

Embodied Carbon (EC) Assesment					Building Name- B03-56m-15984sqm (RCC building)					Built-up Area - 15984 sqm Height - 56 m					
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					
										Road	0.7375	Sea	0.012		
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	0.30%		
	a	Coarse	Str	General	156221	0.009	1406	Road	40	30	1435	0.09		IFC	
	b	Fine	Str	General	1923478	0.009	17311	Road	290	214	17525	1.10		IFC	
2	Aluminium					0						12.81	3.27%		
	a	Electrical Wire	MEP(E)	Virgin	3686	31	114255	Road	200	148	114402	7.16		IFC	
	b	Fire Extinguishers, P	MEP(E)	Virgin	423	35	14803	Road	1267	934	15737	0.98		IFC	
	c	Form work	Str	Virgin	13536	5.50	74446	Sea	9600	115	74561	4.66		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	4401	11.2	49289	Road	161	119	49408	3.09	3.09	0.79%	SP
4	Asphalt		Civil	Recycled	0	0.24	0	Road	0	0	0	0.00	0.00	0.00%	IFC
5	Bitumen		Str	Recycled	414	0.51	211	Road	320	236	447	0.03	0.03	0.01%	SP - Hot
6	AAC Blocks					0						14.39	3.68%		
	a	100mm thick	Str	Green	114793	0.5	57397	Road	260	192	57588	3.60		IFC	
	b	150mm thick	Str	Green	254983	0.5	127492	Road	260	192	127683	7.99		IFC	
	c	200mm thick	Str	Green	89059	0.5	44529	Road	260	192	44721	2.80		IFC	
7	Concrete Blocks					0						0.00	0.00%		
	a	100mm thick	Civil	General	0	0.0897	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						0.67	0.17%		
	a	Diverter	MEP(P)	Virgin	863	4.32	3728	Road	345	254	3982	0.25		SP	
	b	Angle Valve	MEP(P)	Virgin	364	4.32	1574	Road	345	254	1828	0.11		SP	
	c	PRV, Bob Cock	MEP(P)	Virgin	839	4.32	3624	Road	1643	1212	4836	0.30		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						0.70	0.18%		
	a	Split AC	MEP(M)	Virgin	4303	1.77	7616	Road	568	419	8035	0.50		SP	
	b	Butterfly Valves, Ma	MEP(P)	Virgin	1323	1.77	2342	Road	1189	877	3219	0.20		SP	
12	Cement		Str	OPC	539138	0.996	536981	Road	550	406	537387	33.62	33.62	8.59%	Lodha
13	Cementitious WP Materi		Civil	Cementitio	6406	0.546	3498	Road	40	30	3527	0.22	0.22	0.06%	SP
14	Ceramics - WC & Wash b		Arch	Sanitary w	13359	1.97	26317	Road	775	572	26888	1.68	1.68	0.43%	SP
15	Clay		Arch	General	0	0.0099	0	Road	0	0	0	0.00	0.00	0.00%	SP
16	Concrete					0						132.57	33.87%		
	a	M10	Str		0	0.119	0	Road	2	1	1	0.00		Lodha	
	b	M20	Str		0	0.15	0	Road	2	1	1	0.00		Lodha	
	c	M25	Str		0	0.166	0	Road	2	1	1	0.00		Lodha	
	d	M30	Str		16299600	0.13	2118948	Road	2	1	2118949	132.57		Lodha	
	e	M35	Str		0	0.15	0	Road	2	1	1	0.00		Lodha	
	f	M40	Str		0	0.16	0	Road	2	1	1	0.00		Lodha	
17	Copper					0						4.34	1.11%		
	a	Split AC	MEP(M)	Virgin	4978	7.4	36837	Road	568	419	37256	2.33		IFC	
	b	Refrigerant Pipe	MEP(M)	Virgin	1902	7.4	14073	Road	188	139	14212	0.89		IFC	
	c	Electrical Cables, Ge	MEP(E)	Virgin	2357	7.4	17443	Road	647	477	17920	1.12		IFC	
18	CRCA					0						0.36	0.09%		
	a	Control Panel	MEP(E)	Virgin	474	2.63	1246	Road	1020	752	1998	0.13		SP	
	b	Switch Box	MEP(E)	Virgin	521	2.63	1371	Road	1020	752	2123	0.13		SP	
	c	ELV Distribution Box	MEP(E)	Virgin	339	2.63	890	Road	1020	752	1643	0.10		SP	
19	Double Wall Corrugated F		MEP(E)	Virgin	4140	2.59	10723	Road	1130	833	11556	0.72	0.72	0.18%	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						4.77	1.22%		
	a	Split AC	MEP(M)	Virgin	2146	3	6458	Road	568	419	6877	0.43		IFC	
	b	Pipe	MEP(P)	Virgin	20333	3	61204	Road	118	87	61291	3.83		ICE	
	c	Cable Tray	MEP(E)	Recycled	1709	0.72	1231	Road	25	18	1249	0.08		ICE	
	d	Strips , Z Angles	MEP(E)	Recycled	8855	0.72	6376	Road	584	431	6806	0.43		ICE	
22	GGBS		Str	Green	0	0.047	0	Road	0	0	0	0.00	0.00	0.00%	ICE
