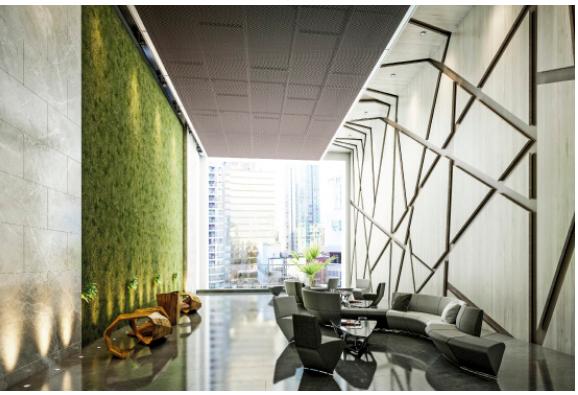
ATENA S.P.A. HAS A QUALITY MANAGEMENT SYSTEM CERTIFIED BY RINA IN COMPLIANCE WITH

ISO 9001

Environmental Product Declaration



IN ACCORDANCE WITH ISO 14025 AND EN 15804:2012+A2:2019 FOR:

STAVES | T-GRID - LAY-IN | CLIP-IN METAL CEILING SYSTEMS

PROGRAMME:	THE INTERNATIONAL EPD® SYSTEM, WWW.ENVIRONDEC.COM
PROGRAMME OPERATOR:	EPD INTERNATIONAL AB
EPD REGISTRATION NUMBER:	S-P-02383
EPD REGISTRATION DATE:	2021-01-11
VALID UNTIL:	2026-01-11
DATE OF REVISION:	2021-01-11 - REVISION 1
P.C.R.	CONSTRUCTION PRODUCTS PCR 2019:14 V 1.1
GEOGRAPHICAL SCOPE:	WORLDWIDE

ECO PLATFORM EPD EN 15804 VERIFIED

EPD®

GENERAL INFORMATION

Programme: The International EPD® System
Address: EPD International AB
Box 210 60
SE-100 31 Stockholm
Sweden

Website: www.environdec.com
E-mail: info@environdec.com

DETAILS

CEN STANDARD EN 15804 SERVES AS THE CORE PRODUCT CATEGORY RULES (PCR)

PRODUCT CATEGORY RULES (PCR): CONSTRUCTION PRODUCTS - PCR 2019:14 V 1.1

PCR REVIEW WAS CONDUCTED BY: THE TECHNICAL COMMITTEE OF THE INTERNATIONAL EPD® SYSTEM

INDEPENDENT THIRD-PARTY VERIFICATION OF THE DECLARATION AND DATA, ACCORDING TO ISO 14025:2006:

☒ External ☐ Internal | *covering* | ☐ EPD Process Certification ☒ EPD Verification

THIRD PARTY VERIFIER: RINA SERVICES

ACCREDITED BY: ACCREDIA

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 programmes 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.

All dimensions are nominal and expressed in millimeters.
All technical specification data and information can be changed without advise.
For further information please contact sales department:
tel. + 39 0421 75526 export@atena-it.com

COMPANY INFORMATION

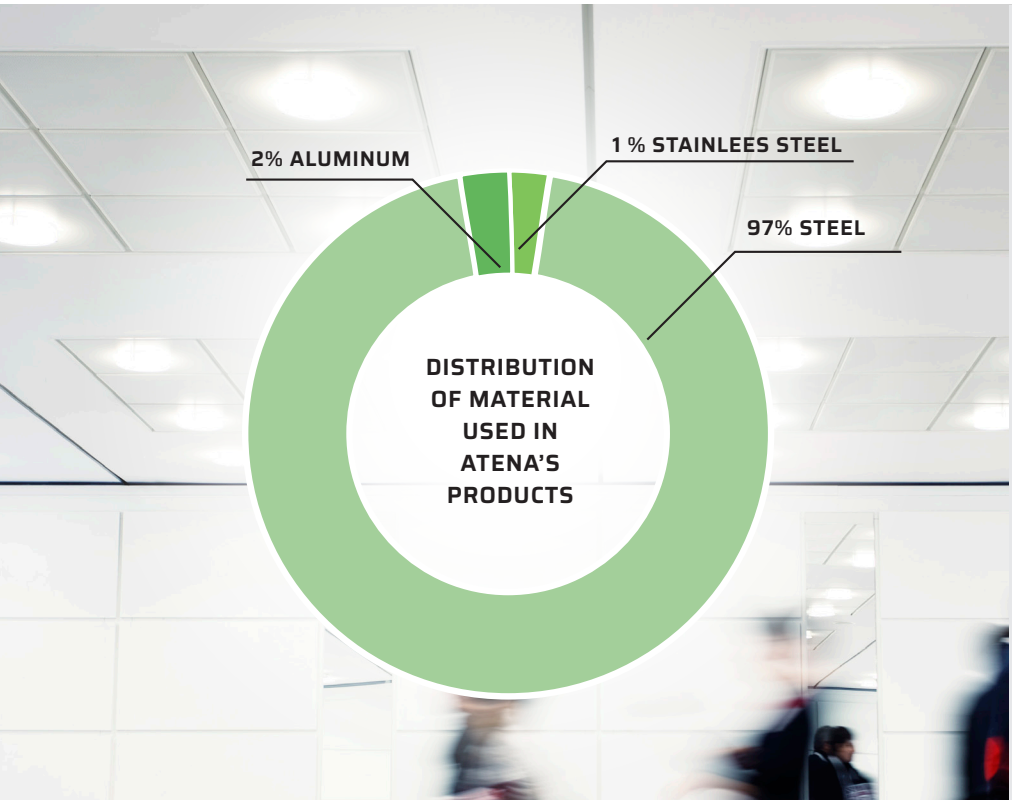
EPD owner: Atena S.p.A. | www.atena-it.com
Contact person: Ing. Monica Iogna Prat | monica@atena-it.com
LCA technical support: Life Cicle Engineering, Italy | www.lcengineering.eu | info@icengineering.it
Epd development: Atena S.p.A.

Company description:

For over 30 years Atena S.p.A. designs and manufactures high quality metal ceilings, metal façades and ship fittings, for the international market.
Founded in 1988 in Gruaro VENEZIA Italy, where is still based today, Atena operates in the false ceiling global market, with the production of metal ceilings systems and channels for plasterboard and mineral fiber false ceilings.

The ceiling market product range includes:
T-grids ■ Metal tiles ceilings ■ Metal staves ceilings ■ Metal baffle ceilings ■ Metal mesh ceilings ■ Open Cells ceilings ■ Special shapes ceilings ■ Floating island ceilings ■ Healthcare ceilings ■ Partition wall systems ■ Channels and profiles for dry construction systems.
The ceiling system ranges above mentioned include all components i .e. the visible surfaces, the bearing structures, the suspensions, the wall angles and all other accessories such as clips, brackets, joints, anti seismic kits and so on as described in Uni En Iso 13964.

Production site: Via Alcide de Gasperi 52, 30020 Gruaro VENEZIA - Italy
Atena has an annual production capacity of 18.430.048 kg (2019 reference year) totally manufactured in its Italian plant from metal coils/sheets cutting to products shaping and finishing.



Certifications:
Atena has a quality management system certified according Uni En Iso 9001

All products for civil applications are tested by independent laboratories, according to the UNI EN 13964 and meet the requirements of NTC 2018 and DM 11 January 2017, C.A.M.

The products intended for the naval market are certified according to MED DIRECTIVE 2014/90/EU.

