightly chosen to use it.

NATSPEC Government owners:

- Department for Infrastructure and Transport (SA)
- Department of Energy and Public Works (QLD)
- Department of Finance (Federal)
- Department of Finance (WA)
- Department of Logistics and Infrastructure (NT)
- Department of Treasury and Finance (TAS)
- Department of Treasury and Finance (VIC)
- Major Projects Canberra
- Public Works Advisory (NSW)

"Construction 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."

Australasian Procurement and Construction Council



Quality of Construction and Documentation in Australia

"If appropriate initiatives are considered early in the design process, then this will enable a quality design outcome."

Office of the Victorian Government Architect

Design and documentation quality directly influences project cost and duration at tender stage.

Tenders focusing on cost can adversely affect the quality of construction that is conveyed through documentation. Contractors are put under pressure to cut costs in order to remain competitive. However, this creates unfair competition, leads to less value for money, and lowers construction quality.

Quality in its simplest form can be defined as what the client wants, at the price they are willing to pay. As clients, Government departments have the responsibility to request a certain standard of quality for construction projects. Clear, concise documentation specifying this level of quality reduces the likelihood of variations, delays, rework and excessive requests for information during construction.

In Australia, contractors are not required to build projects to Australian Standards unless it is stated in the construction specification or regulated by the National Construction Code (NCC). In order for the project to meet the client's expectations of quality, it is crucial to include these standards in the construction specification.

As a quality construction specification, NATSPEC reduces the risk of variations and extra costs by facilitating a clear understanding of the acceptable level of quality for the project. The NATSPEC National Building Specification is easy to use and streamlines communication between Government departments, contractors, subcontractors, designers, architects and project managers.

"If everyone involved in the project complies, there will be a consistent standard, eliminating the need to explain things repeatedly."

Department of Parliamentary Services

Specifying Quality

A specification is part of the contract documentation of a building project. It complements the drawings, schedules and conditions of contract.

The specification is a multi-purpose document with the primary role of defining precisely and succinctly the levels of quality required and the processes necessary to achieve them. Its role includes, but extends beyond, the selection of materials by providing the criteria for acceptable quality of construction.

Factors that influence the desired quality level include:

- Anticipated lifetime – long-term durability or short-term use.
- Purpose of the building – prestige or utility, permanence or flexibility.
- Required functional performance – design repetition or one-offs, environmental.
- User perception – convenience, ease of maintenance and repair.

Quality cannot be managed if it is not defined. In construction, the responsibility for a project is divided between many people and organisations. Agreement on a defined quality level between all parties, and how this quality is to be measured, is essential. Construction specifications are the most reliable way to define the required level of quality and meet technical standards.

Using NATSPEC to achieve quality

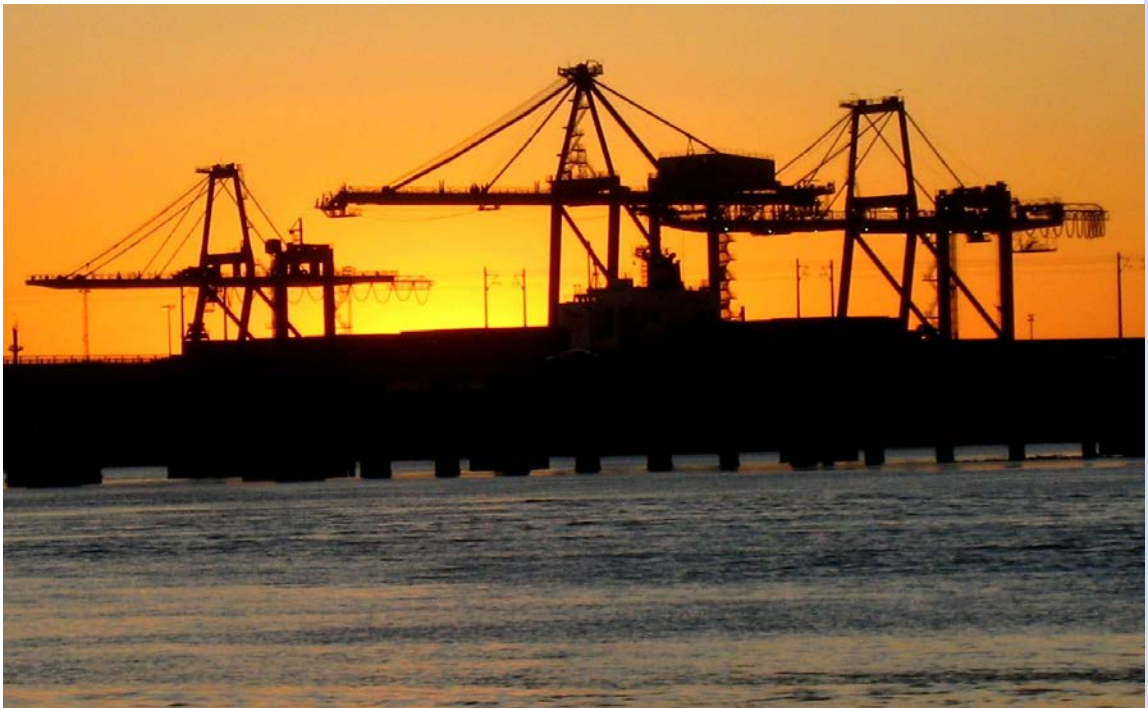
Project quality is dependent on documentation and supervision. The contract documentation includes the conditions of contract, the specification, drawings and schedules. Failure to take care in documentation and material selection may lead to poor quality and increased costs due to rework, repairs and replacements.

