



GLASS OG FASADEFORENINGEN

Innføring i EPD

22.02.2024



AGENDA

Innføring i EPD

01.

Klimagassregnskap

02.

EPD

03.

Spørsmål

1. Klimagassregnskap

(for bygninger)



Klimagassregnskap

Hvorfor?

Byggenæringen er viktig for å nå klimamålene. Store klimagassutslipp kan tilskrives produksjon, transport og bruk av byggevarer. Store utslippsreduksjoner kan tilsvarende oppnås ved å bygge klimasmart og velge byggevarer med lave klimagassutslipp.

Målsetning

Klimagassregnskap for bygninger skal bidra til en mer bærekraftig utvikling ved å redusere miljø- og klimapåvirkningen fra byggesektoren, som er en av de største kildene til globale klimagassutslipp. (Global oppvarming)

- **Reduksjon av utslipp**
Identifisere hvor og hvordan
-> iverksette tiltak
- **Informerte beslutninger**
Gi grunnlag for mer kunnskapsbaserte beslutninger
- **Økt bevissthet og ansvarlighet**
Bevissthet om påvirkningen næringen er ansvarlig for
- **Markedsfordeler**
Høyere eiendomsverdier, etc..

TEK17 Klima og livsløp - § 17-1. Klimagassregnskap fra material

Ved oppføring og hovedombygging av boligblokk og yrkesbygning skal det utarbeides et klimagassregnskap. Som dokumentasjon for klimagassregnskapet bør det benyttes tredjeparts godkjent, standardisert og livsløpsbasert dokumentasjon for klimagassutslipp, for eksempel en miljødeklarasjon (EPD)

Kravet om klimagassregnskap skal bidra til å øke kompetansen i næringen

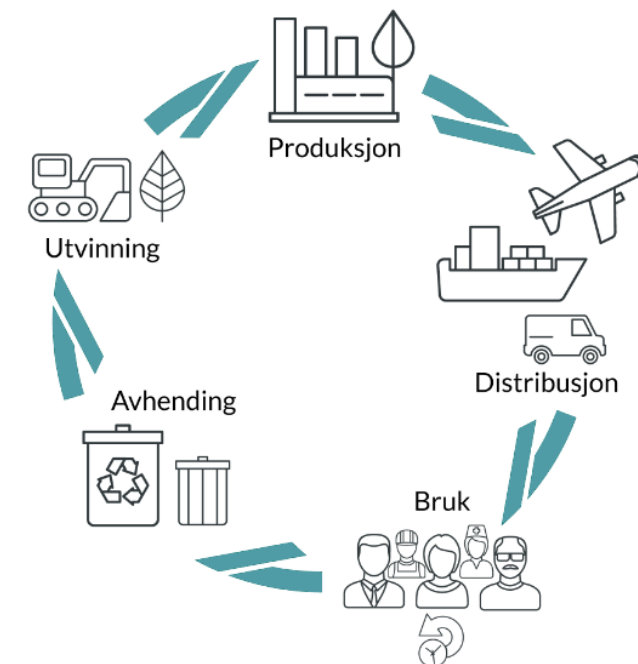
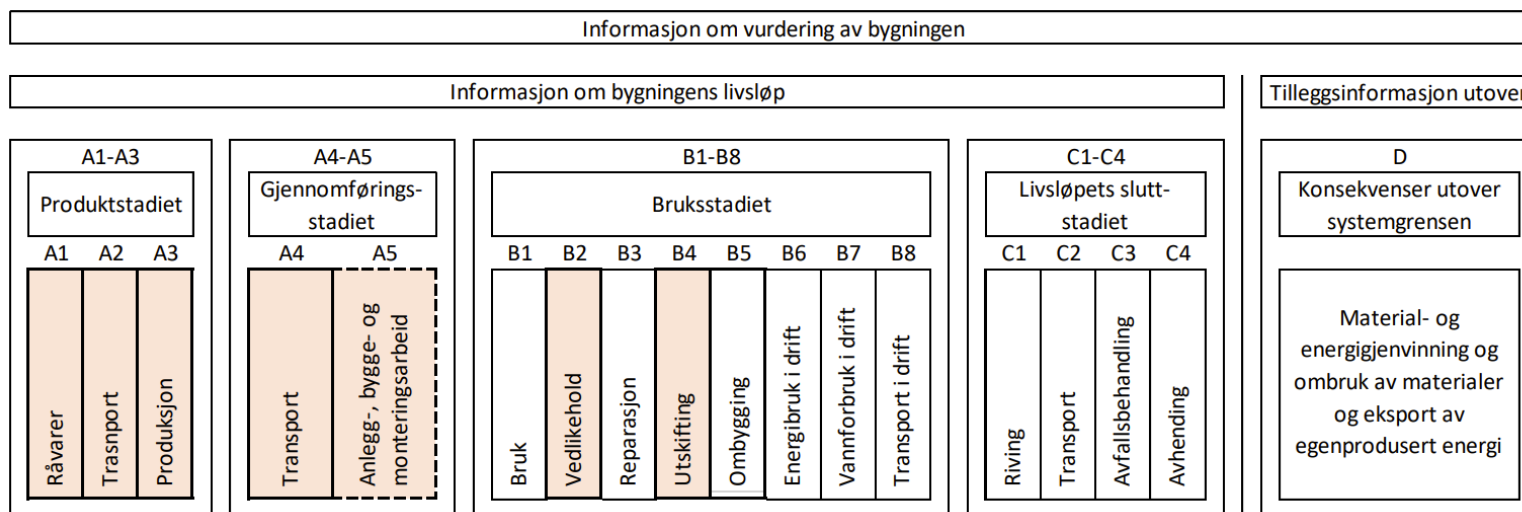
Kravet i TEK17 § 17-1 gjør at aktørene i byggenæringen må øke kompetansen om klimagassutslipp fra materialer. De må ta i bruk verktøy for å beregne klimagassutslipp og utvikle rutiner for å følge opp kravet. På denne måten vil næringen forberedes på mulige strengere klimagasskrav i fremtiden.