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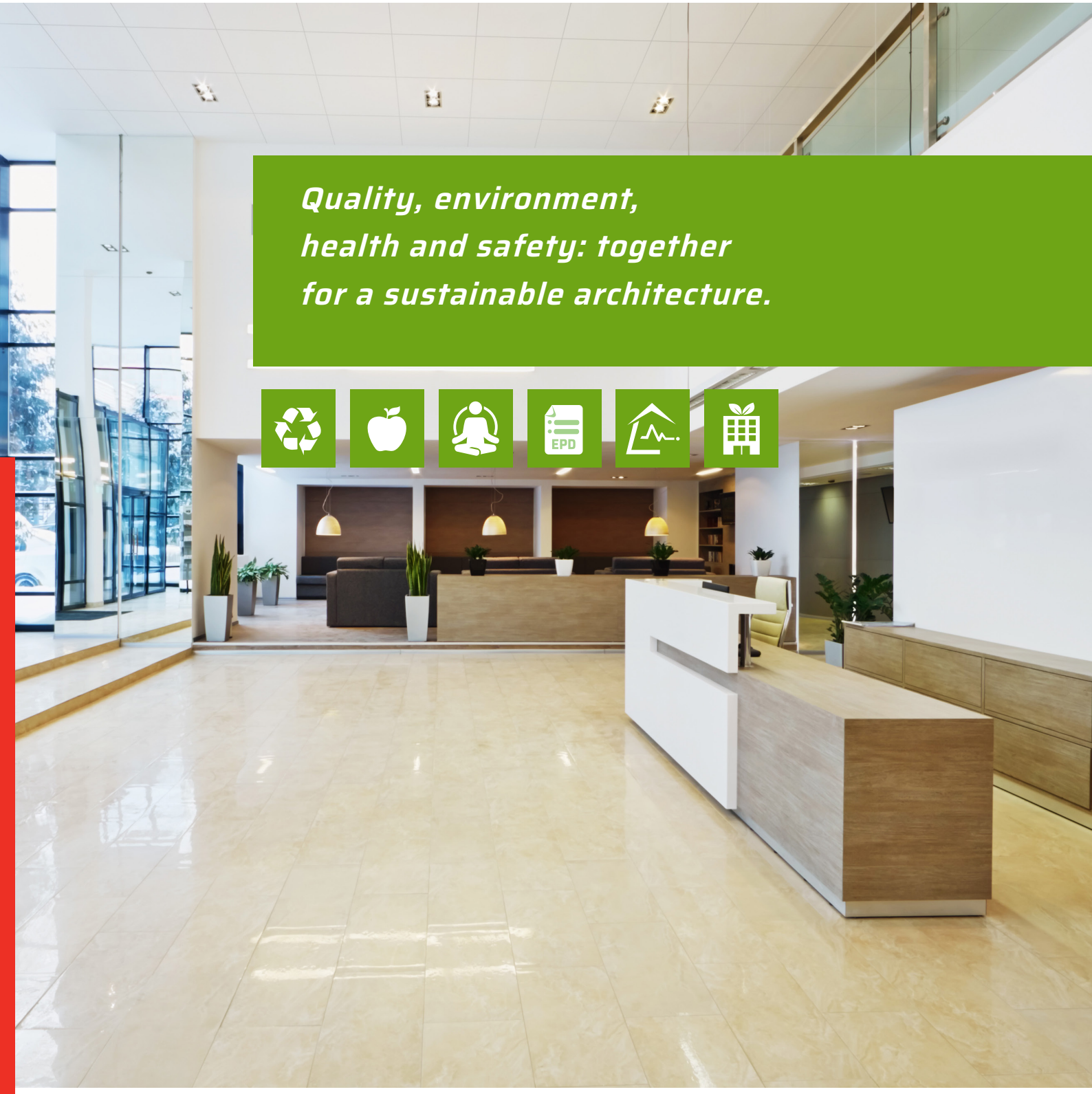
COMPANY INFORMATION



Quality, environment, health and safety: together for a sustainable architecture.

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CORPORATE ENVIRONMENTAL ENGAGEMENT

ENVIRONMENT

Raw materials produced with **recycling** processes;

Aluminum and steel products **100% recyclable**;

Products will not become **hazardous wastes** during demolition / removal.

HEALTHINESS

Safe and fireproof **products**

that do not release dangerous substances into the environment;

Paints and sublimations and digital printing are performed with **VOC-free substances**.

EPD

EPD 2020 is the certification program started by Atena to stand out its best systems from the environmental point of view, in compliance with the current **green procurement** requirements.

GREEN BUILDING

Get credits for building certification according to the **LEED protocol** and to BREEAM and ITACA standards for cross-cutting aspects, by using Atena products.

LIFE BASED DESIGN

Acoustics, lighting technology and shape of spaces: the Atena **metal ceilings** and **coverings** are conceived to create comfortable environments that support the **psycho-physical well-being** of people according to the **modern environmental psychology criteria**.

SEISMIC ENGINEERING

Academic and experimental research, patented systems and technical solutions for the highest degree of **earthquake safety**.

Atena's commitment to **Environmental Sustainability** and **Safety** passes through all main company processes to produce **safe products**, whose use contributes to the construction of high performance buildings, conceived to **achieve the highest levels** of comfort, healthiness and respect for the environment.

GREEN ENERGY

By joining the **"100% clean energy Dolomiti Energia"** certification program, Atena uses energy from **renewable sources**.

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PROUCT INFORMATION

GENERAL INFORMATION ABOUT METAL CEILING SYSTEMS

Product identification:
This Epd reports the environmental information about Atena **metal ceiling system** made up of **staves**, **clip-in** and **t-grid | lay-in** panels.

CPC: 4219 Other structures (except prefabricated buildings) and parts of structures, of iron, steel or aluminium; [...].

Among the ceiling systems made in plasterboard, woods, tissue and other materials, metal ceilings offer several advantages also from the environmental point of view; Here below are listed the main plus, while the following info-graphic datasheet reports the relavant safety and product information related to the environmental issue. Information are broken down by material.

Metal ceilings

- The **modular configuration mimimizes** the **refuse** at installation stage.
- Panels can be **cleaned at site** and do not need to be replaced as often as the mineral wool.
- Each **components** can be **individually replaced** if damaged during maintenance.
- Thanks to a proper mix of dimension, shape, perforation pattern, sound pad and plenum, metal ceilings can reach each **acoustic performance** required.
- Structures are easy to install and adjust to allow an **easy access to plenum** for plants, lighting installation and maintenance.
- All systems can be reinforced with proper **antiseismic kit.**
- Atena products are, as a whole, manufactured using **recycling processes materials**, the **recycled content** is indicated for each type of product as required by C.A.M.; for stainless steel the recycled content is obtained from Ecoivent database, for orther materials, instead, it is declared according to the ISO 14021 standard.
- Atena metal products are **100% recyclable** and at the end of their life cycle can be prepeared for re-use, recovery, recycling and selective demolition.
- All metal components are **safe** and **fireproof** do **not contain SVHC** Substances of Very High Concern, do **not release dangerous substances** into the environment including formaldehyde and will **not** become **hazardous wastes** during demolition / removal.
- Coatings, sublimations and digital printing are performed with **VOC-free** substances.

