ENVIRONMENTAL PRODUCT DECLARATION

In accordance with EN 15804 and ISO 14025

STADIP® (PROTECT/SILENCE)

22.1 / 22.2XN / 33.1 / 33.1 XN / 44.1 /44.1 SILENCE / 33.2 44.2 / 44.2 SILENCE 44.2 XN / 44.4 / 44.4 XN/ 44.6/ 44.6XN 55.2 55.2 Diamant / 66.2 / 66.2 Diamant / 88.2 / 10.10.2

Version 2
Date of issue: 2021-12-17
Validity: 5 years
Valid until: 2026-12-14

Scope of the EPD®: Europe

Version 1
Date of issue: 2016-09-15

EPD VERIFIED

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-00930

EPD®
THE INTERNATIONAL EPD® SYSTEM

ECO PLATFORM EPD VERIFIED

SAINT-GOBAIN

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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: STADIP® produced by SAINT-GOBAIN GLASS INDUSTRY
Owner of the declaration: Saint-Gobain Glass Industry, Europe
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Date of issue: 2021-12-17 Valid: 2026-12-14

ISO standard ISO 21930 and CEN standard EN 15804 serves as the core Product Category Rules (PCR): PCR 2019:14 Construction products, version 1.1	
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PCR review conducted by	The Technical Committee of the International EPD® System Chair: Claudia A. Peña. Contact via info@environdec.com"
LCA and EPD performed by Saint-Gobain LCA central team	
Independent verification of the environmental declaration and data according to standard EN ISO 14025:2010 Internal ☐ External ☒	
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Accredited or 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 programs 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.

Disclaimer: EPD of construction products may not be comparable if they do not comply with EN 15804

Product description

Product description and description of use

This Environmental Product Declaration (EPD®) describes the environmental impacts of 1 m² of STADIP® (PROTECT/SILENCE) glass on PLANICLEAR® or DIAMANT®.

This EPD is an average of 7 glass production sites[1] in Europe. All the sites producing the flat glass PLANICLEAR® are considered. This average calculated is a weighted arithmetic mean.

Laminated safety and security glass, STADIP, comprises two or more sheets of glass bonded together with one or more interlayers of polyvinyl butyral (PVB) film. It is meant to be used in building, furniture and industrial applications.

STADIP glass incorporates a single PVB sheet with a nominal thickness of 0.38 mm, distinguishing it from STADIP PROTECT glass which has a minimum thickness of 0.76 mm (2 PVB).

STADIP SILENCE glass incorporates a special PVB sheet with particular acoustic properties. For the same thickness of glass, STADIP SILENCE achieves an average increase, expressed in Rw (EN ISO 717), of between 3 dB compared with conventional STADIP or STADIP PROTECT laminated glass and 5 dB compared with monolithic PLANICLEAR.

Laminated glasses with different levels of safety and security can be obtained by varying the number and/or thickness of each of the components. If the glass breaks, the fragments of glass are held in place by the PVB interlayer(s). In fully framed installations the broken glass retains a residual strength while awaiting replacement.

Products in the STADIP, STADIP PROTECT ranges comply with standards EN 12543 and EN 14449. Products in the STADIP SILENCE ranges comply with standards EN 12543.

In this Environmental Product Declaration, one square m2 of 6 different STADIP configurations are analyzed:

STADIP (SILENCE) 22.1/33.1/44.1/22.2/33.2/44.2
STADIP (SILENCE) 22.2 XN / 33.1 XN / 44.2 XN / 44.4 XN / 44.6 XN
STADIP (SILENCE) PROTECT 22.2 XN / 33.1 XN / 44.2 XN / 44.4 XN / 44.6 XN
STADIP (SILENCE) PROTECT 22.2/33.2/44.2/55.2/66.2/88.2/1010.2
STADIP (SILENCE) PROTECT 55.2/66.2 on DIAMANT

***XN represent a magnetron coated glass on PLANICLEAR®

The following table shows some examples of configurations covered by the EPD.

		STADIP 33.1	STADIP 44.1	STADIP PROTECT 33.2	STADIP PROTECT 44.2	STADIP PROTECT 55.2 on DIAMANT	STADIP PROTECT 66.2
GLAZING ONE	Flat glass	PLANICLEAR 3mm	PLANICLEAR 4mm	PLANICLEAR 3mm	PLANICLEAR 4mm	DIAMANT 5mm	PLANICLEAR 6mm
Interlayer	Type	Standard, acoustic	Standard, acoustic	Standard, acoustic	Standard, acoustic	Standard, acoustic	Standard, acoustic
	Number & thickness	1 sheet of 0.38mm	1 sheet of 0.38mm	2 sheets of 0.38mm	2 sheets of 0.38mm	2 sheets of 0.38mm	2 sheets of 0.38mm
GLAZING TWO	Flat glass	PLANICLEAR 3mm	PLANICLEAR 4mm	PLANICLEAR 3mm	PLANICLEAR 4mm	DIAMANT 5mm	PLANICLEAR 6mm

[1] Countries considered for the production of PLANICLEAR®: Italia, Poland, UK, Germany, Romania, Spain, France

Performance data

All data are given with a standard PVB layer (not SILENCE).

	STADIP 33.1	STADIP 44.1	STADIP PROTECT 33.2	STADIP PROTECT 44.2	STADIP PROTECT 55.2 on DIAMANT	STADIP PROTECT 66.2
Mechanical properties						
Nominal thickness (mm)	6.4	8.4	6.8	8.8	10.8	12.8
Weight (kg/m^2)	15.4	20.4	15.8	20.8	25.8	30.8
Visible parameters						
Light transmittance (LT) %	89.7	89.1	89.4	88.9	89.9	87.7
External light reflection (RLE) (%)	8.1	8.1	8.1	8.0	8.1	8.0
Thermal properties						
Energy transmittance (ET) %	79.5	77.8	77.5	75.8	79.1	72.6
Energy absorbance (EA) %	13.1	15.0	15.3	17.1	13.5	20.5
Solar factor g	0.83	0.81	0.81	0.80	0.82	0.77
Safety properties						
Class EN 12600 (protection against people/objects falling)	2B2	2B2	1B1	1B1	1B1	1B1
Class EN 356 (protection against vandalism and burglary)	NPD	NPD	P1A	P2A	P2A	P2A
Acoustics properties						
Rw(C;Ctr) (real test)	33(-1;-2)	34(-1;-3)	33(-1;-2)	34(-1;-2)	36(-1;-2)	37(-1;-3)

The performance data are given according to the EN 410-2011 standard for thermal and visible parameters and following the EN 12758 for the acoustic data.

Declaration of the main product components and/or materials

Description of the main components and/or materials for 1 m² of STADIP® for an expected average service life of 30 years.

Components	Weight (in %)	Comments
Glass	>96%	CAS number 65997-17-3, EINECS number 266-046-0
PVB interlayer	<4%	CAS number 63148-65-2 EINECS number 272-808-3

The percentages are given for a 44.2 laminated glass; the % may vary depending on the glazing configuration.

There is no “Substance of Very High Concern” (SVHC) in concentration above 0.1% by weight, and neither do their packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals).

Packaging and product used : None

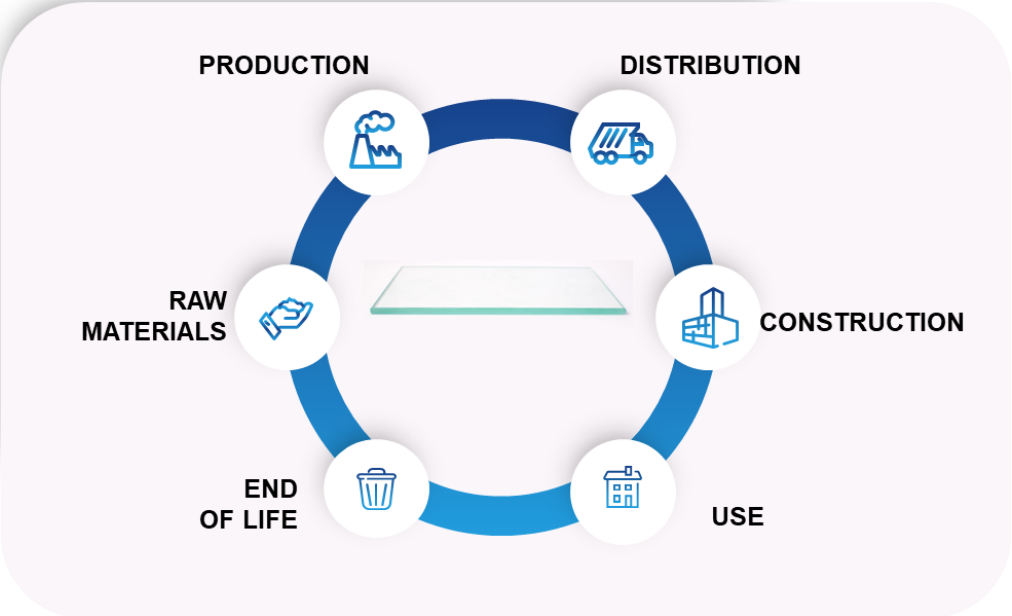
LCA calculation information

FUNCTIONAL UNIT / DECLARED UNIT	1m2 of STADIP® (PROTECT/SILENCE) to be incorporated into a building, furniture or industrial application for an expected average service life of 30 years
SYSTEM BOUNDARIES	Cradle to grave and module D Mandatory Stages = A1-A3 ; B1-B7 ; C1-C4 and D
REFERENCE SERVICE LIFE (RSL)	According to PCR EN 17074:2019, the reference service life is 30 years
CUT-OFF RULES	All significant parameters shall be included. According to EN 15804, mass flows under 1% of the total mass input; and/or energy flows representing less than 1% of the total primary energy usage of the associated unit process may be omitted. However, the total amount of energy and mass omitted must not exceed 5% per module. The energy used for the installation of 1m² of glass and the transport glass racks are included in the cut-off-rules
ALLOCATIONS	Allocations are done on mass basis (kg)
GEOGRAPHICAL COVERAGE AND TIME PERIOD	The information was established over the year 2019. The information collected comes from the European sites producing magnetron coated glass on float glass PLANICLEAR and DIAMANT (SAINT-GOBAIN GLASS INDUSTRY)
BACKGROUND DATA SOURCE	GaBi data were used to evaluate the environmental impacts. The data are representative of the years 2015-2019.
SOFTWARE	Gabi 9.2.0 - GaBi envision

According to EN 15804, EPD of construction products may not be comparable if they do not comply with this standard. According to ISO 21930, EPD might not be comparable if they are from different programmes.

Life cycle stages

Diagram of the Life Cycle

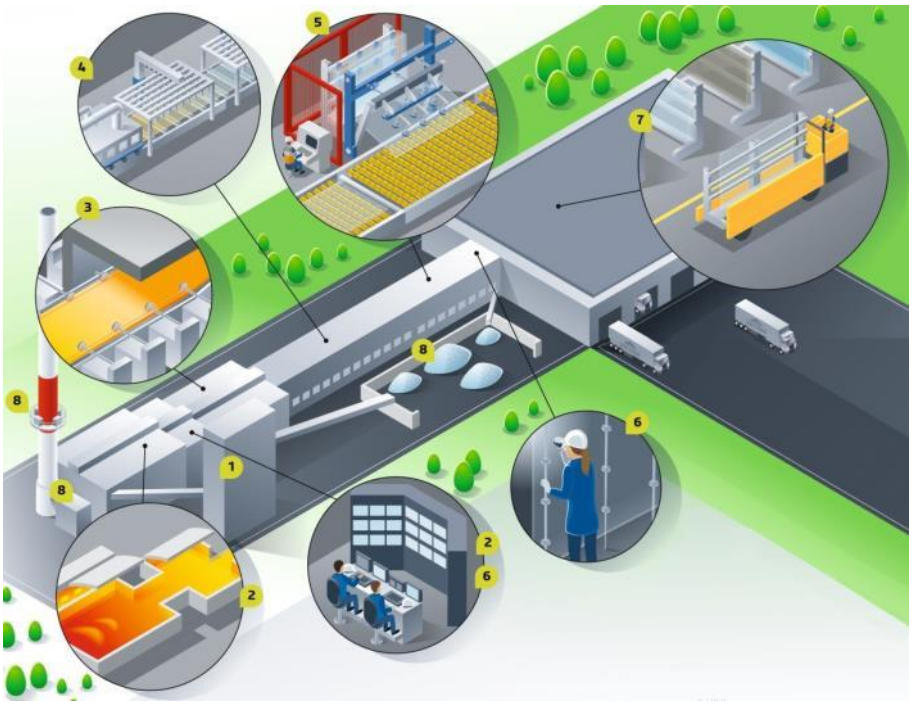


Product stage, A1-A3

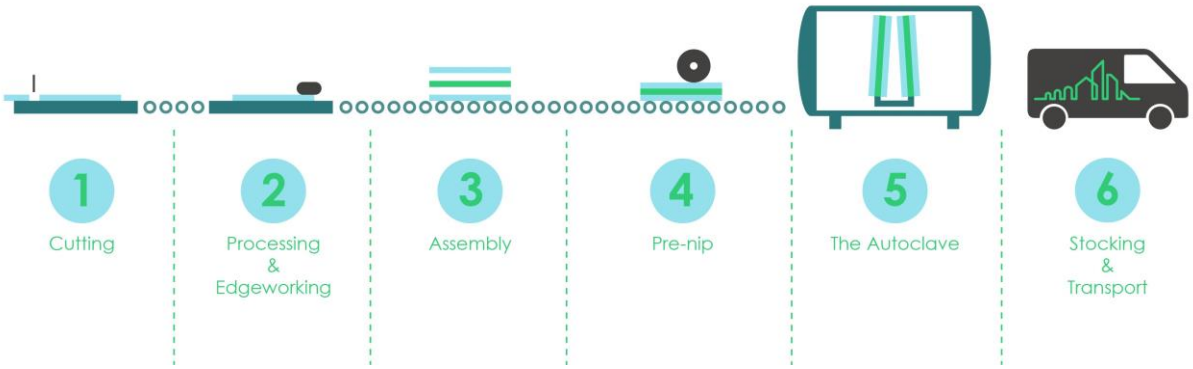
Description of the stage: For laminated glass A1 to A3 represents the production of glass in the float and the laminating line, from cradle to gate.

