

Environmental Product Declaration for:
DIRTT Standard MDF Stacked Wall (Calgary plant)



This Environmental Product Declaration (EPD), covering all life cycle stages, was prepared in conformity with ISO 14025, ISO 14044, and ISO 21930, and in accordance with the Earthsure Product Category Rule 30162403:2014 for Interior Wall Systems. EPDs prepared under other programs may not be comparable.



Dates of Validity: 11/24/2014 to 11/24/2019

DIRTT

Product

These interior walls are designed and manufactured offsite, then installed in the building with a floor-to-ceiling vertical span. They meet the requirements of the International Building Code. They provide a sight, sound, and air barrier; enable the integration of utilities and technology; and are capable of including multiple materials. They can be disassembled and moved without losing any performance characteristics.

Producer

DIRTT Environmental Solutions, the manufacturer of this product, is a leading technology-enabled designer, manufacturer, and installer of fully customized, prefabricated interiors. This EPD is for a standard MDF (medium density fiberboard) stacked wall unit manufactured in the Calgary plant, located at: 7303 30 St SE, Calgary, AB T2C 1N6 Canada.

Independent Verification

Independent verification of the declaration and data, according to ISO 14025: internal external

Verifier: Rita Schenck, rita@iere.org

Summary of Life Cycle Impacts and Inventory per m²-30 yr, meeting IBC requirements for interior walls

Climate Change	250 kg CO ₂ -eq
Acidification	1.9 kg SO ₂ -eq
Eutrophication	1.0 kg N-eq
Ozone Depletion	9.0E-6 kg CFC-11-eq
Photochemical Smog	19 kg O ₃ -eq
Ecotoxicity	4600 CTUe
Human Health – Air	0.31 kg PM _{2.5} -eq
Primary Energy Consumption	2900 MJ non-renewable
	4.2 MJ renewable
Waste Production	0.020 kg hazardous
	41 kg non-hazardous
Material Resource Consumption	220 kg non-renewable
	24 kg renewable
Freshwater Consumption	1.8E+6 L
Land Use	83 m ² -yr

Life cycle impact assessment results

For one square meter of interior wall conforming to the International Building Code for thirty years (1 m²-30 yr), using TRACI 2.1 Life Cycle Indicators:

Life cycle impact	Total	Stage I: Production	Stage II: Installation	Stage III: Use	Stage IV: End of Life	Units
 Climate Change	250	230	20	0	2.9	kg CO ₂ -eq
 Acidification	1.9	1.8	0.12	0	0.014	kg SO ₂ -eq
 Eutrophication	1.0	1.00	6.8E-3	0	0.019	kg N-eq
 Ozone Depletion	9.0E-6	8.8E-6	7.8E-10	0	1.5E-7	kg CFC-11-eq
 Photochemical Smog	19	15	3.3	0	0.34	kg O ₃ -eq
 Ecotoxicity	4600	2700	52	0	1900	CTUe
 Human Health – Air	0.31	0.31	2.1E-3	0	1.1E-3	kg PM _{2.5} -eq

Note: Results are reported to two significant figures. Impacts by stage may not sum to total due to rounding.

Life cycle inventory information

For one square meter of interior wall conforming to the International Building Code for thirty years:

Inventory Item	Amount	Units
Primary Energy Consumption	2900	MJ renewable
	4.2	MJ non-renewable
Waste Production	0.020	kg hazardous
	41	kg non-hazardous
Material Resource Consumption	220	kg non-renewable
	24	kg renewable
Freshwater Consumption	1.8E+6	L
Land Use	83	m ² -yr

Hazardous material content

For one square meter of interior wall conforming to the International Building Code for thirty years (at least 0.1% using California DTSC Candidate Chemical List):

Hazardous material	CAS number	Amount (percent)
Aluminum	7429-90-5	30.11%
Iron	7439-89-6	0.11%
Slack Wax	64742-61-6	0.18%
Selenium	7782-49-2	0.14%
Tin	7440-31-5	0.14%
Cobalt	7440-48-4	0.14%

Additional environmental information

VOC emissions per BIFMA X7.1	not passed
Recycled content	37.5% (pre-consumer)
	1.1% (post-consumer)