Statement of Verification

BREG EN EPD No.: 000534 Issue 01

This is to verify that the

Environmental Product Declaration

provided by:

Profine GmbH

BRE Global Verified EPD

is in accordance with the requirements of:

EN 15804:2012+A1:2013

and

BRE Global Scheme Document SD207

This declaration is for:

1 m² of KömaStyle Internal wall cladding

Company Address

Profine GmbH,
Zweibrückerstraße 200,
66954 Pirmasens,
Germany

Kömmerling® TODAY FOR TOMORROW

Signed for BRE Global Ltd	Emma Baker Operator	09 October 2023 Date of this Issue
06 October 2023 Date of First Issue		08 October 2028 Expiry Date

BRE Global Verified EPD

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ECO PLATFORM EPD VERIFIED

Environmental Product Declaration

EPD Number: 000534

General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE Environmental Profiles 2013 Product Category Rules for Type III environmental product declaration of construction products to EN 15804:2012+A1:2013
Commissioner of LCA study	**LCA consultant/Tool**
Profine GmbH, Zweibrückerstraße 200, 66954 Pirmasens, Germany	Bala Subramanian, BRE LINA 2.0
Declared Unit	**Applicability/Coverage**
1 m² of KömaStyle Internal wall cladding	Other (please specify). Product Specific
EPD Type	**Background database**
Cradle to Gate with options	ecoinvent

Demonstration of Verification
CEN standard EN 15804 serves as the core PCR [a]
Independent verification of the declaration and data according to EN ISO 14025:2010 ☐Internal ☒ External
(Where appropriate [b])Third party verifier: Roger Connick
a: Product category rules b: Optional for business-to-business communication; mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4)

Comparability
Environmental product declarations from different programmes may not be comparable if not compliant with EN 15804:2012+A1:2013. Comparability is further dependent on the specific product category rules, system boundaries and allocations, and background data sources. See Clause 5.3 of EN 15804:2012+A1:2013 for further guidance

Information modules covered

Product			Construction		Use stage							End-of-life					Benefits and loads beyond the system boundary
					Related to the building fabric					Related to the building							
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4		D
Raw materials supply	Transport	Manufacturing	Transport to site	Construction – Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal		Reuse, Recovery and/or Recycling potential
☑	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐

Note: Ticks indicate the Information Modules declared.

Manufacturing site(s)

Profine GmbH

Pirmasens
Zweibrückerstraße 200,
66954 Pirmasens,
Germany

Construction Product:

Product Description

KömaStyle is the wall cladding system for modern interior design. KömaCel panels are available in two laminate variants, i.e., KömaStyle D and KömaStyle Deco.

The KömaStyle Deco panel combines a KömaCel integral skin-foamed sheet and a PVC foil that can be laminated on one or both sides.

The KömaStyle D panel combines a KömaCel integral skin foamed sheet and a print with a scratch resistant topcoat that can be laminated on both sides.

KömaStyle can be used in many ways: as wall cladding in the bathroom, as a shower wall panel, for the redesign of interior rooms in hotels, wellness areas, hospitals, nursing homes, swimming pools, and many more.

In this EPD, KömaStyle Deco and D Panel are only modelled, and any ancillary materials that are used during the product installation, like mounting profiles, are not included in the LCA analysis.

Name	KömaCel Deco	KömaCel D
Dimensions	2500 x 1250 mm	2600 x 1250 mm
Thickness	8 mm	8 mm
Pallet contents	50 pcs	50 pcs