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Sch. 1 - RELEVANT PRODUCT PERFORMANCES RELATED TO ENVIRONMENTAL ISSUE

DISASSEMBLY	Steel and aluminum items are 100% recyclable and at the end of their life cycle can be prepeared for re-use, recovery, recycling and selective demolition.		MATERIAL DEMOLITION AND REMOVAL	At the end of their life cycle, the Atena products become non-hazardous waste that can be prepeared for re-use, recovery or recycling.	
WASTE MANAGEMENT FROM CONSTRUCTION OPERATIONS AND DEMOLITION	Atena uses recyclable packaging only.		SUBSTANCES OF VERY HIGH CONCERN	None Formaldheide E1 Class	
FIRE REACTION UNI EN 13501-1	Structures | Suspensions Wall angles Smooth panels/staves	A1 Class	RELEASE OF DANGEROUS SUBTANCES	Galvanized steel Stainless steel	VOC Free
	Perforated panels/staves with plus acoustic tissue	A1 Class		Pre-painted items	VOC Free
	Perforated panels/staves with standard acoustic tissue	A2s1d0 Class		Post-painted items	VOC Free
ACOUSTIC COMFORT	The perforated Atena metal ceilings coupled with a specific sound-absorbing material allow to improve the reverberation time and the intelligibility of the word, contributing to the achievement of the values indicated for the acoustic descriptors of the internal environments, reported by UNI 11532 and defined in UNI 11367.				

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PROUCT INFORMATION

T-grid / Lay-in & Clip-in metal ceiling systems

Description of panel ceiling system:
The Epd reports the environmental information about the following ceiling models:

T-grid | Lay-in systems
24 Linear Tegular (9 and 15 mm drop)
15 Linear Design (9 and 15 mm drop)
Plan | Flat | Trim | Escape | 24 Syncro Evo

Clip-in systems
Enigma | Enigma Open | Enigma Space
Matrox | MAT (Matrox a tenuta)

System weight: ~ 3,78 - 6,53 kg/m²
(excluded packaging) depending on panel perforation pattern and the structure applied.

Recycled content average:

32,8%
galvanized steel
average calculated considering the recycled content of materiales purchased in 2019.

39,2%
stainless steel
source: Ecoinvent dataset

The following schedule (Sch. 2) identifies the ceiling by matching panels and structures. Acessories such as wall angles, brackets, hanger hooks, springs, and so on, are included.

Sch. 2 - METAL CEILING PANELS IDENTIFICATION

PANELS	T-GRID | LAY-IN METAL CEILINGS					CLIP - IN METAL CEILINGS					
	EASY | EASY A. T24 EASY FOX T24 RUNNER T24	EASY T15	EASY LINE	B43	B35	TS	TDW	CS	CDW	CDU	MATROX
24 Linear Tegular - 9 | 15	●										
15 Linear design 9 | 15		●	●								
Plan	●			●	●						
Flat	●										
Trim	●										
Escape	●										
24 Syncro Evo	●										
Enigma						●	●	●	●	●	
Enigma Open						●	●	●	●	●	
Enigma Space						●	●	●	●	●	
Matrox | MAT											●

Panels analized are made in 5/10 pre and post painted galvanized steel having plain and/or perforated surface with acoustic veil, right or bevelled eges. The perforation pattern considered are those indicated in Atena Metal Modular *perforation* document named as **Parallel** | **Diagonal** | **Square** perforations.

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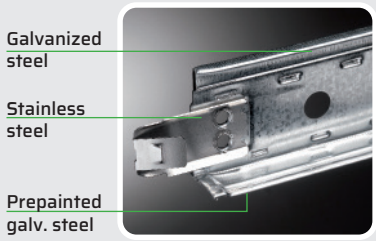
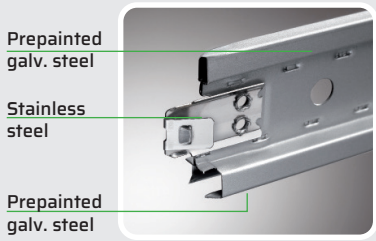
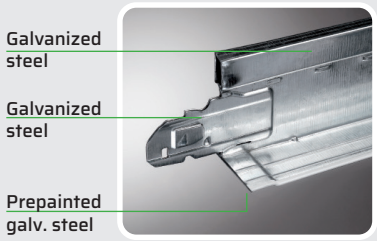
Sch. 3 - MATERIAL CONTENT OF T-GRID SYSTEMS



Type 1



Type 2



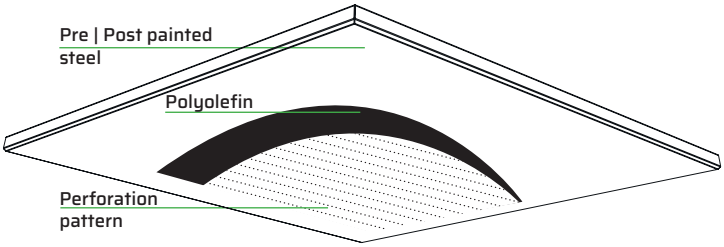
Type 3

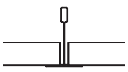
IDENTIFICATION			MAIN T	CROSS T	COMPONENT	FUNCTION	% BY WEIGHT	RECYCLABLE
	Type 1	RUNNER	●	●	Galvanized steel	Profile body	67,1%	●
		EASY T24 | T15	●	●	Pre-painted steel	Visible finishing	31,9%	●
		EASY A. T24						
		EASY FOX	-	●	Stainless steel	Reed	1,0%	●
	Type 2	EASY LINE	●	●	Pre-painted steel	Profile body and visible finishing	93,8%	●
			-	●	Stainless steel	Reed	6,2%	●
	Type 3	B43 | B35	●	●	Galvanized steel	Profile body and reed	68,7%	●
			●	●	Pre-painted steel	Visible finishing	31,3%	●

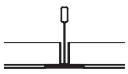
In schedule 3, the T-grid systems produced by Atena are represented using three categories (1 | 2 | 3) in relation to the material content of profiles components.

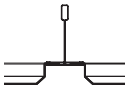
Sch. 4 - MATERIAL CONTENT OF LAY-IN PANELS FOR T-GRID SYSTEM

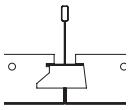
This schedule reports the panels which can be installed with the T-grid structure listed and described in schedule 3. Panels are different in shape but are made up of the same material. The metal ceiling model is identified by the panel shape and the t-grid system as described in matrix of schedule 2.

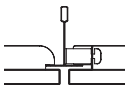


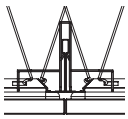

Plan

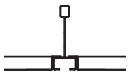

Flat24


24 Linear Tegular
15 Linear Design


Enigma Trim


Enigma Escape


24 Syncro Evo


15 Linear Design

IDENTIFICATION		COMPONENT	FUNCTION	% BY WEIGHT	RECYCLABLE
Lay-in panel	Smooth surface	Post-painted steel Pre-painted steel	Deck covering and sound reflection	100 %	●
Lay-in panel	Perforated surface with acoustic veil	Pre-painted steel Polyolefin	Deck covering and sound absorption	98,50% 1,50%	● -
Lay-in panel	Perforated surface with acoustic veil	Post-painted steel Polyolefin	Deck covering and sound absorption	98,50% 1,50%	● -

