



# Specifying Responsibly

Evaluating and Selecting Products  
for Sustainable Construction

## INTRODUCTION

The construction of residential buildings, commercial buildings and other infrastructure has a significant impact on people and the environment. The built environment requires the use of land, materials and energy, which in turn leads to greenhouse gas emissions and the production of other wastes. In fact, emissions from the building sector hit their highest-ever level in 2019.<sup>1</sup>

Beyond the environmental cost, there is also a human impact. The people involved throughout the construction process are sometimes vulnerable to exploitation or are exposed to unnecessary risks to their health and safety. Buildings themselves may be harmful to human health through poor design or the use of toxic building materials.

While we often focus on aesthetics, performance and cost when designing and constructing buildings, beautiful designs do not need to come at the cost to the earth. Specifying responsibly means architects, designers and specifiers can reduce the environmental impact of building through careful material selection. They can also make informed design decisions that contribute to the health and wellbeing of all stakeholders in the supply chain.

Responsible specification typically involves selecting 'sustainable' products and materials. However, in the current landscape, it can be challenging identifying products and materials that are good for the environment as well as people. Not all 'sustainable' products are created equal – few brands are truly committed to reducing adverse environmental and human impacts throughout the entire building lifecycle, and fewer still can back up such claims with verified evidence.

In this whitepaper, we provide a guide to specifying responsibly to assist architects, designers and specifiers identify products that deliver sustainable outcomes for the client, the industry and the planet.



“Not all ‘sustainable’ products are created equal – few brands are truly committed to reducing adverse environmental and human impacts throughout the entire building lifecycle, and fewer still can back up such claims with verified evidence.”

## WHAT DOES 'SUSTAINABILITY' MEAN?

While there is no universal definition of 'sustainability', it is generally discussed in a specific way. Sustainability refers to processes and actions through which humankind avoids the depletion of natural resources to maintain an ecological balance. This concept also has a social and economic dimension which includes respecting and protecting social and economic equity, human rights, labour rights, livability, and human health and safety.

How does this apply to building and construction? A sustainable building is an outcome of a design philosophy which focuses on increasing the efficiency of resource use, while reducing building impacts on human health and the environment during the building's lifecycle.<sup>2</sup>

This is achieved through better design, specification, construction, operation, maintenance, and removal.

Sustainable building materials are therefore the products and materials that make sustainable building possible.

Such materials are produced in ways that do not deplete non-renewable resources, have no adverse impact on the environment when used, and reduce or eliminate any negative impact on human rights, health and safety throughout the supply chain.

Through responsible material selection, specifiers can reduce our environmental impact in many ways. This includes reducing our reliance on natural resources using reclaimed or recyclable materials, avoiding materials with high embodied emissions, and creating less waste. Certain materials contribute to building efficiency, resulting in reduced energy and water consumption throughout the building's life. Specifiers can also avoid materials that may have been produced through unethical practices (e.g. slave labour, exploitation, or unsafe working conditions), or otherwise pose a threat to human health and safety (e.g. due to toxicity or unsatisfactory performance).

---

“The manufacturer should be transparent about its environmental performance, and provide the appropriate environmental product and health information on request.”

---

## SPECIFYING SUSTAINABLE PRODUCTS AND MATERIALS

### Key attributes

Sustainable building products and materials typically demonstrate a range of environmental and health attributes.<sup>3</sup> Some of these attributes are listed below.

#### Environmental impact

- The product or material incorporates recycled content.
- It has been salvaged or reclaimed from existing or demolished structures (e.g. reclaimed wood).
- It is made with natural or renewable resources.
- It has low 'embodied' energy or emissions (the energy required to produce and transport the product or material).
- It does not contain ozone depleting substances.

#### Operational considerations

- The product or material is long-lasting, durable, with low maintenance requirements.

- It contributes to energy-efficient building operation (e.g. improves thermal comfort thus reducing our reliance on artificial heating and cooling).

#### End-of-life considerations

- The product or material is easily reused (either whole or through disassembly).
- It is readily recycled at the end of its initial life, preferably in a closed-loop recycling system.
- It is biodegradable.