NATSPEC is the only comprehensive Australian national specification system that is regularly updated to reflect the latest changes in regulations, standards and industry practices. NATSPEC provides specification templates for architects, building designers, interior designers, landscape architects, structural and civil engineers and building services engineers.

NATSPEC is independent and does not favour one party over another.

Bryce Mortlock
NATSPEC Founder
RAIA Gold Medalist
Sir John Sulman Medal

"The level of quality that can be policed in the construction stage cannot be higher than that which is spelt out in the contract. If the building contract documents permit a sow's ear then all the quality control in the world cannot demand a silk purse. True quality control starts with the documentation for a project and in the project specification in particular."



"Specifications serve as a resource for everyone – manufacturers, suppliers, installers, assurers, developers – as all participants across the supply chain need to take responsibility for their contribution to producing a quality building."

Office of the NSW Building Commissioner

The Value of Good Documentation

Designers and contractors are under increasing pressure to deliver projects with limited budgets and time frames. This can adversely affect the quality of documentation, which is a critical factor in the success of a project.

Documentation involves the production of drawings, schedules and construction specifications, which form part of the contract documents of each project. Drawings and schedules provide information about quantity, while the construction specifications provide information about quality. The specification is read in conjunction with the drawings.

Drawings and specifications must address compliance with the NCC, Australian Standards, and relevant state and local regulations.

The construction specification is the most reliable way to achieve the desired standards and reduce the risk of contractual disputes, safety hazards and non-compliance.

If you have an up-to-date, comprehensive construction specification to support your drawings, you are well on your way to delivering a project with reduced risk of litigation.

> *"A specification becomes an essential contract management document which is used to ensure that the chosen supplier provides what is specified. It must therefore be clear and accurately define what is expected from a supplier regarding the outputs or the functional and performance requirements."*
>
> Victorian State Government

APCC Principles for Procurement and Conformance of Construction Products

NATSPEC specifications facilitate the implementation of the APCC's 12 principles for procurement and conformance of construction products.

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

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.

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

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.

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.

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.

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

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

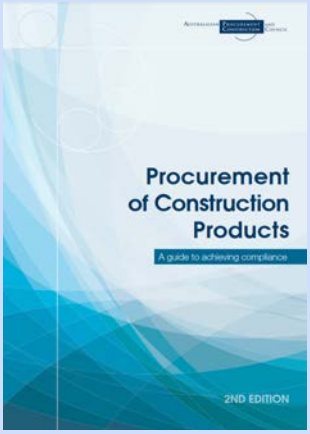
9. Responsibility for managing conformity assessment outcomes at each stage of the project should be appropriately allocated in the contract documentation.

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.

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.

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



Procurement of Construction Products: A guide to achieving compliance

Australasian Procurement and Construction Council

"Specifications are critical to achieving sustainable outcomes because it is here that sustainable inclusions, practices, and finishes are spelled out and linked to the contract."

Designing a Home: Step by Step
Australian Government

National Harmonisation

Figuring out how to save time and money without compromising quality is one of the biggest questions in design and construction. One answer is national harmonisation.