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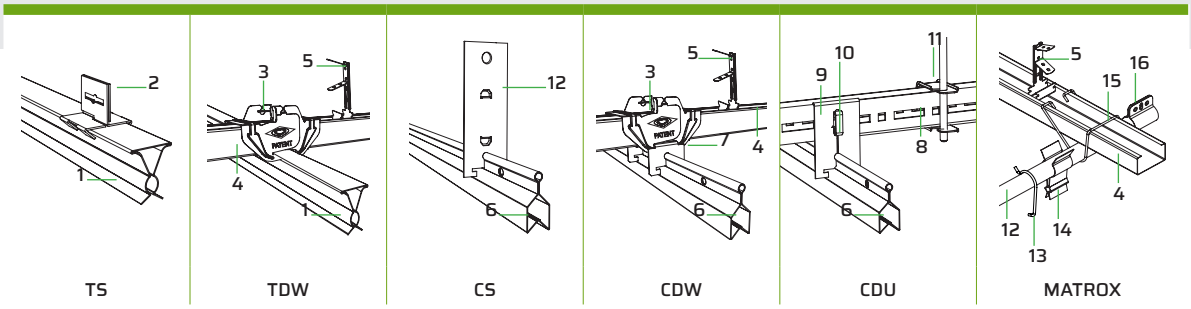
Sch. 5 - MATERIAL CONTENT OF CLIP-IN SYSTEM



NAME	ITEM	DESCRIPTION	MATERIAL	FUNCTION	% BY WEIGHT	RECYCLABLE
TS	1	Triangle profile	Galvanized steel	Main supporting profile	89,92%	●
	2	Suspension bracket		Suspension component	8,93%	
	1.b*	Triangle Joint		Profile joint	1,15%	
TDW	1	Triangle profile	Galvanized steel	Main supporting profile	48,24%	●
	1.b	Triangle Joint		Profile joint	0,62%	
	3	Winger		Profile and carrier coupling	15,97%	
	4	Carrier		Structure reinforcement	31,74%	
	4.b*	Carrier Joint		Carrier joint	0,89%	
	5	Suspension hook		Suspension component	2,54%	
CD	6	Continental profile	Galvanized steel	Main supporting profile	92,53%	●
	12	Suspension bracket		Suspension component	5,46%	
	6.b*	Continental Joint		Profile joint	2,00%	
CDW	6	Continental profile	Galvanized steel	Main supporting profile	51,84%	●
	6.b*	Continental Joint		Profile joint	1,12%	
	3	Winger		Profile and carrier coupling	12,95%	
	7	Winger adapter		Profile and carrier coupling	5,55%	
	4	Carrier		Structure reinforcement	25,75%	
	4.b*	Carrier Joint		Carrier joint	0,73%	
	5	Suspension hook		Suspension component	2,06%	
CDU	6	Continental profile	Galvanized steel	Main supporting profile	54,83%	●
	6.b*	Continental Joint		Profile joint	1,19%	
	8	"U" profile		Structure reinforcement	39,00%	
	8.b*	"U" profile joint		Profile joint	1,18%	
	9	Bracket		Profile and "U" coupling	2,93%	
	10	Safety spring		Connection securing	0,00%	
	11	"U" hanger		Suspension component	0,87%	
MATROX	12	Matrox tube	Galvanized steel	Main supporting profile	49,23%	●
	16	Matrox tube Joint		Profile joint	0,55%	
	15	Hooking spring		Profile and carrier coupling	2,49%	
	4	Carrier		Structure reinforcement	24,22%	
	4.b*	Carrier Joint		Carrier joint	0,68%	
	13	Safety spring		Connection securing	0,00%	
	5	Suspension hook		Suspension component	1,94%	
	14	Matrox clip	Pre-painted steel	Panel hooking	20,89%	

*Item not represented in the illustration

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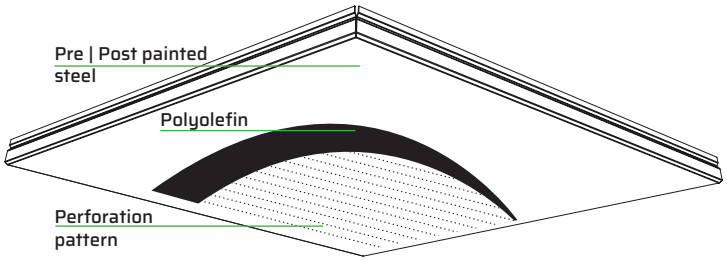
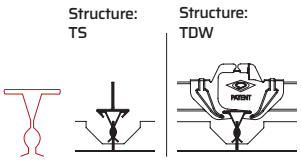
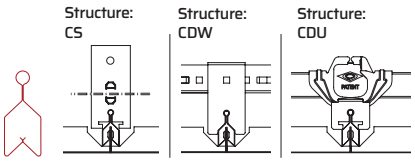
Sch. 6 - MATERIAL CONTENT OF CLIP-IN PANELS

Schedules 5 and 6 describes the clip-in systems considered in LCA studio.
This schedule reports the panels wich can be installed with the clip-in system listed and described in schedule 5. Panels are different in shape but are made up of the same material. The metal ceiling model is identified by the panel shape and the system as described in matrix of schedule 2.

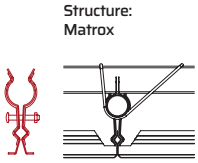




Panels: Enigma | Engma Open | E. Escape



Panels: Enigma | Engma Open | E. Escape



Panels: Matrox

IDENTIFICATION		COMPONENT	FUNCTION	% BY WEIGHT	RECYCLABLE
Clip-in panel	Smooth surface	Post-painted steel Pre-painted steel	Deck covering and sound reflection	100 %	●
Clip-in panel	Perforated surface with acoustic veil	Pre-painted steel Polyolefin	Deck covering and sound absorption	98,63% 1,37%	● -
Clip-in panel	Perforated surface with acoustic veil	Post-painted steel Polyolefin	Deck covering and sound absorption	98,63% 1,37%	● -

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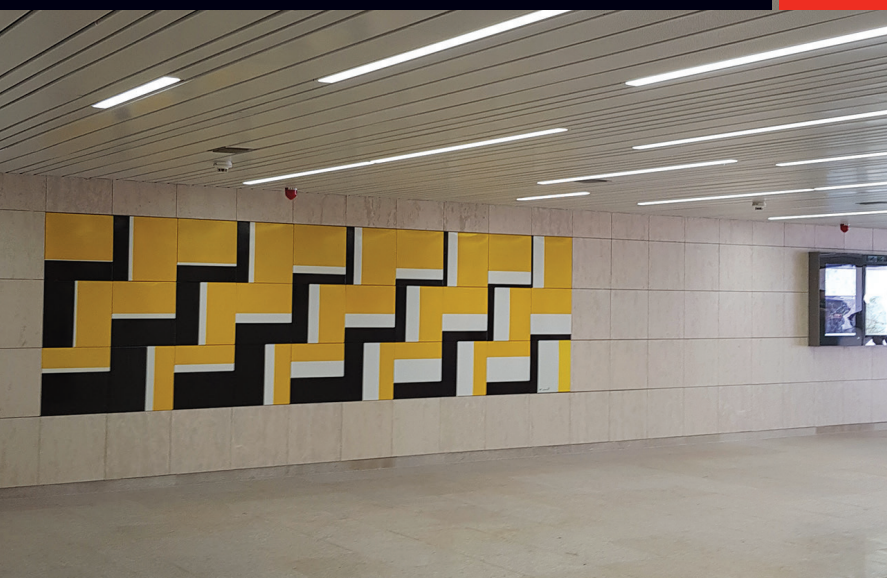
PROUCT INFORMATION



Staves systems

Description of Staves ceiling system:
The Epd reports the environmental information about the following ceiling models:

Hook on Staves:
A 90 | A 100 | A 150 | AR 90 | AR 100 | AC 100 | AC 150 | C 100 | C 150 | C 200 | N 75 | N 150 | SR 80 | SR 90 | SR 100 | ST 32 | ST 50 | STV 60 | T 150 | T 200 | V 50 / 100 | S 30 H14 | S 30 H38 | 30 H40 | S 30 H64 | S 30 H80 | S 40 H40 | S 80 H14 | S 80 H80 | S 80 H100 | S 130 H14 | S 130 H80 | S 130 H100 | S 180 H14 | S 180 H80 | S 180 H100.