The product stage includes the extraction and processing of raw materials and energies, transport to the manufacturer, manufacturing and processing of flat glass.

Manufacturing process flow diagram



1. BATCH MIXER: Mix of raw materials (silica, soda ash, lime, feldspar and dolomite) to which is added recycled glass (cullet) and other compounds depending on the desired color and properties.
2. FUSION FURNACE: Raw materials are melted at 1,550°C in a furnace.
3. FLOAT: The molten glass is fed into a bath of molten tin. The glass floats on this flat surface and is drawn off in a ribbon. Serrated wheels, or top rolls, pull and push the glass sideways depending on the desired thickness (from 2 to 19 millimeters).
4. ANNEALING LEHR: The glass is lifted onto conveyor rollers and passes through a controlled cooling tunnel measuring more than 100 meters in length. Approximately 600°C at the start of this step, the glass exits the lehr at room temperature.
5. CUTTING AND STACKING: The glass is automatically cut lengthwise and crosswise. The sheets of glass are raised by vacuum frames that then place them on glass stillages.
6. QUALITY: Automatic inspections and regular samples are taken to check the quality of the glass at each step in the glassmaking process.
7. STORAGE AND TRANSPORTATION: The stillages are placed on storage racks in the warehouse.
8. ENVIRONMENT: Use of recycled cullet, installation of pollution abatement systems and closed circuit management of water: every measure is taken to limit the consumption of energy, extraction of natural resources, production of waste and emissions into the atmosphere.



1. CUTTING: Flat glass is manufactured in sheets up to 6 * 3.210 m in size. Before laminating, each sheet is lifted using suction cups and placed on the cutting table where a diamond glass cutter scores the glass to the required size. Each piece is then automatically or manually broken out
2. PROCESSING AND EDGEWORKING: Once cut to the required size, the glass can be treated to improve its functionality, highlight its appearance or personalize it even further. There are many types of decorative processing: edgeworking, polishing, shaping, drilling of holes and notches, sand blasting, engraving …
3. ASSEMBLY: The assembly of the two sheets of glass and the PVB interlayer takes place in a protective environment. The PVB is rolled out onto one glass sheet and cut to the same size. The second sheet is then positioned on top.
4. PRE-NIP: The glass is nipped together with a pre-nip roller to force any air out from between the PVB and the glass. The glass assembly is then pre-heat in the pre-nip oven to around 100°C to bond the PVB to the glass and prevent any air from returning back in. At this stage the PVB film has become less opaque and the assembly is stacked ready for transferal to the autoclave.
5. AUTOCLAVE: to ensure total adhesion between the glass and film, and to remove any final bubbles, the assembly is one more placed in a 100°C for around 2-3 hours. The time can vary depending on the thickness and composition of the laminated glass.
6. STACKING AND TRANSPORT: a stacking system lifts the glass sheets vertically using suction cups, placing a thin layer of interleafing lucite power between each sheet for protection against scartches. These are then safely transported in special vans.

Construction process stage, A4-A5

Description of the stage: The construction process is divided into 2 modules: A4, transport to the building site and A5, installation in the building.

A4, Transport to the building site: This module includes transport from the production gate to the building site. Transport is calculated on the basis of a scenario with the parameters described in the following table.

PARAMETER	VALUE/DESCRIPTION
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc.	Average truck trailer with a 27t payload, diesel consumption 38 liters for 100 km
Distance	650km
Capacity utilisation (including empty returns)	100% of the capacity in volume 30 % of empty returns in mass
Bulk density of transported products*	2500 kg/m3
Volume capacity utilisation factor	< 1

A5, Installation in the building:

The accompanying table quantifies the parameters for installing the product at the building site. All installation materials and their waste processing are included.

PARAMETER	VALUE
Ancillary materials for installation (specified by materials)	**According to PCR NF EN 17074, none ancillary materials considered**
Other resource use	**None**
Quantitative description of energy type (regional mix) and consumption during the installation process	**According to EN 15804+A1, the energy needed during the installation is less than 0,1% of the total life cycle energy. It's include in the cut-off-rules.**
Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type)	**According to PCR EN 17074, no waste is considered.**
Output materials (specified by type) as results of waste processing at the building site e.g. of collection for recycling, for energy recovering, disposal (specified by route)	**None**
Direct emissions to ambient air, soil and water	**None**

Use stage (excluding potential savings), B1-B7

Description of the stage: The use stage is divided into the following modules:

B1: Use
B2: Maintenance
B3: Repair
B4: Replacement
B5: Refurbishment
B6: Operational energy use
B7: Operational water use

The product has a reference service life of 30 years. This assumes that the product will last in situ with no requirements for repair, replacement or refurbishment throughout this period. Therefore, it has no impact at this stage, except for maintenance.

According to PCR EN 17074, only the maintenance by cleaning glass with water and cleaning agent is included in this study.

Maintenance parameters, B2 :

PARAMETER	VALUE (expressed per functional/declared unit)
Maintenance process	Water and cleaning agent
Maintenance cycle	Annual average
Ancillary materials for maintenance (e.g. cleaning agent, specify materials)	cleaning agent : 0,001 kg/m² of glass/year
Wastage material during maintenance (specify materials)	0 kg
Net fresh water consumption during maintenance	0,2 kg/m² of glass/year
Energy input during maintenance (e.g. vacuum cleaning), energy carrier type, (e.g. electricity) and amount, if applicable and relevant	None required during product lifetime

End of Life Stage, C1-C4

Description of the stage: This stage includes the next modules:

C1: Deconstruction, demolition
C2: Transport to waste processing
C3: Waste processing for reuse, recovery and/or recycling
C4: Disposal

End of life scenario used in this study is:

- 100% of glass is landfilled and the distance to the landfill site considered is 50 km.

Description of the scenarios and additional technical information:

End of life:

Thickness (mm)	STADIP 22.1	STADIP 33.1	STADIP 44.1	STADIP PROTECT 44.2	STADIP PROTECT 44.4	STADIP PROTECT 44.6	STADIP PROTECT 55.2	STADIP PROTECT 88.2	STADIP PROTECT 1010.2
Collection process specified by type	10,4	15,4	20,4	20,8	21,6	22,4	25,8	40,8	50,8
Recovery system specified by type	0	0	0	0	0	0	0	0	0
Disposal specified by type	10,4	15,4	20,4	20,8	21,6	22,4	25,8	40,8	50,8

Assumptions for scenario development (e.g. transportation): 50 km transport to landfill

Reuse/recovery/recycling potential, D

Description of the stage: An end of life recycling 0% (100% of glass wastes are landfilled) has been assumed using local demolition waste data and adjusted considering the recyclability of the product.

LCA results

Product Environmental Footprint (PEF) method has been used as the impact model. Specific data has been supplied by the plant, and generic data come from GABI and Ecoinvent databases.

All emissions to air, water, and soil, and all materials and energy used have been included.

Raw materials and energy consumption, as well as transport distances have been taken directly from the manufacturing plant (Production data according 2019)

All result tables refer to a functional unit of 1 m² of magnetron coated glass and an expected average service life of 30 years.

	PRODUCT STAGE			CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
	Raw material supply	**Transport**	**Manufacturing**	**Transport**	**Construction-Installation process**	**Use**	**Maintenance**	**Repair**	**Replacement**	**Refurbishment**	**Operational energy use**	**Operational water use**	**De-construction demolition**	**Transport**	**Waste processing**	**Disposal**	**Reuse-recovery**
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Module declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	EU-27																
Specific data used	<90%					-	-	-	-	-	-	-	-	-	-	-	-
Variation products	Not relevant					-	-	-	-	-	-	-	-	-	-	-	-
Variation sites	-2 to +4 %					-	-	-	-	-	-	-	-	-	-	-	-

ENVIRONMENTAL IMPACTS STADIP 22.1

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.]	1,47E+01	2,54E-01	0	0	9,50E-02	0	0	0	0	0	0	2,54E-02	0	1,46E-01	0
Climate Change (fossil) [kg CO2 eq.]	1,45E+01	2,52E-01	0	0	8,08E-02	0	0	0	0	0	0	2,52E-02	0	1,58E-01	0
Climate Change (biogenic) [kg CO2 eq.]	2,27E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	7,20E-03	2,07E-03	0	0	7,28E-02	0	0	0	0	0	0	2,07E-04	0	4,54E-04	0
Ozone depletion [kg CFC-11 eq.]	2,82E-09	3,07E-17	0	0	4,39E-09	0	0	0	0	0	0	3,07E-18	0	5,85E-16	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	6,36E-02	1,08E-03	0	0	4,99E-04	0	0	0	0	0	0	1,08E-04	0	1,13E-03	0
Eutrophication freshwater [kg P eq.]	3,99E-05	7,76E-07	0	0	3,23E-05	0	0	0	0	0	0	7,76E-08	0	2,71E-07	0
Eutrophication marine [kg N eq.]	1,57E-02	5,08E-04	0	0	5,33E-04	0	0	0	0	0	0	5,08E-05	0	2,91E-04	0
Eutrophication terrestrial [Mole of N eq.]	1,87E-01	5,65E-03	0	0	1,38E-03	0	0	0	0	0	0	5,65E-04	0	3,20E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	4,08E-02	1,37E-03	0	0	3,22E-04	0	0	0	0	0	0	1,37E-04	0	8,83E-04	0
Resource use, mineral and metals [kg Sb eq.]	1,74E-06	1,83E-08	0	0	2,55E-06	0	0	0	0	0	0	1,83E-09	0	1,42E-08	0
Resource use, energy carriers [MJ]	2,10E+02	3,40E+00	0	0	1,38E+00	0	0	0	0	0	0	3,40E-01	0	2,07E+00	0
Water scarcity [m³ world equiv.]	1,73E+00	2,28E-03	0	0	3,27E-01	0	0	0	0	0	0	2,28E-04	0	1,65E-02	0

RESOURCE USE STADIP 22.1

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	
Use of renewable primary energy (PERE) [MJ]	2,26E+01	1,91E-01	0	0	7,69E-01	0	0	0	0	0	0	1,91E-02	0	2,71E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	2,26E+01	1,91E-01	0	0	7,69E-01	0	0	0	0	0	0	1,91E-02	0	2,71E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	2,10E+02	3,40E+00	0	0	1,38E+00	0	0	0	0	0	0	3,40E-01	0	2,07E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	2,10E+02	3,40E+00	0	0	1,48E+00	0	0	0	0	0	0	3,40E-01	0	2,07E+00	0
Input of secondary material (SM) [kg]	1,09E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	1,49E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	1,75E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	5,00E-02	2,21E-04	0	0	7,61E-03	0	0	0	0	0	0	2,21E-05	0	5,22E-04	0

