



Multi-product EPD, based on the average of product group results

termolac®, high quality powder coating

HIGH QUALITY POWDER COATING OF SHEETS AND COILS FOR ANY ARCHITECTURAL SOLUTION



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*An EPD should provide current information, it can be updated if conditions change
Its validity is subject to continued registration and publication on www.environdec.com.*

Environmental Product Declaration according to:

ISO 14025:2006 ENVIRONMENTAL LABELS AND DECLARATIONS-TYPE III ENVIRONMENTAL DECLARATIONS - PRINCIPLES AND PROCEDURES (2006)

EN 15804:2012+A2:2019/AC:2021, SUSTAINABILITY OF CONSTRUCTION WORKS. ENVIRONMENTAL PRODUCT DECLARATIONS. CORE RULES FOR THE PRODUCT CATEGORY OF CONSTRUCTION PRODUCTS (2021).

From ALUCOIL COATING, S.L.U

C/ Ircio, Parc. R75 – R77
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[Procedure for follow-up the validity of the EPD is at minimum required once a year with the aim of confirming whether the information in the EPD remains valid or if the EPD needs to be updated during its validity period. The follow-up can be organized entirely by the EPD owner or together with the original verifier via an agreement between the two parties. In both approaches, the EPD owner is responsible for the procedure being carried out. If a change that requires an update is identified, the EPD shall be re-verified by a verifier]	

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EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

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1. PRODUCT-RELATED INFORMATION

1.1 COMPANY INFORMATION

ALUCOIL COATING is a Spanish multinational company, based in Pol. Ind. de Bayas. C/Ircio, Parc. R75 – R77 Miranda de Ebro (Burgos-SPAIN). It is part of the Alibérico Group, specialists in the transformation and manufacture of advanced materials for construction, transport and industry.



Image 1: Lacquer line. Source: Alucoil Coating

ALUCOIL COATING is an innovation-minded company with a spirit of growth, and has 6 state-of-the-art production lines. Since 1996, it has been manufacturing high-tech materials for building and construction, with more than 40 years of experience in the aluminium sector.

ALUCOIL COATING focuses its activity on powder and liquid paint coatings on aluminium and steel, under the brands termolac® and durolac®.



Image 2: Termolac® lacquered coil

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ALUCOIL Coating is part of the ALIBÉRICO Group, the first Spanish and European private family group dedicated to the manufacture of semi-processed aluminium products. Currently, 38 companies form part of the Group, with different business lines and 21 factories distributed over 3 continents. The Group exports 70% of its production and sells its products in more than 90 countries on 5 continents.

The companies belonging to the ALIBÉRICO Group operate with technologically advanced aluminium products and with their own Premium brands, recognised as world leaders in the sectors of packaging, building, surface treatment, transport, health (clean rooms, operating theatres and emergency ICUs), industry and renewable energies. It is organised into the following business areas:

Alucoil® Coating	High quality Coating of aluminium sheets and coils.
Alucoil®	Specialists in the manufacture of advanced materials for architecture, transport, industry
Alibérico® Food Packaging	Packaging.
Alucoat®	Coil Coatings.
Iberfoil®	Foil coil rolling.
Eurocolor®	Surface treatments.
Alintra® Systems	Solutions for transport.
RedBond®	Aluminium Composite panels for digital printing and VISCOM.

Contact person at Company: Laura Alonso, laura.alonso@alucoil.com

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1.2 PRODUCT DEFINITION

Scope of validity This document applies to the high quality powder coating treatment termolac® designed for laminated products: sheets and coils. Applied by the company Alucoil Coating at its Miranda de Ebro plant.

The usefulness of this EPD is business-to-business communication (B2B).

This is an environmental statement on the termolac® coating process on aluminium sheet/coil and galvanised steel. Average results are reported for each of the treatments, weighted by m2 of surface area treated, 87% on sheet and 13% on coil.

CPC 41534, by approximation.

Geographical scope: Global

Figure 1 shows the scope of the process under study.

