ENVIRONMENTAL PRODUCT DECLARATION

FLAT SHEET IN FIBER CEMENT

Società Italiana Lastre S.p.A

EPD® ENVIRONMENTAL PRODUCT DECLARATION

Based on	Revision of	Certification N°	Valid until
PCR 2012:01 Construction products and construction services v.2.3, 2018-11-15 e EN 15804:2013, UN CPC 375	20/06/2020	S-P-00669	20/06/2025

1. SIL GROUP

Società Italiana Lastre S.p.A. (SIL) was founded in 1961 and established itself in the market thanks to the production of corrugated flat sheet production in fiber cement and thanks to the wide variety of products..

From **1973** SIL began to produce **flat sheets**, products subject of the present EPD.

UNI EN ISO
14001:2015

UNI EN ISO
9001:2015

SIL GROUP IS CERTIFIED BOTH **ISO 14001** AND **9001**

SIL plant is located in **Verolanuova** (BS).

1961
Foundation

SIL GROUP IS ONE OF THE FIRST COMPANY IN EUROPE FOR PRODUCT QUALITY AND WORKERS' SKILLS.

2019

2. THE PRODUCT

FLAT SHEET IN FIBER CEMENT

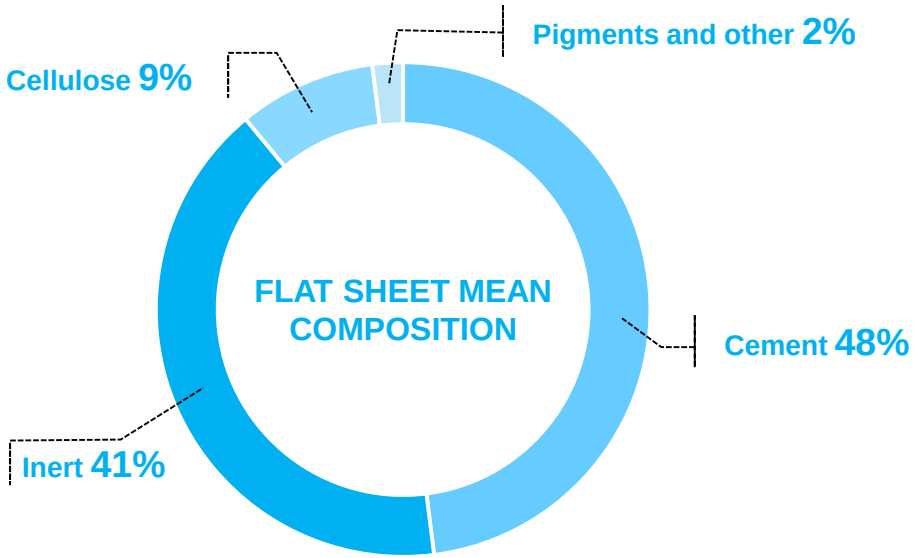
Flat sheets represent the new generation of sheet, composed by cement and inert materials, reinforced with cellulose and autoclaved.

They are fire-resistant, non putrescible and difficult to be attacked by rodents, scums and fungi.

Sheets are produced in different thicknesses ranging from 4 mm to 32 mm, they could be colored in mass.

About 13% of the flat sheets are painted.

The sheets can be used for external applications (facades).



Raw materials used for flat sheets do not include substances listed in the document "Candidate List of SVHC" released by European Chemicals Agency (http://echa.europa.eu/candidate-list-table).

3. METHODOLOGY

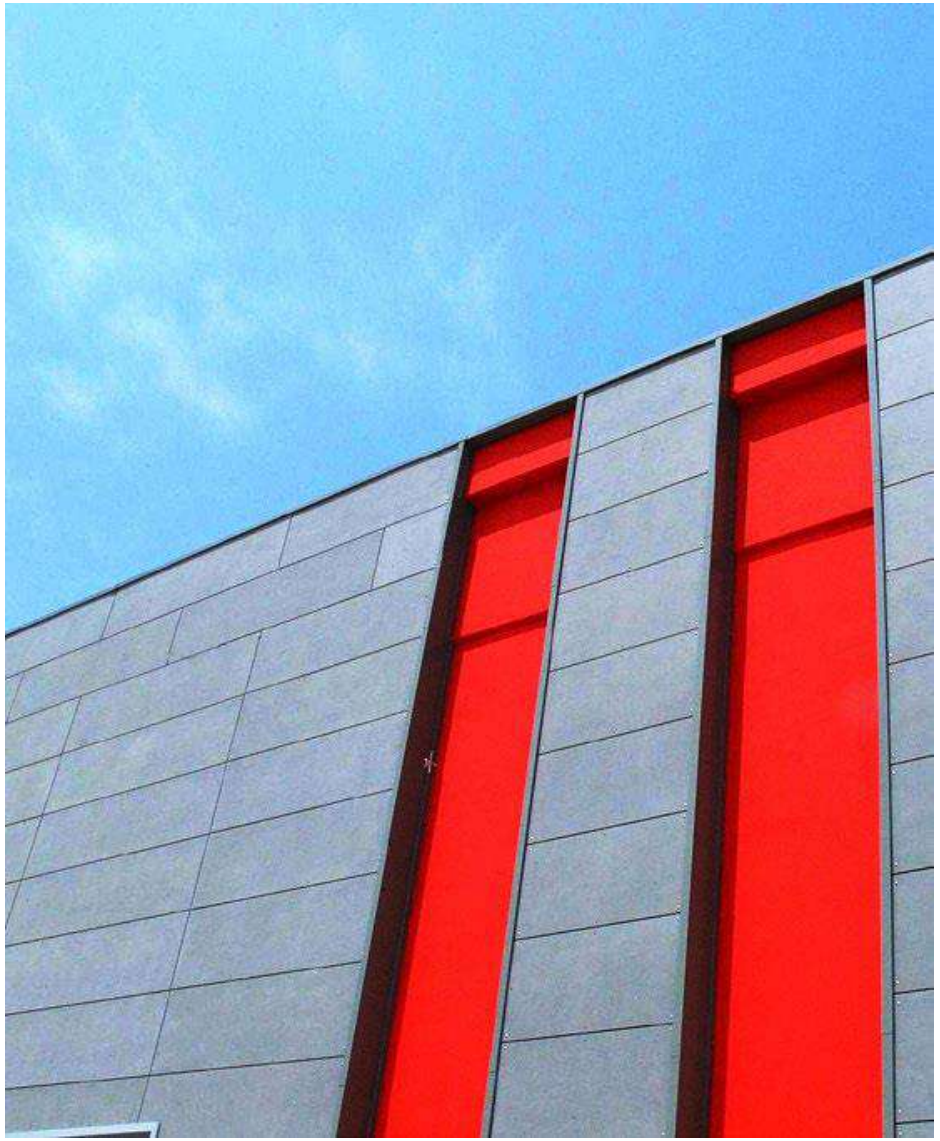
Environmental impacts have been evaluated considering all the phases of the product life cycle according to the rules listed in the PCR 2012:01.

