Improving the Built Environment
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John Harrison
TecEco
497 Main Road
Glenorchy TAS 7010

Dear John

EMBODIED ENERGY AND CO_2 EQUIVALENTS

In response to your enquiry about confirming our embodied energy and CO_2 equivalents, I have prepared a table with the values from our latest revisions. These revisions included data from industry sources. The complete building materials set is still based on Australian Input/Output tables but all values have been modified using a new analysis technique and industry values where available. The embodied energy values are now in terms of primary energy, e.g. coal from which electricity is generated rather than delivered (metered) electrical energy and should result in higher values for most building materials.

The revisions resulted in some values declining while others increased but CSIRO now has a comprehensive and consistent set of embodied energy values for most common building materials. Thus comparisons between structures using different materials are now more valid but the absolute values may differ from other sources; concrete in particular having a smaller embodied energy intensity than that estimated by other sources. The following table is an extract from our new database.

Material	***Embodied energy (GJ)***	***CO_2 equivalent (t CO_2/t)***
Clay bricks	4.7	0.28
Portland cement	12.2	1.30
Brick mortar	1.8	0.30
Masonry units*	0.4 GJ/m^2	0.05 t/m^2
Readymix concrete (20 mpa)	2.7	0.27
Readymix concrete (30 mpa)	3.9	0.39

* Masonry units are assumed to be hollow concrete blocks with this data being for 200mm thick masonry units.

Regards

Dr Selwyn Tucker