"The CCF supports harmonisation and mutual recognition as we support a competitive market where all parties can compete equally."

Civil Contractors Federation (CCF)

Inconsistent regulations across levels of Government create barriers to competition, increase costs of resources, and lower productivity. This affects anyone working on projects in different local government areas or across state jurisdictions. National harmonisation provides much-needed consistency.

The NCC, first published in 2011, is one major example of national harmonisation. In 2012, a report by the Centre for International Economics estimated that this reform had contributed to an annual national saving of over $1 billion.

In their 2018 report *Building Confidence*, Shergold and Weir note that many have described the NCC as world class. However, a call for greater harmonisation in compliance and enforcement systems remained a common theme in the authors' consultations.

The NATSPEC National Building Specification and AUS-SPEC local government specifications both achieve national consistency. In its twice-yearly updates, NATSPEC always incorporates feedback from many sources to ensure its specifications and other publications, such as the National BIM Guide, are relevant to projects across Australia.

NATSPEC supports the industry to achieve better efficiency and productivity through harmonisation.

A National Classification System

NATSPEC worksections are classified and sequenced in a logical order with respect for the common local construction industry sequence. Locations are allocated for specification material provided by the various specialist designers and consultants.

The National Classification System provides locations for specification material produced by the architect, landscape architect, interior designer, civil and structural engineers, and mechanical, hydraulic, electrical and fire engineers.

By adopting a common classification system, working on multiple different projects becomes easier to manage. This classification system is available for free at www.natspec.com.au.

"The life cycle cost approach encourages proponents to focus decisions on a developed life cycle cost regime to reduce energy consumption, maintenance requirements and ongoing operational costs."

Western Australian Department of Local Government, Sport and Cultural Industries

Life Cycle Costing

The longer something lasts, the less it costs over time. Life cycle costing highlights that initial investment counteracts maintenance fees and rework throughout the lifetime of a building. It is therefore important to focus on the initial stages of a construction project and to acknowledge the long-term value of quality design.

As stated by the Office of the Victorian Government Architect, "design quality needs to be prioritised and embedded early in a project." One of the most effective ways this can be achieved is by specifying a certain level of quality in the construction specification.

This will determine the quality of the design and manage the level of risk. It is important to make well-informed decisions and clearly specify these choices before construction begins in order to minimise life cycle costs.

"Life cycle costing is most effectively applied in the project's early design phase to optimise the total development and maintenance costs."

Transport for NSW

NATSPEC Services

David Jenkins
CEO, Institute of Public Works Engineering Australasia (IPWEA)

"AUS-SPEC was developed by IPWEA Australasia to provide nationally consistent civil specifications for councils that prevent duplication of effort and reduce costs.

"The AUS-SPEC library of civil design, construction and maintenance templates brings a shared professional language and process to engineering projects. In the current environment of increasing pressure on resource allocation, these publications are a tool to streamline asset life cycle planning and maintenance, while maintaining the essential focus on community safety and risk prevention."

NATSPEC's major service is the comprehensive National Building Specification, endorsed by Government and professional bodies. It is the only comprehensive national Australian master construction specification. The NATSPEC National Building Specification is suitable for projects of all types and sizes. NATSPEC worksections are updated every April and October to reflect changes in regulations, standards and industry practices.

Specialist packages are available for:

- Architects
- Interior designers
- Landscape architects
- Building designers
- Structural and civil engineers
- Services engineers
- Domestic owners

To learn more about NATSPEC subscription packages, visit www.natspec.com.au.

AUS-SPEC is the technical specification system for the management of minor infrastructure. Aimed at local government, it is a joint initiative between NATSPEC and the IPWEA. NATSPEC has been the key organisation that updates, develops and distributes AUS-SPEC since 2007. AUS-SPEC is an essential technical resource for life cycle management, helping local governments to design, construct and maintain their infrastructure assets. AUS-SPEC specifications are updated every October to reflect changes in regulations, standards and industry practices.