The establishment of product system boundaries follows the three principles referenced in PCR 2019:14: (1) the modularity principle, all environmental aspects and impacts are declared at the life cycle stage at which they appear, (2) inputs (pre-consumer) to the system under study that come from an A1-A3 module of another product system above, are allocated as co-products and (3) the allocation of waste follows the polluter pays principle, waste treatment processes are allocated to the product system that generates the waste until end-of-waste status is reached, including the outputs (post-consumer) of a building when it reaches its end of life.

termolac®
 HIGH QUALITY POWDER COATING

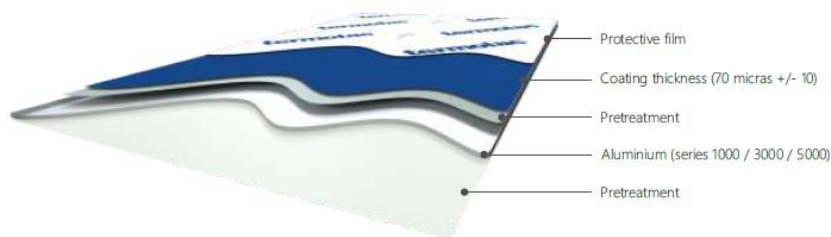


Image 3: termolac® powder coating. Source: Alucoil Coating, S.L.U

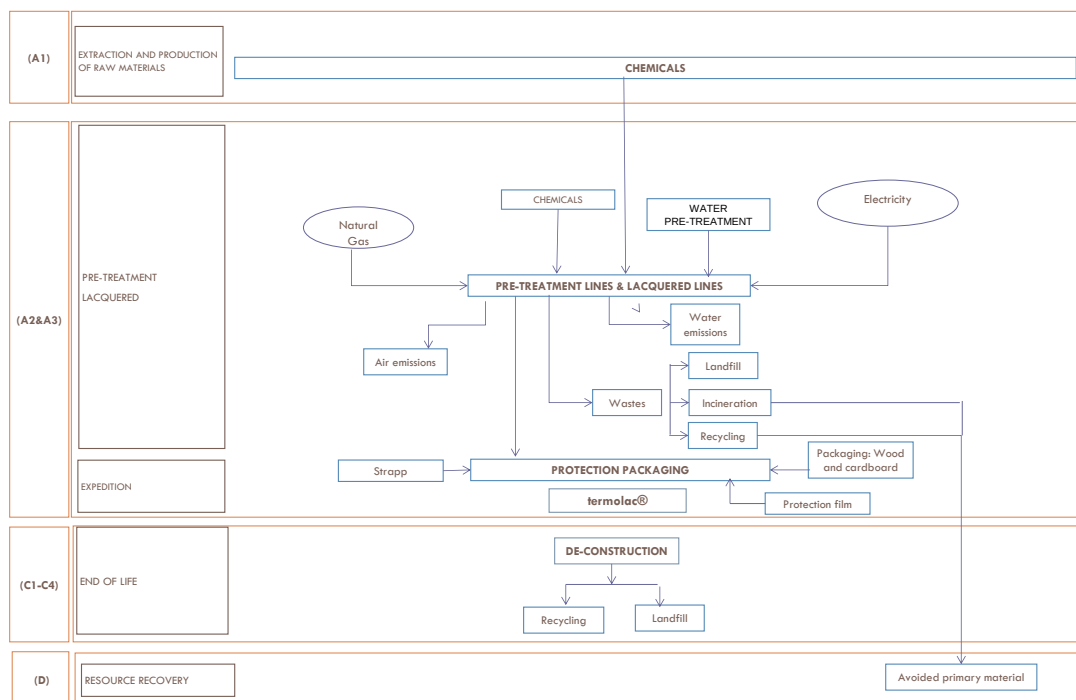


Figure 1: System boundaries of the termolac® product system. Source: Alucoil Coating S.L.U

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Product definition

Coating of aluminium sheets and coils with high quality powder coating that combines high durability properties and excellent mechanical characteristics that allow forming and bending up to OT with guarantee.

Application

Architectural façades and finishes of any architectural solution termolac® has a fire resistance A2-s1, d0 classification according to UNE-EN 13501.

The advanced lacquering process provides a finish equal to that of the profiles, a perfect flatness of the material, it is presented in sheets without holes or hanging marks and is protected with plastic film.

termolac® offers excellent weathering and corrosion resistance, optimum durability and is easily conformable, with an unlimited range of colours.

