

DIN EPD

Miljøvaredeklaration
Sapa 4150 facade,
3-glass, coated

sapa:

 Hydro

DIN EPD

CO2-AFTRYK FOR DIT PRODUKT



(GWP>Bidrag til global opvarmning

89%

af det aluminium som anvendes i dette projekt er CIRCAL



CIRCAL 75R = 2.3 kg CO2 pr. kg Aluminium

Hydro CIRCAL er en række produkter fremstillet med genbrugsskrot. Gennem brugen af genbrugsindhold reducerer vi energiforbruget drastisk, samtidig med at vi stadig kan tilbyde produkter af høj kvalitet. Vi kan altid garantere et CO2-aftryk under 2,3 kg CO2 pr. 1 kg aluminium produceret med Hydro CIRCAL.

Hydro er i dag den eneste producent i verden, der kan levere genanvendt aluminium af højeste kvalitet

10%

af aluminium brugt i dette projekt er REDUXA*



REDUXA 4.0 = 4 kg CO2 pr. kg Aluminium

Hydro REDUXA er vores serie af aluminium med lavt kulstofindhold. Gennem brugen af vedvarende energikilder som vandkraft reducerer vi CO2-aftrykket pr. kg aluminium til mindre end en fjerdedel af det globale gennemsnit. Resultatet er verdens laveste CO2-aftryk fra aluminium til dato



1 % af det aluminium, der bruges i dette projekt, er Hydro Primary Aluminium

Hydro Primary Billets = 5,7 kg CO2 pr. kg aluminium

Aluminiums CO2-aftryk afhængig af oprindelse

2.3

kg CO2 pr. kg
Aluminium



4.0

kg CO2 pr. kg
Aluminium



5.7

kg CO2 pr. kg
Aluminium



8.6*

kg CO2 pr. kg
Aluminium

Gennemsnitligt
forbrugt
primæraluminium
i Europa

16.7*

kg CO2 pr. kg
Aluminium

Primært/Global/
Gennemsnit

*8.6 = primært aluminium brugt i Europa (cradle to gate) - European Aluminium 2018 rapport

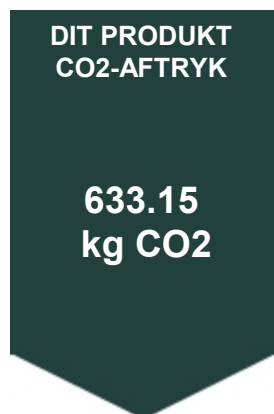
**Globalt gennemsnit: 16,7 kgCO2e/kg (Kilde: IAI 2018-rapport baseret på 2015-data)

EPD >> DIT PROJEKTS DETALJER

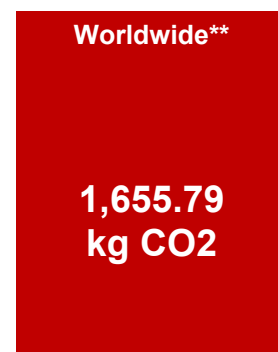
DIT PRDUKTS CO2-AFTRYK



(GWP>Bidrag til global opvarmning)



DIT PRODUKT
Vis der var anvendt primær Aluminium fra:



Ved at bruge vores løsninger på dette projekt reducerer du med:

-438.58
kg CO2

-41%

Dine systemers CO2-aftryk sammenlignet med at bruge primært aluminium, der forbruges i Europa

-1,022.64
kg CO2

-62%

Dine systemers CO2-aftryk sammenlignet med at bruge primært aluminium med globalt gennemsnit



VIDSTE DU?

Du kan bede din salgsekspert om at have dette projekt udelukkende i CIRCAL for at reducere CO2-aftrykket fra dine byggesystemer endnu mere

Hvis du beslutter dig for udelukkende at bruge CIRCAL på dette projekt, reducerer du med:

-454.27
kg CO2

-42%

Dine systemers CO2-aftryk sammenlignet med at bruge primært aluminium, der forbruges i Europa

-1,038.32
kg CO2

-63%

Dine systemers CO2-aftryk sammenlignet med at bruge primært aluminium med globalt gennemsnit

*Europa = 8,6 kg CO2 / kg Aluminium = primært aluminium brugt i Europa (cradle to gate). Rapport for europæisk aluminium 2018