WASTE CATEGORIES STADIP 22.1

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	
Hazardous waste disposed (HWD) [kg]	2,85E-07	1,58E-07	0	0	7,69E-11	0	0	0	0	0	0	1,58E-08	0	3,16E-08	0
Non-hazardous waste disposed (NHWD) [kg]	3,46E-01	5,20E-04	0	0	6,47E-03	0	0	0	0	0	0	5,20E-05	0	1,04E+01	0
Radioactive waste disposed (RWD) [kg]	4,44E-03	4,21E-06	0	0	2,84E-06	0	0	0	0	0	0	4,21E-07	0	2,35E-05	0

OUTPUT FLOWS STADIP 22.1

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ENVIRONMENTAL IMPACTS STADIP (SILENCE) PROTECT 22.2 XN

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.]	1,87E+01	2,64E-01	0	0	9,50E-02	0	0	0	0	0	0	2,64E-02	0	1,51E-01	0
Climate Change (fossil) [kg CO2 eq.]	1,85E+01	2,62E-01	0	0	8,08E-02	0	0	0	0	0	0	2,62E-02	0	1,64E-01	0
Climate Change (biogenic) [kg CO2 eq.]	2,49E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	1,07E-02	2,15E-03	0	0	7,28E-02	0	0	0	0	0	0	2,15E-04	0	4,72E-04	0
Ozone depletion [kg CFC-11 eq.]	2,82E-09	3,19E-17	0	0	4,39E-09	0	0	0	0	0	0	3,19E-18	0	6,08E-16	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	7,39E-02	1,13E-03	0	0	4,99E-04	0	0	0	0	0	0	1,13E-04	0	1,18E-03	0
Eutrophication freshwater [kg P eq.]	4,91E-05	8,06E-07	0	0	3,23E-05	0	0	0	0	0	0	8,06E-08	0	2,82E-07	0
Eutrophication marine [kg N eq.]	1,74E-02	5,28E-04	0	0	5,33E-04	0	0	0	0	0	0	5,28E-05	0	3,03E-04	0
Eutrophication terrestrial [Mole of N eq.]	2,04E-01	5,87E-03	0	0	1,38E-03	0	0	0	0	0	0	5,87E-04	0	3,33E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	4,66E-02	1,42E-03	0	0	3,22E-04	0	0	0	0	0	0	1,42E-04	0	9,17E-04	0
Resource use, mineral and metals [kg Sb eq.]	3,50E-05	1,90E-08	0	0	2,55E-06	0	0	0	0	0	0	1,90E-09	0	1,47E-08	0
Resource use, energy carriers [MJ]	2,78E+02	3,53E+00	0	0	1,38E+00	0	0	0	0	0	0	3,53E-01	0	2,15E+00	0
Water scarcity [m³ world equiv.]	2,57E+00	2,37E-03	0	0	3,27E-01	0	0	0	0	0	0	2,37E-04	0	1,72E-02	0

RESOURCE USE STADIP (SILENCE) PROTECT 22.2 XN

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	
Use of renewable primary energy (PERE) [MJ]	3,60E+01	1,98E-01	0	0	7,69E-01	0	0	0	0	0	0	1,98E-02	0	2,82E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	3,60E+01	1,98E-01	0	0	7,69E-01	0	0	0	0	0	0	1,98E-02	0	2,82E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	2,79E+02	3,53E+00	0	0	1,38E+00	0	0	0	0	0	0	3,53E-01	0	2,15E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	2,79E+02	3,53E+00	0	0	1,48E+00	0	0	0	0	0	0	3,53E-01	0	2,15E+00	0
Input of secondary material (SM) [kg]	1,09E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	1,49E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	1,75E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	7,82E-02	2,30E-04	0	0	7,61E-03	0	0	0	0	0	0	2,30E-05	0	5,43E-04	0

WASTE CATEGORIES 3 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	
Hazardous waste disposed (HWD) [kg]	3,82E-07	1,64E-07	0	0	7,69E-11	0	0	0	0	0	0	1,64E-08	0	3,28E-08	0
Non-hazardous waste disposed (NHWD) [kg]	3,77E-01	5,41E-04	0	0	6,47E-03	0	0	0	0	0	0	5,41E-05	0	1,08E+01	0
Radioactive waste disposed (RWD) [kg]	7,65E-03	4,37E-06	0	0	2,84E-06	0	0	0	0	0	0	4,37E-07	0	2,45E-05	0

OUTPUT FLOWS STADIP (SILENCE) PROTECT 22.2 XN

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STADIP (SILENCE) 33.1

ENVIRONMENTAL IMPACTS STADIP (SILENCE) 33.1

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.]	2,02E+01	3,76E-01	0	0	9,50E-02	0	0	0	0	0	0	3,76E-02	0	2,16E-01	0
Climate Change (fossil) [kg CO2 eq.]	1,99E+01	3,74E-01	0	0	8,08E-02	0	0	0	0	0	0	3,74E-02	0	2,34E-01	0
Climate Change (biogenic) [kg CO2 eq.]	3,23E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	9,37E-03	3,06E-03	0	0	7,28E-02	0	0	0	0	0	0	3,06E-04	0	6,73E-04	0
Ozone depletion [kg CFC-11 eq.]	4,23E-09	4,54E-17	0	0	4,39E-09	0	0	0	0	0	0	4,54E-18	0	8,66E-16	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	9,27E-02	1,60E-03	0	0	4,99E-04	0	0	0	0	0	0	1,60E-04	0	1,68E-03	0
Eutrophication freshwater [kg P eq.]	4,41E-05	1,15E-06	0	0	3,23E-05	0	0	0	0	0	0	1,15E-07	0	4,01E-07	0
Eutrophication marine [kg N eq.]	2,26E-02	7,52E-04	0	0	5,33E-04	0	0	0	0	0	0	7,52E-05	0	4,32E-04	0
Eutrophication terrestrial [Mole of N eq.]	2,73E-01	8,36E-03	0	0	1,38E-03	0	0	0	0	0	0	8,36E-04	0	4,74E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	5,89E-02	2,02E-03	0	0	3,22E-04	0	0	0	0	0	0	2,02E-04	0	1,31E-03	0
Resource use, mineral and metals [kg Sb eq.]	2,18E-06	2,71E-08	0	0	2,55E-06	0	0	0	0	0	0	2,71E-09	0	2,10E-08	0
Resource use, energy carriers [MJ]	2,81E+02	5,03E+00	0	0	1,38E+00	0	0	0	0	0	0	5,03E-01	0	3,07E+00	0
Water scarcity [m³ world equiv.]	2,18E+00	3,38E-03	0	0	3,27E-01	0	0	0	0	0	0	3,38E-04	0	2,45E-02	0

RESOURCE USE STADIP (SILENCE) 33.1

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	
Use of renewable primary energy (PERE) [MJ]	2,72E+01	2,83E-01	0	0	7,69E-01	0	0	0	0	0	0	2,83E-02	0	4,01E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	2,72E+01	2,83E-01	0	0	7,69E-01	0	0	0	0	0	0	2,83E-02	0	4,01E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	2,81E+02	5,03E+00	0	0	1,38E+00	0	0	0	0	0	0	5,03E-01	0	3,07E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	2,81E+02	5,03E+00	0	0	1,48E+00	0	0	0	0	0	0	5,03E-01	0	3,07E+00	0
Input of secondary material (SM) [kg]	1,64E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	2,23E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	2,62E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	6,29E-02	3,27E-04	0	0	7,61E-03	0	0	0	0	0	0	3,27E-05	0	7,73E-04	0

WASTE CATEGORIES STADIP (SILENCE) 33.1

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	
Hazardous waste disposed (HWD) [kg]	4,10E-07	2,34E-07	0	0	7,69E-11	0	0	0	0	0	0	2,34E-08	0	4,68E-08	0
Non-hazardous waste disposed (NHWD) [kg]	4,95E-01	7,70E-04	0	0	6,47E-03	0	0	0	0	0	0	7,70E-05	0	1,54E+01	0
Radioactive waste disposed (RWD) [kg]	5,50E-03	6,23E-06	0	0	2,84E-06	0	0	0	0	0	0	6,23E-07	0	3,48E-05	0

OUTPUT FLOWS STADIP (SILENCE) 33.1

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ENVIRONMENTAL IMPACTS STADIP (SILENCE) 33.1

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.]	2,12E+01	3,76E-01	0	0	9,50E-02	0	0	0	0	0	0	3,76E-02	0	2,16E-01	0
Climate Change (fossil) [kg CO2 eq.]	2,09E+01	3,74E-01	0	0	8,08E-02	0	0	0	0	0	0	3,74E-02	0	2,34E-01	0
Climate Change (biogenic) [kg CO2 eq.]	3,35E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	1,07E-02	3,06E-03	0	0	7,28E-02	0	0	0	0	0	0	3,06E-04	0	6,73E-04	0
Ozone depletion [kg CFC-11 eq.]	4,23E-09	4,54E-17	0	0	4,39E-09	0	0	0	0	0	0	4,54E-18	0	8,66E-16	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	9,90E-02	1,60E-03	0	0	4,99E-04	0	0	0	0	0	0	1,60E-04	0	1,68E-03	0
Eutrophication freshwater [kg P eq.]	4,54E-05	1,15E-06	0	0	3,23E-05	0	0	0	0	0	0	1,15E-07	0	4,01E-07	0
Eutrophication marine [kg N eq.]	2,33E-02	7,52E-04	0	0	5,33E-04	0	0	0	0	0	0	7,52E-05	0	4,32E-04	0
Eutrophication terrestrial [Mole of N eq.]	2,80E-01	8,36E-03	0	0	1,38E-03	0	0	0	0	0	0	8,36E-04	0	4,74E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	6,10E-02	2,02E-03	0	0	3,22E-04	0	0	0	0	0	0	2,02E-04	0	1,31E-03	0
Resource use, mineral and metals [kg Sb eq.]	3,48E-05	2,71E-08	0	0	2,55E-06	0	0	0	0	0	0	2,71E-09	0	2,10E-08	0
Resource use, energy carriers [MJ]	2,98E+02	5,03E+00	0	0	1,38E+00	0	0	0	0	0	0	5,03E-01	0	3,07E+00	0
Water scarcity [m³ world equiv.]	2,66E+00	3,38E-03	0	0	3,27E-01	0	0	0	0	0	0	3,38E-04	0	2,45E-02	0

RESOURCE USE STADIP (SILENCE) 33.1

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	
Use of renewable primary energy (PERE) [MJ]	3,56E+01	2,83E-01	0	0	7,69E-01	0	0	0	0	0	0	2,83E-02	0	4,01E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	3,56E+01	2,83E-01	0	0	7,69E-01	0	0	0	0	0	0	2,83E-02	0	4,01E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	2,98E+02	5,03E+00	0	0	1,38E+00	0	0	0	0	0	0	5,03E-01	0	3,07E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	2,98E+02	5,03E+00	0	0	1,48E+00	0	0	0	0	0	0	5,03E-01	0	3,07E+00	0
Input of secondary material (SM) [kg]	1,64E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	2,23E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	2,62E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	7,96E-02	3,27E-04	0	0	7,61E-03	0	0	0	0	0	0	3,27E-05	0	7,73E-04	0

WASTE CATEGORIES STADIP (SILENCE) 33.1

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	
Hazardous waste disposed (HWD) [kg]	4,77E-07	2,34E-07	0	0	7,69E-11	0	0	0	0	0	0	2,34E-08	0	4,68E-08	0
Non-hazardous waste disposed (NHWD) [kg]	5,06E-01	7,70E-04	0	0	6,47E-03	0	0	0	0	0	0	7,70E-05	0	1,54E+01	0
Radioactive waste disposed (RWD) [kg]	7,64E-03	6,23E-06	0	0	2,84E-06	0	0	0	0	0	0	6,23E-07	0	3,48E-05	0

OUTPUT FLOWS STADIP (SILENCE) 33.1

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ENVIRONMENTAL IMPACTS STADIP (SILENCE) 44.1

