

# SUSTAINABLE MATERIALS GUIDE

## WHAT IS THE PURPOSE OF THIS GUIDE?

**The built environment is responsible for approximately 40% of carbon emissions globally.**

As architects and designers it is our responsibility to ensure the products we specify do not further contribute to this, and to advocate for manufacturers and builders to do the same.

**Asking questions** reminds suppliers that sustainable products are being prioritised on all our projects, so in order to stay relevant, they should be checking their ingredients, supply chain and manufacturing processes and getting certified where they can.

This guide includes a list of commonly used phrases within the industry, as well as different product certifications that help to determine how environmentally friendly a product is. It is likely that no one product will have ALL of these certificates, but prioritising products with at least one can help ensure it is sustainable and allow you to certify its claims.

## OTHER USEFUL GUIDES:

### BPI Rating:

BPI (Building Product Information Rating) is an Australian database that helps you find compliant, sustainable and resilient building products by responsible suppliers.



[BPI RATING](#)

### Breathe Architecture's Sustainable Materials Guide

This guide is a good starting point in understanding how to specify sustainably. It categorises each of the main materials giving you benchmarks of what to prioritise to make them the more environmental choice.



### Sustainable Materials

A framework for selecting and specifying sustainable materials for buildings in Australia, aimed primarily at architects and other building professionals.

[BREATHE'S SUSTAINABILITY GUIDE](#)

### Burwood Brickworks 'Greensheet':

Burwood Brickworks Shopping Centre in Victoria is currently undertaking Living Building Challenge certification. Their Greensheet is the list of materials researched and used throughout the building, with the main focus being materials free of 'Red List' Chemicals (see definitions below and Declare label information).

Criteria used to select products included ingredients, air quality impacts, location of manufacturing / assembly, embodied carbon, lifecycle impacts, responsible sourcing and energy/water consumption where applicable.

The Greensheet is based on research available at the time so its important to do your own due diligence, but its a great starting point and example on whats possible when selecting materials for projects.



[EXTERNAL LINK TO DOWNLOAD](#)

[INTERNAL F+P LINK](#)

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## CERTIFICATES AND WHAT THEY TEST:



### WHAT GETS TESTED?

Declare certification requires full ingredient transparency on products and to declare any Red List ingredients.

Key questions include:

1. Where does the product come from?
2. What is it made of?
3. Where does it go at the end of its life?

### DECLARATION STATUSES:

LBC RED LIST FREE products disclose 100% of ingredients in the final product and do not contain any Red List chemicals.

LBC RED LIST APPROVED products disclose a minimum of 99% of ingredients in the final product and meet the LBC Red List Imperative requirements through one or more approved exceptions.

DECLARED products disclose 100% of ingredients in the final product, but contain one or more Red List chemicals that are not covered by an approved exception.

[LINK: DECLARE DATABASE](#)

### WHATS THE DIFFERENCE?

The main difference between GECA and Greenrate is GECA gives a product a tick, whereas Greenrate will compare it with competitors similar products and give it a rating.

Declare is an initiative by the International Living Future Institute (ILFI) and is described as a nutritional label for products, primarily known for prioritising ingredients.

### WHAT CAN YOU DO?

Prioritise specifying products with these certifications where you can and include them as part of your project finishes schedule. Make clear to the builder these form part of the spec when putting forward any alternatives.



## GLOBAL GREENTAG INTERNATIONAL

### WHAT GETS TESTED?

PHDs are a desktop audit completed by supplier sending across data sheets. EPDs and Life Cycle Assessments are completed by a factory visit.

They check:

- Product synergy
- Greenhouse emissions
- Human and health eco toxicity (ingredients)
- LCA (Lift Cycle Assessment)
- Biodiversity and resource consumption
- Corporate and social responsibilities

### TYPES OF CERTIFICATION

- Greenrate Level A, B + C
- PHDs (Product Health Declarations) Platinum, Gold, Silver, Bronze
- EPDs (Environmental Product Declarations)
- LCA Rate (Lift Cycle Assessment) (EPD required)
- Manufacturers Claim Verifications
- Modern Slavery Transparency Declarations

[LINK: GREENTAG DATABASE](#)



## GECA (GOOD ENVIRONMENTAL CHOICE AUSTRALIA)

### WHAT GETS TESTED?

GECA is an independent, non for profit certifier that will regularly audit companies with this accreditation.

They check:

- Ingredients
- Social and ethical practices of the business
- Raw materials and production processes
- Fit for purpose

### TYPES OF CERTIFICATION

- Ecolabel
- Claims Authentication
- LCA (Lift Cycle Assessment)
- EPD (Environmental Product Declarations)

[LINK: GECA DATABASE](#)

# SUSTAINABLE MATERIALS GUIDE



## PEFC

Programme for the Endorsement of Forest Certification - International non for profit organization. (Called Responsible Wood in Australia)



## FSC

Forest Stewardship Council - International non for profit organization.

Both organisations certify timber so specifiers know that it is sustainably sourced. They mainly check two things:

- Forest Management Certification: This audit considers the social, economic and environmental aspects of a product. This certification means the product has come from a responsibly and sustainably managed forest.
- Chain of Custody (CoC) Certification: This certifies the CoC of the timber through the full production process - including its removal from the forest, processing, manufacturing and distribution. Products will be stamped with one of the logos and an identification number, you can go online and track where the timber has come from.