**Globalt gennemsnit: 16,7 kgCO2e/kg (Kilde: IAI 2018-rapport baseret på 2015-data)

EPD >> SÅDAN LÆSER DU DET



Din EPD er genereret af IBU (IBU - Institut Bauen und Umwelt e.V.), verificeret af en uafhængig tredjepart i henhold til ISO 14025. CEN-standarden EN 15804 fungerer som kerne-PCR (Product Category Rules)

Denne EPD blev automatisk genereret til dit projekt

Det omfatter alle beskrevne systemer inklusive deres komponenter samt det valgte glas, i de angivne dimensioner



Aluminium

Isolerede profiler

Glas

Fugebånd

Beslagning

...*

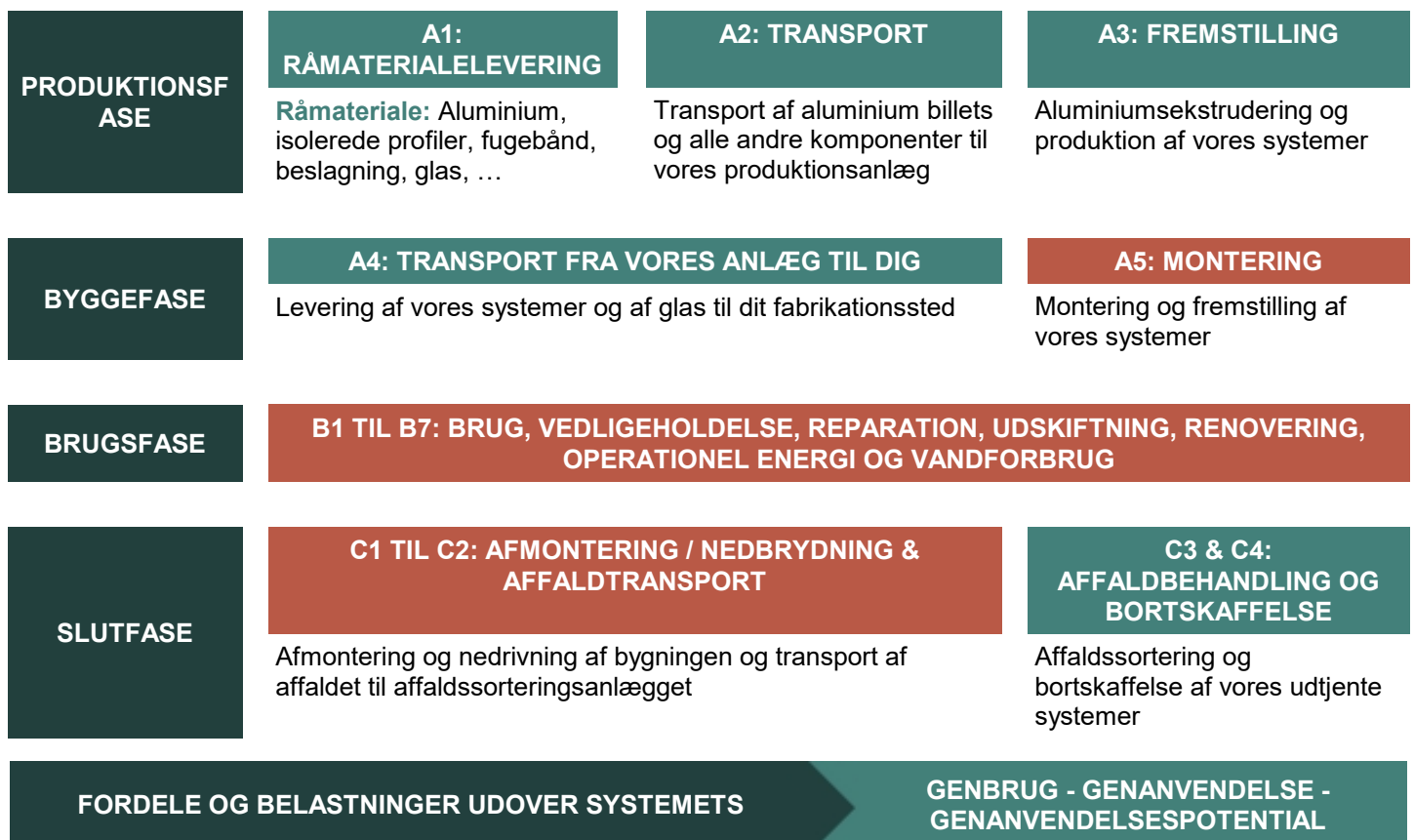
* Alle andre komponenter, som du bestiller fra varemærket