Data collected are referred to the whole 2019 production, occurred in Verolanuova plant.
Ecoinvent database (v3.5) and Simapro v.9.0.0.31 are used for the elaboration.

DECLARED UNIT

Data and results are referred to **1 m²** of surface in different thicknesses.
In the present EPD, sheets with thickness 4, 5, 6, 8, 10 and 12 mm are considered because they represent over 99% of 2019 production.

Since environmental impacts differ from more than 10% both among different thicknesses and among painted and not painted sheets, results are reported separately both for not painted flat sheets with 4, 5, 8 and 10 mm of thickness and for painted sheet with 8, 10 and 12 mm thickness.



4. SYSTEM BOUNDARIES

PRODUCT			CONSTRUCTION PROCESS		USE							END OF LIFE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw materials supply	Transport	Manufaturing	Transport	Construction-installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction, demolition	Transport	Waste processing	Disposal	Reuse, Recovery, Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
X = Included in the system, MND = Module Not Declared																

The system analysed includes all life cycle phases from raw material production to final customer distribution, as required by the option "cradle to gate with options" of the reference PCR.

The option includes the evaluation of upstream process (module A1), core process (modules A2 and A3) and downstream process (module A4).

5. UPSTREAM PROCESSES

Cement comes from North Italy production plants, near to Verolanuova.

Inerts (such as sand) are used to increase sheet strength.

Chemical additives (oils, varnish) are used in small amount to help production process.

Cellulose is composed by virgin fibres and it is produced in South America.

Electricity and natural gas production used in the production process.

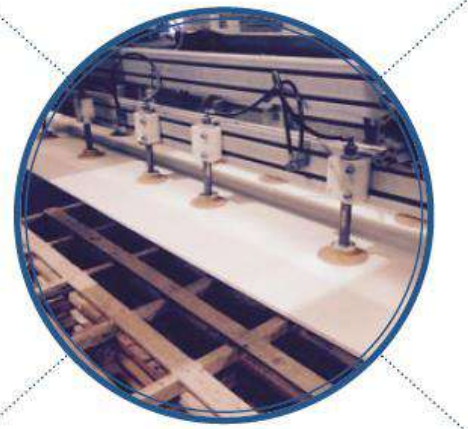
A1 - Raw materials and Energy production

6. CORE PROCESSES

A2 - Raw materials transport

Raw materials transport up to Verolanuova plant.

Packaging materials production
(HDPE film; pallet and metallic strappings).



Use of thermal energy and water during the production process, that consists of several steps: mixing of raw materials, sheets forming, cutting and pressing, seasoning, autoclaving, finishing and painting.

Waste management including transport up to recovery/disposal.

