

This EC Template is a part of the article on sustainability available on Lodha Group website:
<https://www.lodhagroup.com/blogs/sustainability/baselining-embodied-carbon-in-building-sector>

Transportation emission coefficients

Road0.7375Sea0.012

Ref No	Materials list	Category	Materials Type	Material Weight (Kgs)	EC Coefficients (kgCO ₂ /kg)	EC Emission (kgCO ₂ e)	Transport medium	Lead Distance (km)	Transportation Emissions (kgCO ₂ e)	Total Emissions (kgCO ₂ e)	EC kgCO ₂ /Sqm	EC %	Emission Database Reference
1	Aggregate										1.19	0.32%	
	a Coarse	Str	General	102525	0.009	923	Road	40	30	952	0.09		IFC
	b Fine	Str	General	1262342	0.009	11361	Road	290	214	11575	1.10		IFC
2	Aluminium			0							12.85	3.41%	
	a Electrical Wire	MEP(E)	Virgin	2419	31	74983	Road	200	148	75131	7.16		IFC
	b Fire Extinguishers, P	MEP(E)	Virgin	278	35	9715	Road	1267	934	10649	1.02		IFC
	c Form work	Str	Virgin	8883	5.50	48857	Sea	9600	115	48972	4.67		SP
	d Extruded	Str	Virgin	0	33	0	Road	0	0	0	0.00		IFC
	e Rolled	Str	Virgin	0	32	0	Road	0	0	0	0.00		IFC
3	Anti-Termite material	Civil	General	2888	11.2	32348	Road	161	119	32466	3.09	3.09	0.82% SP
4	Asphalt	Civil	Recycled	0	0.24	0	Road	0	0	0	0.00	0.00	0.00% IFC
5	Bitumen	Str	Recycled	272	0.51	139	Road	320	236	375	0.04	0.04	0.01% SP - Hot
6	AAC Blocks			0							14.41	3.83%	
	a 100mm thick	Str	Green	75337	0.5	37668	Road	260	192	37860	3.61		IFC
	b 150mm thick	Str	Green	167341	0.5	83670	Road	260	192	83862	7.99		IFC
	c 200mm thick	Str	Green	58448	0.5	29224	Road	260	192	29416	2.80		IFC
7	Concrete Blocks			0							0.00	0.00%	
	a 100mm thick	Civil	General	0	0.09	0	Road	0	0	0	0.00		SP
	b 150mm thick	Civil	General	0	0.09	0	Road	0	0	0	0.00		SP
	c 200mm thick	Civil	General	0	0.09	0	Road	0	0	0	0.00		SP
8	Brass			0							0.72	0.19%	
	a Diverter	MEP(P)	Virgin	566	4.32	2446	Road	345	254	2701	0.26		SP
	b Angle Valve	MEP(P)	Virgin	239	4.32	1033	Road	345	254	1287	0.12		SP
	c PRV, Bob Cock	MEP(P)	Virgin	551	4.32	2379	Road	1643	1212	3590	0.34		SP
9	Bronze	Arch	Virgin	0	4.92	0	Road	0	0	0	0.00	0.00	0.00% SP
10	Carpet	Arch	Recycled	0	7	0	Road	0	0	0	0.00	0.00	0.00% IFC
11	Cast Iorn			0							0.75	0.20%	
	a Split AC	MEP(M)	Virgin	2824	1.77	4998	Road	568	419	5417	0.52		SP
	b Butterfly Valves, Ma	MEP(P)	Virgin	868	1.77	1537	Road	1189	877	2414	0.23		SP
12	Cement	Str	OPC	353826	0.912	322689	Road	550	406	323095	30.80	30.80	8.19% Lodha
