

What is Life Cycle Assessment? – The long term environmental benefits of a timber floor.

Life Cycle Assessment (LCA) is an environmental impact assessment to determine the relative contribution of a timber product, such as timber flooring, within a building system (e.g. a residential home), from an environmental perspective.

Life Cycle Assessment (LCA)

LCA of timber flooring allows for the associated environmental aspects to be analysed as well as assessing the potential impact throughout a products life – in the case of a timber floor, from a tree being cut down in the forest, through transportation and processing, installation of the timber floor, the floor's period of service life and the inevitable recycling or disposal. This cycle is commonly referred to as 'Cradle to Grave' with each stage referred to as the 'Gate'.

Another term regularly used is LCI – Life Cycle Inventory. LCI, essentially, is the environmental data collection of a product to be used in a LCA. LCI in timber flooring is the analysis of all mass energy inputs and outputs for the production, use, reuse and disposal of a timber floor. LCI is the second phase of any research which considers what inputs and outputs were derived from producing a timber floor. For example; the chainsaw used to cut down the tree used petrol and energy; fuel and energy were used for transportation; processing the timber used electricity; energy was used with equipment during the floor installation process; and the environmental impact of coatings and adhesives used in the floor. On the positive side, the carbon storage capacity of a timber floor in situ (remembering that half of the dry weight of a timber floor is carbon), how long the floor lasts in serviceable years as compared to other products, and what uses that timber may have once its life as a floor is over.

The 'inventory' at the end of the day will measure the inputs and outputs and compare these to other products as well as list the alternate uses for the wood after its life as a timber floor.

So how does timber flooring stack up?

According to the Cooperative Research Centre for Greenhouse Accounting (2007), the framed structure for a timber floor emits approximately 10 times less greenhouse gases than a concrete slab or steel sub frame. Similarly, a timber floor surface emits approximately five times less greenhouse gases than a ceramic tile floor. This is in addition to the fact that in 2005, Australian forestry was measured as being the only carbon positive industry in Australia.

Arguably, it is regarded that a timber floor of standard thickness (19mm) has a service life of approximately 100 years. The largest competitor to timber flooring is carpet. The service life of carpet is generally regarded as approximately 10 - 15 years, though the energy used in refurbishing a timber floor, although minimal, would need to be taken into account.

There is still much research to occur in the analysis and assessment for the life cycle of a timber floor, however ongoing data from a range of sources indicates that a timber floor is more environmentally friendly than other options.

For further information visit the Building Products Innovation Council (BPIC) website www.bpic.asn.au