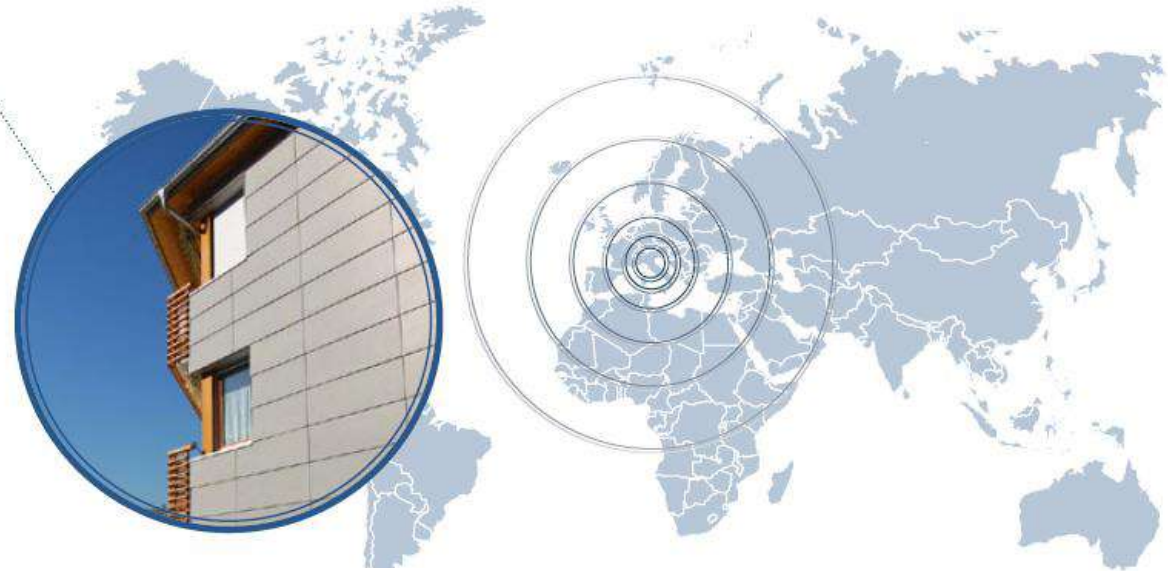
A3 - Production process

7. DOWNSTREAM PROCESSES

Impacts related to transport have been evaluated considering all shipments during year 2019.

Reference distance has been calculated by averaging the distances of each shipment with the weight represented by the quantity transported.

Environmental impacts have been calculated considering the information coming from Ecoinvent database version 3.5 (Lorry 16-32t, EURO5 and Transoceanic freight ship).



A4 - Final product transport

8. ENVIRONMENTAL PERFORMANCE (natural or mass color sheet - thickness 4 mm)

Results in terms of resource consumption or generated impacts are divided in three phases (upstream, core and downstream) and sub-phases (A1, A2, A3, A4) as requested by the reference PCR.

RENEWABLE RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of RENEWABLE primary energy excluding renewable primary energy resources used as raw materials [MJ, net calorific value]	2,98E+01	6,31E-02	3,21E+00	2,53E-01	**3,34E+01**
Use of RENEWABLE primary energy resources used as raw materials [MJ, net calorific value]	1,18E+01	0,00E+00	2,39E+00	0,00E+00	**1,42E+01**
Total use of RENEWABLE primary energy resources (primary energy and primary energy resources used as raw materials) [MJ, net calorific value]	4,16E+01	6,31E-02	5,60E+00	2,53E-01	**4,75E+01**

NATURAL OR MASS COLOR SHEET - THICKNESS 4 mm

NON RENEWABLE RESOURCES	UPSTREAM A1 Raw material supply	CORE A2 Transport	CORE A3 Production Process	DOWNSTREAM A4 Product distribution	TOTAL
Use of NON RENEWABLE primary energy excluding renewable primary energy resources used as raw materials [MJ, net calorific value]	3,97E+01	5,08E+00	1,51E+00	2,29E+01	**6,91E+01**
Use of NON RENEWABLE primary energy resources used as raw materials [MJ, net calorific value]	0,00E+00	0,00E+00	2,02E-01	0,00E+00	**2,02E-01**
Total use of NON RENEWABLE primary energy resources (primary energy and primary energy resources used as raw materials) [MJ, net calorific value]	3,97E+01	5,08E+00	1,71E+00	2,29E+01	**6,93E+01**

NATURAL OR MASS COLOR SHEET - THICKNESS 4 mm

USE OF SECONDARY RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of secondary material [kg]	0,00	0,00	0,00	0,00	**0,00**
Use of renewable secondary fuels [MJ, net calorific value]	0,00	0,00	0,00	0,00	**0,00**
Use of NON renewable secondary fuels [MJ, net calorific value]	0,00	0,00	0,00	0,00	**0,00**

NET USE OF FRESH WATER	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Net use of fresh water [m^3]	5,36E-02	9,41E-04	8,30E-03	4,18E-03	**6,70E-02**

NATURAL OR MASS COLOR SHEET - THICKNESS 4 mm

WASTE PRODUCTION AND TREATMENT	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Hazardous waste disposed [kg]	6,84E-02	3,31E-03	4,91E-03	1,44E-02	**9,10E-02**
Non hazardous waste disposed [kg]	1,59E-01	2,01E-01	8,65E-03	1,02E+00	**1,39E+00**
Radioactive waste disposed [kg]	1,55E-04	3,42E-05	5,16E-06	1,55E-04	**3,49E-04**
Material for recycling [kg]	0,00E+00	0,00E+00	9,12E-05	0,00E+00	**9,12E-05**

ENVIRONMEMNTAL IMPACT PARAMETERS	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Global Warming Potential, GWP [kg CO_2 eq]	4,94E+00	3,33E-01	1,69E+00	1,49E+00	**8,46E+00**
Ozone Depletion Potential, ODP [kg CFC-11 eq]	3,29E-07	6,02E-08	9,18E-09	2,74E-07	**6,73E-07**
Photochemical Ozone Creation, POCP [kg C_2H_4 eq]	6,70E-04	8,18E-05	6,33E-05	2,75E-04	**1,09E-03**
Acidification Potential, AP [kg SO_2 eq]	1,59E-02	2,13E-03	8,33E-04	6,42E-03	**2,53E-02**
Eutrophication Potential, EP [kg PO_4^{3-} eq]	2,22E-03	2,47E-04	1,42E-04	8,76E-04	**3,48E-03**
Depletion of abiotic resources-elements, ADP-elements [kg Sb eq]	7,00E-06	8,53E-07	1,73E-07	4,31E-06	**1,23E-05**
Depletion of abiotic resources-fossil, ADP-fossil fuels [MJ]	3,56E+01	4,98E+00	1,62E+00	2,25E+01	**6,47E+01**

8. ENVIRONMENTAL PERFORMANCE (natural or mass color sheet - thickness 5 mm)

Results in terms of resource consumption or generated impacts are divided in three phases (upstream, core and downstream) and sub-phases (A1, A2, A3, A4) as requested by the reference PCR.

