Environmental Product Declaration

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

VISOR BLIND Q2

Pre-EPD

Rakennustieto Pre-EPD
EPD Number: RTS_377_25
Publication date: 1.4.2025
Valid until: 30.9.2026

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GENERAL INFORMATION

MANUFACTURER INFORMATION

Manufacturer	Suomen Visor Oy, a member of the Lumon Group
Address	Zatelliitintie 13, 90440 Kempele, Finland
Website	https://Visorblinds.com/fi/

PRODUCT IDENTIFICATION

Product name	Visor Blind Q2
Declared unit	1 m^2
Specific product name	Visor Blind Q2
Place(s) of production	Kempele, Finland

PRE-EPD INFORMATION

Construction products EPDs may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

EPD program operator	Rakennustieto Oy, RTS, Malminkatu 16 A, 00100 Helsinki, Finland https://www.rakennustieto.fi/
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The CEN standard EN 15804 serves as the core PCR. RTS PCR 2020
EPD author	Jere Peltomäki, Emma Väliaho, Anni Viitala, Granlund Oy, Malminkaari 21, 00701 Helsinki, Finland
EPD verification	Independent verification of this EPD and data, according to ISO 14025:External verification
Verification date	21.03.2025
EPD verifier	Anni Oviir, LCA Support, Rangi Maja OÜ Läänekaare 1, Tallinn Harju county 11611, Estonia
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EPD VERIFICATION REPORT

Verified according to the requirements of EN 15804+A2 (product category rules) Independent verification of the declaration, according to EN ISO 14025:2010	
☒ External	☐ Internal
Third party verifier: Anni Oviir, LCA Support, Rangi Maja OÜ, Tallinn, Estonia	

PRODUCT INFORMATION

PRODUCT DESCRIPTION

The studied product: Visor Blind Q2, pleated blinds. The EPD has been developed based on 1 m^2 of product. The assessment of environmental impacts has been made for a product with dimensions of: width 750 mm – length 2300 mm.

General description: Pleated blinds

Commercial labels: Visor Blind Q2, pleated blinds

PRODUCT APPLICATION

Visor blind products are used for balcony and terrace glazing systems as well as interior windows. The products are suitable for all types of buildings.

VISOR PLEATED BLIND

Visor Blind products can be installed on different types of balcony glazing systems and interior windows. The blind consists of recycled pleated polyester fabric (100% recycled PES) and aluminum profiles that are attached to the upper and lower edges of each balcony glazing pane or window frame (aluminum contains 100 % recycled aluminum raw material). A plastic seal strip protects the top blind profile from dust and dirt.

The blind can be adjusted steplessly on a glazing pane or window, from top to bottom and from bottom up. Each balcony or terrace glazing pane is fitted with its own blind. The balcony glazing system can be operated normally when blinds are installed. Depending on the balcony glazing system, the blinds are installed either with stainless steel brackets that are attached onto the sides of the glass, on top of the glazing profiles or mounted with screws.

EAD and ETA

European Assessment Document: EAD 020002-00-0404 January 2016 European. Technical Assessment: ETA 21/0677 of 09/08/2021

PRODUCT RAW MATERIAL COMPOSITION AND TECHNICAL INFORMATION

The product's main substances are presented in the table below presenting raw materials per 1 m^2.

MAIN MATERIALS OF VISOR BLIND Q2

Visor Blind Q2	Mass per 1 m^2 (%)	Origin
Aluminium	61 %	Finland
Polyester fabric	23 %	EU
Other polymers	10 %	EU
Magnet	5,5 %	Global
Steel	0,5 %	Finland
Total mass of materials	**0,43 kg**	

ORIGIN GROUPS OF VISOR BLIND Q2

Visor Blind Q2	Mass per 1 m^2 (%)
Renewable materials	0 %
Non-renewable materials	100 %
Recycled materials	84 %
Re-used materials	0 %

PACKAGING MATERIAL COMPOSITION AND TECHNICAL INFORMATION

Main packaging materials of products per 1 m^2 of product are presented in table below.

