

Database Details

Date: November 2013

Version: Impact Estimator for Buildings v4.5.0102

The following table sets out both structural and envelope materials supported by the model and the vintage of these databases. A large number of raw materials are also available in the software (e.g., aggregates, recycled concrete aggregate, etc.) for users to choose from – not all of these are listed below.

Product	Vintage	Comments
Concrete products		
Ready Mix Concrete (3000, 4000, 9000 psi with various high volume fly ash levels (average, 25% & 35%) specified on a volume basis	CDN 2005 US 2004	<ul style="list-style-type: none"> Canadian regional cement data updated from original 1993 data (concrete designs remain unchanged) Added Portland limestone cement based on 2007 LCA study US data reflects PCA design mixes and average cement for the US Institute report available. US cement profile available at US LCI database (www.nrel.gov/lci)
Concrete Masonry Units (CMU) specified on a number of units basis	CDN 2005 US 2004	
Precast products	CDN 2011 US 2008	
Mortar - specified on a volume basis	CDN 2005 US 2004	
Steel Products -specified on a mass or area basis	N.A. 2013	<ul style="list-style-type: none"> All profiles updated for steel construction products based on worldsteel "avoided burden" methodology approach. Data have been regionalized to reflect N.A. steel production technologies (BOF/EAF) and market recovery rates (recycling rates). See section (4.5) for a brief description of the methodology.
Nails		
Welded wire mesh		
Screws, nut, bolts		
Wide Flange sections		
Open-web joists		
Reinforcing bar		
Hollow structural steel		
Steel tubing		
Hot rolled sheet		
Cold rolled sheet		
Galvanized sheet		
MBS wall and roof cladding		
Residential cladding		
Commercial cladding		
Galvanized decking		
Galvanized studs		
Wood Products – specified on a volume basis		
Softwood lumber (kiln dried)	2012	<ul style="list-style-type: none"> Canadian regional data updated in 2012 Corrim data for US reflects PNW, Inland West, NC and SE production 2012. Institute report available for Canadian cradle-to-gate profile. See Corrim.org



Product	Vintage	Comments
Plywood	2012	<ul style="list-style-type: none"> • Canadian regional (BC only) data originally developed in 1993 updated in 2006 and 2012. • Resource harvesting profile updated in 2012 • Institute report available for Canadian cradle-to-gate profile. • Corrim data for US reflects PNW and SE production in 2012. • See Corrim.org
Oriented Strand board	2012	<ul style="list-style-type: none"> • Canadian regional data originally developed in 1993 updated in 2006 and 2012. • Resource harvesting profile updated in 2012 • Institute report available for Canadian cradle-to-gate profile. • Corrim data for US reflects PNW and SE production in 2012. • See Corrim.org
Laminated Veneer Lumber	2012	<ul style="list-style-type: none"> • Canadian regional data originally developed in 1993 updated in 2012. • Resource harvesting profile updated in 2012. • Institute report available for Canadian cradle-to-gate profile. • Corrim data for US reflects PNW and SE production in 2012. • See Corrim.org
Glulam Beams	2011	<ul style="list-style-type: none"> • Canadian regional data originally developed in 1993, updated in 2011. • Resource harvesting profile updated in 2009. • Latest Institute report available for Canadian cradle-to-gate profile. • Corrim data for US reflects PNW and SE production in 2012. • See Corrim.org or US LCI database (www.nrel.gov/lci) for US data
Wood I-Joists	2012	<ul style="list-style-type: none"> • Composite product of softwood lumber, LVL, OSB or plywood with fabrication process. Canadian and US regional data updated in 2012
Wood bevel siding – 3 species	CDN - 2009 US -2004	<ul style="list-style-type: none"> • Canadian regional data originally developed in 2000. Cedar siding data updated in 2009 • Institute report available for Canadian cradle-to-gate profile. • US profiles based on PNW/SE lumber with Canadian transformation processes (2004) – no report available
Wood tongue and groove siding - 3 species		
Wood shiplap siding - 3 species		



