Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019 for:

VitraDual Aluminium Cladding

from

Fairview Europe Ltd t/a Valcan

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
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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

General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): *PCR 2019:14. Construction products. Version 1.11*
PCR review was conducted by: *technical committee of the International EPD® System*
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: *Chris Foster, EuGeos Srl* Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD:
Fairview Europe Ltd t/a Valcan
Dunball House, Woodlands Court Business Park, Bristol Rd,
Bridgwater, Somerset
www.valcan.co.uk

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Description of the organisation:
Valcan is a designer and manufacturer of rainscreen cladding systems working with clients, insurers, architects and contractors. We deliver fully tested non-combustible A1 or A2 (A2-s1,d0) certified solutions, paired with reliable and technically assured customer service. With over 20 years of experience in the façade industry through our global network, we have established a leading position in the market and are now the preferred company by Architects, Builders and Fabricators. Valcan began with the supply of aluminium composite panels and a suite of Façade products including Ceramapanel, VitraDual and Vitrafix. Our stock holdings have grown to be one of the largest in the UK, ensuring consistent supply to our dedicated fabricator/distributor network. Valcan is continuing to develop its range of Façade solutions in conjunction with our partner Fairview and is committed to maintaining a high level of service and support to the construction industry.

Product-related or management system-related certifications: [ISO 9001 + 14001 as well as BBA accreditation on the VitraDual panel and CWCT tested as a rainscreen façade system.

Product information

Product name: VitraDual

Product identification: Non-combustible Aluminium Cladding

Product description: Valcan VitraDual is a prefinished rainscreen panel designed to provide a non-combustible aluminium panel solution that can be fitted as both cassette panels and flat sheets with no oil-canning appearance offering a cost effective and aesthetically pleasing facade solution.

UN CPC code: 41534 Plates, sheets and strip, of aluminium, of a thickness exceeding 0.2 mm

Geographical scope: United Kingdom, Global

LCA information

Functional unit / declared unit: 1 m2 of VitraDual panel.
For this study the 3mm panel has been considered representative of both configurations as a worst-case product. This assumption is based on the fact that the only difference between the two configurations is the panel volume; the higher environmental impacts of the 3mm can therefore be linearly scaled to the 2mm.
Time representativeness: 2021

Database used: Ecoinvent 3.6
LCA software used: SimaPro 9.4
LCA practitioner:
Studio Fieschi & soci Srl
C.so Vittorio Emanuele II, 18 10123 Torino, IT
www.studiofieschi.it

Description of system boundaries:

Cradle-to-gate with options, modules C1-C4 and module D. System boundaries include:

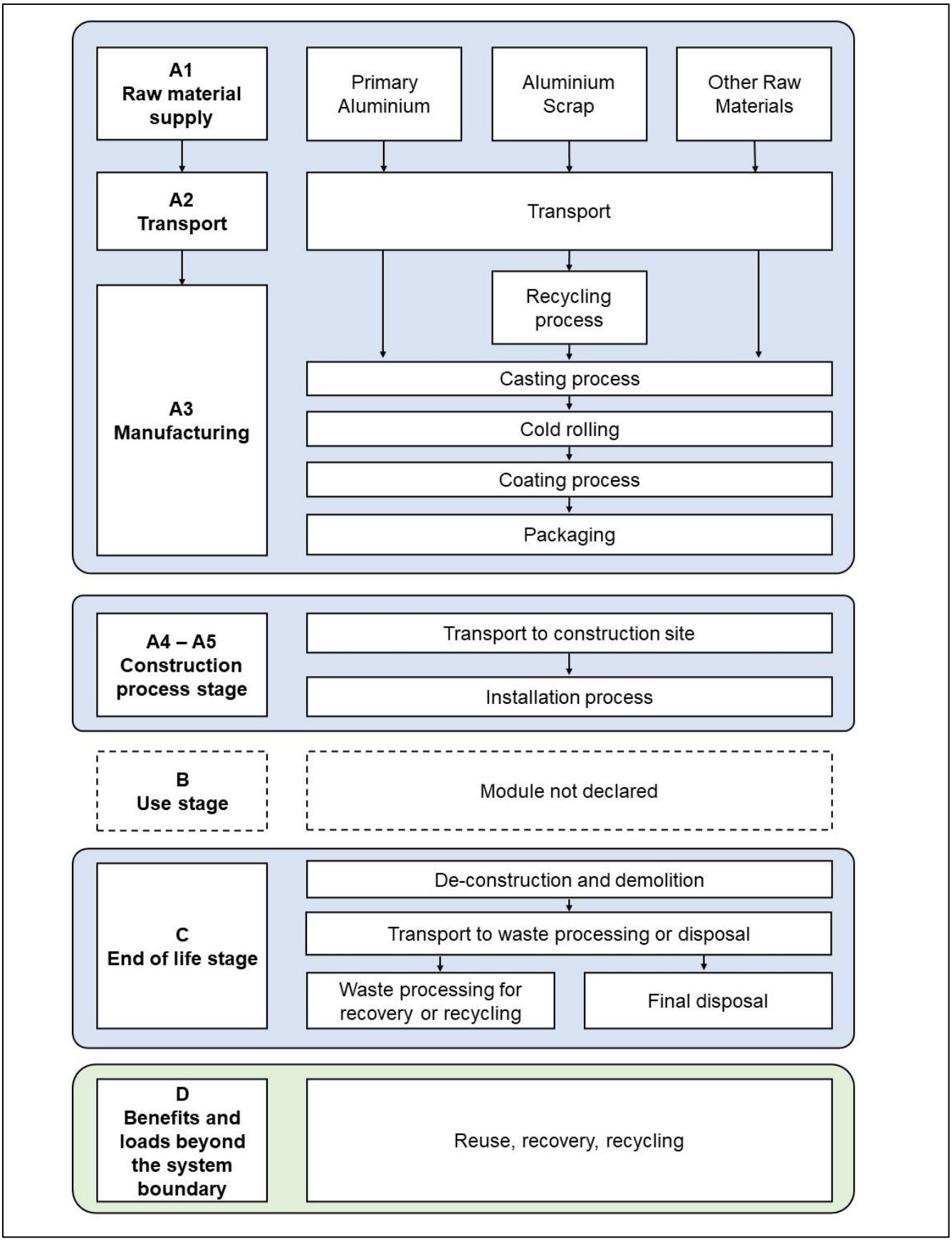
- A1: Raw material extraction and processing, processing of secondary material input, production of energy used in manufacturing processes;
- A2: External transport of raw materials and secondary material inputs to the core processes;
- A3: Manufacturing of the final products and packaging, including water use, emissions to air, water discharges and waste to be recovered or disposed;
- A4: Transportation from production plant to Valcan distribution and storage facility, final transportation to the installation site;
- A5: Construction installation and packaging disposal;
- C1: Deconstruction operation;
- C2: Transport to waste processing;
- C3: Waste processing for reuse, recovery and/or recycling;
- C4: Final disposal;
- D: Estimate of the potential benefits and/or impacts in case the products under study were reused, recycled, or recovered.