MAIN PACKAGING MATERIALS PER PRODUCT

Packaging material	% of weight
Corrugated board	50,8 %
EUR Pallet	31,8 %
Paper	9,7 %
Plastics	7,7 %
Total mass of materials	**0,066 kg**

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

LIFE-CYCLE ASSESSMENT

LIFE-CYCLE ASSESSMENT INFORMATION

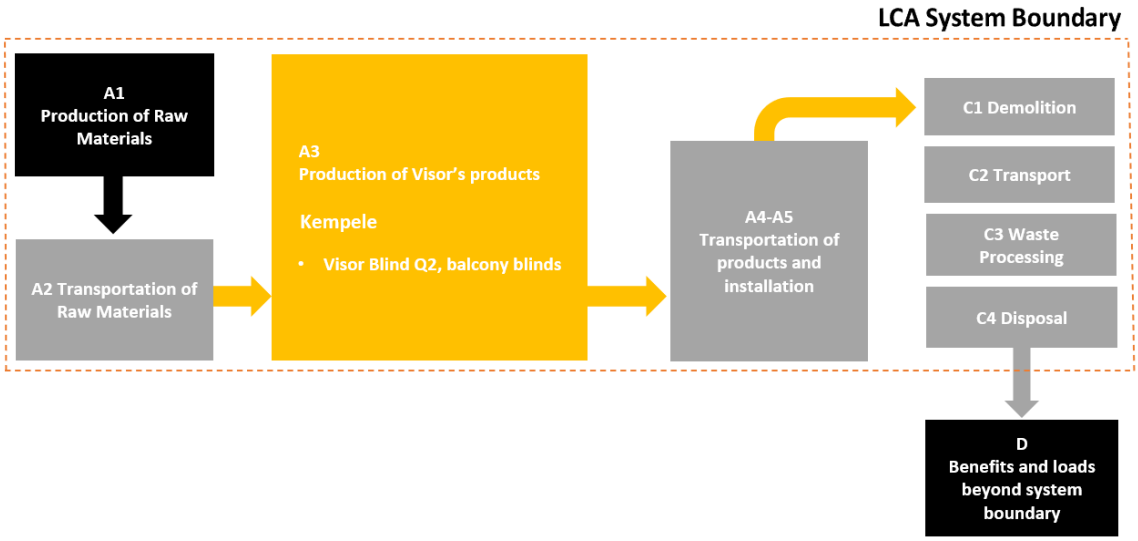
Period for data	1 year, 2024

DECLARED UNIT

Declared unit	1 m^2
Mass per declared unit	0,43 kg
System boundary	Cradle to gate with options (A4 and A5), modules C1–C4, and module D

SYSTEM BOUNDARY

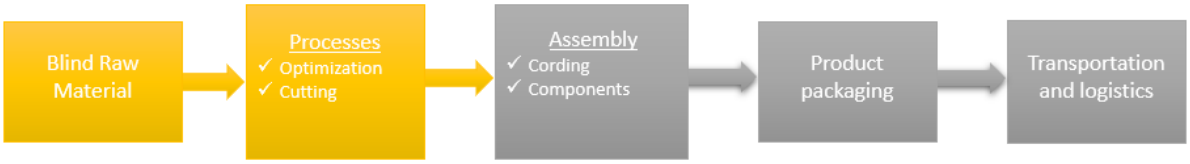
Studied system covers the following steps of life cycle according to EN 15804: **A1** Raw material supply**, A2** Transport, **A3** Manufacturing, **A4** Transportation of the product to construction site, **A5** Installation to building, **C1** Deconstruction, **C2** Transportation of end-of-life **C3** Waste processing and **C4** Disposal. In addition, the benefits and loads beyond the system boundary of stage **D** consist of product reuse, recovery and recycling. System boundary describing the system boundary and the input and output flows is shown below:



LCA System Boundary of studied products

End of waste point of the studied product is the step when material is used as fuel in an incineration plant or recycled material is handled in the collection and sorting plant. **End of waste point of the waste flows** in A3 module is the step when materials are collected and handled in the sorting plant. **End of waste point of the packaging materials** collected for recycling in A5 module is the point where materials are collected and handled in the sorting plant. **The end of waste point of the recycled metal** raw material that is used in the product was assumed to be after scrap collection, sorting and preparation. Processing of scrap in production was considered to be part of next life cycle and included to the system boundaries of the studied product.

Production stage (**A3**) on the Suomen Visor´s production site covers following manufacturing processes; raw material supply (polyester fabric, aluminium and plastics), processing; optimization and cutting, assembly; components and cording, packaging of the final product. After that, products will be transported to the client. The production process of the studied product is presented in the following Figure.