Self Supporting staves
AP 100 | AP 150 | AP 200 | CR 150 | CR 200 | APR 150 | APR 200.

Self bearing staves simply lay-on wall angles while **hook-on systems** are made up of bearing carriers to hang staves.

System weight*:

Hook-on system
1,98-6,174 kg/m²

Self bearing system
1,98-2,32 kg/m²

*excluded packaging and considering smooth surface which is the condition of greater weight.

Recycled content average:

95%
aluminum

32,8%
galvanized steel

avarage calculated considering the recycled content of materiales purchased in 2019

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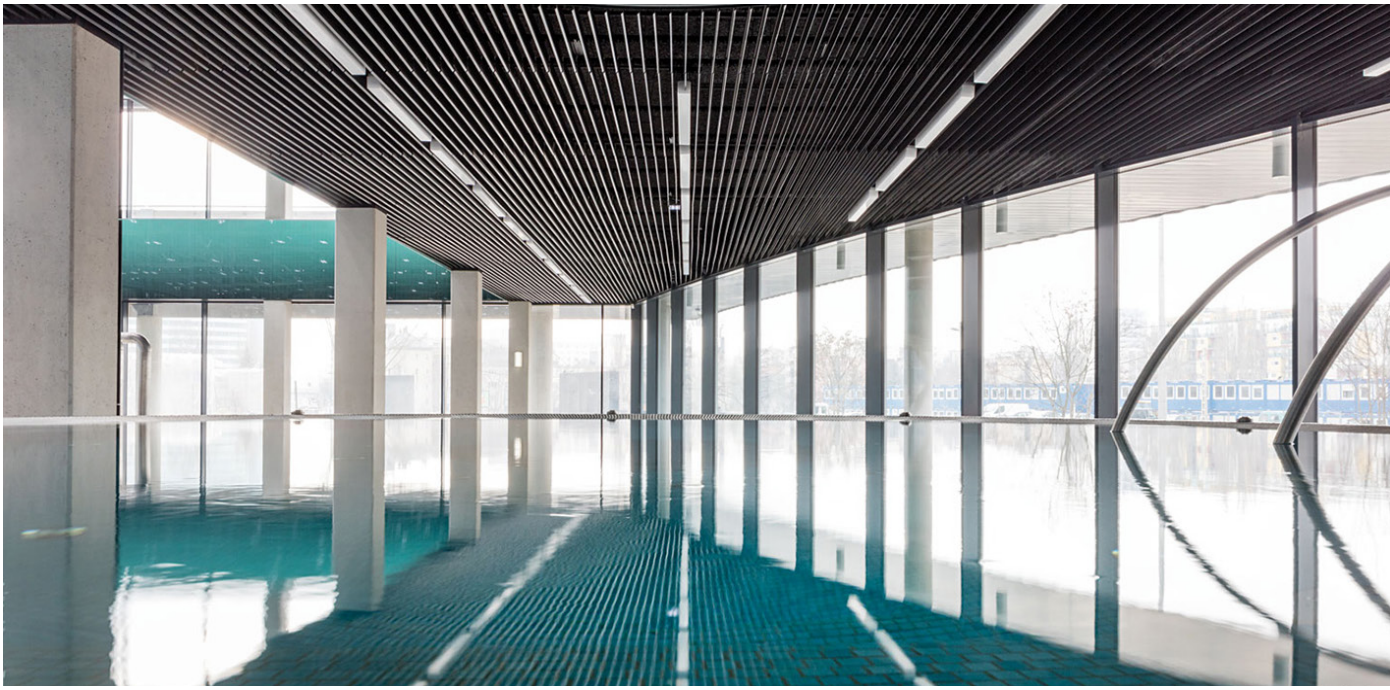
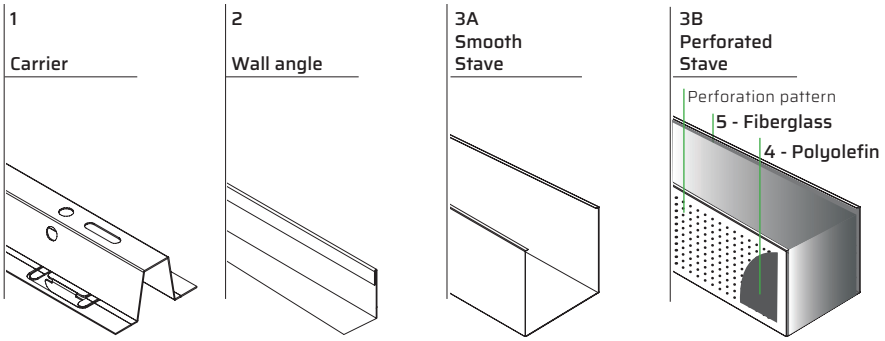


Sch. 7 - MATERIAL CONTENT OF STAVES CEILING SYSTEMS



IDENTIFICATION		COMPONENT	FUNCTION	RECYCLABLE
1	Carrier	Galvanized steel	Ceiling supporting	●
1	Carrier	Pre-painted galv.steel	Ceiling supporting	●
1	Carrier	Pre-painted aluminum	Ceiling supporting	●
1	Carrier	Aluminum	Ceiling supporting	●
2	Wall angles	Pre-painted steel	Ceiling supporting	●
3/A	Staves with smooth surface	Pre-painted aluminum	Deck covering	●
3/B	Staves with perforated surface	Pre-painted aluminum	Deck covering	●
4	Acoustic veil	Polyolefin	Sound absorption	-
5	Acoustic pad	Fiberglass	Sound absorption	-

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LCA INFORMATION

Declared unit:
1m² of metal ceiling system
(panels, structure and accessories)

Reference service life: 50 years § 2.4.1 NTC2018
Time representativeness: 2019

Software: SimaPro 9.1.0.8

Main data base: Ecoinvent 3.6, 2018

Report LCA: Lyfe Cycle Assessment applied to Atena products for EPD purposes

Intended audience: business

Geographical scope: worldwide

Methodology:

The environmental burden of the product has been processed according to General Programme Instructions for the International EPD® System version 3.01. 2019-09-18 and to the N.PCR 2019:14 V 1.1 Construction product and construction service EN 15804 - CPC code 4219 "Cradle to gate with options."

This declaration is based on the application of Life Cycle Assessment (LCA) including the phase: goal and scope definition, inventory analysis (LCI); impact assessment (LCIA); interpretation regarding the whole life-cycle system. Products, packaging and manufacturing process are described using Atena data and information for year 2019. Pollutant concentration in wastewater is considered negligible in accordance with the cut-off criteria established in PCR 2019:14 V 1.1.

The LCA study considers the procurement of raw materials and fuels, their transport to the production site, the actual production of the products and delivery to a representative final customer. Customized LCA questionnaires were used to gather in-depth information about all main raw materials and energy consumption, air emissions, waste management and so on, therefore the data collected have been processed to represent the related environmental impacts.

Fig. 1 represents the system bunderies considered: raw materials supply (A1), transport (A2), manufacturing (A3), transport to final destination (A4), deconstruction - demolition (C1), transport (C2), waste processing (C3), disposal (C4), reuse - recovery - recycling potential (D) were considered.

