



# Which product is best for the environment?

David Baggs explains how the ecospecifier global GreenTag™ product rating system works.

BY DAVID BAGGS

A common question owner builders and green building professionals ask when it comes to products is 'which one is best for the environment?'

You may think this would be a relatively easy question to answer. It can be, but only after highly detailed and scientifically accurate research has been carried out and this is not an uncomplicated or easy process.

## Whole of life criteria

Why does it have to be complicated and difficult? Typically we identify key sustainability criteria of products, e.g. recycled content, ability to be recycled, embodied energy, greenhouse emissions, energy efficiency and so on as indicators of how 'green' a product is. However, these may only be minor aspects of the overall environmental and health impacts of a product and may not be indicative of the overall 'whole of life' (WOL) impacts.

So we need to consider to what extent a product contains each of these criteria and what is the real, relative importance of each in relation to the overall life span of the product. What started as a few clearly understood (but not necessarily accurate) indicators is already getting more complex.

What's more, as you consider each product, it becomes clear that the relative importance of these criteria change with each product category, so it becomes important to think about



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the product in context. For instance, different floor coverings have different maintenance requirements and these can have massive impacts over the life of a product. Carpet requires frequent vacuuming and typically has a much worse environmental impact than polished timber or sheet flooring like rubber, cork, vinyl or linoleum purely because of the energy used in vacuuming and the chemicals used in cleaning over the life of the carpet compared to relatively low maintenance requirements for other floor finishes e.g. wet mopping. The complexity has magnified again.

So how do we measure and simplify the communication of all of the impacts of a product so it can be easily understood? By using a concept called Life Cycle Analysis or LCA.

## Life cycle assessment

According to the Australian Life Cycle Assessment Society (ALCAS):

LCA is a key tool which considers the entire life cycle of a product, giving a 'cradle-to-grave' approach for assessing industrial systems. It enables the estimation of cumulative environmental impacts resulting from all stages in the product life cycle, often including impacts not considered in more traditional analyses, such as raw material extraction, material transportation and ultimate product disposal. LCA therefore provides a more accurate picture of the true environmental trade-offs in product and process selection.

'Cradle to grave' as a concept includes 'end of life fate' and can also be called 'cradle to end of life' i.e. at the end of a product's useful life it tallies statistically what percentage of a product is re-used, recycled or sent to landfill. Some may have heard of the concept of 'cradle to cradle,' this is more of a statement of intent rather than a type of study, as in reality no product will be 100% recycled, so categorising the actual proportions of a product that will end their life in various ways is more accurate.

## Calculation of LCA

The calculation of LCA is in itself a highly detailed and complex process with huge amounts of information involved. For example, according to the RMIT National Life Cycle



indicate grades. Bronze denotes an entry level eco-product that has been assessed to be, as a minimum, healthy and non-toxic. Platinum is an exceedingly high benchmark that denotes a world leading eco-product and contains no chemicals at any stage of production that affect health or ecology and has the lowest ecological impact of any products.

If you want to know more information about the product, a food label type Product Eco-Scorecard provides individual scores for sustainability criteria; design synergy, health and ecotoxicity, biodiversity, life cycle analysis, greenhouse gas emissions and corporate social responsibility. The scores in each of these criteria are then added together and weighted to provide a single GreenTag™ EcoPOINT indicator. This is a number between 1 and -1 where 1 equals the impact of a worst case business-as-usual product fulfilling the same function and -1 equals 100% net positive impacts. So the smaller the number the better!

Inventory Study there are 241 separate environmental effects produced in kiln drying one kilogram of Australian native hardwood. So think about an object as simple as a painted, internal, hollow core door. Typically, there would be maybe two kinds of wood, one in the internal frame and one in the facing material, as well as an adhesive holding them together. Then there is the paper honeycomb core and another adhesive, a primer and finish paint coat, plus several metals in the hinges, locks and face plates. There are likely 2000 to 3000 separate impacts in the finished door. So why use LCA if it is so detailed and complex? Because it is the most accurate and informative way to analyse product effects.

LCA is typically undertaken by professionals and, fortunately, the complexity of LCA is reduced for practitioners by the use of various types of software that do much of the calculation once a manufacturer's product specific information is known.