The production process of the studied product

Studied system covers the following steps of life cycle according to EN 15804

	Product Stage			Construction Process Stage		Use Stage							End-of-Life Stage				Benefits and loads beyond the system boundary		
	Raw material supply	Transport	Manufacturing	Transport to building	Installation to building	Use/applications	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling
Stage	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D
Included	X	X	X	X	X								X	X	X	X	X	X	X
Relevancy	R	R	R	R	R	NR	NR	NR	NR	NR	NR	NR	R	R	R	R	R	R	R

Mandatory
Mandatory as per the RTS PCR section 6.2.1 rules and terms
Optional modules based on scenarios

The study does not omit any life cycle stages, processes or data needs that are mandatory according to EN 15804 and RTS PCR. The study excludes following life cycle stages which are optional according to EN 15804 and RTS PCR.

- B1 Use
- B2 Maintenance
- B3 Repairs
- B4 Replacement
- B5 Refurbishment
- B6 Operational energy use
- B7 Operational water use

CUT-OFF CRITERIA

This study follows the cut-off criteria stated in RTS PCR and EN 15804 -standard. This study does not exclude any modules or processes which represent more than 1 % of the emissions of studied life cycle stage. The study does not exclude any hazardous materials or substances.

Excluded processes and the criteria for exclusion are given in following table. Machines and facilities (capital goods) required for and during production are excluded, as is transportation of employees.

Process excluded from study	Cut-off criteria	Quantified contribution from process
B1-B7, use stage	Not mandatory according to the RTS PCR	-

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation rules used are made according to the ISO14044:2006. Allocation is avoided when possible and when necessary, allocation is made based on physical shares and also avoiding double calculations. Allocation is required if the production process produces more than one product and the flows of materials, energy and waste cannot be separately measured for the studied product. Allocation used in generic data sources follow the requirements of the EN 15804 -standard. It should be noticed that the allocation method 'allocation, cut-off by classification' has been used for Ecoinvent 3.10.1 data, which complies with EN 15804. Avoiding allocation could not be avoided for following inputs as the information was only measured on factory process level.

- Electricity consumption, heat production, transport fuels: only measured on factory level.
- Waste flows: only measured on factory level.
- Packaging materials: only measured on factory level.

The inputs were allocated to studied product based on production volume (mass in kilograms).

According to EN 15804, flows leaving the system at the end-of-waste boundary of the product stage (A1-A3) are allocated as co-products. According to EN 15804, process that has a very low contribution to the overall revenue may be neglected in co-product allocation. Aluminium scrap collected from the cutting process is sent for recycling. This process has a very low contribution to the overall revenue and neglected in co-product allocation.

KEY ASSUMPTIONS

The scenarios included are currently in use and are representative for one of the most likely scenario alternatives.

A1 Raw materials: Aluminium profiles contain 100 % recycled aluminium raw material based on the information received from the supplier. Recycled content for PES fabric is 100 %, based on the information received from the supplier.

A4 Transport to building: Transportation distance assumed to be 594 km driving by lorry, which represents the distance from Suomen Visor to Helsinki.

A5 Installation to building: It can be assumed that there are no significant environmental impacts (energy or water use) caused by installation phase. Only includes the waste management of packaging materials.

C1-C4 End of life scenario: This was assumed based on the common practises of construction products. The geographical area is assumed to be Finland. The material flows at the end of life were assumed to be following:

- C1: Deconstruction/demolition: It was assumed that materials are collected separately for recycling in the end-of-life stage. It can be assumed that there are no significant environmental impacts caused by demolition phase and hence it is not declared.
- C2: Transportation distance 75 km road driving by lorry.
- C3-C4: It was assumed that products are collected, and the materials are separated.
    - Aluminium and steel waste to material recycling (95%) and to final disposal (5 %)
    - Plastic waste to energy recovery

Module D: covers the net benefits and loads arising from the reuse of products or the recycling or recovery of energy from end-of-waste state materials. The geographical area for benefits from recycling and energy recovery is assumed to be Finland.

- Recovery: when a product is incinerated at its end-of-life and the produced energy is recovered, the benefits can include avoiding the production of energy.
- Recycling: Benefits from the recycling of metal materials were included to the assessment. Only share of virgin raw materials in the product composition were included to the module D.
    - Steel: Benefits from avoided primary steel production due to the recycling of materials end of life was included
    - Aluminium: No benefits accounted due to the recycled content
    - PES fabric: No benefits accounted due to the recycled content

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VALIDATION OF DATA

The quality requirements for the life cycle assessment were set according to the EN ISO 14044 standard (4.2.3.6) and EN 15804 standard (6.3.7).

This LCA study follows the standard EN 15804:2012+A2:2019 and RTS PCR and no decisions are made based on the values.

Characterization factors of EF 3.1. has been used throughout the assessment.