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.]	2,56E+01	4,98E-01	0	0	9,50E-02	0	0	0	0	0	0	4,98E-02	0	2,86E-01	0
Climate Change (fossil) [kg CO2 eq.]	2,52E+01	4,95E-01	0	0	8,08E-02	0	0	0	0	0	0	4,95E-02	0	3,10E-01	0
Climate Change (biogenic) [kg CO2 eq.]	4,20E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	1,15E-02	4,05E-03	0	0	7,28E-02	0	0	0	0	0	0	4,05E-04	0	8,91E-04	0
Ozone depletion [kg CFC-11 eq.]	5,64E-09	6,01E-17	0	0	4,39E-09	0	0	0	0	0	0	6,01E-18	0	1,15E-15	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	1,22E-01	2,12E-03	0	0	4,99E-04	0	0	0	0	0	0	2,12E-04	0	2,22E-03	0
Eutrophication freshwater [kg P eq.]	4,82E-05	1,52E-06	0	0	3,23E-05	0	0	0	0	0	0	1,52E-07	0	5,32E-07	0
Eutrophication marine [kg N eq.]	2,95E-02	9,97E-04	0	0	5,33E-04	0	0	0	0	0	0	9,97E-05	0	5,72E-04	0
Eutrophication terrestrial [Mole of N eq.]	3,59E-01	1,11E-02	0	0	1,38E-03	0	0	0	0	0	0	1,11E-03	0	6,28E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	7,69E-02	2,68E-03	0	0	3,22E-04	0	0	0	0	0	0	2,68E-04	0	1,73E-03	0
Resource use, mineral and metals [kg Sb eq.]	2,62E-06	3,59E-08	0	0	2,55E-06	0	0	0	0	0	0	3,59E-09	0	2,78E-08	0
Resource use, energy carriers [MJ]	3,53E+02	6,66E+00	0	0	1,38E+00	0	0	0	0	0	0	6,66E-01	0	4,06E+00	0
Water scarcity [m³ world equiv.]	2,63E+00	4,47E-03	0	0	3,27E-01	0	0	0	0	0	0	4,47E-04	0	3,24E-02	0

RESOURCE USE STADIP (SILENCE) 44.1

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	
Use of renewable primary energy (PERE) [MJ]	3,19E+01	3,74E-01	0	0	7,69E-01	0	0	0	0	0	0	3,74E-02	0	5,32E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	3,19E+01	3,74E-01	0	0	7,69E-01	0	0	0	0	0	0	3,74E-02	0	5,32E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	3,53E+02	6,67E+00	0	0	1,38E+00	0	0	0	0	0	0	6,67E-01	0	4,06E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	3,53E+02	6,67E+00	0	0	1,48E+00	0	0	0	0	0	0	6,67E-01	0	4,06E+00	0
Input of secondary material (SM) [kg]	2,19E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	2,97E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	3,49E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	7,59E-02	4,34E-04	0	0	7,61E-03	0	0	0	0	0	0	4,34E-05	0	1,02E-03	0

WASTE CATEGORIES STADIP (SILENCE) 44.1

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	
Hazardous waste disposed (HWD) [kg]	5,34E-07	3,10E-07	0	0	7,69E-11	0	0	0	0	0	0	3,10E-08	0	6,19E-08	0
Non-hazardous waste disposed (NHWD) [kg]	6,44E-01	1,02E-03	0	0	6,47E-03	0	0	0	0	0	0	1,02E-04	0	2,04E+01	0
Radioactive waste disposed (RWD) [kg]	6,57E-03	8,25E-06	0	0	2,84E-06	0	0	0	0	0	0	8,25E-07	0	4,61E-05	0

OUTPUT FLOWS STADIP (SILENCE) 44.1

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ENVIRONMENTAL IMPACTS STADIP (SILENCE) PROTECT 33.2

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.]	2,31E+01	3,86E-01	0	0	9,50E-02	0	0	0	0	0	0	3,86E-02	0	2,22E-01	0
Climate Change (fossil) [kg CO2 eq.]	2,28E+01	3,83E-01	0	0	8,08E-02	0	0	0	0	0	0	3,83E-02	0	2,40E-01	0
Climate Change (biogenic) [kg CO2 eq.]	3,33E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	1,16E-02	3,14E-03	0	0	7,28E-02	0	0	0	0	0	0	3,14E-04	0	6,90E-04	0
Ozone depletion [kg CFC-11 eq.]	4,23E-09	4,66E-17	0	0	4,39E-09	0	0	0	0	0	0	4,66E-18	0	8,89E-16	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	9,66E-02	1,65E-03	0	0	4,99E-04	0	0	0	0	0	0	1,65E-04	0	1,72E-03	0
Eutrophication freshwater [kg P eq.]	5,19E-05	1,18E-06	0	0	3,23E-05	0	0	0	0	0	0	1,18E-07	0	4,12E-07	0
Eutrophication marine [kg N eq.]	2,37E-02	7,72E-04	0	0	5,33E-04	0	0	0	0	0	0	7,72E-05	0	4,43E-04	0
Eutrophication terrestrial [Mole of N eq.]	2,83E-01	8,58E-03	0	0	1,38E-03	0	0	0	0	0	0	8,58E-04	0	4,87E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	6,26E-02	2,08E-03	0	0	3,22E-04	0	0	0	0	0	0	2,08E-04	0	1,34E-03	0
Resource use, mineral and metals [kg Sb eq.]	2,81E-06	2,78E-08	0	0	2,55E-06	0	0	0	0	0	0	2,78E-09	0	2,15E-08	0
Resource use, energy carriers [MJ]	3,34E+02	5,16E+00	0	0	1,38E+00	0	0	0	0	0	0	5,16E-01	0	3,15E+00	0
Water scarcity [m³ world equiv.]	2,54E+00	3,47E-03	0	0	3,27E-01	0	0	0	0	0	0	3,47E-04	0	2,51E-02	0

RESOURCE USE STADIP (SILENCE) PROTECT 33.2

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	
Use of renewable primary energy (PERE) [MJ]	3,22E+01	2,90E-01	0	0	7,69E-01	0	0	0	0	0	0	2,90E-02	0	4,12E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	3,22E+01	2,90E-01	0	0	7,69E-01	0	0	0	0	0	0	2,90E-02	0	4,12E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	3,34E+02	5,17E+00	0	0	1,38E+00	0	0	0	0	0	0	5,17E-01	0	3,15E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	3,34E+02	5,17E+00	0	0	1,48E+00	0	0	0	0	0	0	5,17E-01	0	3,15E+00	0
Input of secondary material (SM) [kg]	1,64E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	2,23E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	2,62E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	7,46E-02	3,36E-04	0	0	7,61E-03	0	0	0	0	0	0	3,36E-05	0	7,94E-04	0

WASTE CATEGORIES STADIP (SILENCE) PROTECT 33.2

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	
Hazardous waste disposed (HWD) [kg]	4,39E-07	2,40E-07	0	0	7,69E-11	0	0	0	0	0	0	2,40E-08	0	4,80E-08	0
Non-hazardous waste disposed (NHWD) [kg]	5,15E-01	7,91E-04	0	0	6,47E-03	0	0	0	0	0	0	7,91E-05	0	1,58E+01	0
Radioactive waste disposed (RWD) [kg]	6,57E-03	6,40E-06	0	0	2,84E-06	0	0	0	0	0	0	6,40E-07	0	3,58E-05	0

OUTPUT FLOWS STADIP (SILENCE) PROTECT 33.2

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ENVIRONMENTAL IMPACTS STADIP (SILENCE) PROTECT 44.2

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.]	2,86E+01	5,08E-01	0	0	9,50E-02	0	0	0	0	0	0	5,08E-02	0	2,92E-01	0
Climate Change (fossil) [kg CO2 eq.]	2,81E+01	5,05E-01	0	0	8,08E-02	0	0	0	0	0	0	5,05E-02	0	3,16E-01	0
Climate Change (biogenic) [kg CO2 eq.]	4,30E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	1,37E-02	4,13E-03	0	0	7,28E-02	0	0	0	0	0	0	4,13E-04	0	9,09E-04	0
Ozone depletion [kg CFC-11 eq.]	5,64E-09	6,13E-17	0	0	4,39E-09	0	0	0	0	0	0	6,13E-18	0	1,17E-15	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	1,26E-01	2,17E-03	0	0	4,99E-04	0	0	0	0	0	0	2,17E-04	0	2,26E-03	0
Eutrophication freshwater [kg P eq.]	5,61E-05	1,55E-06	0	0	3,23E-05	0	0	0	0	0	0	1,55E-07	0	5,42E-07	0
Eutrophication marine [kg N eq.]	3,06E-02	1,02E-03	0	0	5,33E-04	0	0	0	0	0	0	1,02E-04	0	5,83E-04	0
Eutrophication terrestrial [Mole of N eq.]	3,69E-01	1,13E-02	0	0	1,38E-03	0	0	0	0	0	0	1,13E-03	0	6,41E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	8,06E-02	2,73E-03	0	0	3,22E-04	0	0	0	0	0	0	2,73E-04	0	1,77E-03	0
Resource use, mineral and metals [kg Sb eq.]	3,25E-06	3,66E-08	0	0	2,55E-06	0	0	0	0	0	0	3,66E-09	0	2,83E-08	0
Resource use, energy carriers [MJ]	4,05E+02	6,79E+00	0	0	1,38E+00	0	0	0	0	0	0	6,79E-01	0	4,14E+00	0
Water scarcity [m³ world equiv.]	2,99E+00	4,56E-03	0	0	3,27E-01	0	0	0	0	0	0	4,56E-04	0	3,31E-02	0

RESOURCE USE STADIP (SILENCE) PROTECT 44.2

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	
Use of renewable primary energy (PERE) [MJ]	3,69E+01	3,82E-01	0	0	7,69E-01	0	0	0	0	0	0	3,82E-02	0	5,42E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	3,69E+01	3,82E-01	0	0	7,69E-01	0	0	0	0	0	0	3,82E-02	0	5,42E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	4,06E+02	6,80E+00	0	0	1,38E+00	0	0	0	0	0	0	6,80E-01	0	4,14E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	4,06E+02	6,80E+00	0	0	1,48E+00	0	0	0	0	0	0	6,80E-01	0	4,14E+00	0
Input of secondary material (SM) [kg]	2,19E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	2,97E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	3,49E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	8,75E-02	4,42E-04	0	0	7,61E-03	0	0	0	0	0	0	4,42E-05	0	1,04E-03	0

WASTE CATEGORIES STADIP (SILENCE) PROTECT 44.2

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	
Hazardous waste disposed (HWD) [kg]	5,64E-07	3,17E-07	0	0	7,69E-11	0	0	0	0	0	0	3,17E-08	0	6,32E-08	0
Non-hazardous waste disposed (NHWD) [kg]	6,64E-01	1,04E-03	0	0	6,47E-03	0	0	0	0	0	0	1,04E-04	0	2,08E+01	0
Radioactive waste disposed (RWD) [kg]	7,64E-03	8,42E-06	0	0	2,84E-06	0	0	0	0	0	0	8,42E-07	0	4,71E-05	0

OUTPUT FLOWS STADIP (SILENCE) PROTECT 44.2

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ENVIRONMENTAL IMPACTS STADIP (SILENCE) PROTECT 44.2 XN

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.]	2,96E+01	5,08E-01	0	0	9,50E-02	0	0	0	0	0	0	5,08E-02	0	2,92E-01	0
Climate Change (fossil) [kg CO2 eq.]	2,92E+01	5,05E-01	0	0	8,08E-02	0	0	0	0	0	0	5,05E-02	0	3,16E-01	0
Climate Change (biogenic) [kg CO2 eq.]	4,41E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	1,51E-02	4,13E-03	0	0	7,28E-02	0	0	0	0	0	0	4,13E-04	0	9,09E-04	0
Ozone depletion [kg CFC-11 eq.]	5,64E-09	6,13E-17	0	0	4,39E-09	0	0	0	0	0	0	6,13E-18	0	1,17E-15	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	1,32E-01	2,17E-03	0	0	4,99E-04	0	0	0	0	0	0	2,17E-04	0	2,26E-03	0
Eutrophication freshwater [kg P eq.]	5,74E-05	1,55E-06	0	0	3,23E-05	0	0	0	0	0	0	1,55E-07	0	5,42E-07	0
Eutrophication marine [kg N eq.]	3,12E-02	1,02E-03	0	0	5,33E-04	0	0	0	0	0	0	1,02E-04	0	5,83E-04	0
Eutrophication terrestrial [Mole of N eq.]	3,76E-01	1,13E-02	0	0	1,38E-03	0	0	0	0	0	0	1,13E-03	0	6,41E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	8,27E-02	2,73E-03	0	0	3,22E-04	0	0	0	0	0	0	2,73E-04	0	1,77E-03	0
Resource use, mineral and metals [kg Sb eq.]	3,59E-05	3,66E-08	0	0	2,55E-06	0	0	0	0	0	0	3,66E-09	0	2,83E-08	0
Resource use, energy carriers [MJ]	4,22E+02	6,79E+00	0	0	1,38E+00	0	0	0	0	0	0	6,79E-01	0	4,14E+00	0
Water scarcity [m³ world equiv.]	3,48E+00	4,56E-03	0	0	3,27E-01	0	0	0	0	0	0	4,56E-04	0	3,31E-02	0