### Australian Standards

From the point of view of homeowners and designers, the benefit of LCA is that, provided the work is done in compliance with international and Australian Standards and peer reviewed, the information can be trusted. Australian Standard ISO 14040-44 is the LCA standard and ISO 14025 is the Environmental Product Declaration (EPD) standard that sets out the requirements for LCA reporting of products.

Any product that has done an LCA is likely to report in the format of an EPD and while this is a summary, it is nonetheless usually more detail than the average owner builder would want or need and does not make comparison between products easy unless the serious research is undertaken.

### ecospecifier global GreenTag™

There is now an easier way, where all the work is done under the relevant standards and then simplified into a rating scheme based on LCA and then key issues highlighted and simply scored. The ecospecifier global GreenTag™ product rating system was introduced into Australia in February 2010 and is an easy to understand way to choose eco-products.

The GreenTag™ logo simply shows how the product scores by using Bronze, Silver, Gold or Platinum colours to

### Choosing the best product

With EcoPOINT you can figure out which product is the best in any category. For example, EcoPOINT compares all types of flooring, paints, ceilings, kitchen bench materials etc. on the same scale from cradle to end of life including maintenance, durability and likely end of life fate. Just look for the product with the smallest (or negative) number e.g. a product with an EcoPOINT of 0.25 is better than one with a rating of 0.35, but one that has an EcoPOINT of -0.25 is better than one with a rating of 0.25.

You can also decide which product has the lowest greenhouse gas emission profile by selecting products based on their comparative Greenhouse Gas (GHG) score.

The Product Eco-Scorecard also shows the certificate number and validity dates so owner builders can find more information about the product free on the [www.ecospecifier.com.au](http://www.ecospecifier.com.au)



**The GreenTag EcoPOINT is a number between -1 and 1 where:**

- A score of 1 = a worst case 'business as usual' (BAU) product
- A score of 0 = no impacts at any stage
- A score of -1.0 (in the case of Greenhouse Gas and Biodiversity) is possible if the product is a sink or has net positive benefit

website where further detailed technical information and peer reviewed ISO compliant product summary LCA EPD reporting is available.

The word PLUS in the certification indicates that the LCA uses fully audited manufacturer specific information. In some instances the word 'Streamlined' will appear in the same position. This means that the product constituent information is manufacturer specific and the data, while audited, is industry average data. Streamlined Certification is common in industries where components come from mass supply sources where the actual manufacturer is not known or knowable e.g. furniture.

The GreenRate Level rating shown in the bottom left hand corner of Figure 1 relates only to professionals

who are interested in recognised third party certification under the Green Building Council of Australia's Green Star™ green building rating tools.

**Where you will see the GreenTag™**

GreenTag™ has recently been approved within the National Certification Mark process that will give it the same status as the Heart Foundation's 'Heart Tick' and the Woolmark labels.

Over 150 products have already been certified under the GreenTag™ system and more than a further 250 are under assessment. Many relate to the commercial sector but most are within the building sector, with many products relevant to owner builders either certified or undergoing certification, like vinyl floors (yes, there are vinyls that are okay environmentally and health-wise); panels, veneers and laminates; blinds; plasterboard; adhesives; prefabricated stairs; fabrics; insulation and carpet underlays.

You will soon start to see GreenTag™ Certified Products in retail outlets, particularly now as GreenTag™ moves

into certifying products in other sectors like packaging, cleaning products, stationery and paper goods. ■

*David Baggs is the CEO and Technical Director of ecospecifier global. He is an eco-architect, owner builder and sustainability consultant with over 30 years experience in green buildings and products.*

*Ed's note: Not all products on the market will be assessed for GreenTag certification. This does not mean that they are 'bad' products. You can still use the basic principles behind the certification process to make your own assessment of other products.*



**• Australian Life Cycle Assessment Society (ALCAS)**

Australia's peak professional organisation for people involved in the use and development of Life Cycle Assessment (LCA). A not-for-profit organisation, ALCAS has individual and corporate members from industry, government, academia and service organisations. [www.alcas.asn.au](http://www.alcas.asn.au)

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