PROCEDURED FOR COLLECTION PROCESS SPECIFIC DATA

Production specific data was collected directly from manufacturer's production plant. The data represents the production of the studied product at the plant from the materials transported to the facility and represents 1 year average, for other than recycled aluminium and PES fabric, which is why this is a Pre-EPD. The data represents year 2024, which was the latest year with full year data. All gathered data was used without excluding categories in advance following the system boundaries set in earlier chapters.

CRITERIA FOR CHOOSING THE GENERIC DATA

Generic data that was used for upstream and downstream processes represents complementary data from Ecoinvent 3.10.1 database.

The datasets were chosen to represent the studied system as closely as possible. When available supplier specific information was used for instance in form of EN 15804 EPDs or emissions profile of local energy supplier. When supplier specific information was not available the information sources were chosen based on their technical and geographical representativeness. Only when country specific or European data has not been available has global level data been used (concerns mainly data from ecoinvent 3.10.1)

As up-to-date data as possible was chosen and no more than five-year-old for producer specific data and ten years for generic data was used.

ENVIRONMENTAL IMPACT DATA

VISOR BLIND Q2 PER 1 M2

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	1,76E+00	3,14E-02	1,06E-01	0,00E+00	3,43E-03	3,89E-01	8,34E-05	-7,82E-03
GWP – fossil	kg CO_2e	1,84E+00	3,14E-02	1,37E-02	0,00E+00	3,43E-03	3,89E-01	8,33E-05	-7,68E-03
GWP – biogenic	kg CO_2e	-9,25E-02	0,00E+00	9,25E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	1,17E-02	1,41E-05	1,12E-06	0,00E+00	1,54E-06	2,91E-05	1,51E-08	-1,40E-04
Ozone depletion pot.	kg CFC_{-11}e	3,21E-07	4,64E-10	1,78E-11	0,00E+00	5,07E-11	6,01E-10	3,11E-12	-2,48E-10
Acidification potential	mol H^+e	8,40E-03	1,07E-04	8,27E-06	0,00E+00	1,17E-05	2,60E-04	5,19E-07	-1,25E-04
EP-freshwater[3)]	kg Pe	2,64E-01	2,45E-06	3,43E-07	0,00E+00	2,67E-07	1,49E-05	3,76E-09	-4,31E-06
EP-marine	kg Ne	1,91E-03	3,52E-05	3,72E-06	0,00E+00	3,85E-06	6,70E-05	2,22E-07	-1,65E-05
EP-terrestrial	mol Ne	1,94E-02	3,83E-04	2,93E-05	0,00E+00	4,18E-05	6,34E-04	2,43E-06	-9,33E-05
POCP (“smog”)	kg NMVOCe	6,41E-03	1,58E-04	8,91E-06	0,00E+00	1,72E-05	1,81E-04	9,80E-07	-3,18E-05
ADP-minerals & metals	kg Sbe	1,06E-05	8,76E-08	1,16E-08	0,00E+00	9,57E-09	1,37E-06	1,06E-10	3,02E-07
ADP-fossil resources	MJ	3,99E+01	4,56E-01	1,74E-02	0,00E+00	4,98E-02	3,93E-01	2,08E-03	-3,50E-01
Water use[2)]	m^3e depr.	3,66E+02	2,25E-03	1,04E-03	0,00E+00	2,46E-04	2,98E-02	7,11E-06	-1,30E-02

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	1,16E+01	6,25E-03	-6,31E-01	0,00E+00	6,83E-04	5,57E-02	4,28E-05	-1,20E-01
Renew. PER as material	MJ	8,09E-01	0,00E+00	-8,09E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	1,25E+01	6,25E-03	-1,44E+00	0,00E+00	6,83E-04	5,57E-02	4,28E-05	-1,20E-01
Non-re. PER as energy	MJ	3,42E+01	4,56E-01	-1,67E-01	0,00E+00	4,98E-02	-4,77E+00	2,08E-03	-3,50E-01
Non-re. PER as material	MJ	1,32E+00	0,00E+00	-2,29E-01	0,00E+00	0,00E+00	-1,09E+00	0,00E+00	0,00E+00
Total use of non-ren. PER	MJ	3,56E+01	4,56E-01	-3,97E-01	0,00E+00	4,98E-02	-5,86E+00	2,08E-03	-3,50E-01
Secondary materials	kg	1,60E-01	1,94E-04	2,70E-05	0,00E+00	2,12E-05	3,03E-04	4,93E-07	2,69E-01
Renew. secondary fuels	MJ	1,68E-02	2,47E-06	2,06E-07	0,00E+00	2,69E-07	1,01E-05	1,24E-08	3,05E-06
Non-ren. secondary fuels	MJ	5,90E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	8,62E-03	6,74E-05	1,92E-05	0,00E+00	7,36E-06	6,01E-04	2,37E-06	3,10E-04

