

Environmental Product Declaration for:
DIRTT Standard MDF Solid Wall (Phoenix 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 Phoenix plant, located at: 836 E University Dr, Phoenix, AZ 85034 USA.

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 | 220 kg CO ₂ -eq |
| Acidification | 1.6 kg SO ₂ -eq |
| Eutrophication | 0.88 kg N-eq |
| Ozone Depletion | 8.4E-6 kg CFC-11-eq |
| Photochemical Smog | 16 kg O ₃ -eq |
| Ecotoxicity | 4100 CTUe |
| Human Health – Air | 0.24 kg PM _{2.5} -eq |
| Primary Energy Consumption | 2700 MJ non-renewable |
| | 11 MJ renewable |
| Waste Production | 0.017 kg hazardous |
| | 41 kg non-hazardous |
| Material Resource Consumption | 180 kg non-renewable |
| | 35 kg renewable |
| Freshwater Consumption | 1.3E+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 | 220 | 190 | 21 | 0 | 5.0 | kg CO ₂ -eq |
|  Acidification | 1.6 | 1.4 | 0.13 | 0 | 0.020 | kg SO ₂ -eq |
|  Eutrophication | 0.88 | 0.84 | 7.3E-3 | 0 | 0.035 | kg N-eq |
|  Ozone Depletion | 8.4E-6 | 8.3E-6 | 8.3E-10 | 0 | 1.8E-7 | kg CFC-11-eq |
|  Photochemical Smog | 16 | 12 | 3.6 | 0 | 0.52 | kg O ₃ -eq |
|  Ecotoxicity | 4000 | 2200 | 48 | 0 | 1800 | CTUe |
|  Human Health – Air | 0.24 | 0.24 | 2.3E-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 | 2700 | MJ renewable |
| | 11 | MJ non-renewable |
| Waste Production | 0.017 | kg hazardous |
| | 41 | kg non-hazardous |
| Material Resource Consumption | 180 | kg non-renewable |
| | 35 | kg renewable |
| Freshwater Consumption | 1.3E+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 | 73.7% (pre-consumer) |
| | 2.3% (post-consumer) |