Livsløpsmoduler etter NS 3720:2018 (Metode for klimagassberegninger for bygninger)

NS 3720:2018 inndeler livsløpet i ulike moduler. Figuren viser hvilke moduler som minimum skal inngå i klimagassregnskapet for å tilfredsstille kravet i TEK17 § 17-1

Livsløpsmoduler etter NS 3720:2018 (Metode klimagassberegninger for bygninger)

NS 3720:2018 inndeler livsløpet i ulike moduler. Figuren viser hvilke moduler som minimum skal inngå i klimagassregnskapet for å tilfredsstille kravet i TEK17 § 17-1



A1-A3 = produksjon av byggevarer

A4 = transport til byggeplass

A5 = byggefasen

B1-B8 = bruksstadiet med drift, vedlikehold og utskifting

C1-C4 = avskaffelse ved enden av livsløpet

D = Ressurspotensial/materialgjenvinning

2. EPD

Environmental Product Declaration
Miljødeklarasjon



EPD / Miljødeklarasjon

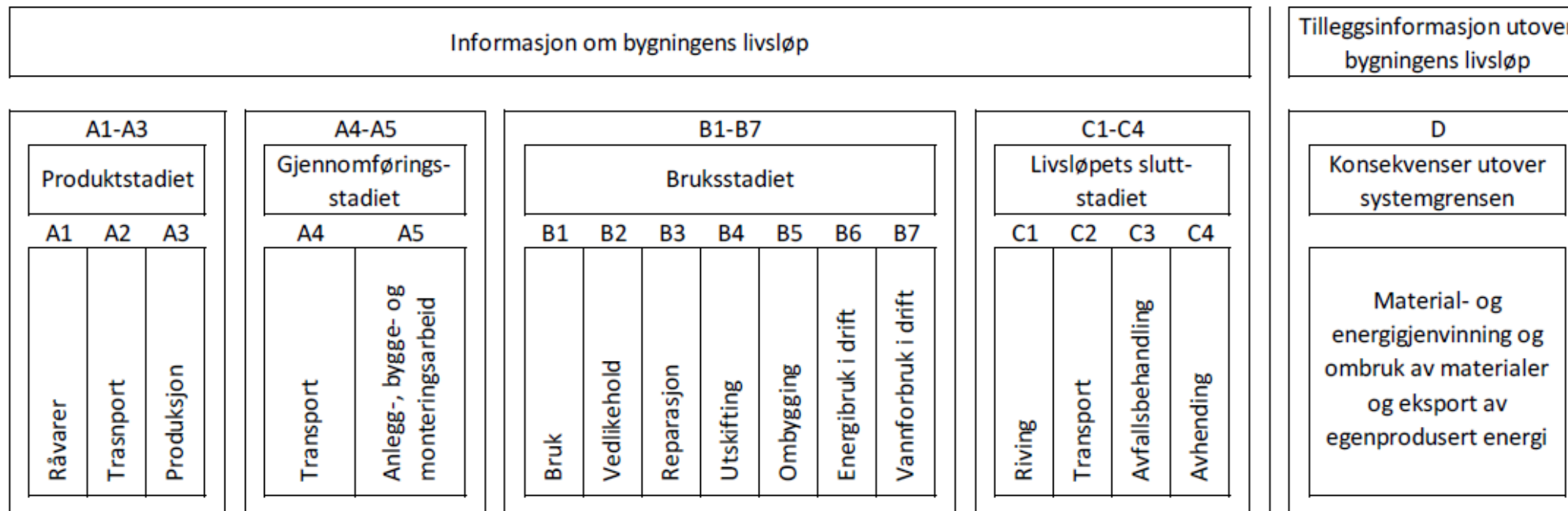
EPD (Environmental Product Declaration) er et dokument som beskriver miljøpåvirkningen til et produkt. På norsk brukes gjerne begrepet «miljødeklarasjon».

- **Godkjente av en uavhengig tredjepart**
- **Sammenlignbare, siden de er utviklet i henhold til standarder**
- **Hjelper å oppfylle dokumentasjonskrav (klimagassregnskap)**
- **Gir miljørådgivere e.l. et bedre grunnlag for å vurdere miljøbelastningen på et produkt.**
- **EPD kan være et redskap ved produktutvikling og forbedringer i produktverdikjeden.**

En EPD er ikke nødvendigvis noe bevis på «bærekraftige» produkter.

Den beskriver miljøvirkningen, og man må sammenligne med andre relevante produkter for å kunne si noe om «god eller dårlig».

NS-EN 15804:2012+A2:2019 er den europeiske standarden for utarbeidelse av miljødeklarasjoner. Denne standarden har de samme livsløpsmodulen som NS 3720:2018, med unntak for modul B8 transport i drift



EPDene gir informasjon om en rekke miljøegenskaper til byggevaren, deriblant globalt oppvarmingspotensial (GWP) som angis som CO2-ekvivalenter (CO2e)

EPDene gir informasjon om en rekke miljøegenskaper til byggevaren, deriblant globalt oppvarmingspotensial (GWP) som angis som CO₂-ekvivalenter (CO₂e)

CO₂-ekvivalenter (CO₂e)

CO₂ er den klimagassen som vi mennesker slipper ut mest av. Som konsekvens er CO₂ hovedårsaken til global oppvarming. Når vi måler totale utslipp gjør vi det enklere for oss selv ved å regne om andre klimagasser til CO₂-ekvivalenter, istedenfor å oppgi utslippene fra de ulike gassene hver for seg.

Klimagass	Globalt oppvarmingspotensiale i et 100-årsperspektiv (GWP100, global)
Karbondioksid (CO ₂)	1
Metan (CH ₄)	28
Lystgass (N ₂ O)	265
PFK-gasser: CF ₄	6 630
Svovelheksafluorid (SF ₆)	23 500

Utslippene fra mopeder i Norge:

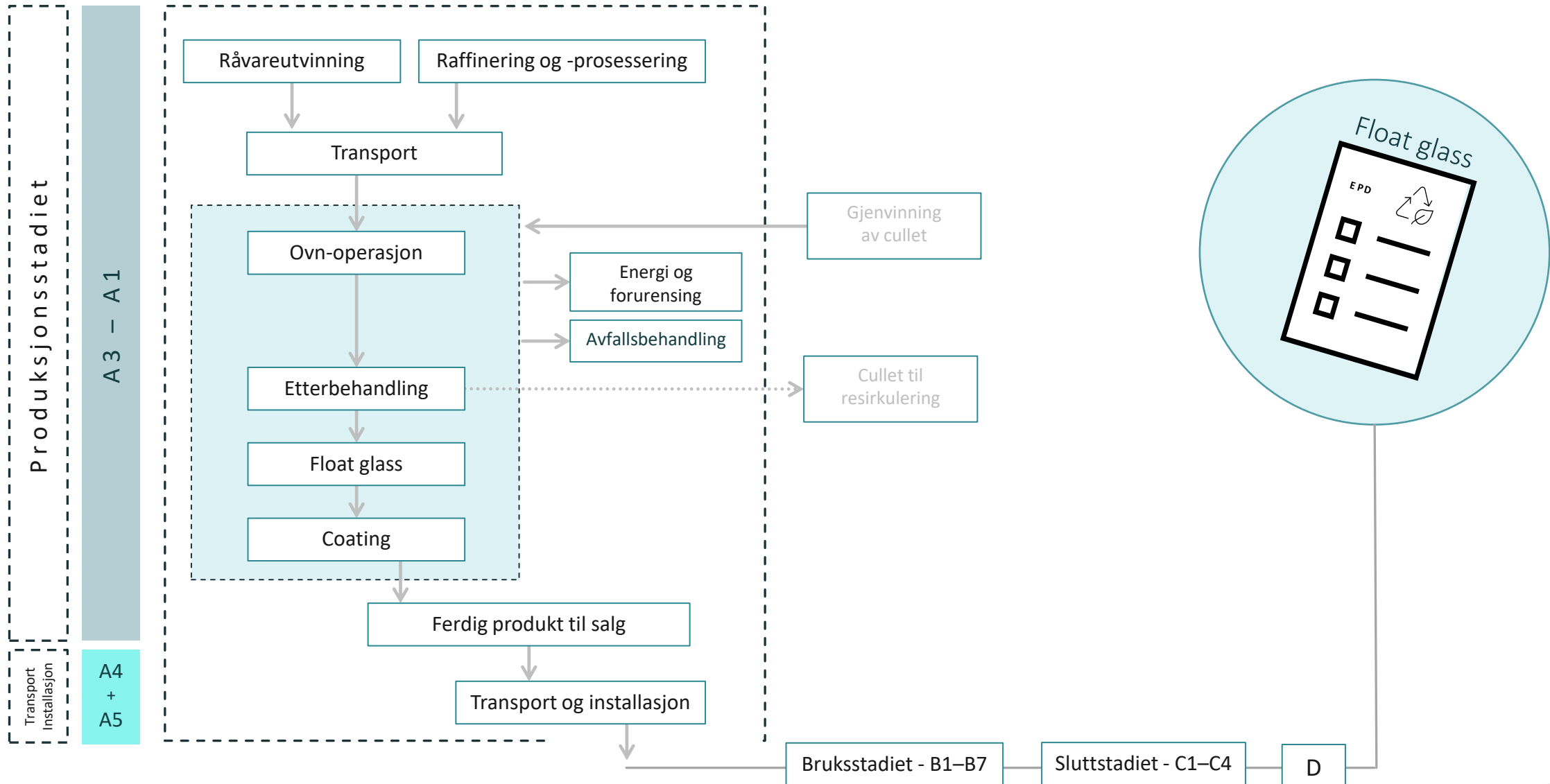
32 497 tonn **CO₂**, 231 tonn **metan** og 1 tonn **lystgass**.

Dette regnes om til CO₂-ekvivalenter på følgende måte:

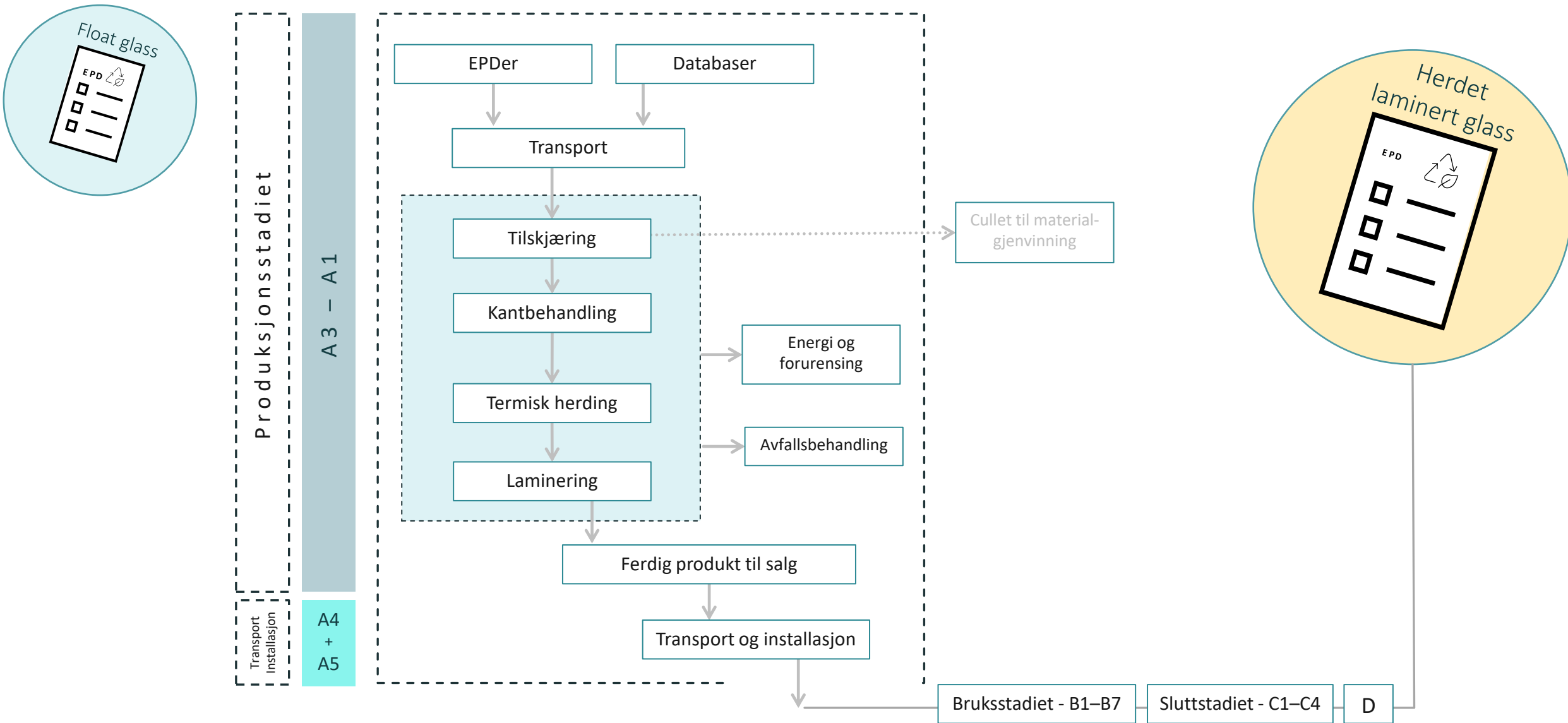
$(32\,497 \times 1) + (231 \times 28) + (1 \times 265) = 39\,230$ tonn CO₂e