Technical Information

Name	Standard	KömaCel Deco	KömaCel D
Weight		4.400 g/m²	4.400 g/m²
Compressive strength (Hooke's law)	DIN EN ISO 844	7 MPa	7 MPa
Thermal conductivity (range from 0 °C to +60 °C)	DIN EN ISO 22007	0.05–0.07 W/mK	0.05–0.07 W/mK
Insulation value (heat transfer coefficient)	DIN EN ISO 674	approx. 3.1 W/m²K	approx. 3.1 W/m²K
Airborne sound insulation index	DIN EN ISO 10848	approx. 25 dB	approx. 25 dB
Water absorption after 7 days	DIN EN ISO 62	approx. 0.2%	approx. 0.2%
Chemical resistance	DIN 68861 – 1:2001 – 01	1 B	1 B
Abrasion resistance	DIN 68861 – 2:2013 – 02	2 B	2 B
Scratch resistance	DIN 68861 – 4:2013 – 02	4 E	4 E
Dry heat	DIN 68861 – 7:2001 – 04	7 D	7 D
Humid heat	DIN 68861 – 8:2001 – 04	8 C	8 C
Light resistance	DIN EN 15187:2006 – 12	>6	>5
Continuous operating temperature		up to 58 ºC	up to 58 ºC

Main Product Contents

KömaStyle Deco

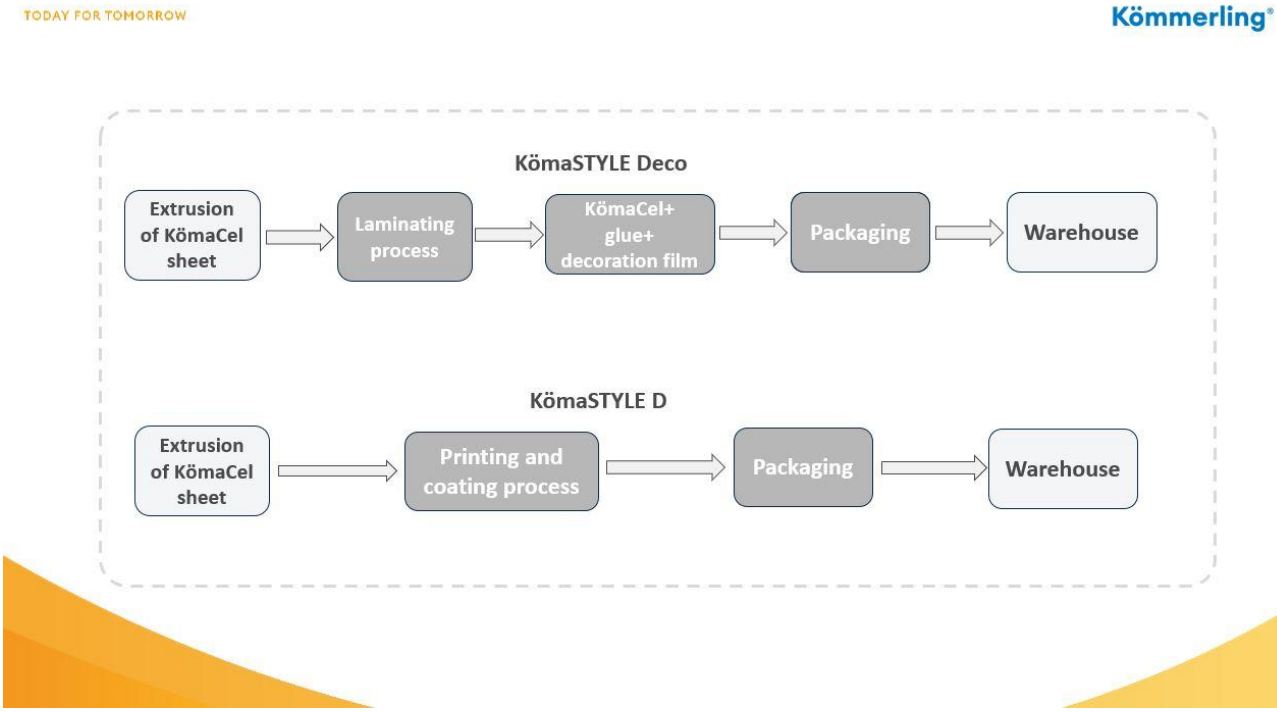
Material Input	%
KömaCel sheet	86
PVC Film	14