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	1,39E-01	7,72E-04	3,23E-04	0,00E+00	8,44E-05	1,09E-02	1,56E-06	1,07E-02
Non-hazardous waste	kg	1,65E+00	1,43E-02	9,13E-03	0,00E+00	1,56E-03	2,94E-01	3,76E-05	-3,86E-01
Radioactive waste	kg	2,26E-03	9,72E-08	2,40E-08	0,00E+00	1,06E-08	8,53E-07	4,17E-10	-3,90E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	1,99E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	5,38E-02	0,00E+00	4,08E-02	0,00E+00	0,00E+00	2,69E-01	0,00E+00	0,00E+00
Materials for energy recovery	kg	3,37E-02	0,00E+00	5,09E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	1,49E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,65E+00	0,00E+00	0,00E+00

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content	Unit (expressed perdeclared unit)
Biogenic carbon content in product	0 kgC
Biogenic carbon content in accompanying packaging	0,025 kgC

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2.

RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO2e	4,13E+00	7,38E-02	2,49E-01	0,00E+00	8,06E-03	9,14E-01	1,96E-04	-1,84E-02
ADP-minerals & metals	kg Sbe	2,49E-05	2,06E-07	2,73E-08	0,00E+00	2,25E-08	3,22E-06	2,49E-10	7,10E-07
ADP-fossil	MJ	9,37E+01	1,07E+00	4,09E-02	0,00E+00	1,17E-01	9,23E-01	4,89E-03	-8,22E-01
Water use	m3e depr.	8,60E+02	5,29E-03	2,44E-03	0,00E+00	5,78E-04	7,00E-02	1,67E-05	-3,05E-02
Secondary materials	kg	3,76E-01	4,56E-04	6,34E-05	0,00E+00	4,98E-05	7,12E-04	1,16E-06	9,49E-01
Biogenic carbon content in product	kg C	0,00E+00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	2,50E-02	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Energy type	Object	GWP value	Data quality	Representativeness
Electricity	Electricity data quality and CO2e emission	0,0076 $kgCO_2eq/kWh$	Electricity production, nuclear, boiling water reactor EN15804+A2, Ecoinvent 3.10.1, Finland, 2024	The processes included in the data set are well representative for the geography
District heat	District heating data quality and CO2e emissions	0,013 $kgCO_2eq/MJ$	heat and power co-generation, wood chips, 6667 kW, state-of-the-art 2014, Finland	The processes included are representative for the geography (Finland / Europe)
			heat production, wood chips from industry, at furnace 1000kW, state-of-the-art 2014, Switzerland	
			heat production, untreated waste wood, at furnace 1000-5000 kW, state-of-the-art 2014, Switzerland	
			heat production, borehole heat exchanger, brine-water heat pump 10kW, Europe	
			market for electricity, medium voltage, Finland	
			EN15804+A2, Ecoinvent 3.10.1, 2024	

Transportation scenario

Parameter	Unit
Vehicle type	Lorry, Euro 5, >32 t
Distance	594 km (from Kempele to Helsinki)
Load capacity	100 %
Volume capacity utilization factor (factor: =1 or <1 or ≥ 1 for compressed or nested packaged products)	1

Installation of the product in the building

Parameter		Unit
Ancillary materials for installation (specified by material)		-
Water use		0 m3
Other resource use		0 kWh (energy use is insignificant)
Quantitative description of energy type (regional mix) and consumption during the installation process		-
Waste materials generated by product installation	Packaging material	
	EUR pallet	0,021 kg
	Plastic film	0,004 kg
	Paper	0,006 kg
	Plastic strap	0,001 kg
	Corrugated board	0,033 kg

End-of-life scenario

		Visor Blind Q2
Process flow		Mass
Collection process specified by type	kg collected separately	0,426 kg
	kg collected with mixed construction waste	
Recovery system specified by type	kg for reuse	
	kg for recycling	0,269 kg
	kg for energy recovery	0,142 kg
Disposal specified by type	kg material for final deposition	0,014 kg
Assumptions for scenario development	units as appropriate	Waste materials are transported 75 km by truck to recycling facility with a truck capacity utilization of 45%

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