RENEWABLE RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of RENEWABLE primary energy excluding renewable primary energy resources used as raw materials [MJ, net calorific value]	3,73E+01	7,89E-02	4,01E+00	3,16E-01	**4,17E+01**
Use of RENEWABLE primary energy resources used as raw materials [MJ, net calorific value]	1,47E+01	0,00E+00	2,99E+00	0,00E+00	**1,77E+01**
Total use of RENEWABLE primary energy resources (primary energy and primary energy resources used as raw materials) [MJ, net calorific value]	5,20E+01	7,89E-02	7,00E+00	3,16E-01	**5,94E+01**

NATURAL OR MASS COLOR SHEET - THICKNESS 5 mm

NON RENEWABLE RESOURCES	UPSTREAM A1 Raw material supply	CORE A2 Transport	CORE A3 Production Process	DOWNSTREAM A4 Product distribution	TOTAL
Use of NON RENEWABLE primary energy excluding renewable primary energy resources used as raw materials [MJ, net calorific value]	4,96E+01	6,35E+00	1,88E+00	2,86E+01	**8,64E+01**
Use of NON RENEWABLE primary energy resources used as raw materials [MJ, net calorific value]	0,00E+00	0,00E+00	2,52E-01	0,00E+00	**2,52E-01**
Total use of NON RENEWABLE primary energy resources (primary energy and primary energy resources used as raw materials) [MJ, net calorific value]	4,96E+01	6,35E+00	2,13E+00	2,86E+01	**8,67E+01**

NATURAL OR MASS COLOR SHEET - THICKNESS 5 mm

USE OF SECONDARY RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of secondary material [kg]	0,00	0,00	0,00	0,00	**0,00**
Use of renewable secondary fuels [MJ, net calorific value]	0,00	0,00	0,00	0,00	**0,00**
Use of NON renewable secondary fuels [MJ, net calorific value]	0,00	0,00	0,00	0,00	**0,00**

NET USE OF FRESH WATER	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Net use of fresh water [m^3]	6,70E-02	1,18E-03	1,04E-02	5,23E-03	**8,37E-02**

NATURAL OR MASS COLOR SHEET - THICKNESS 5 mm

WASTE PRODUCTION AND TREATMENT	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Hazardous waste disposed [kg]	8,56E-02	4,14E-03	6,14E-03	1,80E-02	**1,14E-01**
Non hazardous waste disposed [kg]	1,98E-01	2,51E-01	1,08E-02	1,28E+00	**1,74E+00**
Radioactive waste disposed [kg]	1,94E-04	4,27E-05	6,45E-06	1,93E-04	**4,36E-04**
Material for recycling [kg]	0,00E+00	0,00E+00	1,14E-04	0,00E+00	**1,14E-04**

ENVIRONMEMNTAL IMPACT PARAMETERS	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Global Warming Potential, GWP [kg CO_2 eq]	6,18E+00	4,17E-01	2,12E+00	1,87E+00	**1,06E+01**
Ozone Depletion Potential, ODP [kg CFC-11 eq]	4,12E-07	7,52E-08	1,15E-08	3,42E-07	**8,41E-07**
Photochemical Ozone Creation, POCP [kg C_2H_4 eq]	8,38E-04	1,02E-04	7,91E-05	3,44E-04	**1,36E-03**
Acidification Potential, AP [kg SO_2 eq]	1,98E-02	2,66E-03	1,04E-03	8,02E-03	**3,16E-02**
Eutrophication Potential, EP [kg PO_4^{3-} eq]	2,77E-03	3,09E-04	1,78E-04	1,10E-03	**4,35E-03**
Depletion of abiotic resources-elements, ADP-elements [kg Sb eq]	8,75E-06	1,07E-06	2,16E-07	5,38E-06	**1,54E-05**
Depletion of abiotic resources-fossil, ADP-fossil fuels [MJ]	4,45E+01	6,22E+00	2,03E+00	2,81E+01	**8,08E+01**

8. ENVIRONMENTAL PERFORMANCE (natural or mass color sheet - thickness 8 mm)

Results in terms of resource consumption or generated impacts are divided in three phases (upstream, core and downstream) and sub-phases (A1, A2, A3, A4) as requested by the reference PCR.