KömaStyle D cel

Material Input	%
KömaCel sheet	98
Others	2

An integral PVC foam sheet is created with relatively high density near the surface and low density at the core. During the forming process inside the die and the calibration, the cells of the sheet at the surface are smoothed out. The interior foaming process (Celuka) utilises a torpedo inside the die. The torpedo generates a hollow section as the profile exits the die, which encourages the foaming action to fill this hollow by inward foaming. The cooling of the surfaces that encounter the calibrator walls creates a very strong, glossy outer skin on the part's surface while inwardly filling the foam part. Simultaneous calibration prevents further enlargement of the profile's cross-section. In this process, foaming takes place mainly toward the core. By achieving optimal interaction between the PVC compound, foaming agent, and foam calibration, excellent product quality can be achieved. As an outcome, the KömaCel product will be produced, and for further processing, the sheets will be sent to the laminating process using glue and decorative film to achieve the KömaStyle Deco variant. Further for KömaStyle D laminate variety, the KömaCel panels will be sent to the printing and coating processes. Hence, after the final quality checks, the panels will be sent to the packing plant and delivered to the customer sector.

Process flow diagram



Construction Installation

Checking the surface - The surface to which you would like to attach the KömaStyle. Sheet must be solid, capable of load bearing, dry, dust-free, and clean.

Taking dimensions - Determine all the necessary dimensions for cutting the sheets.

Transferring - Transfer the dimensions determined to the sheets. The drilling centre point is marked for drilled holes.

Trimming - All woodworking and metalworking machines can generally be used (commercial handheld circular saws or jigsaws) to produce a sharp joint without any cracks.

Drilling - The best way to drill holes for fittings is to use a fine-toothed hole saw with an appropriate diameter.

Checking and adapting - Before being fixed in place, the sheet on the wall is checked to ensure a precision fit and adapted if necessary.

Applying adhesive - Apply the adhesive across the entire surface of the wall using a toothed spatula or alternatively apply beads of adhesive to the cleaned back of the colour laminate sheet.

Installing- First of all, the sheet must be attached in the required position at the bottom. It is important to press down gently on the sheet from bottom to top once it has been correctly positioned. You can now correct this if necessary. If you require end beads, these can be attached as an option. Then, firmly press down on the KömaStyle sheet over its entire surface. This ensures that the adhesive is evenly distributed and the KömaStyle sheet will remain in the required position. Any excess adhesive must be removed immediately.

Attach the sheets - Sheets can be fitted easily one after the other using a vacuum handling device.

Life Cycle Assessment Calculation Rules

Declared unit description.

1 m2 of KömaStyle Interior wall cladding panel.

System boundary

This is a cradle-to-gate with options LCA study that follows the modular design defined in EN 15804:2012+A1:2013 and includes the production stage modules, A1 to A3; and construction stages A4 Transport and A5 Installation.

Data sources, quality and allocation

Datasets are derived from Ecoinvent v3.2 (2015) and the LCA tool used was BRE LINA v2.0. The LCA models and reports the production stage modules, A1 to A3 and construction stage modules A4 and A5.

The quantity used in the data collection for this EPD is for the total quantity of KömaStyle Deco and KömaStyle D manufacturing as a proportion of the total manufactured during the data collection period (01-01-2021 to 31-12-2021) and the allocation has been done using the m^2 production. The Profine GmbH manufactures other products in addition to KömaStyle products; therefore, an allocation of fuel consumption, water consumption, and discharge is required, and this has been done according to the provisions of the BRE PCR PN514 and EN 15804. The original data collection form has been used while doing an LCA analysis and there was a no uplift in the given data.