23	Glass		Façade	General	46002	1.2	55202	Road	411	303	55505	3.47	3.47	0.89%	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						0.40	0.10%		
	a	WC Chair Bracket	MEP(P)	Recycled	2631	0.47	1237	Road	345	254	1491	0.09		ICE	
	b	ODU Stand	MEP(M)	Recycled	591	0.47	278	Road	10	7	285	0.02		ICE	
	c	Hose Reel Drum, Sai	MEP(M)	Recycled	217	0.47	102	Road	859	634	735	0.05		ICE	
	d	M.S.Railing	Façade	recycled	4600	0.83	3818	Road	50	37	3855	0.24		IFC	

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30	Paint				0							23.91	6.11%		
	a	External	Façade	Acrylic	44458	6.63	294758	Road	159	117	294875	18.45		SP	
	b	Internal	Arch	Enamel	13151	6.63	87193	Road	200	148	87340	5.46		SP	
31	Paper		Arch	General	0	2.78	0	Road	0	0	0	0.00	0.00	0.00%	SP
32	Pipes				0							4.30	1.10%		
	a	CPVC	MEP(P)	Virgin	3787	3.39	12839	Road	430	317	13156	0.82		SP	
	b	CPVC	MEP(P)	Virgin	117	3.39	396	Road	1704	1257	1652	0.10		SP	
	c	UPVC	MEP(P)	Virgin	15339	3.39	51999	Road	430	317	52316	3.27		SP	
	d	UPVC (Multi Floor T	MEP(P)	Virgin	343	3.39	1162	Road	665	490	1652	0.10		SP	
33	Plaster		Arch	Gypsum	343796	0.099	34036	Road	1200	885	34921	2.18	2.18	0.56%	IFC
34	Plastics				0							0.58	0.15%		
	a	Split AC body	MEP(M)	General	3256	2.17	7065	Road	568	419	7484	0.47		SP	
	b	Exhaust Fan body	MEP(M)	General	388	2.17	842	Road	592	437	1278	0.08		SP	
	c	LED, Smoke Detecto	MEP(M)	General	234	2.17	507	Sea	3130	38	545	0.03		SP	
35	Polyurethane				0					0		1.74	0.45%		
	a	PU Foam -Gap bet sl	MEP(M)	Virgin	1575	12	18896	Sea	4883	59	18954	1.19		ICE	
	b	Waterproofing mate	Civil	Polyuretha	1626	5.47	8895	Road	40	30	8925	0.56		IFC	
36	PV Modules		MEP(M)	Polycrystall	0	242	0	Road	0	0	0	0.00	0.00	0.00%	ICE
37	PVC				0							0.41	0.10%		
	a	Electrical Cable	MEP(E)	Virgin	1320	2.17	2864	Road	200	148	3012	0.19		SP	
	b	Flush Tanks	MEP(P)	Virgin	546	2.17	1186	Road	345	254	1440	0.09		SP	
	c	Conduits	MEP(E)	Virgin	298	2.17	647	Road	180	133	780	0.05		SP	
	d	Fire Hose Pipe, PVC	MEP(M)	Virgin	478	2.17	1037	Road	403	297	1334	0.08		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	5837595	0.024	140102	Road	1	1	140103	8.77	8.77	2.24%	ICE
43	Solar Panels/ Solar Heatin		MEP(M)	Polycrystall	0	208	0	Road	0	0	0	0.00	0.00	0.00%	ICE
44	Stainless Steel				0							0.98	0.25%		
	a	Split AC	MEP(M)	virgin	2867	2.8	8028	Road	568	419	8447	0.53		IFC	
	b	Drain Board	MEP(P)	virgin	800	2.8	2241	Road	345	254	2496	0.16		IFC	
	c	SS Grating, Double L	MEP(P)	virgin	1555	2.8	4354	Road	520	384	4738	0.30		IFC	
45	Reinforcement				0							71.07	18.16%		
	a	Virgin	Str	Virgin	0	2.5	0	Road	0	0	0	0.00		SP	
	b	Recycled	Str	Recycled	631000	1.8	1135800	Road	180	133	1135933	71.07		SP	
46	Stone				0							4.31	1.10%		
	a	Granite	Arch	General	71944	0.7	50361	Road	1100	811	51172	3.20		ICE	
	b	Marble	Arch	General	32657	0.13	4245	Road	720	531	4776	0.30		ICE	
	c	Soling	Str	General	163502	0.079	12917	Road	25	18	12935	0.81		ICE	
47	Tiles				0					0		19.80	5.06%		
	a	Ceramic (Toilet & Kii	Arch	General	34392	0.67	23043	Road	720	531	23574	1.47		IFC	
	b	Vetrified	Arch	General	429967	0.68	292377	Road	720	531	292908	18.33		IFC	
48	Timber				0							8.55	2.18%		
	a	MDF	Arch	Recycled	0	4.47	0	Road	0	0	0	0.00		SP	
	b	Door Frames	Arch	General	24240	2.56	62130	Road	800	590	62720	3.92		SP	
	c	Doors	Arch	General	46468	1.58	73370	Road	800	590	73960	4.63		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							29.81	7.61%		
	a	Aluminium framed	Façade	Virgin	19042	25.00	476039	Road	532	392	476432	29.81		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							6233583			23248	6256831	391	391		