RENEWABLE RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of RENEWABLE primary energy excluding renewable primary energy resources used as raw materials [MJ, net calorific value]	5,97E+01	1,26E-01	6,42E+00	5,05E-01	**6,67E+01**
Use of RENEWABLE primary energy resources used as raw materials [MJ, net calorific value]	2,36E+01	0,00E+00	4,78E+00	0,00E+00	**2,84E+01**
Total use of RENEWABLE primary energy resources (primary energy and primary energy resources used as raw materials) [MJ, net calorific value]	8,33E+01	1,26E-01	1,12E+01	5,05E-01	**9,51E+01**

NATURAL OR MASS COLOR SHEET - THICKNESS 8 mm

NON RENEWABLE RESOURCES	UPSTREAM A1 Raw material supply	CORE A2 Transport	CORE A3 Production Process	DOWNSTREAM A4 Product distribution	TOTAL
Use of NON RENEWABLE primary energy excluding renewable primary energy resources used as raw materials [MJ, net calorific value]	7,93E+01	1,02E+01	3,01E+00	4,58E+01	**1,38E+02**
Use of NON RENEWABLE primary energy resources used as raw materials [MJ, net calorific value]	0,00E+00	0,00E+00	4,04E-01	0,00E+00	**4,04E-01**
Total use of NON RENEWABLE primary energy resources (primary energy and primary energy resources used as raw materials) [MJ, net calorific value]	7,93E+01	1,02E+01	3,41E+00	4,58E+01	**1,39E+02**

NATURAL OR MASS COLOR SHEET - THICKNESS 8 mm

USE OF SECONDARY RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of secondary material [kg]	0,00	0,00	0,00	0,00	**0,00**
Use of renewable secondary fuels [MJ, net calorific value]	0,00	0,00	0,00	0,00	**0,00**
Use of NON renewable secondary fuels [MJ, net calorific value]	0,00	0,00	0,00	0,00	**0,00**

NET USE OF FRESH WATER	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Net use of fresh water [m^3]	1,07E-01	1,88E-03	1,66E-02	8,37E-03	**1,34E-01**

WASTE PRODUCTION AND TREATMENT	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Hazardous waste disposed [kg]	1,37E-01	6,63E-03	9,82E-03	2,87E-02	**1,82E-01**
Non hazardous waste disposed [kg]	3,17E-01	4,02E-01	1,73E-02	2,05E+00	**2,79E+00**
Radioactive waste disposed [kg]	3,10E-04	6,83E-05	1,03E-05	3,09E-04	**6,98E-04**
Material for recycling [kg]	0,00E+00	0,00E+00	1,82E-04	0,00E+00	**1,82E-04**

ENVIRONMEMNTAL IMPACT PARAMETERS	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Global Warming Potential, GWP [kg CO_2 eq]	9,88E+00	6,67E-01	3,39E+00	2,98E+00	**1,69E+01**
Ozone Depletion Potential, ODP [kg CFC-11 eq]	6,59E-07	1,20E-07	1,84E-08	5,48E-07	**1,35E-06**
Photochemical Ozone Creation, POCP [kg C_2H_4 eq]	1,34E-03	1,64E-04	1,27E-04	5,50E-04	**2,18E-03**
Acidification Potential, AP [kg SO_2 eq]	3,17E-02	4,26E-03	1,67E-03	1,28E-02	**5,05E-02**
Eutrophication Potential, EP [kg PO_4^{3-} eq]	4,43E-03	4,94E-04	2,85E-04	1,75E-03	**6,96E-03**
Depletion of abiotic resources-elements, ADP-elements [kg Sb eq]	1,40E-05	1,71E-06	3,45E-07	8,61E-06	**2,47E-05**
Depletion of abiotic resources-fossil, ADP-fossil fuels [MJ]	7,11E+01	9,95E+00	3,25E+00	4,50E+01	**1,29E+02**

8. ENVIRONMENTAL PERFORMANCE (natural or mass color sheet - thickness 10 mm)

Results in terms of resource consumption or generated impacts are divided in three phases (upstream, core and downstream) and sub-phases (A1, A2, A3, A4) as requested by the reference PCR.

RENEWABLE RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of RENEWABLE primary energy excluding renewable primary energy resources used as raw materials [MJ, net calorific value]	7,46E+01	1,58E-01	8,02E+00	6,32E-01	**8,34E+01**
Use of RENEWABLE primary energy resources used as raw materials [MJ, net calorific value]	2,95E+01	0,00E+00	5,97E+00	0,00E+00	**3,54E+01**
Total use of RENEWABLE primary energy resources (primary energy and primary energy resources used as raw materials) [MJ, net calorific value]	1,04E+02	1,58E-01	1,40E+01	6,32E-01	**1,19E+02**

NATURAL OR MASS COLOR SHEET - THICKNESS 10 mm

NON RENEWABLE RESOURCES	UPSTREAM A1 Raw material supply	CORE A2 Transport	CORE A3 Production Process	DOWNSTREAM A4 Product distribution	TOTAL
Use of NON RENEWABLE primary energy excluding renewable primary energy resources used as raw materials [MJ, net calorific value]	9,92E+01	1,27E+01	3,76E+00	5,72E+01	**1,73E+02**
Use of NON RENEWABLE primary energy resources used as raw materials [MJ, net calorific value]	0,00E+00	0,00E+00	5,05E-01	0,00E+00	**5,05E-01**
Total use of NON RENEWABLE primary energy resources (primary energy and primary energy resources used as raw materials) [MJ, net calorific value]	9,92E+01	1,27E+01	4,27E+00	5,72E+01	**1,73E+02**