Management certifications



Delivery status

termolac® is available in different dimensional characteristics as shown in the table below:

Table 1: termolac® characteristics

CHARACTERISTICS	termolac®
Minimum - maximum thicknesses	Aluminium sheets: 0.7 mm - 4 mm Aluminium coils: 0.4 mm - 1.5 mm Galvanised steel sheets: 0,3 mm - 2 mm Galvanised steel coils: 0.2 mm - 0.8 mm
Lengths	≤6000 mm
Minimum - maximum widths	800 mm - 1600 mm
Plastic film	35µ transparent - 80µ Black/White - Laser
Colour charts	RAL NCS PANTONE
Finishes	Gloss Matt Metallic Textured

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Construction data Alucoil Coating has defined a self-declaration of Quality (QUALICOIL®) applicable to the termolac® powder coating, whose technical requirements are stricter.

Table 2: Mechanical characteristics

TECHNICAL DATA		termolac®
Powder characteristics		High-end polyester suitable for outdoor use
Aspect		No defects from a distance of 1 metre
Gloss 60° [ISO 2813] [ECCA T2].		0-30±5 / 31-70±5 / 71-100±10
Coating thickness (ISO 2360/ECCA T1)		70±10 µ
Adherence (ISO 2409 / ECCA T6)		GT0
Buccholz Indentation (ISO 2815 / ECCA T12)		90
Cupping test (ISO 1520)		6-12mm(*)
Bending test (bending radius) (ECCA T7)		Bending radius equals zero=OT(*)
Impact test (without cracking) (ECCA T5)		10Nm
Corrosion resistance (ISO 9227)		1000 hours without corrosion(**)
Quality certificate		Qualicoil® (with each order)

*Depending on alloy/temple/thickness of metal and selected colour.

**Depending on alloy / Rolling of metal.

1.3 DECLARED UNIT

Declared Unit The declared unit is 1m2 of coated surface, pre-treated on both sides and coated one face on the outer side, on aluminium and steel roll products.

1.4 CONTENT OF MATERIALS AND CHEMICAL SUBSTANCES

Table 3: List of materials of termolac®

MATERIALS CONTENT TERMOLAC®					
COMPONENTS		kg/m ²		%	MATERIAL POST-CONSUMPTION, kg
Protective film	Polymer (LDPE)	7,24E-02	48%	---	0
Painting	Polyester	7,81E-03	5%	---	0
termolac®		8,02E-02	53%	---	0
	Metal strapp	3,05E-03	2%	---	2,65E-03
	Plastic strapp	2,65E-03	2%	---	9,97E-05
	Cardboard	1,04E-04	0%	8,46E-03	2,10E-02
	Corner protectors	2,10E-02	14%	1,95E-03	4,85E-03
	Wooden pallet	4,85E-03	3%	1,81E-02	0
	Wooden cradle	4,11E-02	27%	1,58E-05	0
Packaging		6,97E-02	47%	1,04E-02	2,86E-02
TOTAL		1,50E-01	100%	1,04E-02	2,86E-02

The packaging used for the termolac® sheets is 71% higher in weight than for termolac® coils.

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SVHC List termolac® does not contain any substances included in the SVHC List in concentrations greater than 0.1% by weight.

2. LCA INFORMATION

2.1 RULES FOR REPORTING INFORMATION PER MODULE

The environmental product declaration is type a) cradle-to-gate with modules C1-C4 and module D (A1-A3, C, D). The aggregation of modules A1-A3 includes the compensation of the biogenic CO2 contained in the packaging.

Table 4: Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results)

	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	MND	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X
Geography	EU	EU	ES	-	-	-	-	-	-	-	-	-	GLO	GLO	GLO	GLO	GLO
Specific data used	94%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	21%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variacion sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Module A1. Upstream stages, from cradle to gate. The phase of acquisition and pre-treatment of the raw material that enters the Alucoil Coating facilities and which is directly part of the termolac® coating. This phase includes the production of the chemical preparations: degreaser, treatment acid, converters and paint. These preparations have been specifically inventoried through the formulation declared in their respective safety data sheets. For those substances that are not represented in the ecoinvent database, they have been approximated to a chemical precursor included in their molecular formula.

Module A2. Module A2 includes transports to the plant gate and transports to waste managers in the case of waste outlets. The distances used are specific data calculated from the supplier location to the destination location (plant/manager). The transport models have been chosen following the default scenarios from the supplier to the plant as set out in the EU Recommendation 2021/2279.