13	Cementitious WP Materiz	Civil	Cementitiou	4204	0.546	2295	Road	40	30	2325	0.22	0.22	0.06% SP
14	Ceramics - WC & Wash b	Arch	Sanitary war	8767	1.97	17271	Road	775	572	17843	1.70	1.70	0.45% SP
15	Clay	Arch	General	0	0.0099	0	Road	0	0	0	0.00	0.00	0.00% SP
16	Concrete		Concrete	0							117.44	31.21%	
	a M10	Str		196350	0.0825	16199	Road	2	1	16200	1.54		Lodha
	b M20	Str		91290	0.11	9823	Road	2	1	9824	0.94		Lodha
	c M25	Str		0	0.11	0	Road	2	1	1	0.00		Lodha
	d M30	Str		5703951	0.09	507711	Road	2	1	507712	48.40		Lodha
	e M35	Str		2656811	0.10	263935	Road	2	1	263936	25.16		Lodha
	f M40	Str		3589408	0.12	434247	Road	2	1	434249	41.40		Lodha
17	Copper			0							4.38	1.16%	
	a Split AC	MEP(M)	Virgin	3267	7.4	24175	Road	568	419	24594	2.34		IFC
	b Refrigerant Pipe	MEP(M)	Virgin	1248	7.4	9236	Road	188	139	9375	0.89		IFC
	c Electrical Cables, Ge	MEP(E)	Virgin	1547	7.4	11447	Road	647	477	11925	1.14		IFC
18	CRCA			0							0.43	0.12%	
	a Control Panel	MEP(E)	Virgin	311	2.63	818	Road	1020	752	1570	0.15		SP
	b Switch Box	MEP(E)	Virgin	342	2.63	900	Road	1020	752	1652	0.16		SP
	c ELV Distribution Box	MEP(E)	Virgin	222	2.63	584	Road	1020	752	1337	0.13		SP
19	Double Wall Corrugated I	MEP(E)	Virgin	2717	2.59	7037	Road	1130	833	7871	0.75	0.75	0.20% SP
20	Fly Ash	Str	Green	0	0.004	0	Road	0	0	0	0.00	0.00	0.00% Lodha
21	Galvanized Iron			0							4.80	1.28%	
	a Split AC	MEP(M)	Virgin	1408	3	4239	Road	568	419	4657	0.44		IFC
	b Pipe	MEP(P)	Virgin	13344	3	40167	Road	118	87	40254	3.84		ICE
	c Cable Tray	MEP(E)	Recycled	1122	0.72	808	Road	25	18	826	0.08		ICE
	d Strips , Z Angles	MEP(E)	Recycled	5811	0.72	4184	Road	584	431	4615	0.44		ICE
22	GGBS	Str	Green	0	0.047	0	Road	0	0	0	0.00	0.00	0.00% ICE
23	Glass	Façade	General	29470	1.2	35365	Road	411	303	35668	3.40	3.40	0.90% IFC
24	Insulation	MEP(E)	Rockwool	0	1.14	0	Road	0	0	0	0.00	0.00	0.00% SP
25	Iron	Arch	Recycled	0	1.77	0	Road	0	0	0	0.00	0.00	0.00% SP
26	Lead	Arch	Virgin	0	1.22	0	Road	0	0	0	0.00	0.00	0.00% SP
27	Lime	Arch	General	0	1.3	0	Road	0	0	0	0.00	0.00	0.00% IFC
28	Linoleum	MEP(M)	Recycled	0	1.1	0	Road	0	0	0	0.00	0.00	0.00% IFC
29	Mild Steel			0							0.43	0.11%	
	a WC Chair Bracket	MEP(P)	Recycled	1727	0.47	812	Road	345	254	1066	0.10		ICE
	b ODU Stand	MEP(M)	Recycled	388	0.47	182	Road	10	7	190	0.02		ICE
	c Hose Reel Drum, Sai	MEP(M)	Recycled	142	0.47	67	Road	859	634	700	0.07		ICE
	d M.S.Railing	Façade	recycled	3019	0.83	2506	Road	50	37	2543	0.24		IFC