Generally, the Profine GmBH uses their own KömaCel panel to produce the KömaStyle panels. Initially, once the KömaCel panels is manufactured they will be sent to their third-party processing sector there by the additional processes like laminating and coating will takes place. Therefore, the diesel and the transportation used between the manufacturing site and processing site has been covered and the electricity used for the processing is also included in this LCA analysis. The manufacturer has confirmed that there is no water used for the KömaCel manufacturing and processing. In this LCA analysis, two results table have been enclosed. One is for the processing of the KömaStyle Deco and the other is for the processing of KömaStyle D. Secondary data has been obtained for all other upstream and downstream processes that are beyond the control of the manufacturer (i.e., raw material production) from the ecoinvent 3.2 database. All ecoinvent datasets are complete within the context used and conform to the system boundary and the criteria for the exclusion of inputs and outputs, according to the requirements specified in EN15804.

Specific European datasets have been selected from the ecoinvent LCI for this LCA. For grid electricity, the following dataset was used: “Electricity, Germany (kWh) (Ecoinvent 3.2). The quality levels of geographical and technical representativeness are therefore very good. The quality level of time representativeness is fair as the background LCI datasets are based on ecoinvent v3.2 which was compiled in 2015. Therefore, there is approximately 5-6 years between the ecoinvent LCI reference year and the time period for which the LCA was undertaken.

Cut-off criteria

All the raw materials, ancillary materials, process energy, packaging, have been included. Only emission to water, land, and soil was not covered.

LCA Results – KömaStyle D

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts

			GWP	ODP	AP	EP	POCP	ADPE	ADPF
			kg CO2 equiv.	kg CFC 11 equiv.	kg SO2 equiv.	kg (PO4)3- equiv.	kg C2H4 equiv.	kg Sb equiv.	MJ, net calorific value.
Product stage	Raw material supply	A1	1.27E+01	6.14E-07	5.53E-02	3.22E-02	1.24E-02	2.85E-03	2.61E+02
	Transport	A2	2.55E-01	4.69E-08	8.51E-04	2.25E-04	1.48E-04	6.70E-07	3.84E+00
	Manufacturing	A3	3.70E+00	8.61E-07	4.66E-02	2.92E-02	7.54E-03	4.31E-05	1.96E+02
	Total (Consumption grid)	A1-3	1.66E+01	1.52E-06	1.03E-01	6.16E-02	2.01E-02	2.89E-03	4.61E+02
Construction process stage	Transport	A4	6.07E-01	1.12E-07	2.03E-03	5.35E-04	3.54E-04	1.60E-06	9.17E+00
	Construction	A5	7.62E+00	1.54E-07	3.22E-02	9.22E-03	6.90E-03	1.63E-04	1.55E+02

GWP = Global Warming Potential;
ODP = Ozone Depletion Potential;
AP = Acidification Potential for Soil and Water;
EP = Eutrophication Potential;
POCP = Formation potential of tropospheric Ozone;
ADPE = Abiotic Depletion Potential – Elements;
ADPF = Abiotic Depletion Potential – Fossil Fuels;

Parameters describing resource use, primary energy

			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	2.00E+01	1.48E-01	2.01E+01	2.96E+02	2.19E-01	2.97E+02
	Transport	A2	5.10E-02	1.90E-07	5.10E-02	3.82E+00	0.00E+00	3.82E+00
	Manufacturing	A3	9.62E+01	5.16E-04	9.62E+01	2.08E+02	2.65E+00	2.11E+02
	Total (Consumption grid)	A1-3	1.16E+02	1.49E-01	1.16E+02	5.08E+02	2.87E+00	5.11E+02
Construction process stage	Transport	A4	1.22E-01	4.53E-07	1.22E-01	9.11E+00	0.00E+00	9.11E+00
	Construction	A5	6.32E+00	2.38E-02	6.34E+00	1.11E+02	5.60E+01	1.67E+02

PERE = Use of renewable primary energy excluding renewable primary energy 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 resource

