Environmental Product Declaration for
Stacked Interior Wall (Phoenix)

This Environmental Product Declaration, covering all life cycle stages, was prepared in conformity with ISO 14025, ISO 14040, ISO 14044, and ISO 21930, and in accordance with the Earthsure Product Category Rule 30162403:2014 for Interior Wall Systems. PCR Review Chair Thomas Gloria, LCACP # 2008-3. EPDs prepared under other programs may not be comparable.

Life cycle assessment

PRODUCER
DIRTT Environmental Solutions, the manufacturer of this product, is a building process powered by technology. We’re changing the face of construction with software and advanced manufacturing. Custom interior spaces are built faster, cleaner and more sustainably. DIRTT’s technology provides certainty on cost, schedule and the final results, while creating a future proof space.

PROGRAM OPERATOR
ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428

INDEPENDENT VERIFICATION
Independent verification of the declaration and data, according to ISO 14025: ☐ internal ☐ external
Verifier: Thomas Gloria, t.gloria@industrial-ecology.com

ASTM Declaration Number: EPD 098
Dates of Validity: 5/6/2019 to 5/6/2024

| Average Life Cycle Impacts and Inventory per m²-30 yr-meeting IBC requirements for interior walls |
|-----------------------------------------------|------------------|------------------|
| Climate Change                               | 152 kg CO₂-eq    |
| Acidification                                | 0.87 kg SO₂-eq   |
| Eutrophication                               | 0.27 kg N-eq     |
| Ozone Depletion                              | 3.50E-6 kg CFC-11-eq |
| Photochemical Smog                           | 10.5 kg O₃-eq    |
| Ecotoxicity                                  | 0.26 PAF.m³.day  |
| Human Health – Air                           | 0.03 kg PM2.5-eq |
| Primary Energy Consumption                   | 1,714 409 MJ non-renewable |
| Freshwater Consumption                       | 1,856 L         |
| Waste Production                             | 7.76E-3 25.2 kg hazardous |
| Material Resource Consumption                | 31.8 20.2 kg non-renewable |
| Land Use                                     | 2.4 m²-yr       |
Life cycle assessment continued

**PRODUCT**
This EPD is for an interior stacked wall with an aluminum frame and glass segment on the top half. The bottom half consists of an aluminum frame with cotton-denim insulation and a NAF (no added formaldehyde) MDF (medium density fiberboard) tile with a chromacoat paint finish. This assembly is manufactured at: 836 E University Drive, Phoenix, AZ 85034 United States

DIRTT’s interior walls are designed and manufactured offsite, then installed in a building with a floor-to-ceiling vertical span. They provide a sight, sound, and air barrier; allow for integrated technology and can be disassembled and moved without losing any performance characteristics.

**Functional Unit**
The functional Unit is one square meter (1 m²) of demountable interior wall for 30 years, meeting the performance standards of the International Building Code.

**System Boundary**
This EPD is a cradle-to-grave EPD covering all stages of the life cycle of the interior wall system.

<table>
<thead>
<tr>
<th>Production Stage (Mandatory)</th>
<th>Construction Stage</th>
<th>Use Stage</th>
<th>End-of-Life Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraction and Upstream Production</td>
<td>Transport to Factory</td>
<td>Manufacturing</td>
<td>Transport to Site</td>
</tr>
<tr>
<td>A1</td>
<td>A2</td>
<td>A3</td>
<td>A4</td>
</tr>
</tbody>
</table>

**Cut-off**
Items excluded from system boundary include:
- production and disposal of capital goods and infrastructure;
- personnel impacts (travel, operation of lunchrooms);
- company management and sales activities that may be located either within the factory site or at another location (furniture, office supplies, energy and water use); and
- installation/demounting/reinstallation.

**Allocation Procedure**
 Allocation follows the requirements and guidance of ISO 14044:2006, Clause 4.3.4. Recycling and recycled content is modeled using the cut-off rule.

**Life Cycle Inventory (LCI)**
Primary data was used for 26% of all technosphere flows.

**For additional explanatory material please contact:**
Green Team 7303 30 Street SE 7303 30th Street SE 7303 30th Street SE 7303 30th Street SE Calgary, AB T2C 1N6 Canada 1-800-605-6707 greenteam@DIRTT.net
For one square meter of interior wall conforming to the International Building Code for thirty years, using TRACI 2.1 Life Cycle Indicators:

<table>
<thead>
<tr>
<th>Life Cycle Impact</th>
<th>Total</th>
<th>Stage I: Production</th>
<th>Stage II: Installation</th>
<th>Stage III: Use</th>
<th>Stage IV: End of Life</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate Change</td>
<td>152</td>
<td>133</td>
<td>5.61</td>
<td>0.13</td>
<td>13.3</td>
<td>Kg CO₂-eq</td>
</tr>
<tr>
<td>Acidification</td>
<td>0.87</td>
<td>0.79</td>
<td>0.06</td>
<td>0.00</td>
<td>0.01</td>
<td>kg SO₂-eq</td>
</tr>
<tr>
<td>Eutrophication</td>
<td>0.27</td>
<td>0.23</td>
<td>0.01</td>
<td>0.00</td>
<td>0.03</td>
<td>kg N-eq</td>
</tr>
<tr>
<td>Ozone Depletion</td>
<td>3.50E-6</td>
<td>3.23E-6</td>
<td>2.31E-7</td>
<td>4.84E-9</td>
<td>3.31E-8</td>
<td>kg CFC-11-eq</td>
</tr>
<tr>
<td>Photochemical Smog</td>
<td>10.5</td>
<td>8.57</td>
<td>1.62</td>
<td>0.01</td>
<td>0.32</td>
<td>kg O₃-eq</td>
</tr>
<tr>
<td>Ecotoxicity</td>
<td>0.26</td>
<td>0.23</td>
<td>0.01</td>
<td>0.03</td>
<td>0.00</td>
<td>PAF.m³.day</td>
</tr>
<tr>
<td>Human Health - Air</td>
<td>0.03</td>
<td>0.03</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>kg PM2.5-eq</td>
</tr>
</tbody>
</table>
Life cycle inventory information

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

<table>
<thead>
<tr>
<th>Inventory Item</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Energy Consumption</td>
<td>1,714 MJ non-renewable 409 MJ renewable</td>
</tr>
<tr>
<td>Freshwater Consumption</td>
<td>1,856 L</td>
</tr>
<tr>
<td>Waste Production</td>
<td>7.76E-3 kg hazardous 25.3 kg non-hazardous</td>
</tr>
<tr>
<td>Material Resource Consumption</td>
<td>31.8 kg non-renewable 20.2 kg renewable</td>
</tr>
<tr>
<td>Land Use</td>
<td>2.4 m2-yr</td>
</tr>
</tbody>
</table>

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).

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS number</th>
<th>Amount (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>7429-90-5</td>
<td>29.51</td>
</tr>
<tr>
<td>Polymerized methylene-diphenyldiisocyanate (pMDI)</td>
<td>9016-87-9</td>
<td>1.74</td>
</tr>
</tbody>
</table>

Additional environmental information

Forest Stewardship Council (FSC) (*must be specified)
Recycled Content 43.6% (pre-consumer) 5.1% (post-consumer)

SCS Indoor Advantage Gold Certified

Chromacoat paint is a no-VOC formula
Insulation has 70% rapidly-renewable content