### PEFC STANDARDS

Maintenance and enhancement of:

1. Forest resources
2. Forest ecosystem health and vitality
3. Productive functions of forests (wood and no-wood)
4. Conservation of biological diversity
5. Protective functions in forest management)
6. Socioeconomic functions and conditions
7. Compliance with legal requirements

### TYPES OF LABELS

- PEFC/Responsible Wood Certified (at least 70% of tree based material in product is PEFC certified, remaining must be from PEFC controlled sources)
- PEFC/Responsible Wood Recycled (only recycled forest and tree based material in product)
- PEFC/Responsible Wood Off - Product (for certified companies wanting to promote their certification)

### FSC PRINCIPLES

1. Compliance with laws
2. Workers rights and employment conditions
3. Indigenous Peoples rights
4. Maintain or improve well-being of local communities
5. Benefits from the Forest
6. Environmental values and impacts
7. Management planning outlining objectives and policies
8. Monitoring and assessment to meet above objectives
9. High conservation values
10. Ensure management activities comply with FSC criteria and principles

### TYPES OF LABELS

- FSC 100% (all materials certified)
- FSC Recycled (product made from 100% recycled materials)
- FSC Mix (Mix of FSC materials, recycled materials and/or FSC controlled wood)
- Controlled wood is wood not necessarily FSC certified. Manufacturers can use up to 30% of controlled wood to meet consumer demand.
- Controlled wood is verified through a risk assessment, to ensure it still aligns with the FSC Principles.

### WHATS THE DIFFERENCE?

The main difference with FSC and PEFC is that FSC has higher standards and can be harder to comply with. For example, Tasmanian timber is all PEFC but not yet FSC certified.

PEFC incorporates more national certification schemes therefore covers a larger area than FSC.

### WHAT CAN YOU DO?

When specifying any timber note that it has to be either FSC or PEFC certified, as early as possible. It is better to note both schemes down as a requirement as some suppliers may only have one certification, not both.

If possible, try and source local for a smaller carbon footprint. Always ask where the timber is coming from.

[LINK: FSC DATABASE](#)

[LINK: PEFC DATABASE](#)

[LINK: RESPONSIBLE WOOD DATABASE](#)

# SUSTAINABLE MATERIALS GUIDE

## WHAT SHOULD WE BE ASKING SUPPLIERS BEFORE SPECIFYING A PRODUCT?

If a product with specific environmental certifications such as those above can't be specified, the following questions can be asked of suppliers to confirm whether or not it is a suitable alternative:

- *Does your company have a Sustainability Action Plan or strategy? If so can you share it? If not why not?*
- *Do you have any take-back schemes for your products at the end of their life cycle?*
- *What happens to this product at the end of its life, can they be recycled or will it go to land fill? Can it be disassembled?*
- *Where is the product manufactured? (Try to prioritise local if you can)*
- *What ingredients is the product made up of?*
- *Is the product Red List Free?*
- *What is the rough wastage percentage when installing this product? (you may need to provide rough plans / design for this)*
- *What is your manufacturing source of power, is it green?*
- *Do you have any credetials around Modern Slavery reporting?*

## DEFINITIONS:

### OPERATIONAL CARBON

Operational Carbon is the amount of carbon emitted during the operational phase of a building - such as heating, cooling, ventilating and lighting of a building.

### NET ZERO / CARBON NEUTRAL

Net zero is the balance between the amount of greenhouse gas produced by human activity and the amount removed from the atmosphere by implementing methods of absorbing carbon dioxide from the atmosphere and reducing emissions. This means we can still produce some emissions, but we need to offset them (for example, by planting new forests.) As a process this should be the last resort to reduce carbon emissions.

### RED LIST INGREDIENTS

This term was coined by the Living Future Institute and is associated with the 'Declare' label certification (noted above)

Red List ingredients are known to have harmful effects on humans, other living creatures and the environment. This list is updated regularly.

If something is 'Red List Free' it means the product does not contain any of the harmful ingredients currently on the Red List.

### MATERIAL STEWARDSHIP

Materials stewardship is an informed approach to materials management that addresses the maintenance of the material during product ownership and the "second life" of the material when its re-used or recycled.

### PRODUCT STEWARDSHIP

Product stewardship acknowledges those involved in designing, manufacturing, and selling products have a responsibility to ensure those products or materials are managed in a way that reduces their environmental and human health impacts, throughout the life-cycle of the product and across its supply chain.

### EMBODIED CARBON

Embodied Carbon is the emissions associated with construction, relating to how a material is first extracted, transported, manufactured, transported again installed on site, maintained and its end of life disposal.

### BIODIVERSITY

Is the different life you will find in one area - animal life, plants, fungi, microorganisms such as bacteria etc. All of these contribute to natural ecosystems that maintain balance and support life in that environment.

### EPDs

An Environmental Product Declaration (EPD) is an independantly verified and registered document (based on ISO14025 and EN15804) that gives information on the life cycle of a product in one comprehensive document. They could include information on areas like carbon footprint and end of life options. Unlike eco labels, they don't give ratings, but rather all the information so the user can make their own informed decisions. EPD Australiasia have a database online to search for products. Note; ISO 14021 is self declared and as such less trustworthy than ISO14025.

### GREENWASHING

Greenwashing is a marketing strategy adopted by some organisations that put forward they are sustainable and practicing environmental initiatives, when really they are not. Often certain information is withheld or their environmental contributions are minor compared to the harm the business causes in their general practices.

### When talking about % of recycled content...

#### POST-CONSUMER CONTENT

Materials generated by households or by commercial, and institutional facilities e.g. kerbside recyclables.

#### PRE-CONSUMER CONTENT

Materials diverted from waste stream during manufacturing e.g. offcuts.