

Environmental Product Declaration for:
DIRTT Standard MDF Solid 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) solid 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	240 kg CO ₂ -eq
Acidification	1.7 kg SO ₂ -eq
Eutrophication	1.00 kg N-eq
Ozone Depletion	8.3E-6 kg CFC-11-eq
Photochemical Smog	17 kg O ₃ -eq
Ecotoxicity	4300 CTUe
Human Health – Air	0.28 kg PM _{2.5} -eq
Primary Energy Consumption	2800 MJ non-renewable
	6.9 MJ renewable
Waste Production	0.017 kg hazardous
	43 kg non-hazardous
Material Resource Consumption	210 kg non-renewable
	36 kg renewable
Freshwater Consumption	1.6E+6 L
Land Use	120 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	240	210	21	0	5.0	kg CO ₂ -eq
 Acidification	1.7	1.6	0.13	0	0.020	kg SO ₂ -eq
 Eutrophication	1.00	0.96	7.1E-3	0	0.035	kg N-eq
 Ozone Depletion	8.3E-6	8.1E-6	8.1E-10	0	1.8E-7	kg CFC-11-eq
 Photochemical Smog	17	13	3.5	0	0.52	kg O ₃ -eq
 Ecotoxicity	4300	2400	54	0	1800	CTUe
 Human Health – Air	0.28	0.28	2.2E-3	0	1.5E-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	2800	MJ renewable
	6.9	MJ non-renewable
Waste Production	0.017	kg hazardous
	43	kg non-hazardous
Material Resource Consumption	210	kg non-renewable
	36	kg renewable
Freshwater Consumption	1.6E+6	L
Land Use	120	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	23.61%
Slack Wax	64742-61-6	0.35%

Additional environmental information

VOC emissions per BIFMA X7.1	not passed
Recycled content	69.6% (pre-consumer)
	2.0% (post-consumer)