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30	Paint				0							23.92	6.36%		
	a	External	Façade	Acrylic	29177	6.63	193444	Road	159	117	193561	18.45			SP
	b	Internal	Arch	Enamel	8631	6.63	57223	Road	200	148	57371	5.47			SP
31	Paper		Arch	General	0	2.78	0	Road	0	0	0	0.00	0.00	0.00%	SP
32	Pipes				0							4.38	1.16%		
	a	CPVC	MEP(P)	Virgin	2486	3.39	8426	Road	430	317	8743	0.83			SP
	b	CPVC	MEP(P)	Virgin	77	3.39	260	Road	1704	1257	1516	0.14			SP
	c	UPVC	MEP(P)	Virgin	10067	3.39	34126	Road	430	317	34443	3.28			SP
	d	UPVC (Multi Floor T	MEP(P)	Virgin	225	3.39	762	Road	665	490	1253	0.12			SP
33	Plaster		Arch	Gypsum	225627	0.099	22337	Road	1200	885	23222	2.21	2.21	0.59%	IFC
34	Plastics				0							0.61	0.16%		
	a	Split AC body	MEP(M)	General	2137	2.17	4636	Road	568	419	5055	0.48			SP
	b	Exhaust Fan body	MEP(M)	General	255	2.17	552	Road	592	437	989	0.09			SP
	c	LED, Smoke Detecto	MEP(M)	General	153	2.17	333	Sea	3130	38	370	0.04			SP
35	Polyurethane				0					0		1.75	0.46%		
	a	PU Foam -Gap bet sl	MEP(M)	Virgin	1033	12	12401	Sea	4883	59	12459	1.19			ICE
	b	Waterproofing mate	Civil	Polyurethane	1067	5.47	5838	Road	40	30	5867	0.56			IFC
36	PV Modules		MEP(M)	Polycrystallir	0	242	0	Road	0	0	0	0.00	0.00	0.00%	ICE
37	PVC				0							0.44	0.12%		
	a	Electrical Cable	MEP(E)	Virgin	866	2.17	1880	Road	200	148	2027	0.19			SP
	b	Flush Tanks	MEP(P)	Virgin	359	2.17	778	Road	345	254	1033	0.10			SP
	c	Conduits	MEP(E)	Virgin	196	2.17	425	Road	180	133	557	0.05			SP
	d	Fire Hose Pipe, PVC	MEP(M)	Virgin	314	2.17	680	Road	403	297	978	0.09			SP
38	Red Bricks		Civil	Recycled	0	0.32	0	Road	0	0	0	0.00	0.00	0.00%	IFC
39	Rubber (Nitrile)		MEP(M)	General	0	4.69	0	Road	0	0	0	0.00	0.00	0.00%	SP
40	Sand		Str	General	0	0.009	0	Road	0	0	0	0.00	0.00	0.00%	IFC
41	Sealants and adhesives		MEP(M)	General	0	1.13	0	Road	0	0	0	0.00	0.00	0.00%	SP Bitumen
42	Soil(Plinth/back filling)		Str	General	3831104	0.024	91947	Road	1	1	91947	8.77	8.77	2.33%	ICE
43	Solar Panels/ Solar Heatin		MEP(M)	Polycrystallir	0	208	0	Road	0	0	0	0.00	0.00	0.00%	ICE
44	Stainless Steel				0							1.02	0.27%		
	a	Split AC	MEP(M)	virgin	1882	2.8	5268	Road	568	419	5687	0.54			IFC
	b	Drain Board	MEP(P)	virgin	525	2.8	1471	Road	345	254	1725	0.16			IFC
	c	SS Grating, Double L	MEP(P)	virgin	1021	2.8	2858	Road	520	384	3242	0.31			IFC
45	Reinforcement				0							73.21	19.45%		
	a	Virgin	Str	Virgin	0	2.5	0	Road	0	0	0	0.00			SP
	b	Recycled	Str	Recycled	426550	1.8	767790	Road	180	133	767923	73.21			SP
46	Stone				0							4.35	1.16%		
	a	Granite	Arch	General	47216	0.7	33051	Road	1100	811	33862	3.23			ICE
	b	Marble	Arch	General	21432	0.13	2786	Road	720	531	3317	0.32			ICE
	c	Soling	Str	General	107303	0.079	8477	Road	25	18	8495	0.81			ICE
47	Tiles				0					0		19.83	5.27%		
	a	Ceramic (Toilet & Ki	Arch	General	22571	0.67	15122	Road	720	531	15653	1.49			IFC
	b	Vetrified	Arch	General	282179	0.68	191882	Road	720	531	192413	18.34			IFC
48	Timber				0							8.59	2.28%		
	a	MDF	Arch	Recycled	0	4.47	0	Road	0	0	0	0.00			SP
	b	Door Frames	Arch	General	15908	2.56	40775	Road	800	590	41365	3.94			SP
	c	Doors	Arch	General	30496	1.58	48151	Road	800	590	48741	4.65			SP
49	Tin		Arch	Virgin	0	20.6	0	Road	0	0	0	0.00	0.00	0.00%	SP
50	Titanium		Arch	Virgin	0	29.2	0	Road	0	0	0	0.00	0.00	0.00%	SP
51	Vinyl flooring		Arch	Virgin	0	2.1	0	Road	0	0	0	0.00	0.00	0.00%	IFC
52	Windows				0							29.82	7.92%		
	a	Aluminium framed	Façade	Virgin	12497	25.00	312416	Road	532	392	312808	29.82			SP
	b	Aluminium-clad Tim	Façade	Virgin	0	14.00	0	Road	0	0	0	0.00			SP
	c	Timber Framed	Façade	General	0	2.40	0	Road	0	0	0	0.00			IFC
53	Zinc		Arch	Virgin	0	4.72	0	Road	0	0	0	0.00	0.00	0.00%	SP
Total					3924074			23248			3947321	376	376		