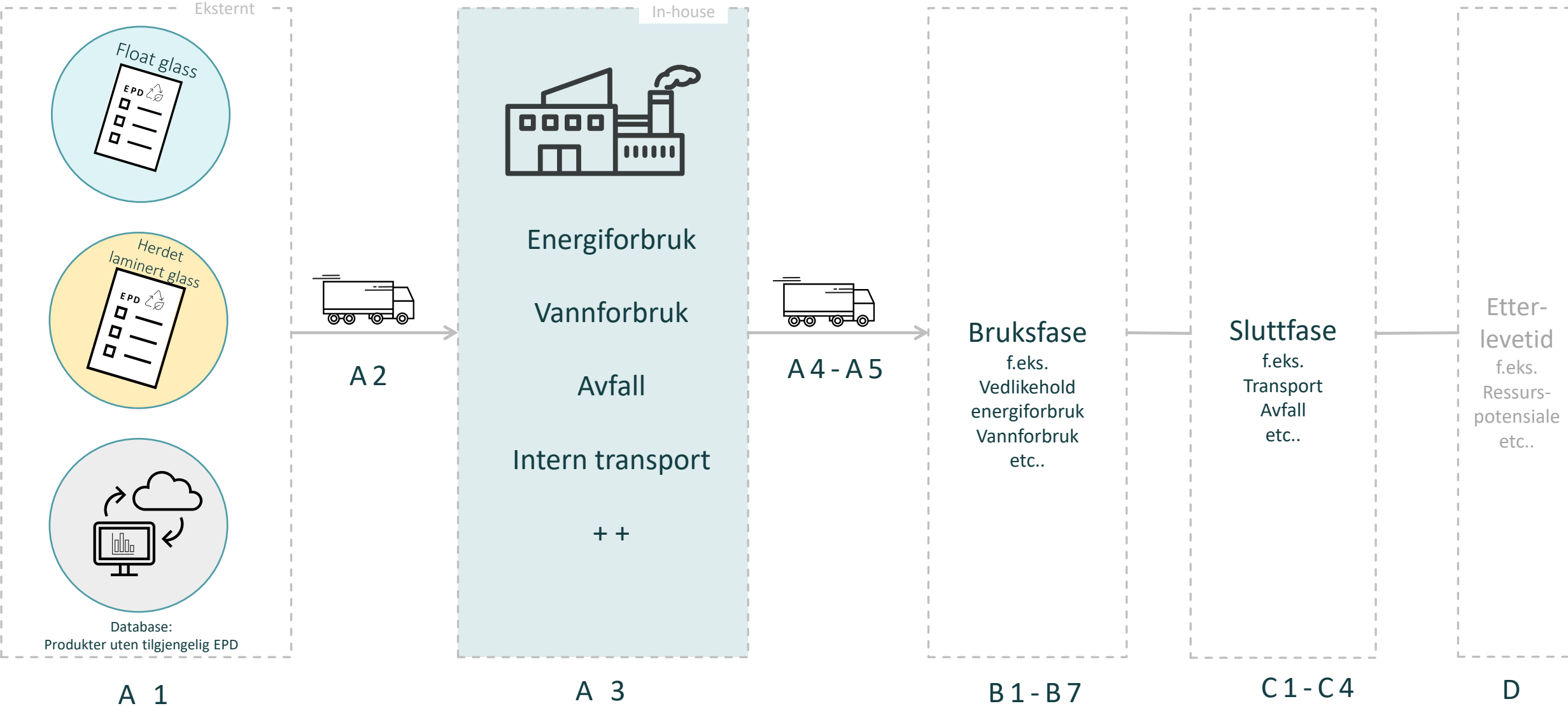
Eksempel: float glass



Eksempel: herdet laminert glass



Eksempel: systemvegger



Klimagassregnskap og miljødeklarasjoner

Miljødeklarasjoner /EPD

+ andre faktorer for bygget



Klimagassregnskap

Livsløpsanalyse



Byggets miljøpåvirkning

Bærekraftig byggverk?



Eksempel på EPD / Miljødeklarasjon

Produktspesifikk EPD - utarbeidet for et spesifikt produkt fra en gitt produsent/leverandør.

Glass 4mm - klart



SAINT-GOBAIN

**ENVIRONMENTAL
PRODUCT
DECLARATION**
In accordance with ISO 14025:2006
and EN 15804:2012+A2:2019 for:

ORAÉ
4 mm
Low carbon glass

Version 1
Date of publication: 2023-04-14
Validity: 5 years
Valid until: 2028-04-13
Scope of the EPD®: Europe

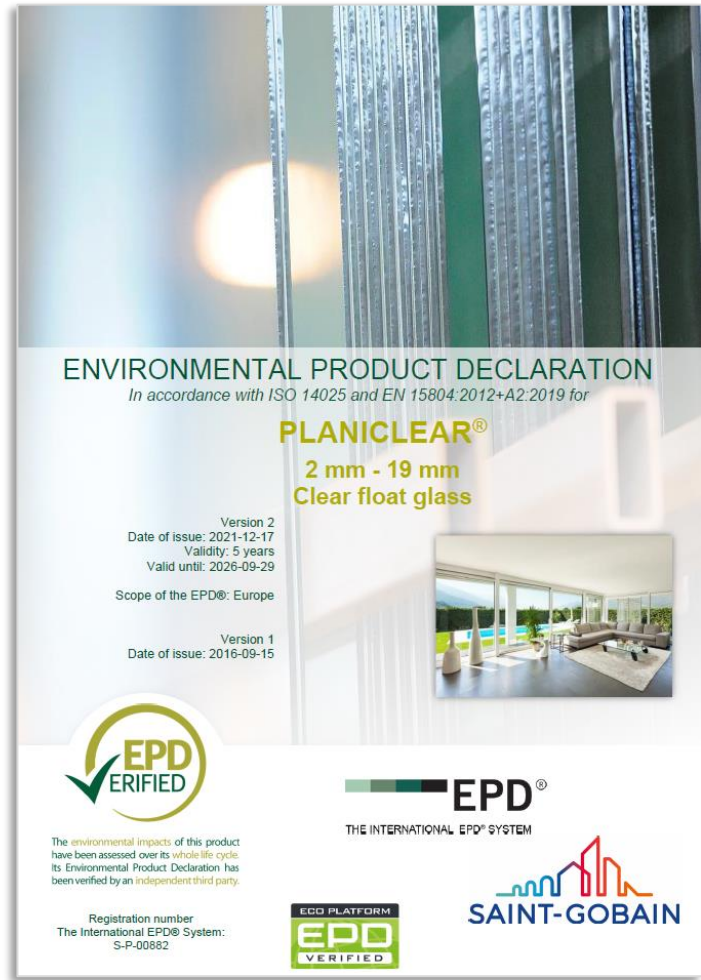
EPD®
THE INTERNATIONAL EPD® SYSTEM
The International EPD® System
Programme operator: EPD International AB
www.environdec.com
Registration number: S-P-08970

ECO PLATFORM
EPD
VERIFIED

EPD
ERIFIED

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

SAINT-GOBAIN GLASS



ENVIRONMENTAL PRODUCT DECLARATION
In accordance with ISO 14025 and EN 15804:2012+A2:2019 for

PLANICLEAR®
2 mm - 19 mm
Clear float glass

Version 2
Date of issue: 2021-12-17
Validity: 5 years
Valid until: 2026-09-29
Scope of the EPD®: Europe

Version 1
Date of issue: 2016-09-15

EPD
ERIFIED

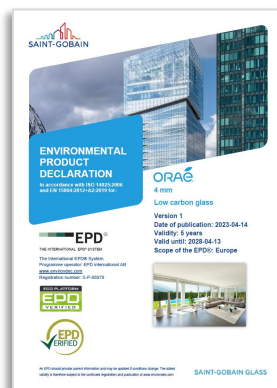
The environmental impacts of this product have been assessed over its whole life cycle. Its Environmental Product Declaration has been verified by an independent third party.