Product	Vintage	Comments
Claddings		
Metal cladding residential Metal cladding commercial MBS roof and wall cladding	2013	<ul style="list-style-type: none"> Roll forming data from client report (2011) Base steel sheet values updated in 2013.
Common clay brick (modular and standard)	2009	<ul style="list-style-type: none"> Canadian clay brick data first developed in 1998. Adjusted for US by substituting electricity grids and transportation distances. Institute report available. data updated in 2009
Concrete brick and split faced block	2005	<ul style="list-style-type: none"> Canadian concrete brick data first developed in 1998. Split faced block updated in 2005. Adjusted for US by substituting US cement profile, electricity grids and transportation distances. Institute report available.
Stucco – over porous surface and metal mesh	2005	<ul style="list-style-type: none"> Canadian data developed in 2001. Cement portion updated in 2005. Adjusted for US by incorporating US cement profile and substituting electricity grids, base fuel use and transportation distances. Institute report available.
PVC vinyl siding	2010	<ul style="list-style-type: none"> Originally developed in 1998 and updated in 2009. PVC polymer portion to reflect new 2010 ACC data See US LCI database (www.nrel.gov/lci) for data
Fiber Cement Siding	2009	<ul style="list-style-type: none"> Originally developed in 2009.
Natural Stone	2009	<ul style="list-style-type: none"> Developed in 2009 from a secondary data source.
Insulation and barrier products	Various for NA	
Polyethylene vapour barrier	2010	<ul style="list-style-type: none"> Originally developed in 1998 and updated in 1999. LDPE polymer portion reflect new 2010 Am. Chemistry Council data See US LCI database (www.nrel.gov/lci) for data
Air barrier	2010	<ul style="list-style-type: none"> Added in 2007 based on ACC polypropylene profiles (updated in 2010)
Mineral Wool	2012	<ul style="list-style-type: none"> Updated and expanded our fiberglass and mineral (rock) wool insulation materials. Working with NAIMA, these data have now been stratified by r-value to better reflect the density of these materials at various thicknesses: Fibreglass Batt Fibreglass Loose Fill
Fiberglass	2012	
Polystyrene XPS and EPS	2007	
Polyisocyanurate (glass/foil faced)	2011	
Cellulose		



Product	Vintage	Comments
		Mineral Wool Batt FG Batt R20 FG Batt R30 FG Batt R40 FG Batt R50 FG LF Open Blow R13-20 FG LF Open Blow R21-30 FG LF Open Blow R31-40 FG LF Open Blow R41-50 FG LF Open Blow R51-60 FG LF Cavity Fill R15 FG LF Cavity Fill R22 FG LF Cavity Fill R30 FG LF Cavity Fill R38 MW Batt R20 MW Batt R30 MW Batt R40 MW Batt R50 <ul style="list-style-type: none"> • Styrene polymer portion reflects new 2010 ACC data; Polyiso reflects 2011 PIMA data • See US LCI database (www.nrel.gov/lci)
Paint Products	Various for N. America	
Basic latex, solvent based and varnish		<ul style="list-style-type: none"> • Originally developed in 1998 and updated in 1999. Institute report available – due to be updated
Gypsum Board Products	Various for N. America	
Regular		<ul style="list-style-type: none"> • Originally developed in 1997. • Regular and Fire rated updated in 2012. • Original Institute report available. GA report confidential
Fire rated		
Moisture resistant		
Gypsum fiber board		
Joint compound and paper tape		
Roofing Products	Various for N. America	
3 tab shingles - organic		<ul style="list-style-type: none"> • Originally developed in 2000 and 2001. • Institute report available
3 tab shingles - glass		
#15 and #30 organ felt		
Type III and IV glass felt		
Mineral roll roofing		
Clay tile		<ul style="list-style-type: none"> • Originally developed in 1998. • Adjusted and updated for US by substituting US cement profile, electricity grids and transportation distances (2008). • Institute report available
Concrete tile		
BUR organ felt based		<ul style="list-style-type: none"> • Originally developed in 2001. • Adjusted and updated for US electricity grids and transportation distances.
BUR glass felt based		
Roofing asphalt		
GAF TPO Membrane (white)		



Product	Vintage	Comments
PVC Membrane		<ul style="list-style-type: none">• Institute reports available• EPDM black updated in 2009 and EPDM white added.• PVC updated in 2011• GAF TPO (5 products) added in 2013
EPDM membrane (black & white)		
Modified Bitumen		
Windows	Various for N. America	
Unclad Wood Frame (Double and Triple pane)	2013	<ul style="list-style-type: none">• Frame and Glazing data and quantity take offs updated in 2013, with the exception of Aluminum Frame (awaiting new Aluminum data)• Originally developed in 1998 and updated in 1999.• PVC polymer portion to reflect new 2010 ACC data• See US LCI database (www.nrel.gov/lci) for data.• Added fiberglass frame in 2012• Updated quantity take-offs in 2010 for PVC and wood windows.
PVC Frame (Double and Triple pane)	2013	
Vinyl Clad Wood Frame (Double and Triple pane)	2013	
Metal Clad Wood Frame (Double and Triple pane)	2013	
Aluminum Frame (Double pane only)	2002	
Double and Triple pane glazing, Hard (Tin) and Soft (Silver or Tin) Coated, Air and Argon Filled	2013	