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, secondary materials and fuels, use of water						
			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m^3
Product stage	Raw material supply	A1	0.00E+00	0.00E+00	0.00E+00	7.10E-01
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	8.33E-04
	Manufacturing	A3	0.00E+00	0.00E+00	0.00E+00	1.88E-01
	Total (Consumption grid)	A1-3	0.00E+00	0.00E+00	0.00E+00	8.99E-01
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	1.99E-03
	Construction	A5	0.00E+00	0.00E+00	0.00E+00	2.23E-01

SM = Use of secondary material;
RSF = Use of renewable secondary fuels;
NRSF = Use of non-renewable secondary fuels;
FW = Net use of fresh water

Other environmental information describing waste categories					
			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	3.32E-01	1.40E+00	3.65E-04
	Transport	A2	1.61E-03	1.79E-01	2.65E-05
	Manufacturing	A3	3.73E-01	1.05E+00	5.12E-04
	Total (Consumption grid)	A1-3	7.06E-01	2.62E+00	9.04E-04
Construction process stage	Transport	A4	3.84E-03	4.27E-01	6.32E-05
	Construction	A5	2.50E-01	2.98E-01	1.05E-04

HWD = Hazardous waste disposed;
NHWD = Non-hazardous waste disposed;
RWD = Radioactive waste disposed

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing output flows – at end of life						
			CRU	MFR	MER	EE
			kg	kg	kg	MJ per energy carrier
Product stage	Raw material supply	A1	2.80E-01	5.08E-03	1.03E-03	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total (of product stage)	A1-3	2.80E-01	5.08E-03	1.03E-03	0.00E+00
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Construction	A5	1.22E-02	9.13E-01	4.50E-05	0.00E+00

CRU = Components for reuse;
MFR = Materials for recycling
MER = Materials for energy recovery;
EE = Exported Energy

LCA Results – KömaStyle Deco

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts								
			GWP	ODP	AP	EP	POCP	ADPE	ADPF
			kg CO2 equiv.	kg CFC 11 equiv.	kg SO2 equiv.	kg (PO4)3- equiv.	kg C2H4 equiv.	kg Sb equiv.	MJ, net calorific value.
Product stage	Raw material supply	A1	1.26E+01	5.58E-07	5.48E-02	2.92E-02	1.26E-02	2.49E-03	2.74E+02
	Transport	A2	2.66E-01	4.89E-08	8.88E-04	2.34E-04	1.55E-04	7.00E-07	4.01E+00
	Manufacturing	A3	4.00E+00	3.31E-07	9.49E-03	1.77E-02	1.25E-03	1.31E-05	7.32E+01
	Total (Consumption grid)	A1-3	1.68E+01	9.37E-07	6.51E-02	4.71E-02	1.40E-02	2.50E-03	3.51E+02
Construction process stage	Transport	A4	6.69E-01	1.23E-07	2.24E-03	5.90E-04	3.90E-04	1.76E-06	1.01E+01
	Construction	A5	7.62E+00	1.54E-07	3.22E-02	9.22E-03	6.90E-03	1.63E-04	1.55E+02

GWP = Global Warming Potential;
ODP = Ozone Depletion Potential;
AP = Acidification Potential for Soil and Water;
EP = Eutrophication Potential;
POCP = Formation potential of tropospheric Ozone;
ADPE = Abiotic Depletion Potential – Elements;
ADPF = Abiotic Depletion Potential – Fossil Fuels;

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, primary energy

			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	1.94E+01	1.29E-01	1.95E+01	3.08E+02	1.91E-01	3.08E+02
	Transport	A2	5.33E-02	1.98E-07	5.33E-02	3.98E+00	0.00E+00	3.98E+00
	Manufacturing	A3	1.40E+01	5.27E-05	1.40E+01	8.12E+01	1.98E-01	8.14E+01
	Total (Consumption grid)	A1-3	3.34E+01	1.29E-01	3.35E+01	3.93E+02	3.89E-01	3.93E+02
Construction process stage	Transport	A4	1.34E-01	4.99E-07	1.34E-01	1.00E+01	0.00E+00	1.00E+01
	Construction	A5	6.32E+00	2.38E-02	6.34E+00	1.11E+02	5.60E+01	1.67E+02