Registration number:
The International EPD® System:
S-P-00882

ECO PLATFORM
EPD
VERIFIED

EPD®
THE INTERNATIONAL EPD® SYSTEM

SAINT-GOBAIN



General information

Company information

Manufacturer: Saint-Gobain Glass FRANCE, 12 place de l'Iris, 92096 La Défense

Production plant: SAINT-GOBAIN GLASS INDUSTRY - Aviles, Spain/ Torgau, Germany/ Aniche, France.

Management system-related certification: Glass products are manufactured in production plants with an integrated management system certified according to ISO 9001:2015, ISO 14001:2015 and OHSAS 18001:2009 standards.

Programme used: The International EPD® System. More information at www.environdec.com.

PCR identification: PCR 2019:14 Construction products (EN 15804:2012: A2) version 1.1 and its c-PCR-009 Flat glass products used in buildings and other construction works (EN17074:2019)

Prepared by: IVL Swedish Environmental Research Institute, EPD International Secretariat

UN CPC CODE: 3711 - Unworked glass, flat glass and pressed or moulded glass for construction; glass mirrors

Owner of the declaration: Saint-Gobain Glass Industry, Europe

Product name and manufacturer represented: ORAÉ® produced by SAINT-GOBAIN GLASS INDUSTRY

EPD® prepared by: Amelie Briend (Saint-Gobain) and Marie-Charlotte Harquet (Saint-Gobain LCA central team)

Contact : François Guillemot - francois.guillemot@saint-gobain.com

Geographical scope of the EPD®: Europe, cradle to grave and module D

EPD® registration number: S-P-08970

Declaration issued: 2023_04_14, valid until: 2028_04_13



General information

Manufacturer : Saint-Gobain Glass FRANCE, 12 place de l'Iris, 92096 La Défense

Program used: The International EPD® System. More information at www.environdec.com

EPD registration/declaration number: S-P-00882

PCR identification: PCR 2019:14 Construction products (EN 15804:2012: A2) version 1.1 and its c-PCR-009 Flat glass products used in buildings and other construction works (EN17074:2019)

UN CPC code: 371

Product name and manufacturer represented: PLANICLEAR® produced by SAINT-GOBAIN GLASS INDUSTRY

Owner of the declaration: Saint-Gobain Glass Industry, Europe

EPD® prepared by: Yves Coquelet (Saint-Gobain) and Marie-Charlotte Harquet (Saint-Gobain)

Contact: Amelie Briend - Amelie.briend@saint-gobain.com

Date of update: 2021-12-17 Valid: 2026-09-29



General information

Company information

Manufacturer: Saint-Gobain Glass FRANCE, 12 place de l'Iris, 92096 La Défense
Production plant: SAINT-GOBAIN GLASS INDUSTRY - Aviles, Spain/Torgau, Germany/ Aniche, France.

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Prepared by: IVL Swedish Environmental Research Institute, EPD International Secretariat
UN CPC CODE: 3711 - Unworked glass, flat glass and pressed or moulded glass for construction, glass mirrors

Owner of the declaration: Saint-Gobain Glass Industry, Europe
Product name and manufacturer represented: ORA6® produced by SAINT-GOBAIN GLASS INDUSTRY

EPD® prepared by: Amelie Briend (Saint-Gobain) and Marie-Charlotte Harquet (Saint-Gobain LCA central team)

Contact : François Guillemot - francois.guillemot@saint-gobain.com

Geographical scope of the EPD®: Europe, cradle to grave and module D

EPD® registration number: S-P-08970

Declaration issued: 2023_04_14, valid until: 2028_04_13

Environmental Impacts

Environmental indicators		PRODUCT STAGE	CONSTRUCTION STAGE	USE STAGE								END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING
		A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	Climate Change [kg CO2 eq.]	5,88E+00	3,92E-01	0	0	1,84E-01	0	0	0	0	0	0	2,44E-02	0	1,60E-01	0
	Climate Change (fossil) [kg CO2 eq.]	5,88E+00	3,84E-01	0	0	8,08E-02	0	0	0	0	0	0	2,39E-02	0	1,52E-01	0
	Climate Change (biogenic) [kg CO2 eq.]	1,08E-02	4,21E-03	0	0	3,05E-02	0	0	0	0	0	0	2,62E-04	0	8,00E-03	0
	Climate Change (land use change) [kg CO2 eq.]	3,43E-03	3,19E-03	0	0	7,28E-02	0	0	0	0	0	0	1,99E-04	0	4,37E-04	0
	Ozone depletion [kg CFC-11 eq.]	4,70E-09	4,73E-17	0	0	4,39E-09	0	0	0	0	0	0	2,95E-18	0	5,62E-16	0
	Acidification terrestrial and freshwater [Mole of H+ eq.]	2,84E-02	1,67E-03	0	0	4,99E-04	0	0	0	0	0	0	1,04E-04	0	1,09E-03	0
	Eutrophication freshwater [kg P eq.]	4,71E-05	1,20E-06	0	0	3,23E-05	0	0	0	0	0	0	7,45E-08	0	2,60E-07	0
	Eutrophication marine [kg N eq.]	6,27E-03	7,84E-04	0	0	5,33E-04	0	0	0	0	0	0	4,88E-05	0	2,80E-04	0
	Eutrophication terrestrial [Mole of N eq.]	6,80E-02	8,72E-03	0	0	1,38E-03	0	0	0	0	0	0	5,43E-04	0	3,08E-03	0
	Photochemical ozone formation - human health [kg NMVOC eq.]	1,77E-02	2,11E-03	0	0	3,22E-04	0	0	0	0	0	0	1,31E-04	0	8,48E-04	0
	Resource use, mineral and metals [kg Sb eq.] ²	1,09E-06	2,82E-08	0	0	2,55E-06	0	0	0	0	0	0	1,76E-09	0	1,36E-08	0
	Resource use, energy carriers [MJ] ¹	7,71E+01	5,24E+00	0	0	1,38E+00	0	0	0	0	0	0	3,28E-01	0	1,99E+00	0
	Water deprivation potential [m³ world equiv.] ¹	1,29E+00	3,52E-03	0	0	3,27E-01	0	0	0	0	0	0	2,19E-04	0	1,59E-02	0

General information

Manufacturer : Saint-Gobain Glass FRANCE, 12 place de l'Iris, 92096 La Défense

Program used: The International EPD® System. More information at www.environdec.com