NATURAL OR MASS COLOR SHEET - THICKNESS 10 mm

USE OF SECONDARY RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of secondary material [kg]	0,00	0,00	0,00	0,00	**0,00**
Use of renewable secondary fuels [MJ, net calorific value]	0,00	0,00	0,00	0,00	**0,00**
Use of NON renewable secondary fuels [MJ, net calorific value]	0,00	0,00	0,00	0,00	**0,00**

NET USE OF FRESH WATER	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Net use of fresh water [m^3]	1,34E-01	2,35E-03	2,08E-02	1,05E-02	**1,67E-01**

NATURAL OR MASS COLOR SHEET - THICKNESS 10 mm

WASTE PRODUCTION AND TREATMENT	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Hazardous waste disposed [kg]	1,71E-01	8,28E-03	1,23E-02	3,59E-02	**2,28E-01**
Non hazardous waste disposed [kg]	3,97E-01	5,03E-01	2,16E-02	2,56E+00	**3,48E+00**
Radioactive waste disposed [kg]	3,88E-04	8,54E-05	1,29E-05	3,87E-04	**8,73E-04**
Material for recycling [kg]	0,00E+00	0,00E+00	2,28E-04	0,00E+00	**2,28E-04**

ENVIRONMEMNTAL IMPACT PARAMETERS	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Global Warming Potential, GWP [kg CO_2 eq]	1,24E+01	8,33E-01	4,24E+00	3,73E+00	**2,12E+01**
Ozone Depletion Potential, ODP [kg CFC-11 eq]	8,23E-07	1,50E-07	2,29E-08	6,85E-07	**1,68E-06**
Photochemical Ozone Creation, POCP [kg C_2H_4 eq]	1,68E-03	2,04E-04	1,58E-04	6,88E-04	**2,73E-03**
Acidification Potential, AP [kg SO_2 eq]	3,97E-02	5,33E-03	2,08E-03	1,60E-02	**6,31E-02**
Eutrophication Potential, EP [kg PO_4^{3-} eq]	5,54E-03	6,17E-04	3,56E-04	2,19E-03	**8,70E-03**
Depletion of abiotic resources-elements, ADP-elements [kg Sb eq]	1,75E-05	2,13E-06	4,32E-07	1,08E-05	**3,08E-05**
Depletion of abiotic resources-fossil, ADP-fossil fuels [MJ]	8,89E+01	1,24E+01	4,06E+00	5,63E+01	**1,62E+02**

8. ENVIRONMENTAL PERFORMANCE (painted sheet - thickness 8 mm)

Results in terms of resource consumption or generated impacts are divided in three phases (upstream, core and downstream) and sub-phases (A1, A2, A3, A4) as requested by the reference PCR.

PAINTED SHEET - THICKNESS 8 mm

RENEWABLE RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of RENEWABLE primary energy excluding renewable primary energy resources used as raw materials [MJ, net calorific value]	6,07E+01	1,27E-01	6,42E+00	5,05E-01	**6,78E+01**
Use of RENEWABLE primary energy resources used as raw materials [MJ, net calorific value]	2,36E+01	0,00E+00	4,78E+00	0,00E+00	**2,84E+01**
Total use of RENEWABLE primary energy resources (primary energy and primary energy resources used as raw materials) [MJ, net calorific value]	8,43E+01	1,27E-01	1,12E+01	5,05E-01	**9,62E+01**

PAINTED SHEET - THICKNESS 8 mm

NON RENEWABLE RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of NON RENEWABLE primary energy excluding renewable primary energy resources used as raw materials [MJ, net calorific value]	1,11E+02	1,02E+01	3,01E+00	4,58E+01	**1,70E+02**
Use of NON RENEWABLE primary energy resources used as raw materials [MJ, net calorific value]	0,00E+00	0,00E+00	4,04E-01	0,00E+00	**4,04E-01**
Total use of NON RENEWABLE primary energy resources (primary energy and primary energy resources used as raw materials) [MJ, net calorific value]	1,11E+02	1,02E+01	3,41E+00	4,58E+01	**1,70E+02**

PAINTED SHEET - THICKNESS 8 mm

USE OF SECONDARY RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of secondary material [kg]	0,00	0,00	0,00	0,00	**0,00**
Use of renewable secondary fuels [MJ, net calorific value]	0,00	0,00	0,00	0,00	**0,00**
Use of NON renewable secondary fuels [MJ, net calorific value]	0,00	0,00	0,00	0,00	**0,00**

NET USE OF FRESH WATER	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Net use of fresh water [m^3]	1,25E-01	1,90E-03	1,66E-02	8,37E-03	**1,52E-01**

PAINTED SHEET - THICKNESS 8 mm

WASTE PRODUCTION AND TREATMENT	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Hazardous waste disposed [kg]	1,76E-01	6,68E-03	9,82E-03	2,87E-02	**2,22E-01**
Non hazardous waste disposed [kg]	4,18E-01	4,06E-01	1,73E-02	2,05E+00	**2,89E+00**
Radioactive waste disposed [kg]	3,53E-04	6,89E-05	1,03E-05	3,09E-04	**7,42E-04**
Material for recycling [kg]	0,00E+00	0,00E+00	1,82E-04	0,00E+00	**1,82E-04**