PERE = Use of renewable primary energy excluding renewable primary energy 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 resource

Parameters describing resource use, secondary materials and fuels, use of water

			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m^3
Product stage	Raw material supply	A1	0.00E+00	0.00E+00	0.00E+00	6.43E-01
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	8.69E-04
	Manufacturing	A3	0.00E+00	0.00E+00	0.00E+00	4.28E-02
	Total (Consumption grid)	A1-3	0.00E+00	0.00E+00	0.00E+00	6.86E-01
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	2.19E-03
	Construction	A5	0.00E+00	0.00E+00	0.00E+00	2.23E-01

SM = Use of secondary material;
RSF = Use of renewable secondary fuels;
NRSF = Use of non-renewable secondary fuels;
FW = Net use of fresh water

LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing waste categories					
			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	3.04E-01	1.26E+00	3.48E-04
	Transport	A2	1.68E-03	1.87E-01	2.77E-05
	Manufacturing	A3	3.91E-02	1.79E-01	2.81E-04
	Total (Consumption grid)	A1-3	3.45E-01	1.62E+00	6.57E-04
Construction process stage	Transport	A4	4.23E-03	4.71E-01	6.97E-05
	Construction	A5	2.50E-01	2.98E-01	1.05E-04

HWD = Hazardous waste disposed;
NHWD = Non-hazardous waste disposed;
RWD = Radioactive waste disposed

Other environmental information describing output flows – at end of life						
			CRU	MFR	MER	EE
			kg	kg	kg	MJ per energy carrier
Product stage	Raw material supply	A1	2.44E-01	4.43E-03	9.01E-04	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total (of product stage)	A1-3	2.44E-01	4.43E-03	9.01E-04	0.00E+00
Construction process stage	Transport	A4	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Construction	A5	1.22E-02	9.13E-01	4.50E-05	0.00E+00

CRU = Components for reuse;
MFR = Materials for recycling
MER = Materials for energy recovery;
EE = Exported Energy

Scenarios and additional technical information

Scenarios and additional technical information			
Scenario	Parameter	Units	Results
A4 – Transport to the building site	Transported from Germany to mainly plastic distributors and industrial customers, also building industries across Europe		
	Vehicle type – Road transport	Vehicle type	Lorry, 16 - 32 metric ton
	Manufacturing site to the third-party processing sector (KömaStyle Deco processing)	Km	309
	Manufacturing site to the third-party processing sector (KömaStyle D processing)	Km	225
	Distance: Germany to distributors	Km	600
	Capacity utilisation (incl. empty returns)	%	26
	Bulk density of transported products	kg/m^3	217
A5 – Installation in the building	The panels will be adjusted to the final dimensions, then they are installed using screw or adhesive connections		
	Glues	kg	1.5
	Screws	kg	0.1
	Installation waste rate	%	5
Packaging waste	Wastages during the installation of product	KömaStyle D (kg)	KömaStyle Deco (kg)
	Pallets	0.6541	0.6541
	Protection/packaging foil	0.1797	0.0134
	Styrofoam	0.0162	0.0162
	Cardboard	0.0095	0.0095

Interpretation of results

The bulk of the environmental impacts and primary energy demand are attributed to the upstream manufacturing process of the Interior wall cladding panel, covered by information modules A1-A3 of EN15804:2012+A1:2013.

References

BSI. Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products. BS EN 15804:2012+A1:2013. London, BSI, 2013.

BSI. Environmental labels and declarations – Type III Environmental declarations – Principles and procedures. BS EN ISO 14025:2010 (exactly identical to ISO 14025:2006). London, BSI, 2010.

BSI. Environmental management – Life cycle assessment – Principles and framework. BS EN ISO 14040:2006. London, BSI, 2006.

BSI. Environmental management – Life cycle assessment – requirements and guidelines. BS EN ISO 14044:2006. London, BSI, 2006.