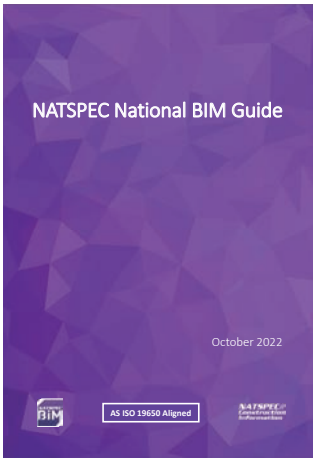
Specification packages include:

- Complete
- Contracts
- Urban and Open Spaces
- Buildings
- Roadworks and Bridges
- Public Utilities
- Maintenance
- Rural Roads

To learn more about AUS-SPEC subscription packages, visit www.aus-spec.com.au.

NATSPEC TECHnotes, TECHreports and other technical resources are available to download for free from www.natspec.com.au.

NATSPEC is responsible for the National BIM Guide and its associated documents, as well as the online National BIM Portal and NATSPEC BIM Properties Generator.



The National BIM Guide is a suite of documents that can be used to implement BIM on a project. The documents in the suite are:

- NATSPEC National BIM Guide and 4 supporting appendices.
- NATSPEC Project BIM Brief Template.
- Asset Information Requirements (AIR) Template.
- Project Information Requirements (PIR) Template.
- Exchange Information Requirements (EIR) Template.

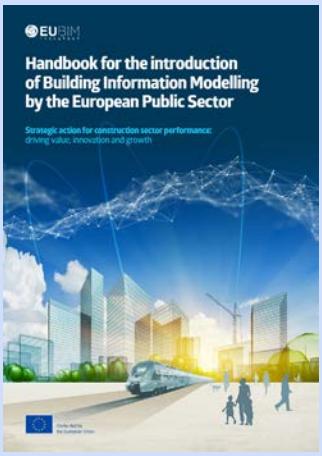
NATSPEC believes that digital information, including 3D Modelling, Building Information Modelling (BIM) and Digital Engineering (DE), will improve methods of design, construction and communication for the industry.

NATSPEC supports open global systems and aims to promote productivity through consistency and the development of BIM guidelines, standards and tools.

Visit the National BIM Portal here: www.bim.natspec.org.

NATSPEC BIM Building Information Modelling

"BIM is a digital form of construction and asset operations. It brings together technology, process improvements and digital information to radically improve client and project outcomes and asset operations. BIM is a strategic enabler for improving decision making for both buildings and public infrastructure assets across the whole life cycle. It applies to new build projects; and crucially, BIM supports the renovation, refurbishment and maintenance of the built environment – the largest share of the sector."



European Union BIM Task Group Handbook

NCPR NCPR

The National Construction Product Register (NCPR) is a searchable database of construction products whose evidence of conformity to Australian and international standards has been authenticated by NATSPEC.

Launched by NATSPEC in 2018, the NCPR is a response to the rising volume of inadequate, inaccurate and false evidence of conformity. Non-conforming building products reduce the safety profile of Australian buildings, putting clients and the public at risk. The NCPR combats this by promoting quality and safety.

The NCPR helps architects, building designers, building surveyors and contractors to:

- Select products that meet specific standards.
- Check if a substitute product meets the same standard as the originally specified product.
- Expedite the process of verifying product suitability for specific uses.
- Find credible manufacturers.
- Discover what evidence is available to submit to a contract administrator.

Search the NCPR here: www.ncpr.com.au.

NATSPEC// Construction Information

NATSPEC is a national not-for-profit organisation whose objective is to improve the quality and productivity of the sustainable built environment through leadership of information.

Founded in 1975, NATSPEC maintains the comprehensive national master construction specification system that provides a baseline level of quality for Australian construction. Endorsed by Government and industry bodies, NATSPEC is impartial and not involved in advocacy or policy development.

NATSPEC was established with the aim of providing a common language and economies of scale for its stakeholders.

For individual consulting practices, it is neither time efficient nor economically viable to monitor the large volumes of changes to regulations, standards, products and technologies. For this reason, a national master specification system is indispensable.

The NATSPEC master specification system provides significant advantages as its level of quality is taken as a standard by all sectors of the industry. The Australian construction industry is highly suited to a national system due to the use of common materials, construction techniques and procurement strategies.

NATSPEC//ConstructionInformation

NATSPEC is a national not-for-profit organisation, owned by Government and industry, with the objective to improve the construction quality and productivity of the sustainable built environment through leadership of information. It is impartial and is not involved in advocacy or policy development.

ABN 20 117 574 606
www.natspec.com.au