RESOURCE USE STADIP (SILENCE) PROTECT 44.2 XN

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	
Use of renewable primary energy (PERE) [MJ]	4,52E+01	3,82E-01	0	0	7,69E-01	0	0	0	0	0	0	3,82E-02	0	5,42E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	4,52E+01	3,82E-01	0	0	7,69E-01	0	0	0	0	0	0	3,82E-02	0	5,42E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	4,22E+02	6,80E+00	0	0	1,38E+00	0	0	0	0	0	0	6,80E-01	0	4,14E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	4,22E+02	6,80E+00	0	0	1,48E+00	0	0	0	0	0	0	6,80E-01	0	4,14E+00	0
Input of secondary material (SM) [kg]	2,19E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	2,97E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	3,49E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	1,04E-01	4,42E-04	0	0	7,61E-03	0	0	0	0	0	0	4,42E-05	0	1,04E-03	0

WASTE CATEGORIES STADIP (SILENCE) PROTECT 44.2 XN

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	
Hazardous waste disposed (HWD) [kg]	6,32E-07	3,17E-07	0	0	7,69E-11	0	0	0	0	0	0	3,17E-08	0	6,32E-08	0
Non-hazardous waste disposed (NHWD) [kg]	6,75E-01	1,04E-03	0	0	6,47E-03	0	0	0	0	0	0	1,04E-04	0	2,08E+01	0
Radioactive waste disposed (RWD) [kg]	9,78E-03	8,42E-06	0	0	2,84E-06	0	0	0	0	0	0	8,42E-07	0	4,71E-05	0

OUTPUT FLOWS STADIP (SILENCE) PROTECT 44.2 XN

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ENVIRONMENTAL IMPACTS STADIP (SILENCE) PROTECT 44.4

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.]	3,46E+01	5,28E-01	0	0	9,50E-02	0	0	0	0	0	0	5,28E-02	0	3,03E-01	0
Climate Change (fossil) [kg CO2 eq.]	3,41E+01	5,24E-01	0	0	8,08E-02	0	0	0	0	0	0	5,24E-02	0	3,28E-01	0
Climate Change (biogenic) [kg CO2 eq.]	4,50E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	1,81E-02	4,29E-03	0	0	7,28E-02	0	0	0	0	0	0	4,29E-04	0	9,44E-04	0
Ozone depletion [kg CFC-11 eq.]	5,64E-09	6,37E-17	0	0	4,39E-09	0	0	0	0	0	0	6,37E-18	0	1,22E-15	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	1,34E-01	2,25E-03	0	0	4,99E-04	0	0	0	0	0	0	2,25E-04	0	2,35E-03	0
Eutrophication freshwater [kg P eq.]	7,19E-05	1,61E-06	0	0	3,23E-05	0	0	0	0	0	0	1,61E-07	0	5,63E-07	0
Eutrophication marine [kg N eq.]	3,26E-02	1,06E-03	0	0	5,33E-04	0	0	0	0	0	0	1,06E-04	0	6,06E-04	0
Eutrophication terrestrial [Mole of N eq.]	3,91E-01	1,17E-02	0	0	1,38E-03	0	0	0	0	0	0	1,17E-03	0	6,66E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	8,81E-02	2,84E-03	0	0	3,22E-04	0	0	0	0	0	0	2,84E-04	0	1,83E-03	0
Resource use, mineral and metals [kg Sb eq.]	4,53E-06	3,80E-08	0	0	2,55E-06	0	0	0	0	0	0	3,80E-09	0	2,95E-08	0
Resource use, energy carriers [MJ]	5,11E+02	7,06E+00	0	0	1,38E+00	0	0	0	0	0	0	7,06E-01	0	4,30E+00	0
Water scarcity [m³ world equiv.]	3,72E+00	4,74E-03	0	0	3,27E-01	0	0	0	0	0	0	4,74E-04	0	3,44E-02	0

RESOURCE USE STADIP (SILENCE) PROTECT 44.4

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	
Use of renewable primary energy (PERE) [MJ]	4,70E+01	3,97E-01	0	0	7,69E-01	0	0	0	0	0	0	3,97E-02	0	5,64E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	4,70E+01	3,97E-01	0	0	7,69E-01	0	0	0	0	0	0	3,97E-02	0	5,64E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	5,11E+02	7,07E+00	0	0	1,38E+00	0	0	0	0	0	0	7,07E-01	0	4,31E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	5,11E+02	7,07E+00	0	0	1,48E+00	0	0	0	0	0	0	7,07E-01	0	4,31E+00	0
Input of secondary material (SM) [kg]	2,19E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	2,97E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	3,49E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	1,11E-01	4,60E-04	0	0	7,61E-03	0	0	0	0	0	0	4,60E-05	0	1,09E-03	0

WASTE CATEGORIES STADIP (SILENCE) PROTECT 44.4

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	
Hazardous waste disposed (HWD) [kg]	6,24E-07	3,29E-07	0	0	7,69E-11	0	0	0	0	0	0	3,29E-08	0	6,56E-08	0
Non-hazardous waste disposed (NHWD) [kg]	7,05E-01	1,08E-03	0	0	6,47E-03	0	0	0	0	0	0	1,08E-04	0	2,16E+01	0
Radioactive waste disposed (RWD) [kg]	9,78E-03	8,75E-06	0	0	2,84E-06	0	0	0	0	0	0	8,75E-07	0	4,89E-05	0

OUTPUT FLOWS STADIP (SILENCE) PROTECT 44.4

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ENVIRONMENTAL IMPACTS STADIP (SILENCE) PROTECT 44.4 XN

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.]	3,56E+01	5,28E-01	0	0	9,50E-02	0	0	0	0	0	0	5,28E-02	0	3,03E-01	0
Climate Change (fossil) [kg CO2 eq.]	3,51E+01	5,24E-01	0	0	8,08E-02	0	0	0	0	0	0	5,24E-02	0	3,28E-01	0
Climate Change (biogenic) [kg CO2 eq.]	4,62E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	1,95E-02	4,29E-03	0	0	7,28E-02	0	0	0	0	0	0	4,29E-04	0	9,44E-04	0
Ozone depletion [kg CFC-11 eq.]	5,64E-09	6,37E-17	0	0	4,39E-09	0	0	0	0	0	0	6,37E-18	0	1,22E-15	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	1,40E-01	2,25E-03	0	0	4,99E-04	0	0	0	0	0	0	2,25E-04	0	2,35E-03	0
Eutrophication freshwater [kg P eq.]	7,32E-05	1,61E-06	0	0	3,23E-05	0	0	0	0	0	0	1,61E-07	0	5,63E-07	0
Eutrophication marine [kg N eq.]	3,33E-02	1,06E-03	0	0	5,33E-04	0	0	0	0	0	0	1,06E-04	0	6,06E-04	0
Eutrophication terrestrial [Mole of N eq.]	3,98E-01	1,17E-02	0	0	1,38E-03	0	0	0	0	0	0	1,17E-03	0	6,66E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	9,02E-02	2,84E-03	0	0	3,22E-04	0	0	0	0	0	0	2,84E-04	0	1,83E-03	0
Resource use, mineral and metals [kg Sb eq.]	3,71E-05	3,80E-08	0	0	2,55E-06	0	0	0	0	0	0	3,80E-09	0	2,95E-08	0
Resource use, energy carriers [MJ]	5,28E+02	7,06E+00	0	0	1,38E+00	0	0	0	0	0	0	7,06E-01	0	4,30E+00	0
Water scarcity [m³ world equiv.]	4,21E+00	4,74E-03	0	0	3,27E-01	0	0	0	0	0	0	4,74E-04	0	3,44E-02	0

RESOURCE USE STADIP (SILENCE) PROTECT 44.4 XN

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	
Use of renewable primary energy (PERE) [MJ]	5,54E+01	3,97E-01	0	0	7,69E-01	0	0	0	0	0	0	3,97E-02	0	5,64E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	5,54E+01	3,97E-01	0	0	7,69E-01	0	0	0	0	0	0	3,97E-02	0	5,64E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	5,28E+02	7,07E+00	0	0	1,38E+00	0	0	0	0	0	0	7,07E-01	0	4,31E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	5,28E+02	7,07E+00	0	0	1,48E+00	0	0	0	0	0	0	7,07E-01	0	4,31E+00	0
Input of secondary material (SM) [kg]	2,19E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	2,97E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	3,49E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	1,27E-01	4,60E-04	0	0	7,61E-03	0	0	0	0	0	0	4,60E-05	0	1,09E-03	0

WASTE CATEGORIES STADIP (SILENCE) PROTECT 44.4 XN

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	
Hazardous waste disposed (HWD) [kg]	6,91E-07	3,29E-07	0	0	7,69E-11	0	0	0	0	0	0	3,29E-08	0	6,56E-08	0
Non-hazardous waste disposed (NHWD) [kg]	7,16E-01	1,08E-03	0	0	6,47E-03	0	0	0	0	0	0	1,08E-04	0	2,16E+01	0
Radioactive waste disposed (RWD) [kg]	1,19E-02	8,75E-06	0	0	2,84E-06	0	0	0	0	0	0	8,75E-07	0	4,89E-05	0

OUTPUT FLOWS STADIP (SILENCE) PROTECT 44.4 XN

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ENVIRONMENTAL IMPACTS STADIP (SILENCE) PROTECT 44.6

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.]	4,05E+01	5,48E-01	0	0	9,50E-02	0	0	0	0	0	0	5,48E-02	0,00E+00	3,14E-01	0
Climate Change (fossil) [kg CO2 eq.]	4,00E+01	5,44E-01	0	0	8,08E-02	0	0	0	0	0	0	5,44E-02	0,00E+00	3,40E-01	0
Climate Change (biogenic) [kg CO2 eq.]	4,70E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	2,25E-02	4,46E-03	0	0	7,28E-02	0	0	0	0	0	0	4,46E-04	0,00E+00	9,80E-04	0
Ozone depletion [kg CFC-11 eq.]	5,64E-09	6,61E-17	0	0	4,39E-09	0	0	0	0	0	0	6,61E-18	0,00E+00	1,26E-15	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	1,41E-01	2,34E-03	0	0	4,99E-04	0	0	0	0	0	0	2,34E-04	0,00E+00	2,44E-03	0
Eutrophication freshwater [kg P eq.]	8,76E-05	1,67E-06	0	0	3,23E-05	0	0	0	0	0	0	1,67E-07	0,00E+00	5,85E-07	0
Eutrophication marine [kg N eq.]	3,47E-02	1,10E-03	0	0	5,33E-04	0	0	0	0	0	0	1,10E-04	0,00E+00	6,29E-04	0
Eutrophication terrestrial [Mole of N eq.]	4,14E-01	1,22E-02	0	0	1,38E-03	0	0	0	0	0	0	1,22E-03	0,00E+00	6,91E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	9,57E-02	2,95E-03	0	0	3,22E-04	0	0	0	0	0	0	2,95E-04	0,00E+00	1,90E-03	0
Resource use, mineral and metals [kg Sb eq.]	5,79E-06	3,95E-08	0	0	2,55E-06	0	0	0	0	0	0	3,95E-09	0,00E+00	3,06E-08	0
Resource use, energy carriers [MJ]	6,16E+02	7,33E+00	0	0	1,38E+00	0	0	0	0	0	0	7,33E-01	0,00E+00	4,47E+00	0
Water scarcity [m³ world equiv.]	4,45E+00	4,92E-03	0	0	3,27E-01	0	0	0	0	0	0	4,92E-04	0,00E+00	3,57E-02	0

RESOURCE USE STADIP (SILENCE) PROTECT 44.6

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	
Use of renewable primary energy (PERE) [MJ]	5,71E+01	4,12E-01	0	0	7,69E-01	0	0	0	0	0	0	4,12E-02	0,00E+00	5,85E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	5,71E+01	4,12E-01	0	0	7,69E-01	0	0	0	0	0	0	4,12E-02	0,00E+00	5,85E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	6,16E+02	7,33E+00	0	0	1,38E+00	0	0	0	0	0	0	7,33E-01	0,00E+00	4,47E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	6,16E+02	7,33E+00	0	0	1,48E+00	0	0	0	0	0	0	7,33E-01	0,00E+00	4,47E+00	0
Input of secondary material (SM) [kg]	2,19E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	2,97E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	3,49E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	1,34E-01	4,77E-04	0	0	7,61E-03	0	0	0	0	0	0	4,77E-05	0,00E+00	1,13E-03	0