The system boundaries do not include:

- Input and output flows related to personnel (e.g. energy used in head offices and sales offices, transports of employees to and from workplace, water use for toilets, etc);
- Input and output flows related to production and maintenance of equipment.

The information and data about the manufacturing process are derived from an EPD of coated aluminium sheet registered in the International EPD System, which is deemed representative of VitraDual manufacturing, in accordance with ISO 14025 and EN 15804:2012+A2:2019.
The environmental impacts of modules A1-A3, retrieved from this EPD, were used as input for this LCA study and the development of the related EPD.

System diagram:



Cut-off:
No cut-off has been applied in this study.

Packaging:
It is assumed that the average packaging contains 25 panels.

Assumptions for the End-of-Life scenario:
The end of waste (EoW) state has reached at the point of delivery to recycling plant.

- Module C1: this module was modelled following the assumptions made in the EPD used to represent the manufacturing process.
- Module C2: a distance of 50 km was assumed for the transport of materials to waste processing or disposal. All transport has assumed by truck.
- Module C3-C4: the following EoL scenario was set:

Destination	Scenario	Quantity per m^2 (kg)	Reference
Recycling	95%	7.7	Annex C: PEF Guidance document and supporting documentation
Landfill	5%	0.4	Annex C: PEF Guidance document and supporting documentation

Production process:
The VitraDual panel is composed of pre-painted and coated aluminium sheets. This EPD applies to the following configurations of the panel:

- 2mm thickness with a weight of 5.42 kg/m2
- 3mm thickness with a weight of 8.13 kg/m2

Impact Assessment:
Inventory indicators relating to the use of raw and secondary material, as well as renewable and non-renewable secondary fuels, for module A4 and C has been assumed 0, since there is no material consumption in these stages. To be consistent with the results of EPD of coated aluminium sheet, inventory indicators related to radioactive waste have been assumed 0.
WDP resulted negative values for modules A4 and C2 due to inconsistencies within the secondary data and have been assumed 0.
The impacts depend on the amount of aluminium used for the production and thus on the volume of the panel; the impacts of the 3mm VitraDual are in fact one third higher than those of the 2mm.

Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation:

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	GLO	GLO	EUR	GLO	GLO	-	-	-	-	-	-	-	UK	UK	UK	UK	UK
Specific data used	>99.5%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-33,3%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	Not relevant					-	-	-	-	-	-	-	-	-	-	-	-

Content information

Product components	Weight per unit area (kg/m²)
Aluminium, primer ingot	5.4-8.1
Coating Material	0.05-0.08
Packaging materials	**Total weight (kg/m²)**
Wooden Pallet	0.2
Cardboard	0.08
PE Film	0.02

This content information was taken from the fire resistance classification report of the 3 mm VitraDual panel.

No recycled content included in packaging materials.

