

0	0	Materials or component	Material	Embodied Energy MJ/kg	Embodied Energy MJ/m ²	Embodied Energy MJ/item	Area m ²	Embodied Carbon kg CO ₂ /kg	Embodied Carbon kg CO ₂ /m ²	Emboodo Carbon kc CO ₂ /item	Density kg/m ³	Weight kg/m ²	Min or Max	Source	CAWS	CAWS title	
102	1	Materials	Aggregate	0.083				0.0048			2240			ICE2	E10	Concrete	
103	1	Materials	Concrete (1:1.5:3 eg in-situ floor slabs, structure)	1.11				0.159			2400			ICE 1 & 2	E10	Concrete	
104	1	Materials	Concrete (eg in-situ floor slabs) with 25% PFA RC40	0.97				0.132			2400			ICE1 & 2	E10	Concrete	
105	1	Materials	Concrete (eg in-situ floor slabs) with 50% GGBS RC40	0.88				0.101			2400			ICE1 & 2	E10	Concrete	
106	1	Materials	Bricks (common)	3				0.24			1700			ICE2	F10	Brick/block walling	
107	1	Materials	Concrete block (Medium density 10 N/mm ²)	0.67				0.073			1450			ICE2	F10	Brick/block walling	
108	1	Materials	Aerated block	3.5				0.3			750			ICE 1 & 2	F10	Brick/block walling	
109	1	Materials	Rammed earth (no cement content)	0.45				0.023			1460			ICE 1 & 2	E70	Rammed earth	
110	1	Materials	Rammed earth (with cement content)								1460				E70	Rammed earth	
111	1	Materials	Limestone block	0.85							2180			ICE 1 & 2	F20	Stone walls	
112	1	Materials	Marble	2				0.116			2500			ICE2	M40	Stone floor/wall tile	
113	1	Materials	Marble	2				0.116			2500			ICE2	H50	Stone Cladding	
114	1	Materials	Cement mortar (1:3)	1.33				0.208						ICE2	Z21	Mortar	
115	1	Materials	Steel (general - average recycled content)	20.1				1.37			7800			ICE2	G10	Steel Structures	
116	1	Materials	Steel (section - average recycled content)	21.5				1.42			7800			ICE2	G10	Steel Structures	
117	1	Materials	Steel (pipe - average recycled content)	19.8				1.37			7800			ICE2	G10	Steel Structures	
118	1	Materials	Stainless steel	56.7				6.15						ICE2	Z11	Metal	
119	1	Materials	Timber (general - excludes sequestration)	10				0.72			480			Min ICE2	Z10	Timber	
120	1	Materials	Timber (general - includes sequestration)	10							480			Min ICE2	Z10	Timber	
121	1	Materials	Timber (general - excludes sequestration)	10				0.72			720			Max ICE2	Z10	Timber	
122	1	Materials	Timber (general - includes sequestration)	10							720			Max ICE2	Z10	Timber	
123	1	Materials	Glue laminated timber	12				0.87						ICE2	G24	Glue laminated timber	
124	1	Materials	Sawn hardwood	10.4				0.86			700			Min ICE2	Z10	Timber	
125	1	Materials	Sawn hardwood	10.4				0.86			800			Max ICE2	Z10	Timber	
126	1	Materials	Cellular glass insulation	27										ICE 1 & 2	P10	Proofing: Insulation	
127	1	Materials	Cellulose insulation (loose fill)	0.94							43			ICE1 & 2	P10	Proofing: Insulation	
128	1	Materials	Cellulose insulation (loose fill)	3.3							43			ICE2	P10	Proofing: Insulation	
129	1	Materials	Cork insulation	26							160			ICE2	P10	Proofing: Insulation	
130	1	Materials	Glass fibre insulation (glass wool)	28				1.35			12			ICE2	P10	Proofing: Insulation	
131	1	Materials	Flax insulation	39.5				1.7			30			PD	P10	Proofing: Insulation	
132	1	Materials	Rockwool (slab)	16.8				1.05			24			ICE 1 & 2	P10	Proofing: Insulation	
133	1	Materials	Expanded Polystyrene insulation	88.6				2.55			15			Min ICE2	P10	Proofing: Insulation	