WASTE CATEGORIES STADIP (SILENCE) PROTECT 44.6

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	
Hazardous waste disposed (HWD) [kg]	6,82E-07	3,41E-07	0	0	7,69E-11	0	0	0	0	0	0	3,41E-08	0,00E+00	6,81E-08	0
Non-hazardous waste disposed (NHWD) [kg]	7,45E-01	1,12E-03	0	0	6,47E-03	0	0	0	0	0	0	1,12E-04	0,00E+00	2,25E+01	0
Radioactive waste disposed (RWD) [kg]	1,19E-02	9,08E-06	0	0	2,84E-06	0	0	0	0	0	0	9,08E-07	0,00E+00	5,07E-05	0

OUTPUT FLOWS STADIP (SILENCE) PROTECT 44.6

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STADIP (SILENCE) PROTECT 44.6 XN

ENVIRONMENTAL IMPACTS STADIP (SILENCE) PROTECT 44.6 XN

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.]	4,16E+01	5,48E-01	0	0	9,50E-02	0	0	0	0	0	0	5,48E-02	0	3,14E-01	0
Climate Change (fossil) [kg CO2 eq.]	4,10E+01	5,44E-01	0	0	8,08E-02	0	0	0	0	0	0	5,44E-02	0	3,40E-01	0
Climate Change (biogenic) [kg CO2 eq.]	4,82E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	2,38E-02	4,46E-03	0	0	7,28E-02	0	0	0	0	0	0	4,46E-04	0	9,80E-04	0
Ozone depletion [kg CFC-11 eq.]	5,64E-09	6,61E-17	0	0	4,39E-09	0	0	0	0	0	0	6,61E-18	0	1,26E-15	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	1,48E-01	2,34E-03	0	0	4,99E-04	0	0	0	0	0	0	2,34E-04	0	2,44E-03	0
Eutrophication freshwater [kg P eq.]	8,89E-05	1,67E-06	0	0	3,23E-05	0	0	0	0	0	0	1,67E-07	0	5,85E-07	0
Eutrophication marine [kg N eq.]	3,54E-02	1,10E-03	0	0	5,33E-04	0	0	0	0	0	0	1,10E-04	0	6,29E-04	0
Eutrophication terrestrial [Mole of N eq.]	4,21E-01	1,22E-02	0	0	1,38E-03	0	0	0	0	0	0	1,22E-03	0	6,91E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	9,78E-02	2,95E-03	0	0	3,22E-04	0	0	0	0	0	0	2,95E-04	0	1,90E-03	0
Resource use, mineral and metals [kg Sb eq.]	3,84E-05	3,95E-08	0	0	2,55E-06	0	0	0	0	0	0	3,95E-09	0	3,06E-08	0
Resource use, energy carriers [MJ]	6,33E+02	7,33E+00	0	0	1,38E+00	0	0	0	0	0	0	7,33E-01	0	4,47E+00	0
Water scarcity [m³ world equiv.]	4,94E+00	4,92E-03	0	0	3,27E-01	0	0	0	0	0	0	4,92E-04	0	3,57E-02	0

RESOURCE USE STADIP (SILENCE) PROTECT 44.6 XN

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	
Use of renewable primary energy (PERE) [MJ]	6,55E+01	4,12E-01	0	0	7,69E-01	0	0	0	0	0	0	4,12E-02	0	5,85E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	6,55E+01	4,12E-01	0	0	7,69E-01	0	0	0	0	0	0	4,12E-02	0	5,85E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	6,33E+02	7,33E+00	0	0	1,38E+00	0	0	0	0	0	0	7,33E-01	0	4,47E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	6,33E+02	7,33E+00	0	0	1,48E+00	0	0	0	0	0	0	7,33E-01	0	4,47E+00	0
Input of secondary material (SM) [kg]	2,19E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	2,97E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	3,49E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	1,51E-01	4,77E-04	0	0	7,61E-03	0	0	0	0	0	0	4,77E-05	0	1,13E-03	0

WASTE CATEGORIES STADIP (SILENCE) PROTECT 44.6 XN

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	
Hazardous waste disposed (HWD) [kg]	7,50E-07	3,41E-07	0	0	7,69E-11	0	0	0	0	0	0	3,41E-08	0	6,81E-08	0
Non-hazardous waste disposed (NHWD) [kg]	7,56E-01	1,12E-03	0	0	6,47E-03	0	0	0	0	0	0	1,12E-04	0	2,25E+01	0
Radioactive waste disposed (RWD) [kg]	1,41E-02	9,08E-06	0	0	2,84E-06	0	0	0	0	0	0	9,08E-07	0	5,07E-05	0

OUTPUT FLOWS STADIP (SILENCE) PROTECT 44.6 XN

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ENVIRONMENTAL IMPACTS STADIP (SILENCE) PROTECT 55.2

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.]	3,40E+01	6,30E-01	0	0	9,50E-02	0	0	0	0	0	0	6,30E-02	0,00E+00	3,62E-01	0
Climate Change (fossil) [kg CO2 eq.]	3,35E+01	6,26E-01	0	0	8,08E-02	0	0	0	0	0	0	6,26E-02	0,00E+00	3,92E-01	0
Climate Change (biogenic) [kg CO2 eq.]	5,26E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	1,59E-02	5,12E-03	0	0	7,28E-02	0	0	0	0	0	0	5,12E-04	0,00E+00	1,13E-03	0
Ozone depletion [kg CFC-11 eq.]	7,05E-09	7,61E-17	0	0	4,39E-09	0	0	0	0	0	0	7,61E-18	0,00E+00	1,45E-15	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	1,55E-01	2,69E-03	0	0	4,99E-04	0	0	0	0	0	0	2,69E-04	0,00E+00	2,81E-03	0
Eutrophication freshwater [kg P eq.]	6,02E-05	1,92E-06	0	0	3,23E-05	0	0	0	0	0	0	1,92E-07	0,00E+00	6,72E-07	0
Eutrophication marine [kg N eq.]	3,75E-02	1,26E-03	0	0	5,33E-04	0	0	0	0	0	0	1,26E-04	0,00E+00	7,23E-04	0
Eutrophication terrestrial [Mole of N eq.]	4,55E-01	1,40E-02	0	0	1,38E-03	0	0	0	0	0	0	1,40E-03	0,00E+00	7,94E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	9,87E-02	3,39E-03	0	0	3,22E-04	0	0	0	0	0	0	3,39E-04	0,00E+00	2,19E-03	0
Resource use, mineral and metals [kg Sb eq.]	3,69E-06	4,54E-08	0	0	2,55E-06	0	0	0	0	0	0	4,54E-09	0,00E+00	3,52E-08	0
Resource use, energy carriers [MJ]	4,77E+02	8,43E+00	0	0	1,38E+00	0	0	0	0	0	0	8,43E-01	0,00E+00	5,14E+00	0
Water scarcity [m³ world equiv.]	3,44E+00	5,66E-03	0	0	3,27E-01	0	0	0	0	0	0	5,66E-04	0,00E+00	4,10E-02	0

RESOURCE USE STADIP (SILENCE) PROTECT 55.2

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	
Use of renewable primary energy (PERE) [MJ]	4,15E+01	4,74E-01	0	0	7,69E-01	0	0	0	0	0	0	4,74E-02	0,00E+00	6,73E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	4,15E+01	4,74E-01	0	0	7,69E-01	0	0	0	0	0	0	4,74E-02	0,00E+00	6,73E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	4,77E+02	8,43E+00	0	0	1,38E+00	0	0	0	0	0	0	8,43E-01	0,00E+00	5,14E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	4,77E+02	8,43E+00	0	0	1,48E+00	0	0	0	0	0	0	8,43E-01	0,00E+00	5,14E+00	0
Input of secondary material (SM) [kg]	2,74E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	3,72E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	4,37E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	1,01E-01	5,48E-04	0	0	7,61E-03	0	0	0	0	0	0	5,48E-05	0,00E+00	1,30E-03	0

WASTE CATEGORIES STADIP (SILENCE) PROTECT 55.2

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	
Hazardous waste disposed (HWD) [kg]	6,89E-07	3,93E-07	0	0	7,69E-11	0	0	0	0	0	0	3,93E-08	0,00E+00	7,83E-08	0
Non-hazardous waste disposed (NHWD) [kg]	8,13E-01	1,29E-03	0	0	6,47E-03	0	0	0	0	0	0	1,29E-04	0,00E+00	2,58E+01	0
Radioactive waste disposed (RWD) [kg]	8,70E-03	1,04E-05	0	0	2,84E-06	0	0	0	0	0	0	1,04E-06	0,00E+00	5,84E-05	0

OUTPUT FLOWS STADIP (SILENCE) PROTECT 55.2

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STADIP (SILENCE) PROTECT 55.2 DIAMANT

ENVIRONMENTAL IMPACTS STADIP (SILENCE) PROTECT 55.2 DIAMANT

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.]	3,55E+01	6,30E-01	0	0	9,50E-02	0	0	0	0	0	0	6,30E-02	0	3,62E-01	0
Climate Change (fossil) [kg CO2 eq.]	3,47E+01	6,26E-01	0	0	8,08E-02	0	0	0	0	0	0	6,26E-02	0	3,92E-01	0
Climate Change (biogenic) [kg CO2 eq.]	8,05E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	1,64E-02	5,12E-03	0	0	7,28E-02	0	0	0	0	0	0	5,12E-04	0	1,13E-03	0
Ozone depletion [kg CFC-11 eq.]	1,09E-08	7,61E-17	0	0	4,39E-09	0	0	0	0	0	0	7,61E-18	0	1,45E-15	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	1,44E-01	2,69E-03	0	0	4,99E-04	0	0	0	0	0	0	2,69E-04	0	2,81E-03	0
Eutrophication freshwater [kg P eq.]	5,48E-05	1,92E-06	0	0	3,23E-05	0	0	0	0	0	0	1,92E-07	0	6,72E-07	0
Eutrophication marine [kg N eq.]	3,12E-02	1,26E-03	0	0	5,33E-04	0	0	0	0	0	0	1,26E-04	0	7,23E-04	0
Eutrophication terrestrial [Mole of N eq.]	3,81E-01	1,40E-02	0	0	1,38E-03	0	0	0	0	0	0	1,40E-03	0	7,94E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	8,33E-02	3,39E-03	0	0	3,22E-04	0	0	0	0	0	0	3,39E-04	0	2,19E-03	0
Resource use, mineral and metals [kg Sb eq.]	3,09E-06	4,54E-08	0	0	2,55E-06	0	0	0	0	0	0	4,54E-09	0	3,52E-08	0
Resource use, energy carriers [MJ]	4,85E+02	8,43E+00	0	0	1,38E+00	0	0	0	0	0	0	8,43E-01	0	5,14E+00	0
Water scarcity [m³ world equiv.]	3,49E+00	5,66E-03	0	0	3,27E-01	0	0	0	0	0	0	5,66E-04	0	4,10E-02	0

RESOURCE USE STADIP (SILENCE) PROTECT 55.2 DIAMANT

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	
Use of renewable primary energy (PERE) [MJ]	2,87E+01	4,74E-01	0	0	7,69E-01	0	0	0	0	0	0	4,74E-02	0	6,73E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	2,87E+01	4,74E-01	0	0	7,69E-01	0	0	0	0	0	0	4,74E-02	0	6,73E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	4,85E+02	8,43E+00	0	0	1,38E+00	0	0	0	0	0	0	8,43E-01	0	5,14E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	4,85E+02	8,43E+00	0	0	1,48E+00	0	0	0	0	0	0	8,43E-01	0	5,14E+00	0
Input of secondary material (SM) [kg]	1,82E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	3,11E-21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	3,66E-20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	1,02E-01	5,48E-04	0	0	7,61E-03	0	0	0	0	0	0	5,48E-05	0	1,30E-03	0

WASTE CATEGORIES STADIP (SILENCE) PROTECT 55.2 DIAMANT

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	
Hazardous waste disposed (HWD) [kg]	8,07E-07	3,93E-07	0	0	7,69E-11	0	0	0	0	0	0	3,93E-08	0	7,83E-08	0
Non-hazardous waste disposed (NHWD) [kg]	7,59E-01	1,29E-03	0	0	6,47E-03	0	0	0	0	0	0	1,29E-04	0	2,58E+01	0
Radioactive waste disposed (RWD) [kg]	1,10E-02	1,04E-05	0	0	2,84E-06	0	0	0	0	0	0	1,04E-06	0	5,84E-05	0