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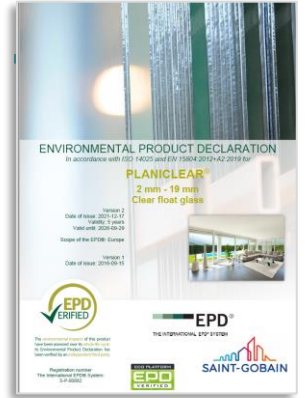
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EPD® prepared by: Yves Coquelet (Saint-Gobain) and Marie-Charlotte Harquet (Saint-Gobain)

Contact: Amelie Briend - Amelie.briend@saint-gobain.com

Date of update: 2021-12-17 Valid: 2026-09-29



PLANICLEAR 4 mm

Parameters		ENVIRONMENTAL IMPACTS 4 mm														
		Product stage	Construction process stage		Use stage								End-of-life stage			
		A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	Climate Change [kg CO2 eq.]	1,09E+01	3,42E-01	0	0	0,095	0	0	0	0	0	0	2,44E-02	0	1,40E-01	0
	Climate Change (fossil) [kg CO2 eq.]	1,07E+01	3,39E-01	0	0	0,081	0	0	0	0	0	0	2,42E-02	0	1,52E-01	0
	Climate Change (biogenic) [kg CO2 eq.]	1,92E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Climate Change (land use change) [kg CO2 eq.]	4,34E-03	2,78E-03	0	0	0,073	0	0	0	0	0	0	1,99E-04	0	4,37E-04	0
	Ozone depletion [kg CFC-11 eq.]	2,82E-09	4,13E-17	0	0	4E-09	0	0	0	0	0	0	2,95E-18	0	5,62E-16	0
	Acidification terrestrial and freshwater [Mole of H+ eq.]	5,82E-02	1,46E-03	0	0	5E-04	0	0	0	0	0	0	1,04E-04	0	1,09E-03	0
	Eutrophication freshwater [kg P eq.]	8,42E-06	1,04E-06	0	0	3E-05	0	0	0	0	0	0	7,45E-08	0	2,60E-07	0
	Eutrophication marine [kg N eq.]	1,38E-02	6,84E-04	0	0	5E-04	0	0	0	0	0	0	4,88E-05	0	2,80E-04	0
	Eutrophication terrestrial [Mole of N eq.]	1,72E-01	7,60E-03	0	0	0,001	0	0	0	0	0	0	5,43E-04	0	3,08E-03	0
	Photochemical ozone formation - human health [kg NMVOC eq.]	3,61E-02	1,84E-03	0	0	3E-04	0	0	0	0	0	0	1,31E-04	0	8,48E-04	0
	Resource use, mineral and metals [kg Sb eq.]	8,79E-07	2,46E-08	0	0	3E-06	0	0	0	0	0	0	1,76E-09	0	1,36E-08	0
	Resource use, energy carriers [MJ]	1,44E+02	4,57E+00	0	0	1,38	0	0	0	0	0	0	3,26E-01	0	1,99E+00	0
Water scarcity [m³ world equiv.]		9,04E-01	3,07E-03	0	0	0,327	0	0	0	0	0	0	2,19E-04	0	1,59E-02	0

Environmental Impacts

		PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING
Environmental indicators		A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	Climate Change [kg CO2 eq.]	5,88E+00	3,92E-01	0	0	1,84E-01	0	0	0	0	0	0	2,44E-02	0	1,60E-01	0
	Climate Change (fossil) [kg CO2 eq.]	5,88E+00	3,84E-01	0	0	8,08E-02	0	0	0	0	0	0	2,39E-02	0	1,52E-01	0
	Climate Change (biogenic) [kg CO2 eq.]	1,08E-02	4,21E-03	0	0	3,05E-02	0	0	0	0	0	0	2,62E-04	0	8,00E-03	0
	Climate Change (land use change) [kg CO2 eq.]	3,43E-03	3,19E-03	0	0	7,28E-02	0	0	0	0	0	0	1,99E-04	0	4,37E-04	0

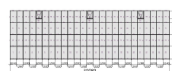
ENVIRONMENTAL IMPACTS 4 mm															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	
 Climate Change [kg CO2 eq.]	1,09E+01	3,42E-01	0	0	0,095	0	0	0	0	0	0	2,44E-02	0	1,40E-01	0
 Climate Change (fossil) [kg CO2 eq.]	1,07E+01	3,39E-01	0	0	0,081	0	0	0	0	0	0	2,42E-02	0	1,52E-01	0
 Climate Change (biogenic) [kg CO2 eq.]	1,92E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
 Climate Change (land use change) [kg CO2 eq.]	4,34E-03	2,78E-03	0	0	0,073	0	0	0	0	0	0	1,99E-04	0	4,37E-04	0

Eksempel på EPD / Miljødeklarasjon

Prosjektspesifikk EPD - direkte fra produsent og er knyttet til et gitt prosjekt/leveranse



SCHÜCO



System design: Schüco FW 50+ HI
W x H: 30130 mm x 9088 mm
Surface finish of profiles: Powder-coated
Appendices: Unit overview

2.2 Application

The product is generally installed as an external building attachment. Integrated windows permit the exchange of air and let light into the building.

2.3 Technical Data

In accordance with the CE marking, the following technical data must be stated for the unit for field 1:

Name	Value	Unit
Heat transfer coefficient glass acc. to DIN EN 673	1,3	W/(m ² K)
Total solar energy transmittance glazing acc. to EN 410	npd	-
Heat transfer coefficient of profile frame in accordance with DIN EN 10277-2	1,8	W/(m ² K)
Heat transfer coefficient of the curtain wall in accordance with DIN EN 12651	1,5	W/(m ² K)
Heat transfer coefficient of a panel in accordance with DIN EN 6946	npd	W/(m ² K)
Exterior sound reduction acc. to DIN EN ISO 10140 and DIN EN ISO 7171	-)	dB
Driving rain impermeability acc. to DIN EN 12154	npd	Class
Air permeability in accordance with DIN EN 12153 and DIN EN 12152	-)	Pa
Fire resistance class (for fire facades)	npd	-
Resistance to dead load (L500, max. 3mm)	-)	-

*) Omitted as there are no mandatory properties in accordance with product standard DIN EN 13030.

Additional product specification can be found in the Declaration of Performance. The characteristics of the unit can be viewed on the CE labelling.

2.4 Placing on the market / Application rules

The /CPR/ applies to placement on the market in the EU / EFTA countries. The products require a Declaration of Performance taking account of the harmonised product standard DIN EN 13030: 2013-06/ on curtain walling and the CE marking.

With regard to use, the respective national regulations apply.

2.5 Delivery status

The façade unit is installed on the building in the dimensions described under 2.1.