#### Health and safety

- The product or material promotes good indoor air quality (e.g. through containing no volatile organic compounds and/or formaldehyde).
- It is sourced from ethical resources and manufacturers, preferably local.
- It is non-toxic, and poses no threat to human health and safety to any person involved in the project.



## TOOLS AND RESOURCES

### Environmental certifications and product standards

Several local and international industry and government organisations assure the environmental performance of building products and materials through environmental product labelling schemes and standards. Such third-party schemes and standards typically provide a ‘tick of approval’ and certification communicating that the product has been independently tested and verified to confirm its environmental performance. Examples include ISO 14025:2006 (Environmental labels and declarations), EN 15804 (Sustainability of construction works - Environmental product declarations), Good Environmental Choice Australia (GECA) and Global GreenTag’s GreenRate.

Other third-party certification schemes apply green criteria to specific material types. For example, wood sourced responsibly from sustainable forests are usually certified by third-party organisations and bodies such as the Programme for the Endorsement of Forest Certification (PEFC) and the Forest Stewardship Council (FSC). The international chain of custody standard for wood products is ISO 38200:2018 “Chain of custody of wood and wood-based products”.

### Environmental product declarations

An environmental product declaration (EPD) is an independently third-party verified and registered document that communicates transparent comparable data and relevant environmental information about the lifecycle environmental impact of a product. Every EPD is based on a Life Cycle Assessment (LCA), which is an assessment of the product’s environmental impact throughout its various life stages, from material and

component sourcing through to final disposal or recycling.

An LCA is conducted based on a standard set of methods and requirements depending on the product category, enabling the EPD to be used as a platform to compare similar products.

### Green building rating schemes

Gaining in acceptance worldwide, green building rating schemes establish overall environmental performance criteria for entire buildings. Such schemes provide rating tools, usually voluntary, to assess and recognise buildings that meet certain green requirements or standards. By formalising design and performance criteria, these rating schemes provide a common language and benchmark for sustainable design.<sup>4</sup> Some of the most internationally-recognised schemes include:

- GreenStar, administered by the Green Building Council of Australia;
- The WELL Building Standard, run by the International WELL Building Institute; and
- LEED (Leadership in Energy and Environmental Design), developed by the non-profit US Green Building Council.

Most green building rating schemes will award credits or points for the use of sustainable products and materials that go towards certification. Such schemes will recognise the use of reused materials, recycled-content materials, local or regional materials, renewable materials, certified wood, and low-emitting materials. Points are also awarded for responsible sourcing and supply chain, as well minimising health risks associated with the manufacture and use of building products.

## MAKING A RESPONSIBLE CHOICE

Assessing the health and environmental impacts of materials is a challenge faced by all. It is a process that is further complicated by varying claims from product manufacturers,<sup>5</sup> and the lack of definitive, industry-accepted processes for specifying responsibly.

At a minimum, responsible specification requires research, critical evaluation and common sense. Each product or material is subject to a wide range of factors that affect its sustainability and environmental performance, including:

- **Performance.** The product or material should meet the project's requirements for performance, such as durability, structural integrity, thermal performance, acoustic performance, and so on.
- **Environmental product information.** The manufacturer should be transparent about its environmental performance, and provide the appropriate environmental product and health information on request.
- **Code compliance.** The product or material should meet the requirements of local building codes and standards, many of which are geared towards ensuring buildings are safe, healthy, energy efficient and suitable for the local climate.
- **Maintenance requirements.** Products or materials that are difficult or costly to maintain will more likely need to be repaired or replaced sooner than low-maintenance solutions.

- **Warranties.** The manufacturer should be confident in the longevity of its products, and be prepared to provide support to ensure along product lifespan.

Specifiers should also do their best to minimise health and safety risks, not just for end users but also workers on site. For example, projects that are responsibly specified will avoid materials that involve health risks for fabricators and workers, such as reconstituted stone, which has high silica content. Silica dust exposure is linked to the development of lung cancer, silicosis and other diseases.<sup>6</sup> In such a scenario, a more responsible choice would be to select an alternative material that is silica-free, such as acrylic solid surface or a natural, non-toxic wood-based material.