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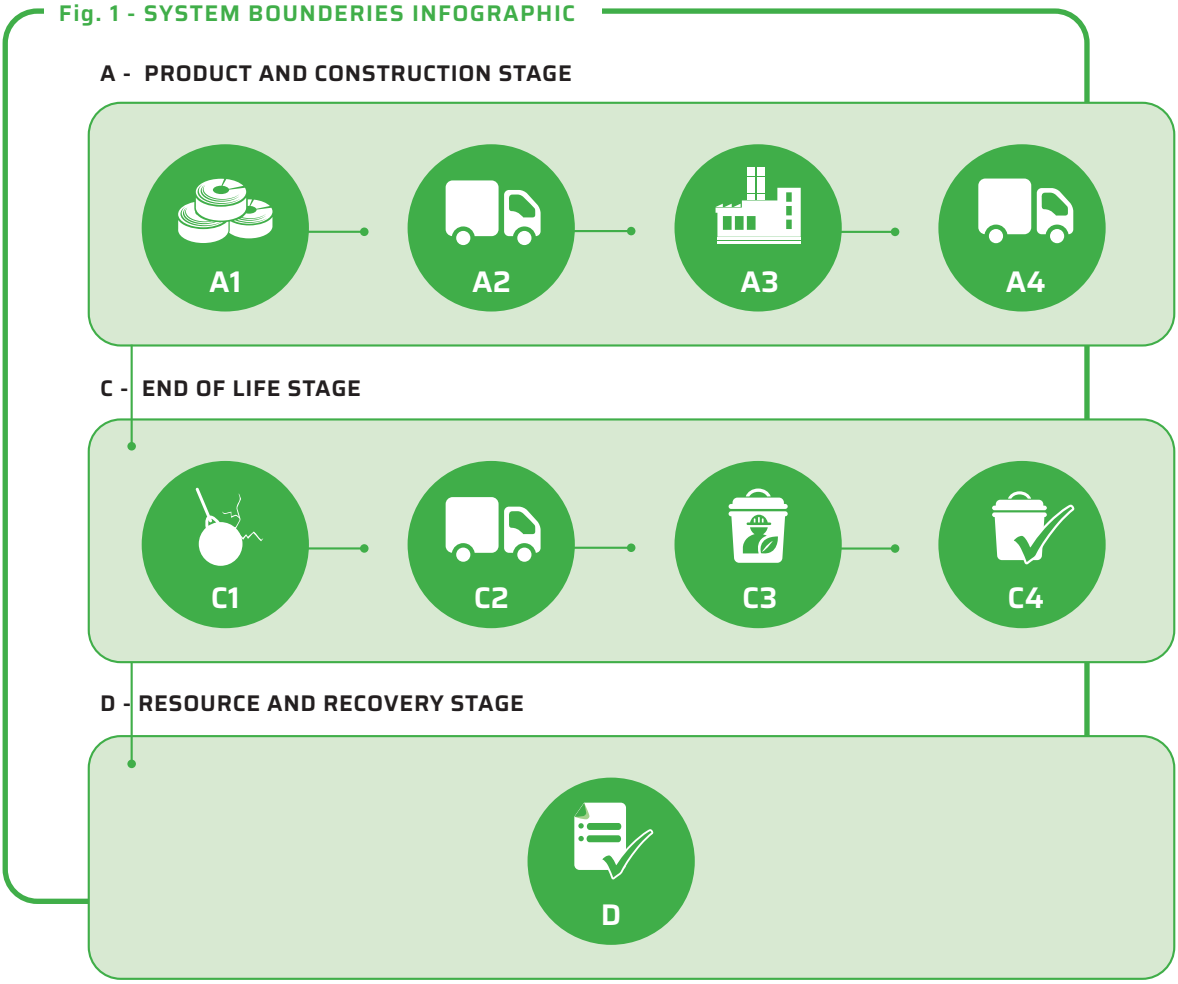
System bounderies:
The **EPD** covers **A1 | A2 | A3 | A4 | C1 | C2 | C3 | C4 | D** stages;
the approch used is "**CRADLE TO GATE WITH OPTIONS**".

Sch. 8 - SYSTEM BOUNDERIES

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				RESOURCE AND RECOVERY STAGE
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Installation	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	x	x	x	x	x

Caption: X = included in LCA | MND = Module Not Declared

Fig. 1 - SYSTEM BOUNDERIES INFOGRAPHIC



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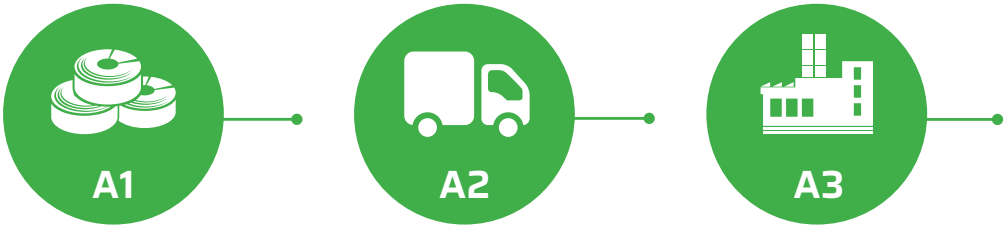
LCA SCENARIOS AND ASSUMPTION

PRODUCT STAGE

A1 - Raw material **A2 - Transport to factory** **A3 - Manufacturing**

At this stage the evrironmental impacts refers to **raw material extraction**, **processing** and **trasport to Atena** factory.



A1 - Raw material

Key materials used for the Atena products considered in LCA studio are the following:

Panels: pre and post painted galvanized steel

T-grid structures: galvanized steel | pre-painted galvanized steel | stainless steel reeds

Clip-in structure and its accessories: galvanized steel some accessories in pre-painted galvanized steel.

Staves : pre-painted aluminum

Carrier: pre-painted steel | galvanized steel | pre-painted aluminum | aluminum

Wall angles: pre-post painted galvanized steel

Other items for accessories productions minimal consumption: tempered steel | neoprene

Acoustic veil: non woven fabric made of cellulose and glass fibers

Packaging: cardboard boxes | polyolefin film | wood pallets | iron strips | paper label.

A2 - Transport to factory

For the main raw materials the transport to the production plant was estimated based on the position of the suppliers involved. For the remaining inputs (accessories and packaging) an average transport of 100 km was assumed. For transport to factory data considered in LCA are the following: 500 km for galvanized steel, 100 km for stainless steel and 400 km for aluminum.

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A3 - Manufacturing

All Atena **products are manufactured** in its **headaquarter** located in Gruaro Venezia Italy.

In the following datasheet the process steps of **A3 module** are reported indicating the manufacturing operations sequence.

Sch. 9 - MANUFACTURING STAGE

PROCESS	PANELS		STAVES		T-GRID PROFILES	CLIP-IN PROFILES	CARRIERS	WALL ANGLES	ACCESSORIES
	PRE	POST	PRE	POST					
Coils peforation*	1	1	1	1					
Product shaping			2	2	1	1	1	1	2
Coils cuttings	2	2	3	3	2	2	2	2	1
Post painting		3		4					
Acoustic veil app.	3	4	4	5					
Packaging	4	5	5	6	3	3	3	3	3

* Coils perforation stage will be not carried out for panels and staves with plain surface

The criteria of mass has been used, to properly allocate the flow of the plant to the product considered in LCA; therefore the consumption of energy, water, natural gas, diesel for internal transport and the flows related to the emissions and to the wastes have been broken down in relation to the product mass. The flows related to post-painting processes have been assigned to post-painted product only.