2.6 Basic materials / Ancillary materials

The façade unit in question consists of the following:

Aluminium	1483,85	kg
Butyl rubber	16,66	kg
Die-cast aluminium	5,75	kg
Die-cast zinc	1,91	kg
Double glazing	10943,02	kg
EPDM	177,13	kg
INOX	0,18	kg
INOX A2	0,76	kg
INOX A4	13,75	kg
PA 66	6,83	kg
PVC/PE foam	79,45	kg
Polypropylene	2,71	kg
Powder	27,71	kg
Total weight	12759,71	kg

The foams do not contain any REACH-relevant substances.

2.7 Manufacture

The surface-finished aluminium profiles are cut to size and fabricated for the appropriate frame size. The resulting off-cuts from the aluminium profiles are recycled. The insulation profiles are fixed securely to the aluminium profiles. The profiles on the building structure are then securely fastened to the frame and the gaskets are inserted in the appropriate grooves. Then the glazing is inserted and secured with glazing profiles. Completed Schüco AWS window units can also be installed in the façade frame construction. This is followed by a check for correct operation.

2.8 Environment and health during manufacturing

For the production of curtain walling, no measures are required beyond those regulations that apply in Germany and the provisions of the European Union on health and safety or environmental protection.

2.9 Product processing / Installation

The Schüco notes on construction and installation for the Schüco FW 50+ HI system must be observed for production, installation and commissioning. No measures beyond standard health and safety measures have to be taken for installation and commissioning.

2.10 Packaging

Generally, the façade units are not packed. In rare cases a PE foil is used as protection. The plastic foil is conveyed to a regional waste separation system. The packed façade units are prepared on transport frames and these are put on euro pallets. Reusable frames are used to transport them to the building site.

2.11 Condition of use

No changes occur to the material composition during use.

2.12 Environment and health during use

There are no emissions during the period of use. Therefore, no negative impacts on health are expected during the period of use.

If used as intended, no risk to soil, air or water is to be expected.

2.13 Reference service life

In accordance with the useful life of components for the lifecycle analyses in accordance with the evaluation system for sustainable building (DNB), the useful life of façades with an aluminium frame is over 50 years. The useful life given is independent of the warranty of the manufacturer. The actual useful life could be much longer. Prerequisites for a long useful life are regular maintenance and care of the product.

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5. LCA: Results

In the following section, the results of the indicators of the assessment of the effect, the use of resources and also waste and other output streams are displayed in reference to a single façade of type Schüco FW 50+ HI in specific dimensions of 30130 mm x 9088 mm. See chapter 3.1 for the conversion.

DESCRIPTION OF THE SYSTEM BOUNDARY (X= INCLUDED IN LCA; MND = MODULE NOT DECLARED)															
PRODUCT STAGE				CONSTRUCTION STAGE				USE STAGE				END OF LIFE STAGE			
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Disassembly	Transport	Waste processing	Disposal
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
X	X	X	X	MND	MND	MND	MND	MND	MND	X	MND	MND	MND	MND	X
															D

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT:

Schüco FW 50+ HI W x H: 30130 mm x 9088 mm

Parameter	Parameter	Unit	A1-A3	A4	B6	C4	D
GWP	Global warming potential	[kg CO ₂ -Eq.]	28651,43	11,49	0,00	741,80	-6851,83
OOP	Depletion potential of the stratospheric ozone layer	[kg CFC ₁₁ -Eq.]	4,64E-4	6,27E-11	0,00	2,56E-9	-3,56E-4
AP	Acidification potential of land and water	[kg SO ₂ -Eq.]	113,28	2,81E-2	0,00	3,28E-1	-27,03
EP	Eutrophication potential	[kg (PO ₄) ³ -Eq.]	16,70	6,53E-3	0,00	2,12E-2	-1,57
POCP	Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen Eq.]	8,54	-7,84E-3	0,00	1,16E-2	-1,88
ADPE	Abiotic depletion potential for non fossil resources	[kg Sb Eq.]	1,32E-1	7,84E-7	0,00	9,43E-5	-1,22E-2
ADPF	Abiotic depletion potential for fossil resources	[MJ]	345267,10	158,06	0,00	442,87	-72887,37

RESULTS OF THE LCA - RESOURCE USE:

Schüco FW 50+ HI W x H: 30130 mm x 9088 mm

Parameter	Parameter	Unit	A1-A3	A4	B6	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	53236,58	0,00	0,00	0,00	0,00
PERM	Renewable primary energy resources as material utilisation	[MJ]	0,00	0,00	0,00	0,00	0,00
PERT	Total use of renewable primary energy resources	[MJ]	53236,58	6,98	0,00	72,86	-3084,40
PENRE	Non renewable primary energy as energy carrier	[MJ]	376952,28	0,00	0,00	0,00	0,00
PENRM	Non renewable primary energy as material utilisation	[MJ]	9625,99	0,00	0,00	0,00	0,00
PENRT	Total use of non renewable primary energy resources	[MJ]	386578,25	158,04	0,00	494,03	-46198,00
SM	Use of secondary material	[kg]	569,28	0,00	0,00	0,00	0,00
RSF	Use of renewable secondary fuels	[MJ]	0,00	0,00	0,00	0,00	0,00
NRSF	Use of non renewable secondary fuels	[MJ]	0,00	0,00	0,00	0,00	0,00
FW	Use of net fresh water	[m ³]	122,70	2,29E-2	0,00	1,51	-61,21

RESULTS OF THE LCA - OUTPUT FLOWS AND WASTE CATEGORIES:

Schüco FW 50+ HI W x H: 30130 mm x 9088 mm

Parameter	Parameter	Unit	A1-A3	A4	B6	C4	D
HWD	Hazardous waste disposed	[kg]	2,90E-2	1,20E-4	0,00	7,35E-6	-6,85E-5
NHWD	Non hazardous waste disposed	[kg]	3270,45	1,33E-2	0,00	225,25	-1602,05
RWD	Radioactive waste disposed	[kg]	18,97	2,27E-4	0,00	2,03E-2	-9,48
CRU	Components for re-use	[kg]	0,00	0,00	0,00	0,00	0,00
MFR	Materials for recycling	[kg]	0,00	0,00	0,00	0,00	12386,62
MER	Materials for energy recovery	[kg]	0,00	0,00	0,00	0,00	0,00
EE	Exported electrical energy	[MJ]	0,00	0,00	0,00	626,91	0,00
EET	Exported thermal energy	[MJ]	0,00	0,00	0,00	2150,21	0,00

Eksempel på EPD / Miljødeklarasjon

Prosjektspesifikk EPD - direkte fra produsent og er knyttet til et gitt prosjekt/leveranse



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5. LCA: Results

In the following section, the results of the indicators of the assessment of the effect, the use of resources and also waste and other output streams are displayed in reference to a single façade of type Schüco FW 50+.HI in specific dimensions of 30130 mm x 9088 mm. See chapter 3.1 for the conversion.