It is also important to consider the manufacturer, and whether they demonstrate sustainable and responsible practices across their entire organisation. Corporate sustainability policies and reports provide insight as to the company's commitment to such practices. The company's track record is also relevant – have they taken action to reduce waste during manufacturing, do they focus on reusing or recycling materials, have they introduced new technologies to reduce energy and water use, and so on. Specifiers should also consider whether the manufacturer engages in responsible labour practices, and whether they engage only with ethical suppliers.



# ForestOne

## A leader in sustainable sourcing

ForestOne is the largest independent distributor of wood panels, timber and decorative surface products in Australia. This Australian-owned company has a strong focus on providing products to allow architects and designers to 'specify responsibly'.

## ForestOne Laminates, Decorative Panels & Worktops, by EGGER

ForestOne presents the EGGER range, which combines the latest in decorative wood-based products to bring unmatched quality and ensure a beautiful aesthetic in any interior. The range includes versatile laminates, durable panels and easy-to-mount worktops, as well as the innovative Feelwood and PerfectSense lines, which offer new finishes and textures alongside high levels of performance.

EGGER promotes sustainable construction and healthy living with their innovative wood-based solutions. The brand focuses on a closed material cycle, incorporating waste wood products in the production of their wood-based materials. They are committed to promoting sustainable forestry, ensuring compliance with legal and social standards, and sourcing from certified forests. They also continually improve the environmental performance of their production processes with a focus on new technology and renewable energy.

EGGER provides full transparency with EPDs, environmental and health datasheets, sustainability indicators and product certification. They readily provide professionals and interested end-users with important information on the environmental and health aspects of their products. EGGER also report on their sustainability performance in their company's Sustainability Report, outlining how they are meeting their responsibilities for their products, production, as well as for their employees and society.

## ForestOne Timber Panels, by DesignerPly & DesignerOSB

DesignerPly is a decorative range of plywood that has been specially selected to create a visual impact – from wall panelling and joinery to ceiling panels. DesignerPly offers an extensive range of products for many applications with clear and feature veneers to pre-finished powder coated and printed surfaces.

DesignerOSB is an engineered wood product formed by layering strands of wood in specific orientations to create striking panels suitable for internal use. Easy to work with, DesignerOSB can be painted, stained, powder coated, and further manipulated to elevate it beyond its humble origins.

ForestOne is committed to sourcing, promoting and supplying forest-friendly timber and panel products. The wood used to produce DesignerPly and DesignerOSB are sourced where possible from renewable natural forests, managed plantations and/or recycled wood sources. ForestOne operates a Responsible Procurement of Timber Policy and holds Chain of Custody certification under the PEFC and FSC® forest certification schemes.

## REFERENCES

- <sup>1</sup> United Nations Environment Programme. "Building sector emissions hit record high, but low-carbon pandemic recovery can help transform sector – UN report." UNEP. <https://www.unep.org/news-and-stories/press-release/building-sector-emissions-hit-record-high-low-carbon-pandemic> (accessed 7 December 2021).
- <sup>2</sup> Srinivas, Hari, "What is a green or sustainable building?". GDRC. <https://www.gdrc.org/uem/green-const/1-what.html> (accessed 7 December 2021).
- <sup>3</sup> Amatruda, John. "Evaluating And Selecting Green Products." Whole Building Design Guide. <https://www.wbdg.org/resources/evaluating-and-selecting-green-products> (accessed 7 December 2021).
- <sup>4</sup> Danish Building Research Institute and 3XN Architects. "Guide to Sustainable Building Certifications." Build. <https://sbi.dk/Assets/Guide-to-sustainable-building-certifications/Guide-to-sustainable-building-certifications-August-2018-e-bog.pdf> (accessed 7 December 2021).
- <sup>5</sup> Above n 3.
- <sup>6</sup> Cancer Council. "Silica Dust." Cancer Council. <https://www.cancer.org.au/cancer-information/causes-and-prevention/workplace-cancer/silica-dust> (accessed 7 December 2021).

All information provided correct as of December 2021