OUTPUT FLOWS STADIP (SILENCE) PROTECT 55.2 DIAMANT

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	5,85E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ENVIRONMENTAL IMPACTS STADIP (SILENCE) PROTECT 66.2

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.]	3,95E+01	7,52E-01	0	0	9,50E-02	0	0	0	0	0	0	7,52E-02	0	4,32E-01	0
Climate Change (fossil) [kg CO2 eq.]	3,88E+01	7,47E-01	0	0	8,08E-02	0	0	0	0	0	0	7,47E-02	0	4,67E-01	0
Climate Change (biogenic) [kg CO2 eq.]	6,22E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	1,81E-02	6,12E-03	0	0	7,28E-02	0	0	0	0	0	0	6,12E-04	0	1,35E-03	0
Ozone depletion [kg CFC-11 eq.]	8,46E-09	9,08E-17	0	0	4,39E-09	0	0	0	0	0	0	9,08E-18	0	1,73E-15	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	1,84E-01	3,21E-03	0	0	4,99E-04	0	0	0	0	0	0	3,21E-04	0	3,35E-03	0
Eutrophication freshwater [kg P eq.]	6,44E-05	2,30E-06	0	0	3,23E-05	0	0	0	0	0	0	2,30E-07	0	8,03E-07	0
Eutrophication marine [kg N eq.]	4,44E-02	1,50E-03	0	0	5,33E-04	0	0	0	0	0	0	1,50E-04	0	8,63E-04	0
Eutrophication terrestrial [Mole of N eq.]	5,41E-01	1,67E-02	0	0	1,38E-03	0	0	0	0	0	0	1,67E-03	0	9,48E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	1,16E-01	4,05E-03	0	0	3,22E-04	0	0	0	0	0	0	4,05E-04	0	2,61E-03	0
Resource use, mineral and metals [kg Sb eq.]	4,13E-06	5,42E-08	0	0	2,55E-06	0	0	0	0	0	0	5,42E-09	0	4,20E-08	0
Resource use, energy carriers [MJ]	5,49E+02	1,01E+01	0	0	1,38E+00	0	0	0	0	0	0	1,01E+00	0	6,13E+00	0
Water scarcity [m³ world equiv.]	3,90E+00	6,75E-03	0	0	3,27E-01	0	0	0	0	0	0	6,75E-04	0	4,90E-02	0

RESOURCE USE STADIP (SILENCE) PROTECT 66.2

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	
Use of renewable primary energy (PERE) [MJ]	4,61E+01	5,65E-01	0	0	7,69E-01	0	0	0	0	0	0	5,65E-02	0	8,03E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	4,61E+01	5,65E-01	0	0	7,69E-01	0	0	0	0	0	0	5,65E-02	0	8,03E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	5,49E+02	1,01E+01	0	0	1,38E+00	0	0	0	0	0	0	1,01E+00	0	6,13E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	5,49E+02	1,01E+01	0	0	1,48E+00	0	0	0	0	0	0	1,01E+00	0	6,13E+00	0
Input of secondary material (SM) [kg]	3,28E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	4,46E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	5,24E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	1,14E-01	6,55E-04	0	0	7,61E-03	0	0	0	0	0	0	6,55E-05	0	1,55E-03	0

WASTE CATEGORIES STADIP (SILENCE) PROTECT 66.2

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	
Hazardous waste disposed (HWD) [kg]	8,14E-07	4,69E-07	0	0	7,69E-11	0	0	0	0	0	0	4,69E-08	0	9,35E-08	0
Non-hazardous waste disposed (NHWD) [kg]	9,62E-01	1,54E-03	0	0	6,47E-03	0	0	0	0	0	0	1,54E-04	0	3,08E+01	0
Radioactive waste disposed (RWD) [kg]	9,76E-03	1,25E-05	0	0	2,84E-06	0	0	0	0	0	0	1,25E-06	0	6,97E-05	0

OUTPUT FLOWS STADIP (SILENCE) PROTECT 66.2

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STADIP (SILENCE) PROTECT 66.2 DIAMANT

ENVIRONMENTAL IMPACTS STADIP (SILENCE) PROTECT 66.2 DIAMANT

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.]	4,12E+01	7,52E-01	0	0	9,50E-02	0	0	0	0	0	0	7,52E-02	0	4,32E-01	0
Climate Change (fossil) [kg CO2 eq.]	4,03E+01	7,47E-01	0	0	8,08E-02	0	0	0	0	0	0	7,47E-02	0	4,67E-01	0
Climate Change (biogenic) [kg CO2 eq.]	9,57E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	1,86E-02	6,12E-03	0	0	7,28E-02	0	0	0	0	0	0	6,12E-04	0	1,35E-03	0
Ozone depletion [kg CFC-11 eq.]	1,30E-08	9,08E-17	0	0	4,39E-09	0	0	0	0	0	0	9,08E-18	0	1,73E-15	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	1,70E-01	3,21E-03	0	0	4,99E-04	0	0	0	0	0	0	3,21E-04	0	3,35E-03	0
Eutrophication freshwater [kg P eq.]	5,78E-05	2,30E-06	0	0	3,23E-05	0	0	0	0	0	0	2,30E-07	0	8,03E-07	0
Eutrophication marine [kg N eq.]	3,69E-02	1,50E-03	0	0	5,33E-04	0	0	0	0	0	0	1,50E-04	0	8,63E-04	0
Eutrophication terrestrial [Mole of N eq.]	4,52E-01	1,67E-02	0	0	1,38E-03	0	0	0	0	0	0	1,67E-03	0	9,48E-03	0
Photochemical ozone formation - human health [kg NMVOC eq.]	9,83E-02	4,05E-03	0	0	3,22E-04	0	0	0	0	0	0	4,05E-04	0	2,61E-03	0
Resource use, mineral and metals [kg Sb eq.]	3,41E-06	5,42E-08	0	0	2,55E-06	0	0	0	0	0	0	5,42E-09	0	4,20E-08	0
Resource use, energy carriers [MJ]	5,58E+02	1,01E+01	0	0	1,38E+00	0	0	0	0	0	0	1,01E+00	0	6,13E+00	0
Water scarcity [m³ world equiv.]	3,95E+00	6,75E-03	0	0	3,27E-01	0	0	0	0	0	0	6,75E-04	0	4,90E-02	0

RESOURCE USE STADIP (SILENCE) PROTECT 66.2 DIAMANT

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	
Use of renewable primary energy (PERE) [MJ]	3,07E+01	5,65E-01	0	0	7,69E-01	0	0	0	0	0	0	5,65E-02	0	8,03E-01	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	3,07E+01	5,65E-01	0	0	7,69E-01	0	0	0	0	0	0	5,65E-02	0	8,03E-01	0
Use of non-renewable primary energy (PENRE) [MJ]	5,58E+02	1,01E+01	0	0	1,38E+00	0	0	0	0	0	0	1,01E+00	0	6,13E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	5,58E+02	1,01E+01	0	0	1,48E+00	0	0	0	0	0	0	1,01E+00	0	6,13E+00	0
Input of secondary material (SM) [kg]	2,18E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	3,71E-21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	4,36E-20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	1,15E-01	6,55E-04	0	0	7,61E-03	0	0	0	0	0	0	6,55E-05	0	1,55E-03	0

WASTE CATEGORIES STADIP (SILENCE) PROTECT 66.2 DIAMANT

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	
Hazardous waste disposed (HWD) [kg]	9,55E-07	4,69E-07	0	0	7,69E-11	0	0	0	0	0	0	4,69E-08	0	9,35E-08	0
Non-hazardous waste disposed (NHWD) [kg]	8,98E-01	1,54E-03	0	0	6,47E-03	0	0	0	0	0	0	1,54E-04	0	3,08E+01	0
Radioactive waste disposed (RWD) [kg]	1,24E-02	1,25E-05	0	0	2,84E-06	0	0	0	0	0	0	1,25E-06	0	6,97E-05	0

OUTPUT FLOWS STADIP (SILENCE) PROTECT 66.2 DIAMANT

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	6,14E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ENVIRONMENTAL IMPACTS STADIP (SILENCE) PROTECT 88.2

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.]	5,03E+01	9,96E-01	0	0	9,50E-02	0	0	0	0	0	0	9,96E-02	0	5,72E-01	0
Climate Change (fossil) [kg CO2 eq.]	4,95E+01	9,89E-01	0	0	8,08E-02	0	0	0	0	0	0	9,89E-02	0	6,19E-01	0
Climate Change (biogenic) [kg CO2 eq.]	8,14E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	2,24E-02	8,10E-03	0	0	7,28E-02	0	0	0	0	0	0	8,10E-04	0	1,78E-03	0
Ozone depletion [kg CFC-11 eq.]	1,13E-08	1,20E-16	0	0	4,39E-09	0	0	0	0	0	0	1,20E-17	0	2,29E-15	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	2,42E-01	4,25E-03	0	0	4,99E-04	0	0	0	0	0	0	4,25E-04	0	4,44E-03	0
Eutrophication freshwater [kg P eq.]	7,26E-05	3,04E-06	0	0	3,23E-05	0	0	0	0	0	0	3,04E-07	0	1,06E-06	0
Eutrophication marine [kg N eq.]	5,82E-02	1,99E-03	0	0	5,33E-04	0	0	0	0	0	0	1,99E-04	0	1,14E-03	0
Eutrophication terrestrial [Mole of N eq.]	7,13E-01	2,21E-02	0	0	1,38E-03	0	0	0	0	0	0	2,21E-03	0	1,26E-02	0
Photochemical ozone formation - human health [kg NMVOC eq.]	1,52E-01	5,36E-03	0	0	3,22E-04	0	0	0	0	0	0	5,36E-04	0	3,46E-03	0
Resource use, mineral and metals [kg Sb eq.]	5,01E-06	7,17E-08	0	0	2,55E-06	0	0	0	0	0	0	7,17E-09	0	5,56E-08	0
Resource use, energy carriers [MJ]	6,93E+02	1,33E+01	0	0	1,38E+00	0	0	0	0	0	0	1,33E+00	0	8,12E+00	0
Water scarcity [m³ world equiv.]	4,80E+00	8,94E-03	0	0	3,27E-01	0	0	0	0	0	0	8,94E-04	0	6,49E-02	0

RESOURCE USE STADIP (SILENCE) PROTECT 88.2

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	
Use of renewable primary energy (PERE) [MJ]	5,54E+01	7,49E-01	0	0	7,69E-01	0	0	0	0	0	0	7,49E-02	0	1,06E+00	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	5,54E+01	7,49E-01	0	0	7,69E-01	0	0	0	0	0	0	7,49E-02	0	1,06E+00	0
Use of non-renewable primary energy (PENRE) [MJ]	6,93E+02	1,33E+01	0	0	1,38E+00	0	0	0	0	0	0	1,33E+00	0	8,13E+00	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	6,93E+02	1,33E+01	0	0	1,48E+00	0	0	0	0	0	0	1,33E+00	0	8,13E+00	0
Input of secondary material (SM) [kg]	4,38E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	5,95E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	6,99E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	1,39E-01	8,67E-04	0	0	7,61E-03	0	0	0	0	0	0	8,67E-05	0	2,05E-03	0

WASTE CATEGORIES STADIP (SILENCE) PROTECT 88.2

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	
Hazardous waste disposed (HWD) [kg]	1,07E-06	6,21E-07	0	0	7,69E-11	0	0	0	0	0	0	6,21E-08	0	1,24E-07	0
Non-hazardous waste disposed (NHWD) [kg]	1,26E+00	2,04E-03	0	0	6,47E-03	0	0	0	0	0	0	2,04E-04	0	4,09E+01	0
Radioactive waste disposed (RWD) [kg]	1,19E-02	1,65E-05	0	0	2,84E-06	0	0	0	0	0	0	1,65E-06	0	9,23E-05	0

OUTPUT FLOWS STADIP (SILENCE) PROTECT 88.2

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	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ENVIRONMENTAL IMPACTS STADIP (SILENCE) PROTECT 1010.2