The total consumptions of this processes have not been totally referred to the postpainted products considered in the LCA because they represent only a part of the annual production of post-painted products; therefore the normalized values per m^2 of post-painted panels in 2019 have been considered. For all other processes the consumption values considered in LCA represent the normalized flow on total production of 2019, and the allocation has been adopted and based on total mass production. The results are reported for product families for which the +/- 10% limit is met. The reference flow has been defined on the basis of the net mass of the products including core process metal waste generation. The additional material eliminated in the processing phase due to product shape has not been accounted for with regard to production impacts and for the advantages associated with the recycling to which it has been subjected. It is assumed that the variation in size and shape of ceiling components has no effect in relation to gas, water and electricity consumption; since the machines are either on or off and therefore use the same ammount of energy regardless of the size of the products passing through. Considering the stages described in schedule 9, the above mentioned steps, coils perforation, product shaping, coils cuttings, acoustic veil-application and packaging account the most energy consumption, while to post-painting process refers the most gas consumption which is not used for other manufacturing operations. The most water consumption instead refers to sanitary waters and to the water/oil emulsion for T-grid and corner protector profiles production.

More over regarding the electric energy, the LCA studio has considered the renewable sources for the company consumption only; while the national energetic mix, properly modified according to the "residual mix" method has been considered for all other processes.

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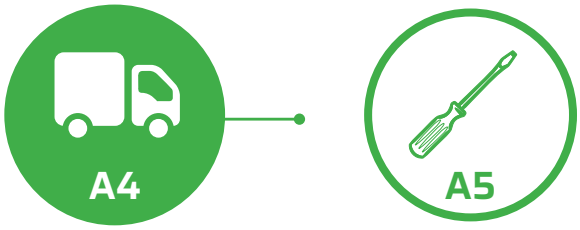
LCA SCENARIOS AND ASSUMPTION

COSTRUCTION STAGE

- **A4 - Transport from the gate to the site**
- **A5 - Assembly**



A4 - Transport from the gate to the site

Products are loaded directly onto the truck in the factory. In the the north of Italy delivery to customer is carried out by Atena trucks while for the other Italian regions and for the export market Atena uses vectors. In LCA studio for the panels ceiling systems the average distance traveled calculated is of 718 km by trucks and 454 km by boat; for staves systems 1.166 km by trucks and 285 km by boat.

A5 - Assembly

The installation process is not covered by Atena therefore it has been considered out of scope.

END OF LIFE STAGE

- **C1 - De-construction demolition**
- **C2 - Transport to recycling sites and to final disposal**
- **C3 - Waste processing**
- **C4 - Disposal**

At this stage the evrironmental impacts refers to **End of Life Stage**

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C1 - De-construction demolition

This step refers to deconstruction, including dismantling or demolition of the product from the building including initial on site sorting of the materials. Impacts related to this stage can be considered not relevant because the activites are generally carried out handly without using special machinery with not considerable energy consumption.

C2 - Transport to recycling sites or to final disposal

Regarding the transport stage of discarded products, as part of the waste processing, to recycling sites and the waste transport to final disposal, the LCA studio has estimated the impacts related to 150 km by truck.

C3 - Waste processing

Energy can not be recovered during waste processing. So this stage is considered equal to 0. At this stage infact materials for energy recovery are indentified in relation to efficiency of energy recovery with a rate higher than 60% without prejudice to exiting legislation. Below this rate materials are not considered for energy recovery.

C4 - Waste disposal

Regarding the construction products, according to the World Steel Association in 2007, the steel waste sent to landfill is 15%, while incineration / energy recovery is 0%, the same rate can be considered for the aluminum according to European Aluminum Association (Circular aluminum action plan,2020).

RESOURCE AND RECOVERY STAGE

D - Reuse- Recovery- Recycling potential

Regarding to the steel construction products, the steel waste sent to recovery is equal to 85% accordig to the World Steel Association data 2007.

Regarding the aluminum construction products, the aluminum waste sent to recovery is equal to 85% according European Aluminum Association (Circular aluminum action plan,2020)

Atena products do not contain SVHC Substances of Very High Concern, do not release dangerous substances including formaldehyde, paints, sublimations and digital printing are carried out using VOC-free substances.

At the end of their life cycle, the Atena products become non-hazardous waste, that can be prepared for selective demolition, re-use, recovery and recycling; steel and aluminum components infacts are totally recyclable.

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LCA IMPACT ASSESSMENT

The **environmental impact indicators** processed by SimaPro software for the LCA model refers to 1 m² of metal ceiling made up of **structures, wall angles, panels, staves, acoustic tissue/pad and the related accessories**.

The following paraghraphs report the environmental impact assessment of all products considered in LCA.

In compliance with the regulations to which the EPD refers, for each product category the impact indicators are divided into three classes:

ENVIRONMENTAL IMPACT, RESOURCE CONSUMPTION, WASTE PRODUCTION.

Products categories refer to metal ceiling system whose belong the components analized in LCA studio.

For all models aggregated data are reported in compliance with the impact range covered by the EPD standard; that is 10% of final impact range.

Therefore the product category are classified as follow:

PANEL SYSTEMS

T-Grid | Lay-in metal ceilings

In this section metal ceilings are classified in relation to the structure use to support the system.

The schedules report the data of 5 t-grid system clusters

A Easy T24 | Easy A. T24 | Runner
B Easy T15 | E. Foxh32 | E. Foxh27
C B43
D B35
E Easy Line

All panels models, as described in shedule 4 of this EPD, are aggregated and despite of changes in shape, the panels weights fall within the range covered by the standard. The following clusters refer to perforation ranges that affect the mass:

1) 0 ≤ % perforated area ≤ 10%
2) 11 ≤ % perforated area ≤ 20%
3) 21 ≤ % perforated area ≤ 30%
4) 31 ≤ % perforated area ≤ 40%

Clip-in metal ceilings

Also in this section metal ceilings are classified in relation to the structure use to support the system. The schedules report the data of 5 clip-in system cluster:

A) **- TS** Single triangle structure
B) **- TDW** Double triangle with winger
C) **- CS** Single continental profile
D) **- CDW** Double continental profile with winger
- CDU Double continental profile with "U" profile
E) **- Matrox -** Matrox Structure

As per t-grid | lay-in metal ceiling section all panels, as described in shedule 6 of this EPD, models are aggregated and despite of changes in shape, the panels' weights fall within the range covered by the standard. The folowing cluster refer to perforation ranges that affect the mass:

1) 0 ≤ % perforated area ≤ 10%
2) 11 ≤ % perforated area ≤ 20%
3) 21 ≤ % perforated area ≤ 30%
4) 31 ≤ % perforated area ≤ 40%

Clip-in Matrox metal ceilings

In this case data have been extracted from LCA studio to represent the system Matrox only.

STAVE SYSTEMS

Hook-on and self-bearing metal stave ceilings:

Regarding Staves the assumption considered for panels can not be applied due to the wide range of staves and carriers models, perforation set and applicable gap, therefore the condition with the highest impacts have been considered: that is smooth surface and zero or minum gap. Based on these parameters staves have been clusterd in the following weight classes.

