

Whole Building Embodied Carbon matrix: PRESCRIPTIVE TABLE

Baseline Embodied Carbon of All Materials (A-C)	3,398,000 kg CO2e
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Upfront Carbon (A1-A3) of Most Contributing Materials																		
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Category	Materials	Estimated Material Qty	Estimated Wastage 4%	Total Estimated	Unit	Baseline			Allowable GWP Limit		Prescribed Product and Material				Upfront Carbon Reduction (kg CO2e)	% Reduction Project Embodied Carbon		
						Material Description	GWP (A1-A3)	Units	Total (kg CO2e)	GWP (A1-A3)	Units	Product Name	EPD Number	GWP (A1-A3)			Units	Total (kg CO2e)
			=C x 0.04	=C+D					=E x H							=E x O	=J - Q	
Insulation	Extruded Polystyrene (Foundation)	541	21.6	562.6	m3	XPS - Dow Highload 40		220.3	kg CO2e/m3		131.9	kg CO2e/m3				kg CO2e/m3		
	Extruded Polystyrene (Foundation)	10648	425.9	11074.2	m2 @ 1 RSI	XPS - Dow Highload 40		11.19	kg CO2e/m2 @ 1 RSI		6.7	kg CO2e/m2 @ 1 RSI	Soprema XPS	EPD-283		1.8	kg CO2e/m2 @ 1 RSI	19,933
Rebar	Rebar	125253	5010.1	130263.1	kg	60% Recycled Content Rebar (Canada)		1.41	kg CO2e/kg		183.671	0.92	kg CO2e/kg	Gerdau Long Steel Rebar, Whitby, ON Steel Mill	SCS-EPD-07290	0.78	kg CO2e/kg	101,605
	Steel Plate	179	7.2	186.2	tonne	CISC Industry Average		1710	kg CO2e/tonne		318,334	1710	kg CO2e/tonne	CISC Industry Average	SCS-EPD-07593	1710	kg CO2e/tonne	318,334
Structural Steel	Rolled Steel Sections	172	6.9	178.9	tonne	CISC Industry Average		1720	kg CO2e/tonne		307,674	1720	kg CO2e/tonne	Structural steel product, hot-rolled, North America average, 7850 kg/m3 (Gerdau)	SCS-EPD-07504	820	kg CO2e/tonne	146,682
	HSS	338	13.5	351.7	tonne	CISC Industry Average		1860	kg CO2e/tonne		654,214	1860	kg CO2e/tonne	CISC Industry Average	SCS-EPD-07425	1860	kg CO2e/tonne	654,214
	OWSJ	322	12.9	334.7	tonne	SJI Industry		1430	kg CO2e/tonne		478,581	1430	kg CO2e/tonne	Fabricated open-web steel joists and joist girders, 7800 kg/m3 (Nucor)	EPD-394	840	kg CO2e/tonne	281,124
	Steel Deck	116	4.6	120.1	tonne	Steel Deck Institute		2370	kg CO2e/tonne		284,684	1800	kg CO2e/tonne	Steel roof and floor deck using electric arc furnace (EAF) technology, North America average, 7800 kg/m3 (Nucor Corporation's Vulcraft Group)	SCS-EPD-09144	1740	kg CO2e/tonne	209,009
Concrete	Piers	24	0.9	24.6	m3	Ontario Industry Average Concrete Baseline 35MPa concrete with air & 0.40 w/cm (C-1)GU 25 SL		313.07	kg CO2e/m3		7,717	270	kg CO2e/m3	Lafarge ECOPact GWP Range (Upper)		270	kg CO2e/m3	6,655
	Topping on Steel Deck	234	9.4	243.4	m3	Ontario Industry Average Concrete Baseline 25MPa concrete without air GU 10 SL		254.05	kg CO2e/m3		61,826	215	kg CO2e/m3	Lafarge ECOPact GWP Range (Upper)		215	kg CO2e/m3	52,322
	Topping	147	5.9	152.9	m3	Ontario Industry Average Concrete Baseline 25MPa concrete without air GU 10 SL		254.05	kg CO2e/m3		38,839	215	kg CO2e/m3	Lafarge ECOPact GWP Range (Upper)		215	kg CO2e/m3	32,869
	Foundation Slab	1098	43.9	1141.9	m3	Ontario Industry Average Concrete Baseline 35MPa concrete with air & 0.40 w/cm (C-1)GU 25 SL		313.07	kg CO2e/m3		357,501	270	kg CO2e/m3	Lafarge ECOPact GWP Range (Upper)		270	kg CO2e/m3	308,318
	Footing	210	8.4	217.9	m3	Ontario Industry Average Concrete Baseline 30MPa concrete without air GU 15 SL		313.07	kg CO2e/m3		68,212	236	kg CO2e/m3	Lafarge ECOPact GWP Range (Upper)		236	kg CO2e/m3	51,420
	Foundation Walls	200	8.0	207.7	m3	Ontario Industry Average Concrete Baseline 32MPa concrete with air & 0.45 w/cm (C-2) GU 10 SL		326.46	kg CO2e/m3		67,802	326	kg CO2e/m3	Ontario Industry Average Concrete Baseline 32MPa concrete with air & 0.45 w/cm (C-2) GU 10 SL		326	kg CO2e/m3	67,802
	Stairs	1	0.0	1.0	m3	Ontario Industry Average Concrete Baseline 25MPa concrete without air GU 10 SL		254.05	kg CO2e/m3		264	215	kg CO2e/m3	Lafarge ECOPact GWP Range (Upper)		215	kg CO2e/m3	224
	Core Walls	502	20.1	522.1	m3	Ontario Industry Average Concrete Baseline 35MPa concrete with air & 0.40 w/cm (C-1)GU 25 SL		313.07	kg CO2e/m3		163,448	270	kg CO2e/m3	Lafarge ECOPact GWP Range (Upper)		270	kg CO2e/m3	140,962

Total Column J	Total Column Q	Total Column R	= Total Column R / 3,398,000 kg CO2e
3,116,685	2,391,473	725,212	21.3%
Must be greater than 20%			