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.]	6,12E+01	1,24E+00	0	0	9,50E-02	0	0	0	0	0	0	1,24E-01	0	7,12E-01	0
Climate Change (fossil) [kg CO2 eq.]	6,02E+01	1,23E+00	0	0	8,08E-02	0	0	0	0	0	0	1,23E-01	0	7,71E-01	0
Climate Change (biogenic) [kg CO2 eq.]	1,01E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Climate Change (land use change) [kg CO2 eq.]	2,67E-02	1,01E-02	0	0	7,28E-02	0	0	0	0	0	0	1,01E-03	0	2,22E-03	0
Ozone depletion [kg CFC-11 eq.]	1,41E-08	1,50E-16	0	0	4,39E-09	0	0	0	0	0	0	1,50E-17	0	2,86E-15	0
Acidification terrestrial and freshwater [Mole of H+ eq.]	3,01E-01	5,29E-03	0	0	4,99E-04	0	0	0	0	0	0	5,29E-04	0	5,53E-03	0
Eutrophication freshwater [kg P eq.]	8,09E-05	3,79E-06	0	0	3,23E-05	0	0	0	0	0	0	3,79E-07	0	1,32E-06	0
Eutrophication marine [kg N eq.]	7,21E-02	2,48E-03	0	0	5,33E-04	0	0	0	0	0	0	2,48E-04	0	1,42E-03	0
Eutrophication terrestrial [Mole of N eq.]	8,84E-01	2,76E-02	0	0	1,38E-03	0	0	0	0	0	0	2,76E-03	0	1,56E-02	0
Photochemical ozone formation - human health [kg NMVOC eq.]	1,89E-01	6,67E-03	0	0	3,22E-04	0	0	0	0	0	0	6,67E-04	0	4,31E-03	0
Resource use, mineral and metals [kg Sb eq.]	5,88E-06	8,93E-08	0	0	2,55E-06	0	0	0	0	0	0	8,93E-09	0	6,92E-08	0
Resource use, energy carriers [MJ]	8,36E+02	1,66E+01	0	0	1,38E+00	0	0	0	0	0	0	1,66E+00	0	1,01E+01	0
Water scarcity [m³ world equiv.]	5,70E+00	1,11E-02	0	0	3,27E-01	0	0	0	0	0	0	1,11E-03	0	8,08E-02	0

RESOURCE USE STADIP (SILENCE) PROTECT 1010.2

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	
Use of renewable primary energy (PERE) [MJ]	6,47E+01	9,32E-01	0	0	7,69E-01	0	0	0	0	0	0	9,32E-02	0	1,32E+00	0
Primary energy resources used as raw materials (PERM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy resources (PERT) [MJ]	6,47E+01	9,32E-01	0	0	7,69E-01	0	0	0	0	0	0	9,32E-02	0	1,32E+00	0
Use of non-renewable primary energy (PENRE) [MJ]	8,36E+02	1,66E+01	0	0	1,38E+00	0	0	0	0	0	0	1,66E+00	0	1,01E+01	0
Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy resources (PENRT) [MJ]	8,36E+02	1,66E+01	0	0	1,48E+00	0	0	0	0	0	0	1,66E+00	0	1,01E+01	0
Input of secondary material (SM) [kg]	5,47E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels (RSF) [MJ]	7,44E-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels (NRSF) [MJ]	8,74E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water (FW) [m3]	1,65E-01	1,08E-03	0	0	7,61E-03	0	0	0	0	0	0	1,08E-04	0	2,55E-03	0

WASTE CATEGORIES STADIP (SILENCE) PROTECT 1010.2

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	
Hazardous waste disposed (HWD) [kg]	1,32E-06	7,73E-07	0	0	7,69E-11	0	0	0	0	0	0	7,73E-08	0	1,54E-07	0
Non-hazardous waste disposed (NHWD) [kg]	1,56E+00	2,54E-03	0	0	6,47E-03	0	0	0	0	0	0	2,54E-04	0	5,09E+01	0
Radioactive waste disposed (RWD) [kg]	1,40E-02	2,06E-05	0	0	2,84E-06	0	0	0	0	0	0	2,06E-06	0	1,15E-04	0

OUTPUT FLOWS STADIP (SILENCE) PROTECT 1010.2

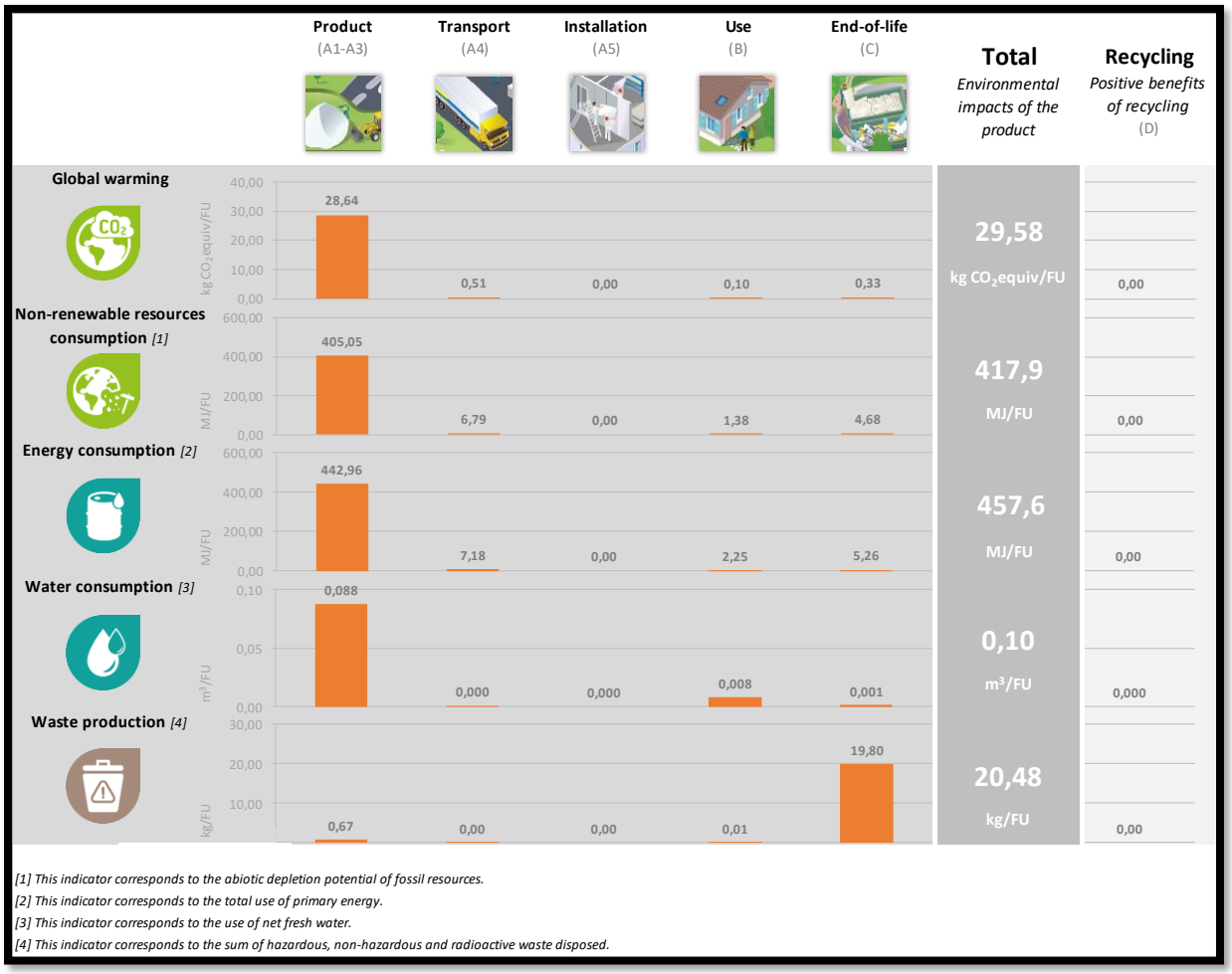
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for Recycling (MFR) [kg]	4,38E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LCA results interpretation

In the production of STADI, in addition to the impact due to glass production that is around 2/3 of the impacts, the production of PVB accounts for nearly 20% of the global warming potential.

PVB has to be stored at a certain range of temperature, so the use of refrigerant is required which accounts for nearly a half of ozone layer depletion indicator.

For the production of glass, the main impacts are related to the energy consumed in the furnace and on the impacts generated in the production of one of the main raw materials, the soda ash.



[1] This indicator corresponds to the abiotic depletion potential of fossil resources.
[2] This indicator corresponds to the total use of primary energy.
[3] This indicator corresponds to the use of net fresh water.
[4] This indicator corresponds to the sum of hazardous, non-hazardous and radioactive waste disposed.

Health characteristics

Concerning the indoor air quality, clear flat glass is an inert material that doesn't release any inorganic & organic compounds, in particular no VOC (volatile organic compounds).

Additional Environmental Information

Saint-Gobain's environmental policy

Saint-Gobain's environmental vision is to ensure the sustainable development of its Activities, while preserving the environment from the impacts of its processes and services throughout their life cycle. The Group thus seeks to ensure the preservation of resources, meet the expectations of its relevant stakeholders, and offer its customers the highest added value with the lowest environmental impact.

The Group has set two long-term objectives: zero environmental accidents and a minimum impact of its activities on the environment. Short and medium-term goals are set to address these two ambitions. They concern five environmental areas identified by the Group: raw materials and waste; energy, atmospheric emissions and climate; water; biodiversity; and environmental accidents and nuisance.

Our products' contribution to Sustainable Buildings

Saint-Gobain encourages sustainable construction and develops innovative solutions for new and renovated buildings that are energy efficient, comfortable, healthy and esthetically superior, while at the same time protecting natural resources.

The following information might be of help for green building certification programs:

RECYCLED CONTENT
(Required for LEED v4 Building product disclosure and optimization - sourcing of raw materials)

Recycled content: proportion. by mass. of recycled material in a product or packaging. Only pre-consumer and post-consumer materials shall be considered as recycled content.

Post-consumer material: material generated by households or commercial, industrial and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose. In practice, in the case of flat glass, all material coming from glass recycling collection schemes falls under this category, i.e. glass waste from end-of-life vehicles, construction and demolition waste, etc.

Pre-consumer material: material diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

In the case of flat glass, this waste originates from the processing or re-processing of glass that takes place before the final product reaches the consumer market. Pre-consumer waste flat glass is made of cut-offs, losses during laminating, bending and other processing, including the manufacture of insulating glass units or automotive windscreens.

Cullet generated in the furnace plant and which is reintroduced into the furnace cannot be considered as pre-consumer recycled content, since there was never an intent to discard it and therefore it would never have entered the solid waste stream.

Pre-consumer cullet	~7%
Post-consumer cullet	< 1%

In the future, Saint-Gobain Glass intends to continue the increase of recycled material in its products, especially when recycling building post-consumer cullet glass dismantling and recycling networks will be available in every country.

RESPONSIBLE SOURCING

(Required for BREEAM International new construction 2013 – MAT 03 Responsible sourcing)

All Saint-Gobain Glass Industry sites with a glassmaking furnace,are ISO 14001 certified.

The Saint-Gobain Glass Industry site from the UK (Eggborough) has a BES 6001 certification. with a Very Good score.

All internal Saint-Gobain Glass quarries are certified ISO 14001 like. for example. SAINT-GOBAIN SAMIN (sand) in France. Many Saint-Gobain Glass raw material suppliers are certified ISO 14001. Our policy consists in encouraging the sourcing of raw materials extracted or made in sites certified ISO 14001 (or the equivalent).

For any other question / document / certification, please contact our local sales teams.

Bibliography

- EN 15804:2012+A1:2013: Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
- EN 15804:2019+A2 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
- ISO 21930: 2017 Sustainability in building construction – Environmental declaration of building products
- ISO 14040:2006: Environmental Management-Life Cycle Assessment-Principles and framework.
- ISO 14044:2006: Environmental Management-Life Cycle Assessment-Requirements and guidelines.
- ISO 14025:2006: Environmental labels and declarations-Type III Environmental Declarations-Principles and procedures.
- PCR 2019:14 Construction products (EN 15804:2012: A2) version 1.1 and c-PCR-009 Flat glass products (EN 17074)
- General Program Instruction of the International EPD® System, version 2.5
- Saint-Gobain Environmental Product Declaration Methodological Guide for Construction Products, Version 3.0.1 (2013)
- European Chemical Agency, Candidate List of substances of very high concern for Authorization.

  http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp
- LCA report, Information for the Environmental Product Declaration of glass products.

Differences versus previous versions

Global update from EN 15804+A1 to EN 15804+A2 including all new requirement, environmental impact indicator, with a more recent data collection and based on a full cycle compare to cage to gate before.