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Module A3. Gate-to-gate stages, Alucoil Coating plant. Includes all inputs/outputs of the treatment lines for sheets and coils. It contains the containers in which the lacquered products are dispatched. It includes the auxiliary processes: purifier and the treatment of the inlet water to the studied processes.

Module C1. End-of-life stage. It is considered that the coating layer follows the same route as its carrier. A non-destructive demolition of the panels is contemplated. For demolition, C1, the electricity consumption of power tools from the specific environmental statement INIES:20231236109, 2023 has been considered.

Module C2. End-of-life stage, transport to the treatment plant, a distance of 50 km is considered, by lorry (EURO 5).

Module C3. Following the same hypothesis as in module C1, the coating adhered to the substrate does not receive environmental loads. Since the lacquered rolled products are directly introduced into the smelting furnace for the recovery of the aluminium.

Module C4. End-of-life stage, final disposal. Post-consumer lacquered substrates are recycled with a recycling rate of 95%, following the R2 parameters applied in the European Commission's Circular Footprint Formula (Annex C v2.1 May 2020). The rest is landfilled. By the way, it is considered that 5% of the termolac® coating will end up in landfill.

Module D. Reuse, recovery and recycling potential, expressed as net loads and benefits. The environmental benefit of recycling the coating is not considered, since the objective of recovery is the substrate and not the coating. The net benefits associated with the material and energy recovery of packaging waste produced in A3 are considered. The amount of secondary material and the performance of the recovery process have been discounted through the default parameters (QSin, QSout) included in the European Commission's Circular Footprint Formula (Annex C v2.1 May 2020).

2.2 ADDITIONAL INFORMATION ABOUT THE UNDERLYING LCA-BASED INFORMATION

Allocation	The selected physical property has been m2 of pre-treatments and coatings to separate the flows linked to termolac® coating from other pre-treatments and coatings.
Cut-off rules	Cut-off rules have not been applied.
Data quality	Specific data have been collected by Alucoil Coating for the production year 2022. All data have a very good temporal and geographical coverage. 94% of the contribution to the GWP-GHG indicator comes from secondary data with good technological representativeness. Generic data source used for the EPD is ecoinvent 3.9.1.
Electricity	The supplier-specific residual electricity mix is applied. GWP-GHG, 0,516 CO2eq (Kg/kWh) obtained from the Comisión Nacional de los Mercados y al Competencia (CNMC) https://gdo.cnmc.es/CNMC/accesoEtiquetado.do

2.3 RESULTS OF ENVIRONMENTAL PERFORMANCE INDICATORS

Table 5 shows the potential impact from the cradle to gate with modules C1-C4 and module D (A1-A3, C, D) for high quality polyester powder paint, termolac®. The method followed for the assessment is based on EN 15804+A2 (EF 3.1).

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Table 5: Mandatory impact category indicators according to EN 15804, for termolac® per declared unit

INDICATOR	UNIDAD	A1-A3	C1	C2	C3	C4	D
GWP-GHG	kg CO2 eq	1,74E+00	7,74E-05	3,10E-05	0,00E+00	3,79E-05	-4,79E-02
Climate change	kg CO2 eq	1,74E+00	7,74E-05	3,10E-05	0,00E+00	3,79E-05	-4,79E-02
Climate change - Biogenic	kg CO2 eq	1,77E-02	1,65E-07	1,99E-09	0,00E+00	2,72E-08	-1,76E-04
Climate change - Fossil	kg CO2 eq	1,72E+00	7,71E-05	3,10E-05	0,00E+00	3,79E-05	-4,77E-02
Climate change - Land use and LU change	kg CO2 eq	9,85E-04	1,63E-07	5,98E-10	0,00E+00	9,68E-10	-9,00E-05
Acidification	mol H+ eq	6,43E-03	3,69E-07	7,78E-08	0,00E+00	1,88E-08	-1,89E-04
Ozone depletion	kg CFC11 eq	1,55E-07	4,42E-13	6,59E-13	0,00E+00	2,94E-14	-1,10E-09
Photochemical ozone formation	kg NMVOC eq	5,27E-03	2,16E-07	1,26E-07	0,00E+00	3,61E-08	-1,98E-04
Eutrophication, marine	kg N eq	1,24E-03	6,60E-08	3,02E-08	0,00E+00	8,08E-09	-4,16E-05
Eutrophication, freshwater	kg P eq	1,43E-04	3,88E-09	2,40E-11	0,00E+00	2,60E-11	-2,57E-06
Eutrophication, terrestrial	mol N eq	1,23E-02	7,28E-07	3,19E-07	0,00E+00	8,79E-08	-4,43E-04
Resource use, fossils (2)	MJ	3,17E+01	1,00E-03	4,06E-04	0,00E+00	2,86E-05	-6,41E-01
Resource use, minerals and metals (2)	kg Sb eq	4,21E-07	2,08E-12	1,05E-12	0,00E+00	8,42E-14	-1,55E-07
Water use (2)	m3 depriv.	7,37E-01	1,27E-05	3,71E-07	0,00E+00	1,01E-07	-7,33E-03