Dit Projekt

Materialer inkluderet i denne EPD

Alle andre byggematerialer er undtaget fra denne EPD

OMFANG AF DIN EPD



Er inkluderet i din EPD

Er ekskluderet fra din EPD

Environmental product declaration

Summarized EPD



Declaration owner: Hydro Building Systems Germany GmbH
Construction project: EPD - Rapport
Publisher: Hydro Building Systems Sweden AB

Date of issue: 24/04/2023



The Summarized EPD includes the following listed products

| Declaration number | Declared product | Declared unit (mm) |
|-----------------------------------|-------------------------------------|--------------------|
| Sapa 4150 facade, 3-glass, coated | K.EPD_Rapport.2.10.2023.10.24.16 AM | 2,900 x 3,600 |

LCA: Results

The results of the impact assessment, resource use and waste and other output streams are shown below
The results are calculated from the values of the individual EPDs.

SPECIFICATION OF THE SYSTEM LIMITS (X = INCLUDED IN LIFE CYCLE ASSESSMENT, MND = MODULE NOT DECLARED)

| PRODUCT STAGE | | | CONSTRUCTION PROCESS STAGE | | USE STAGE | | | | | | | | END OF LIFE STAGE | | | | BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARYS |
|---------------------|-----------|---------------|-------------------------------------|----------|-----------|-------------|--------|---------------------------|-----------------------------|------------------------|-----------------------|----------------------------|-------------------|------------------|----------|------------------------------------|--|
| Raw material supply | Transport | Manufacturing | Transport from the gate to the site | Assembly | Use | Maintenance | Repair | Replacement ¹⁾ | Refurbishment ¹⁾ | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery-Recycling-potential | |
| A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D | |
| X | X | X | X | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | X | X | X | |

RESULTS OF THE LIFE CYCLE ASSESSMENT ENVIRONMENTAL IMPACT:

| Parameter | Parameter | Unit | A1-A3 | A4 | C3 | C4 | D |
|-----------|---|--|-----------|--------|----------|----------|-----------|
| GWP | Global warming potential | [kg CO ₂ -Eq.] | 633.15 | 17.76 | 45.47 | 3.02E-03 | -94.74 |
| ODP | Depleting the stratospheric ozone layer | [kg CFC ₁₁ -Eq.] | 1.09E-05 | 0.00 | 6.90E-07 | 6.87E-16 | -4.69E-06 |
| AP | Acidification potential of soil and water | [kg SO ₂ -Eq.] | 4.72E00 | 0.05 | 6.96E-02 | 1.79E-05 | -5.39E-01 |
| EP | Eutrophication | [kg (PO ₄) ³⁻ -Eq.] | 4.39E-01 | 0.01 | 1.23E-02 | 2.47E-06 | -2.97E-02 |
| POCP | Forming potential for tropospheric ozone | [kg Ethen-Eq.] | -2.87E-01 | -0.02 | 2.61E-03 | 1.39E-06 | -4.35E-02 |
| ADPE | Potential for the abiotic degradation of non-fossil resources | [kg Sb-Eq.] | 2.54E-03 | 0.00 | 1.24E-04 | 1.16E-09 | -4.88E-04 |
| ADPF | Potential for the abiotic degradation of fossil fuels | [MJ] | 9,130.17 | 242.13 | 120.90 | 3.90E-02 | -978.67 |

RESULTS OF THE LIFE CYCLE ASSESSMENT RESOURCE ACCOUNT:

| Parameter | Parameter | Unit | A1-A3 | A4 | C3 | C4 | D |
|-----------|--|-------------------|----------|--------|----------|----------|-----------|
| PERE | Renewable primary energy as an energy source | [MJ] | 1,335.62 | 13.38 | 1.23E01 | 0.00E00 | -342.41 |
| PERM | Renewable primary energy to the material use | [MJ] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| PERT | Total renewable primary energy | [MJ] | 1,335.62 | 13.38 | 1.75E01 | 5.02E-03 | -414.52 |
| PENRE | Non-renewable primary energy as an energy source | [MJ] | 7,711.68 | 242.13 | 454.40 | 0.00E00 | -852.20 |
| PENRM | Non-renewable primary energy to the material use | [MJ] | 316.31 | 0.00 | -316.31 | 0.00 | 0.00 |
| PENRT | Total non-renewable primary energy | [MJ] | 8,028.49 | 242.13 | 138.09 | 4.05E-02 | -1,182.45 |
| SM | Use of secondary materials | [kg] | 142.81 | 0.00 | 0.00 | 0.00 | 0.00 |
| RSF | Renewable secondary fuels | [MJ] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| NRSF | Non-renewable secondary fuels | [MJ] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| FW | Use of freshwater resources | [m ³] | 3.24E00 | 0.02 | 1.10E-01 | 7.75E-06 | -8.91E-01 |