ENVIRONMEMNTAL IMPACT PARAMETERS	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Global Warming Potential, GWP [kg CO_2 eq]	1,10E+01	6,72E-01	4,24E+00	2,98E+00	**1,88E+01**
Ozone Depletion Potential, ODP [kg CFC-11 eq]	9,47E-07	1,21E-07	1,84E-08	5,48E-07	**1,63E-06**
Photochemical Ozone Creation, POCP [kg C_2H_4 eq]	1,79E-03	1,64E-04	1,43E-04	5,50E-04	**2,65E-03**
Acidification Potential, AP [kg SO_2 eq]	4,00E-02	4,28E-03	1,84E-03	1,28E-02	**5,90E-02**
Eutrophication Potential, EP [kg PO_4^{3-} eq]	5,03E-03	4,97E-04	3,18E-04	1,75E-03	**7,59E-03**
Depletion of abiotic resources-elements, ADP-elements [kg Sb eq]	1,88E-05	1,72E-06	3,45E-07	8,61E-06	**2,95E-05**
Depletion of abiotic resources-fossil, ADP-fossil fuels [MJ]	1,01E+02	1,00E+01	3,25E+00	4,50E+01	**1,59E+02**

8. ENVIRONMENTAL PERFORMANCE (painted sheet - thickness 10 mm)

Results in terms of resource consumption or generated impacts are divided in three phases (upstream, core and downstream) and sub-phases (A1, A2, A3, A4) as requested by the reference PCR.

PAINTED SHEET - THICKNESS 10 mm

RENEWABLE RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of RENEWABLE primary energy excluding renewable primary energy resources used as raw materials [MJ, net calorific value]	7,59E+01	1,59E-01	8,02E+00	6,32E-01	**8,47E+01**
Use of RENEWABLE primary energy resources used as raw materials [MJ, net calorific value]	2,95E+01	0,00E+00	5,97E+00	0,00E+00	**3,54E+01**
Total use of RENEWABLE primary energy resources (primary energy and primary energy resources used as raw materials) [MJ, net calorific value]	1,05E+02	1,59E-01	1,40E+01	6,32E-01	**1,20E+02**

PAINTED SHEET - THICKNESS 10 mm

NON RENEWABLE RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of NON RENEWABLE primary energy excluding renewable primary energy resources used as raw materials [MJ, net calorific value]	1,38E+02	1,28E+01	3,76E+00	5,72E+01	**2,12E+02**
Use of NON RENEWABLE primary energy resources used as raw materials [MJ, net calorific value]	0,00E+00	0,00E+00	5,05E-01	0,00E+00	**5,05E-01**
Total use of NON RENEWABLE primary energy resources (primary energy and primary energy resources used as raw materials) [MJ, net calorific value]	1,38E+02	1,28E+01	4,27E+00	5,72E+01	**2,12E+02**

PAINTED SHEET - THICKNESS 10 mm

USE OF SECONDARY RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of secondary material [kg]	0,00	0,00	0,00	0,00	**0,00**
Use of renewable secondary fuels [MJ, net calorific value]	0,00	0,00	0,00	0,00	**0,00**
Use of NON renewable secondary fuels [MJ, net calorific value]	0,00	0,00	0,00	0,00	**0,00**

NET USE OF FRESH WATER	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Net use of fresh water [m^3]	1,56E+02	2,37E+00	2,08E+01	1,05E+01	**1,90E+02**

PAINTED SHEET - THICKNESS 10 mm

WASTE PRODUCTION AND TREATMENT	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Hazardous waste disposed [kg]	2,20E-01	8,35E-03	1,23E-02	3,59E-02	**2,77E-01**
Non hazardous waste disposed [kg]	5,23E-01	5,08E-01	2,16E-02	2,56E+00	**3,61E+00**
Radioactive waste disposed [kg]	4,42E-01	8,61E-02	1,29E-02	3,87E-01	**9,27E-01**
Material for recycling [kg]	0,00E+00	0,00E+00	2,28E-01	0,00E+00	**2,28E-01**

ENVIRONMEMNTAL IMPACT PARAMETERS	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Global Warming Potential, GWP [kg CO_2 eq]	1,37E+01	8,41E-01	5,30E+00	3,73E+00	**2,36E+01**
Ozone Depletion Potential, ODP [kg CFC-11 eq]	1,18E+00	1,52E-01	2,29E-02	6,85E-01	**2,04E+00**
Photochemical Ozone Creation, POCP [kg C_2H_4 eq]	2,24E+00	2,06E-01	1,79E-01	6,88E-01	**3,31E+00**
Acidification Potential, AP [kg SO_2 eq]	5,00E+01	5,35E+00	2,30E+00	1,60E+01	**7,37E+01**
Eutrophication Potential, EP [kg PO_4^{3-} eq]	6,28E+00	6,21E-01	3,97E-01	2,19E+00	**9,49E+00**
Depletion of abiotic resources-elements, ADP-elements [kg Sb eq]	2,35E-02	2,15E-03	4,32E-04	1,08E-02	**3,68E-02**
Depletion of abiotic resources-fossil, ADP-fossil fuels [MJ]	1,26E+02	1,25E+01	4,06E+00	5,63E+01	**1,99E+02**

8. ENVIRONMENTAL PERFORMANCE (painted sheet - thickness 12 mm)

Results in terms of resource consumption or generated impacts are divided in three phases (upstream, core and downstream) and sub-phases (A1, A2, A3, A4) as requested by the reference PCR.