134	1	Materials	Expanded Polystyrene insulation	88.6				2.55			30			Max PD	P10	Proofing: Insulation	
135	1	Materials	Polyurethane insulation (rigid foam)	101.5				3.48			30			ICE2	P10	Proofing: Insulation	
136	1	Materials	Woodwoof board insulation	20				0.98						ICE 1 & 2	P10	Proofing: Insulation	
137	1	Materials	Wool (recycled) insulation	20.9							25			PD	P10	Proofing: Insulation	
138	1	Materials	Straw bale	0.91							100			Min PD	E80	Straw bale walling	
139	1	Materials	Straw bale	0.91							110			Max PD	E80	Straw bale walling	
140	1	Materials	Mineral fibre roofing tile	37				2.7			1850			PD	H6	Tiles/Slates	
141	1	Materials	Slate (UK)	0.1				0.006			1600			ICE 1 & 2	H6	Tiles/Slates	
142	1	Materials	Slate (imported)	1				0.058			1600			ICE2	H6	Tiles/Slates	
143	1	Materials	Slate (UK)	0.1				0.006			1600			ICE 1 & 2	M40	Tiles/Slates floor/wall	
144	1	Materials	Slate (imported)	1				0.058			1600			ICE2	M40	Tiles/Slates floor/wall	
145	1	Materials	Clay tile	6.5				0.45			1900			ICE2	H6	Tiles/Slates	
146	1	Materials	Aluminium (general & incl 33% recycled)	155				8.24			2700			ICE 1 & 2	Z11	Metals	
147	1	Materials	Bitumen (general) min.	51				0.38						ICE2	J41	Built up felt roofing	
148	1	Materials	Bitumen (general) max.	51				0.43						ICE2	J41	Built up felt roofing	
149	1	Materials	Hardboard	16				1.05			600			Min ICE2	Z10	Timber	
150	1	Materials	Hardboard	16				1.05			1000			Max ICE2	Z10	Timber	
151	1	Materials	Hardboard	16				1.05			600			Min ICE2	K11	Timber	
152	1	Materials	Hardboard	16				1.05			1000			Max ICE2	K11	Timber	
153	1	Materials	MDF	11				0.72			680			Min ICE2	K11	Timber	
154	1	Materials	MDF	11				0.72			760			Max PD	K11	Timber	
155	1	Materials	OSB	15				0.96			640			PD	K11	Timber	
156	1	Materials	Plywood	15				1.07			540			Min ICE2	K11	Timber	
157	1	Materials	Plywood	15				1.07			700			Max ICE2	K11	Timber	
158	1	Materials	Plasterboard	6.75				0.38			800			ICE 1 & 2	K10	Plasterboard drylining	
159	1	Materials	Gypsum plaster	1.8				0.12			1120			ICE 1 & 2	M20	Plaster/Render	
160	1	Materials	Glass	15				0.85			2500			ICE 1 & 2	L40	Glazing	
161	1	Materials	PVC (general)	77.2				28.1			1380			ICE2	Z50	Plastics	
162	1	Materials	PVC pipe	67.50				24.40			1400			PD	R11	Above ground drainage	
163	1	Materials	Linoleum	25				1.21			1200			ICE 1 & 2	M50	Flexible floor coverings	
164	1	Materials	PVC Vinyl flooring	65.64				2.92			1200			ICE 1 & 2	M50	Flexible floor coverings	
165	1	Materials	Terrazzo tiles	1.4				0.12			1750			PD	M40	Tiles wall/floor coverings	
166	1	Materials	Ceramic tiles	12				0.74			2000			ICE2	M40	Tiles wall/floor coverings	
167	1	Materials	Carpet tiles, nylon (Polyamide), pile weight 770g/m ²		279				13.7				4.6		ICE2	M50	Flexible floor coverings
168	1	Materials	Wool carpet	106				5.53						ICE2	M50	Flexible floor coverings	
169	1	Materials	Wallpaper	36.4				1.93						ICE 1 & 2	M52	Wall papers/linings	
170	1	Materials	Wood stain / varnish	50				5.35						ICE2	M60	Paints/Stains	
171	1	Materials	Vitrified clay pipe (DN 500)	7.9				0.52						ICE2	R12	Below Ground Drainage	