RESULTS OF LIFE CYCLE ASSESSMENT OUTPUT RIVERS AND WASTE CATEGORIES:

| Parameter | Parameter | Unit | A1-A3 | A4 | C3 | C4 | D |
|-----------|-----------------------------------|------|----------|------|----------|----------|-----------|
| HWD | Hazardous waste of landfill | [kg] | 2.72E-01 | 0.00 | 4.38E-01 | 6.97E-10 | 7.31E-02 |
| NHWD | Discarded non-hazardous waste | [kg] | 113.91 | 0.02 | 9.21E01 | 3.03E00 | -38.95 |
| RWD | Discarded radioactive waste | [kg] | 1.56E-01 | 0.00 | 1.53E-03 | 5.89E-07 | -2.33E-02 |
| CRU | Components for reuse | [kg] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MFR | Materials for recycling | [kg] | 0.00 | 0.00 | 66.27 | 0.00 | 357.67 |
| MER | Materials for the energy recovery | [kg] | 0.00 | 0.00 | 1.92 | 0.00 | 0.00 |
| EEE | Exported electrical energy | [MJ] | 0.00 | 0.00 | 36.42 | 0.00 | 0.00 |
| EET | Exported thermal energy | [MJ] | 0.00 | 0.00 | 65.69 | 0.00 | 0.00 |

LCA: Scenarios and technical information

(according table chapter 4)

The following informations are basis for the declared modules and products in this summary EPD:

Transport to construction site (A4)

| Designation | Value | Unit |
|------------------------------------|---------|------------|
| Liters of fuel | | |
| Train (electric) | 0.01158 | l / 100 km |
| Plane (kerosine) | 0.42164 | l / 100 km |
| 40 t truck (Diesel) | 0.00165 | l / 100 km |
| 7,5 t truck (Diesel) | 0.00591 | l / 100 km |
| 22 t truck (Diesel) | 0.00231 | l / 100 km |
| Ship (heavy heating oil) | 0.00040 | l / 100 km |
| Transport distance | | |
| Train | 0.00 | km |
| Plane | 0.00 | km |
| 40 t truck | 0.00 | km |
| 7,5 t truck | 0.00 | km |
| 22 t truck | 500.00 | km |
| Ship | 0.00 | km |
| Utilisation (including empty runs) | | |
| Train | 51 | % |
| Plane | 61 | % |
| 40 t truck | 55 | % |
| 7,5 t truck | 40 | % |
| 22 t truck | 66 | % |
| Ship | 48 | % |
| Volume utilisation factor | 1 | - |

*) The transport distance indicates the easy distance from the place of manufacture to the construction site.

End of life cycle (C1-C4)

| Designation | Value | Unit |
|---------------------------------------|--------|------|
| Separately collected waste type | 369.21 | kg |
| Collected as mixed construction waste | 68.18 | kg |
| For reuse | 0.00 | kg |
| For recycling (D) | 423.36 | kg |
| For energy recovery (C3) | 12.59 | kg |
| For landfilling (C4) | 4.28 | kg |
| For thermal utilisation (C4) | 0.00 | kg |

Listing of the raw materials and the auxiliary materials

(according table chapter 2.5)

| Designation | Value | Unit |
|--------------------|--------|------|
| EN AW-6060 | 1.08 | kg |
| X10CrNi18-8 | 1.73 | kg |
| A4-21H | 1.07 | kg |
| PE Foam | 0.02 | kg |
| PE | 0.41 | kg |
| EPDM | 2.51 | kg |
| EPDM Foam | 2.23 | kg |
| Float glass | 353.26 | kg |
| REDUXA | 7.06 | kg |
| Pulverbeschichtung | 1.40 | kg |
| CIRCAL 75 | 63.96 | kg |
| Benvic ER306 | 5.49 | kg |
| Total weight | 440.23 | kg |