DESCRIPTION OF THE SYSTEM BOUNDARY (X= INCLUDED IN LCA; MND = MODULE NOT DECLARED)

PRODUCT STAGE		CONSTRUCTION PROCESS STAGE		USE STAGE								END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction 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	X	MND	MND	MND	MND	X	X

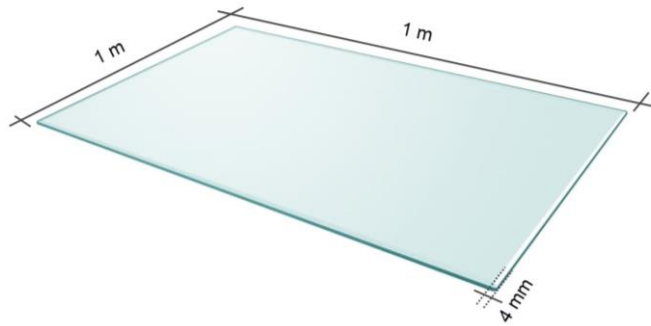
RESULTS OF THE LCA - ENVIRONMENTAL IMPACT:

Schüco FW 50+.HI W x H: 30130 mm x 9088 mm

Parameter	Parameter	Unit	A1-A3	A4	B6	C4	D
GWP	Global warming potential	[kg CO ₂ -Eq.]	28951,48	11,49	0,00	741,80	-8851,83
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC ₁₁ -Eq.]	4,64E-4	5,27E-11	0,00	2,58E-9	-3,56E-4
AP	Acidification potential of land and water	[kg SO ₂ -Eq.]	113,28	2,81E-2	0,00	3,26E-1	-27,03
EP	Eutrophication potential	[kg (PO ₄) ³ -Eq.]	16,70	6,53E-3	0,00	2,12E-2	-1,57
POCP	Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen Eq.]	8,54	-7,84E-3	0,00	1,16E-2	-1,68

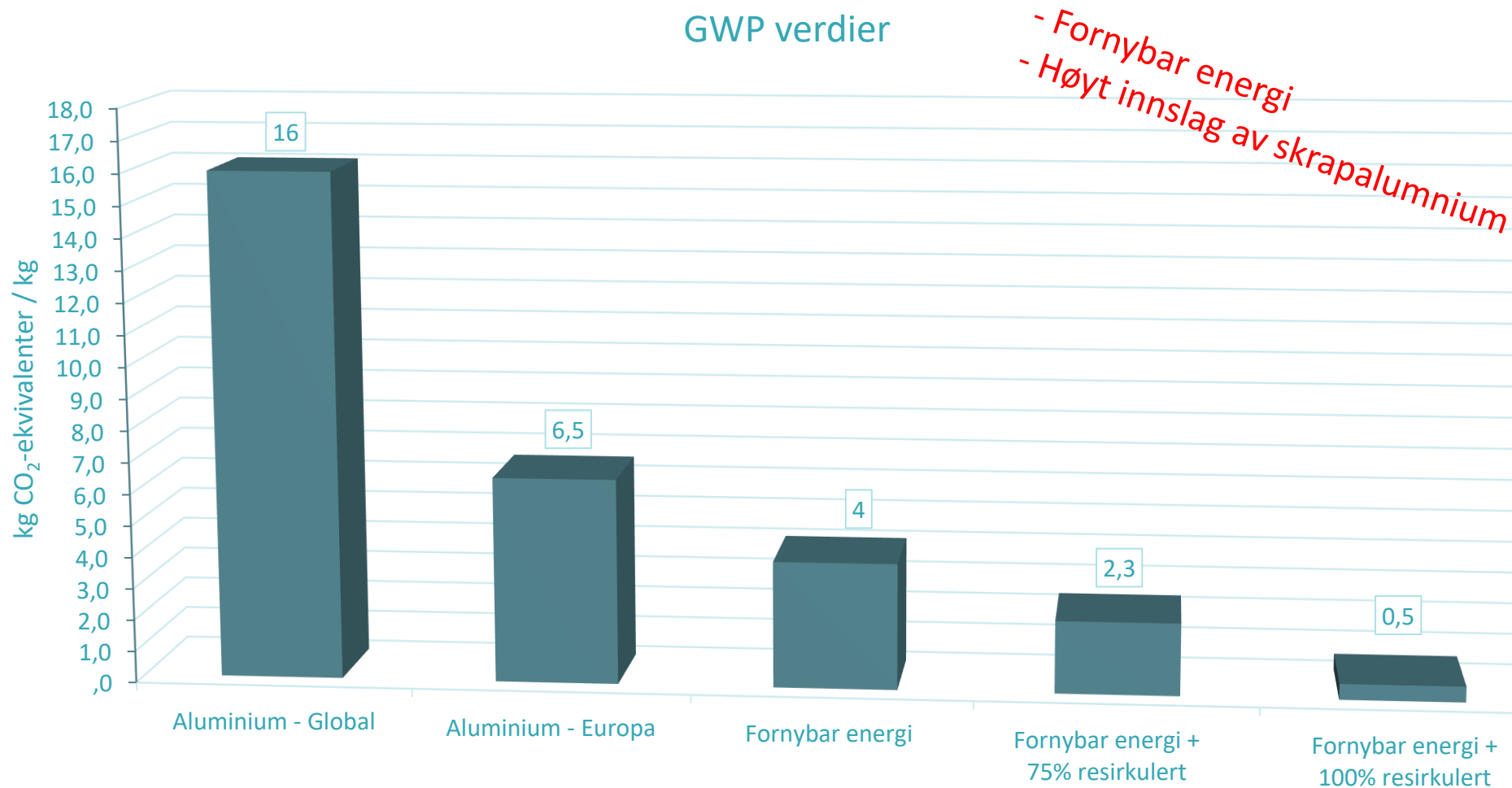
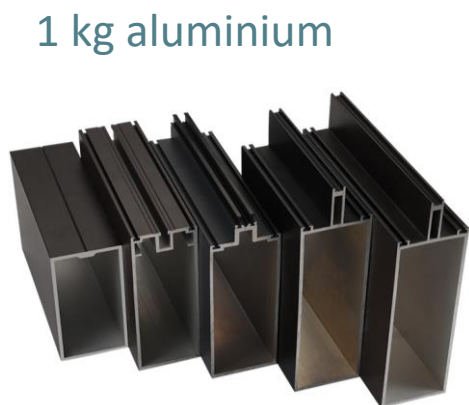
Klimagassregnskap og miljødeklarasjoner

Eksempel - globalt oppvarmingspotensial for glass



Klimagassregnskap og miljødeklarasjoner

Eksempel - globalt oppvarmingspotensial for aluminium



Spørsmål?