172	1	Materials	Iron (general & <u>average</u>)	25				1.91			7870			ICE 1 & 2	G10	Structural steel	
173	1	Materials	Copper (average incl. 37% recycled)	42				2.6			8600			ICE2	H73	Copper cladding/roofing	
174	1	Materials	Lead (incl 61% recycled)	25.21				1.57			11340			ICE2	H71	Lead cladding/roofing	
175	1	Materials	Ceramic sanitary ware	29				1.51						ICE2	N13	Sanitaryware	
177	1	Windows	Aluminium frame 1200 x 1200 2x glazed, air or argon filled				5470	1.44		279			ICE1 & 2	L10	Windows		
178	1	Windows	Aluminium frame 1200 x 1200 2x glazed, krypton filled				5980	1.44		305			ICE2	L10	Windows		
179	1	Windows	Aluminium frame 1200 x 1200 2x glazed, xenon filled				9970	1.44		508			ICE2	L10	Windows		

180	1	Windows	PVC frame 1200 x 1200 2x glazed, air or argon filled		2150	1.44		110	Min			ICE2	L10	Windows
181	1	Windows	PVC frame 1200 x 1200 2x glazed, air or argon filled		2470	1.44		126	Min			ICE2	L10	Windows
182	1	Windows	PVC frame 1200 x 1200 2x glazed, krypton filled		2660	1.44		136	Min			ICE2	L10	Windows
183	1	Windows	PVC frame 1200 x 1200 2x glazed, krypton filled		2980	1.44		152	Max			ICE2	L10	Windows
184	1	Windows	PVC frame 1200 x 1200 2x glazed, xenon filled		6650	1.44		339	Max			ICE2	L10	Windows
185	1	Windows	PVC frame 1200 x 1200 2x glazed, xenon filled		6970	1.44		355	Max			ICE2	L10	Windows
186	1	Windows	Aluminium clad timber frame 1200 x 1200 2x glazed, air or argon filled		950	1.44		48				ICE2	L10	Windows
187	1	Windows	Aluminium / timber frame double casement 1200 x 1200 2x glazed, air or argon filled		1460	1.44		75				ICE2	L10	Windows
188	1	Windows	Aluminium clad timber frame 1200 x 1200 2x glazed, krypton filled		1460	1.44		74				ICE2	L10	Windows
189	1	Windows	Aluminium / timber frame double casement 1200 x 1200 2x glazed, krypton filled		1970	1.44		101				ICE2	L10	Windows
190	1	Windows	Aluminium clad timber frame 1200 x 1200 2x glazed, xenon filled		5450	1.44		277				ICE2	L10	Windows
191	1	Windows	Aluminium / timber frame double casement 1200 x 1200 2x glazed, xenon filled		5960	1.44		304				ICE2	L10	Windows
192	1	Windows	Timber frame 1200 x 1200 2x glazed, air or argon filled		230	1.44		12	Min			ICE2	L10	Windows
193	1	Windows	Timber frame 1200 x 1200 2x glazed, krypton filled		740	1.44		38	Min			ICE2	L10	Windows
194	1	Windows	Timber frame 1200 x 1200 2x glazed, xenon filled		4730	1.44		241	Min			ICE2	L10	Windows
195	1	Windows	Timber frame 1200 x 1200 2x glazed, air or argon filled		490	1.44		25	Max			ICE2	L10	Windows
196	1	Windows	Timber frame 1200 x 1200 2x glazed, krypton filled		1000	1.44		51	Max			ICE2	L10	Windows
197	1	Windows	Timber frame 1200 x 1200 2x glazed, xenon filled		4990	1.44		254	Max			ICE2	L10	Windows
201	1	Paint	Water-borne paint	59			2.12					ICE2	M60	Paints/Stains
202	1	Paint	Solvent-borne paint	97			3.13					ICE2	M60	Paints/Stains
204	1	Photovoltaic (PV) panels	PV Cells Monocrystalline (average)		4750			242				ICE 1 & 2	V10	Electrical Generation
205	1	Photovoltaic (PV) panels	PV cells Polycrystalline (average)		4070			208				ICE 1 & 2	V10	Electrical Generation
206	1	Photovoltaic (PV) panels	Thin film (average) PV cells		1305			67				ICE 1 & 2	V10	Electrical Generation