PAINTED SHEET - THICKNESS 12 mm

RENEWABLE RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of RENEWABLE primary energy excluding renewable primary energy resources used as raw materials [MJ, net calorific value]	9,11E+01	1,91E-01	9,62E+00	7,58E-01	**1,02E+02**
Use of RENEWABLE primary energy resources used as raw materials [MJ, net calorific value]	3,54E+01	0,00E+00	7,17E+00	0,00E+00	**4,25E+01**
Total use of RENEWABLE primary energy resources (primary energy and primary energy resources used as raw materials) [MJ, net calorific value]	1,26E+02	1,91E-01	1,68E+01	7,58E-01	**1,44E+02**

PAINTED SHEET - THICKNESS 12 mm

NON RENEWABLE RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of NON RENEWABLE primary energy excluding renewable primary energy resources used as raw materials [MJ, net calorific value]	1,66E+02	1,54E+01	4,52E+00	6,87E+01	**2,54E+02**
Use of NON RENEWABLE primary energy resources used as raw materials [MJ, net calorific value]	0,00E+00	0,00E+00	6,06E-01	0,00E+00	**6,06E-01**
Total use of NON RENEWABLE primary energy resources (primary energy and primary energy resources used as raw materials) [MJ, net calorific value]	1,66E+02	1,54E+01	5,12E+00	6,87E+01	**2,55E+02**

PAINTED SHEET - THICKNESS 12 mm

USE OF SECONDARY RESOURCES	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Use of secondary material [kg]	0,00	0,00	0,00	0,00	**0,00**
Use of renewable secondary fuels [MJ, net calorific value]	0,00	0,00	0,00	0,00	**0,00**
Use of NON renewable secondary fuels [MJ, net calorific value]	0,00	0,00	0,00	0,00	**0,00**

NET USE OF FRESH WATER	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Net use of fresh water [m^3]	1,87E+02	2,85E+00	2,49E+01	1,26E+01	**2,28E+02**

PAINTED SHEET - THICKNESS 12 mm

WASTE PRODUCTION AND TREATMENT	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Hazardous waste disposed [kg]	2,65E-01	1,00E-02	1,47E-02	4,31E-02	**3,32E-01**
Non hazardous waste disposed [kg]	6,27E-01	6,09E-01	2,60E-02	3,07E+00	**4,33E+00**
Radioactive waste disposed [kg]	5,30E-01	1,03E-01	1,55E-02	4,64E-01	**1,11E+00**
Material for recycling [kg]	0,00E+00	0,00E+00	2,74E-01	0,00E+00	**2,74E-01**

ENVIRONMEMNTAL IMPACT PARAMETERS	UPSTREAM	CORE		DOWNSTREAM	TOTAL
	A1 Raw material supply	A2 Transport	A3 Production Process	A4 Product distribution	
Global Warming Potential, GWP [kg CO_2 eq]	1,64E+01	1,01E+00	6,36E+00	4,48E+00	**2,83E+01**
Ozone Depletion Potential, ODP [kg CFC-11 eq]	1,42E+00	1,82E-01	2,75E-02	8,21E-01	**2,45E+00**
Photochemical Ozone Creation, POCP [kg C_2H_4 eq]	2,68E+00	2,47E-01	2,15E-01	8,26E-01	**3,97E+00**
Acidification Potential, AP [kg SO_2 eq]	6,00E+01	6,42E+00	2,76E+00	1,93E+01	**8,85E+01**
Eutrophication Potential, EP [kg PO_4^{3-} eq]	7,54E+00	7,45E-01	4,77E-01	2,63E+00	**1,14E+01**
Depletion of abiotic resources-elements, ADP-elements [kg Sb eq]	2,82E-02	2,58E-03	5,18E-04	1,29E-02	**4,42E-02**
Depletion of abiotic resources-fossil, ADP-fossil fuels [MJ]	1,51E+02	1,51E+01	4,87E+00	6,75E+01	**2,39E+02**

9. REFERENCES

Bibliography

- ISO 14025:2006
- EN 15804:2013
- PCR 2012:01 Construction products and Construction services v.2.3, 2018-11-15, UN CPC 375
- General Programme Instructions of the International EPD® System v.2.5, 2015-05-11
- Life Cycle Assessment of flat sheets report 2020 Rev01 (19/03/2020)

For data elaboration the following tools are used:
- Software: SimaPro v.9.0.0.31 (www.pre.nl)
- Main database: Ecoinvent 3.5
- Anno di riferimento dei dati: 2019
- Geographical scope of the EPD: Europe

EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.

Contacts

SIL references for information:

Società Italiana Lastre SpA
Via Francesco Lenzi, 26 – 25028 Verolanuova (BS) – Italy
info@sil-lastre.com
tel. 0039 - 030 9920900

The technical support to SIL has been provided by Studio Fieschi & soci, Italy (www.studiofieschi.it)

Programme:

The International EPD® System
operated by EPD International AB
Box 210 60
SE-100 31 Stockholm, Sweden
www.environdec.com
info@environdec.com

CEN standard EN 15804 served as the core PCR	
PCR:	PCR 2012:01 Construction products and Construction services v.2.3, 2018-11-15
PCR review was conducted by:	The Technical Committee of the International EPD® System. Contact via info@environdec.com
Independent verification of the declaration and data, according to ISO 14025:	EPD verification (External)
Third party verifier:	Etienne Lees-Perasso
Approved by:	The International EPD® System