(2) 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

Table 6: Additional mandatory for termolac® per declared unit

INDICATOR	UNIDAD	A1-A3	C1	C2	C3	C4	D
Ecotoxicity, freshwater (2)	CTUe	8,56E+00	3,27E-04	3,64E-04	0,00E+00	4,07E-05	-4,02E-01
Particulate matter (2)	disease inc.	3,11E-08	3,12E-12	2,55E-12	0,00E+00	4,89E-13	-3,62E-09
Human toxicity, cancer (2)	CTUh	1,59E-09	2,22E-14	4,37E-15	0,00E+00	5,65E-15	-4,79E-10
Human toxicity, non-cancer (2)	CTUh	1,04E-08	1,11E-12	5,38E-13	0,00E+00	1,33E-13	-1,40E-09
Ionising radiation (1)	kBq U-235 eq	1,29E-01	4,29E-06	6,46E-08	0,00E+00	2,55E-08	-1,21E-03
Land use (2)	Pt	6,89E+00	9,63E-05	7,71E-07	0,00E+00	6,85E-05	-1,04E+00

(1) This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

(2) The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

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2.4 RESOURCE USE INDICATORS

Table 7: Resource use indicators **termolac®**

RECURSOS	UNIDAD	A1-A3	C1	C2	C3	C4	D
PERE	MJ	1,88E+00	1,36E-04	1,07E-06	0,00E+00	7,34E-07	-2,38E-01
PERM	MJ	9,26E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,81E+00	1,36E-04	1,07E-06	0,00E+00	7,34E-07	-2,38E-01
PENRE	MJ	3,24E+01	1,00E-03	4,06E-04	0,00E+00	2,86E-05	-6,41E-01
PENRM	MJ	4,41E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	3,24E+01	1,00E-03	4,06E-04	0,00E+00	2,86E-05	-6,41E-01
SM	kg	2,86E-02	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	1,57E-02	5,35E-07	5,75E-09	0,00E+00	4,04E-09	-3,06E-04

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

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3. REFERENCES

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(ISO 14044:2006) Environmental management -- Life cycle assessment -- Requirements and guidelines.

UNE-EN 15804:2012+A2: 2019/AC: 2021 Sustainability of construction work- Environmental product declarations. Core rules for the product category of construction products.

Balance-electrico_2022_2022, <https://www.ree.es/es/datos/balance/balance-electrico>.

EPD International (2021) General Programme Instructions for the International EPD® System. Version 4.0. www.environdec.com

INIES:20231236109, 2023, FICHE DE DECLARATION ENVIRONNEMENTALE ET SANITAIRE Procédé de bardage ventilé panneau composite en aluminium larsen® FR ou larsen® A2 en pose rivetée ou vissée, incluant le système d'ossature de fixation à la structure.

Mezcla de comercialización año 2022, <https://gdo.cnmc.es/CNMC/accesoEtiquetado.do>

PCR 2019:14 Construction products and construction services v1.3.3 (2024/12/20).

Pro Carton, 2009 Envases de cartón y huella de carbono. Enfoque de los envases de cartón respecto al carbono fósil y biogénico.

Recomendación (UE) 2021/2279 de la Comisión Europea de 15 de diciembre del 2021 sobre el uso de los métodos de la huella ambiental para medir y comunicar el comportamiento ambiental de los productos y las organizaciones a lo largo de su ciclo de vida. -

The Circular Footprint Annex_C_V2.1:May 2020.