Environmental Information

Potential environmental impact – mandatory indicators according to EN 15804

	Results per 1 m² of VitraDual								
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	8.52E+01	1.43E+00	5.52E-01	4.70E-01	2.92E-02	2.06E+00	4.02E-03	-6.15E+01
GWP-biogenic	kg CO_2 eq.	-5.69E-02	1.47E-04	6.45E-02	4.60E-05	2.01E-06	0.00E+00	1.62E-05	-5.99E-02
GWP-luluc	kg CO_2 eq.	1.65E+00	2.91E-05	4.63E-05	9.57E-06	2.28E-07	7.28E-04	1.42E-06	-1.42E-01
GWP-total	kg CO_2 eq.	8.68E+01	1.43E+00	6.17E-01	4.70E-01	2.92E-02	2.06E+00	4.04E-03	-6.17E+01
ODP	kg CFC 11 eq.	6.96E-06	2.95E-07	1.02E-07	9.93E-08	6.66E-09	1.33E-07	7.00E-10	-1.92E-06
AP	mol H^+ eq.	6.26E-01	2.01E-02	5.37E-03	4.59E-03	9.78E-05	6.68E-03	3.17E-05	-3.97E-01
EP-freshwater	kg P eq.	2.50E-03	5.61E-06	3.70E-06	1.60E-06	1.71E-08	4.31E-05	6.26E-08	-1.84E-03
EP-marine	kg N eq.	7.32E-02	5.14E-03	2.38E-03	2.04E-03	3.10E-05	1.29E-03	1.28E-05	-6.15E-02
EP-terrestrial	mol N eq.	8.54E-01	5.71E-02	2.62E-02	2.24E-02	3.41E-04	1.47E-02	1.45E-04	-6.81E-01
POCP	kg NMVOC eq.	2.85E-01	1.48E-02	7.10E-03	6.15E-03	9.34E-05	4.00E-03	3.94E-05	-1.98E-01
ADP-minerals&metals*	kg Sb eq.	1.00E-03	4.82E-07	8.77E-07	2.04E-07	1.69E-09	1.20E-05	1.58E-09	1.24E-02
ADP-fossil*	MJ	8.78E+02	2.10E+01	7.38E+00	6.92E+00	4.07E-01	1.40E+01	6.36E-02	-5.61E+02
WDP	m^3	3.17E+01	1.64E-03	1.16E-02	2.23E-03	-8.96E-05	9.09E-02	2.50E-04	-4.35E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Potential environmental impact – additional mandatory and voluntary indicators

Results per 1 m² of VitraDual									
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	8.39E+01	1.42E+00	5.47E-01	4.66E-01	2.90E-02	2.05E+00	3.98E-03	-5.95E+01

Use of resources

Results per 1 m² of VitraDual									
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	5.44E+02	2.64E-01	1.51E-01	7.39E-02	5.69E-04	1.19E+00	1.71E-02	-4.92E+01
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	5.44E+02	2.64E-01	1.51E-01	7.39E-02	5.69E-04	1.19E+00	1.71E-02	-4.92E+01
PENRE	MJ	8.78E+02	2.10E+01	7.38E+00	6.92E+00	4.07E-01	1.40E+01	6.36E-02	-5.61E+02
PENRM	MJ.	1.96E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	8.78E+02	2.10E+01	7.38E+00	6.92E+00	4.07E-01	1.40E+01	6.36E-02	-5.61E+02
SM	kg	3.24E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	1.56E+00	7.97E-04	7.62E-04	2.90E-04	6.10E-07	6.82E-03	6.28E-05	-2.08E-01
Acronyms			PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water							

[1] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Waste production and output flows

Waste production

Results per 1 m² of VitraDual									
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radioactive waste disposed	kg	0.00E+00	1.53E-04	5.22E-05	5.02E-05	2.95E-06	6.86E-05	5.15E-07	-6.84E-04

Output flows

Results per 1 m² of VitraDual									
Indicator	**Unit**	**Tot.A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	5.66E+00	0.00E+00	3.10E-01	0.00E+00	0.00E+00	7.72E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Information on biogenic carbon content

Results per functional or declared unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0.01-0.05

Biogenic carbon is arising from wooden pellet packaging material. The value has been retrieved from the EPD of coated aluminium sheet.

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

References

General Programme Instructions of the International EPD® System. Version 4.0.

PCR 2019:14. Construction products. Version 1.11

EN 15804:2012 + A2:2019 Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products

ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations – Principles and procedures

ISO 14040:2006 Environmental management – Life cycle assessment – Principles and framework

ISO 14044:2006 Environmental management – Life cycle assessment - Requirements and guidelines

Studio Fieschi & soci Srl, *Life Cycle Assessment (LCA) of of Valcan's product: VitraDual 2mm, VitraDual 3mm.*

Other references and databases:

PEF Guidance document and supporting documentation: Annex C to the PEF/OEF Methods (Updated May 2020)

Warringtonfire, *Classification of reaction to fire performance in accordance with BS EN 13501-1:2018.* Product name: "VitraDual". Report N°: WF 431748. August 2020

Plastics Europe - Eco-profiles for determining environmental impacts of plastics, https://plasticseurope.org/sustainability/circularity/life-cycle-thinking/eco-profiles-set/

Ecoinvent 3.6

Eurostat database

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