A 1,47 ≤ Kg/m² ≤ 1,69
B 1,72 ≤ Kg/m² ≤ 1,97
C 2,00 ≤ Kg/m² ≤ 2,29
D 2,39 ≤ Kg/m² ≤ 2,72
E 3,03 ≤ Kg/m² ≤ 3,40
F 3,60 ≤ Kg/m² ≤ 3,95
G 4,54 ≤ Kg/m² ≤ 5,42

For carriers instead all models with the same size have been agregated. Therefore sizes an materials are the parameters used for the carriers classification:

A1 carrier in 6/10 pre-painted galvanized steel
A2 carrier in 6/10 galvanized steel
B carrier in 7/10 galvanized steel
C1 carrier in 8/10 pre-painted aluminum
C2 carrier in 10/10 aluminum
C3 carrier in 8/10 pre-painted galvanized steel
C4 carrier in 8/10 galvanized steel

Wall angles and acoustic tissue data are included in staves data, therefore for the self-bearing staves environmental information of carriers must not be considered.

In case of fiberglass application it is possibile to consider an increase in impacts ranging from 9% to 18% in relation to the indicators considered.

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LCA IMPACT ASSESSMENT

ENVIRONMENTAL IMPACT

PANEL SYSTEM | T-grid | Lay-in metal ceilings

DECLARED UNIT:
1 m² of metal ceiling.

System models: *24 Linear Tegular (9 and 15 mm drop) | 15 Linear Design (9 and 15 mm drop) Plan | Flat | Trim | Escape | 24 Syncro Evo*

CAPTION:

Acronyms

PEI	Potential environment impact
UM	Unit of measure
GWP	Global warming potential, total
GWPf	Global warming potential, fossil
GWPb	Global warming potential, biogenic
GWPl	Global warming potential, land use
ODP	Ozone depletion potential
AP	Acidification potential of land and water
EPf	Eutrophication acquatic, freshwater
EPm	Eutrophication acquatic, marine
EPt	Eutrophication acquatic, terrestrial
POCP	Photochemical ozone creation potential
ADPe	Abiotic depletion potential, elements
ADPf	Abiotic depletion potential, fossil
WDP	Water depletion potential

T-Grid structures
A Easy T24 | Easy A. T24 | Runner
B Easy T15 | E. Foxh32 | E. Foxh27
C B43
D B35
E Easy Line

Plain and perforated panels
1) 0 ≤ % perforated area ≤ 10%
2) 11 ≤ % perforated area ≤ 20%
3) 21 ≤ % perforated area ≤ 30%
4) 31 ≤ % perforated area ≤ 40%

Sound-absorption components:
Acoustic tissue thermo-applied

Sch. 10 - ENVIRONMENTAL IMPACTS OF T-GRID | LAY-IN METAL CEILINGS

STAGE	PEI	UM	T-GRID STRUCTURE					LAY - IN PANELS			
			A	B	C	D	E	1	2	3	4
A1 UPSTREAM PROCESS	GWP	kg CO_2 eq	3,58E+00	3,09E+00	3,66E+00	4,23E+00	3,84E+00	1,36E+01	1,26E+01	1,16E+01	9,47E+00
	GWPf	kg CO_2 eq	3,56E+00	3,07E+00	3,64E+00	4,21E+00	3,82E+00	1,35E+01	1,26E+01	1,16E+01	9,43E+00
	GWPb	kg CO_2 eq	1,56E-02	1,40E-02	1,51E-02	1,68E-02	2,05E-02	4,40E-02	4,11E-02	3,81E-02	3,15E-02
	GWPl	kg CO_2 eq	2,52E-03	2,12E-03	2,60E-03	3,07E-03	2,68E-03	1,02E-02	9,42E-03	8,61E-03	6,89E-03
	ODP	kg CFC-11 eq	3,05E-07	2,67E-07	3,12E-07	3,55E-07	3,17E-07	1,34E-06	1,25E-06	1,15E-06	9,30E-07
	AP	mol H + eq	1,80E-02	1,52E-02	1,84E-02	2,16E-02	1,96E-02	7,15E-02	6,62E-02	6,08E-02	4,90E-02
	EPf	Kg P eq	1,78E-04	1,48E-04	1,84E-04	2,19E-04	1,87E-04	7,41E-04	6,84E-04	6,25E-04	4,98E-04
	EPm	Kg N eq	3,62E-03	3,04E-03	3,73E-03	4,40E-03	3,88E-03	1,48E-02	1,37E-02	1,25E-02	1,00E-02
	EPt	mol N eq	4,08E-02	3,43E-02	4,20E-02	4,96E-02	4,38E-02	1,67E-01	1,55E-01	1,41E-01	1,13E-01
	POCP	kg NMVOC eq	1,56E-02	1,31E-02	1,61E-02	1,89E-02	1,65E-02	6,36E-02	5,89E-02	5,40E-02	4,34E-02
	ADPe	Kg Sb eq	8,00E-03	6,46E-03	8,41E-03	1,02E-02	7,91E-03	3,56E-02	3,27E-02	2,97E-02	2,32E-02
	ADPf	MJ	4,73E+01	4,14E+01	4,84E+01	5,52E+01	5,02E+01	1,87E+02	1,74E+02	1,61E+02	1,31E+02
	WDP	m^3	6,27E+00	5,99E+00	6,34E+00	6,67E+00	6,32E+00	1,04E+01	9,73E+00	9,03E+00	7,53E+00
A2 CORE PROCESS	GWP	kg CO_2 eq	1,02E-01	8,49E-02	1,06E-01	1,26E-01	1,03E-01	3,98E-01	3,61E-01	3,21E-01	2,37E-01
	GWPf	kg CO_2 eq	1,02E-01	8,49E-02	1,06E-01	1,26E-01	1,03E-01	3,98E-01	3,61E-01	3,21E-01	2,36E-01
	GWPb	kg CO_2 eq	4,22E-05	3,51E-05	4,40E-05	5,23E-05	4,25E-05	1,65E-04	1,49E-04	1,33E-04	9,78E-05
	GWPl	kg CO_2 eq	8,15E-07	6,78E-07	8,50E-07	1,01E-06	8,21E-07	3,18E-06	2,88E-06	2,57E-06	1,89E-06
	ODP	kg CFC-11 eq	2,39E-08	1,99E-08	2,49E-08	2,96E-08	2,41E-08	9,32E-08	8,44E-08	7,52E-08	5,53E-08
	AP	mol H + eq	5,91E-04	4,91E-04	6,16E-04	7,31E-04	5,95E-04	2,31E-03	2,09E-03	1,86E-03	1,37E-03
	EPf	Kg P eq	6,12E-08	5,09E-08	6,39E-08	7,58E-08	6,17E-08	2,39E-07	2,17E-07	1,93E-07	1,42E-07
	EPm	Kg N eq	2,37E-04	1,98E-04	2,48E-04	2,94E-04	2,39E-04	9,27E-04	8,40E-04	7,48E-04	5,51E-04
	EPt	mol N eq	2,61E-03	2,17E-03	2,72E-03	3,23E-03	2,63E-03	1,02E-02	9,22E-03	8,21E-03	6,04E-03
	POCP	kg NMVOC eq	6,78E-04	5,64E-04	7,07E-04	8,40E-04	6,83E-04	2,65E-03	2,40E-03	2,14E-03	1,57E-03
	ADPe	Kg Sb eq	6,07E-09	5,05E-09	6,33E-09	7,51E-09	6,11E-09	2,37E-08	2,15E-08	1,91E-08	1,41E-08
	ADPf	MJ	1,46E+00	1,21E+00	1,52E+00	1,80E+00	1,47E+00	5,69E+00	5,16E+00	4,59E+00	3,38E+00
	WDP	m^3	-3,21E-04	-2,67E-04	-3,35E-04	-3,97E-04	-3,23E-04	-1,25E-03	-1,14E-03	-1,01E-03	-7,44E-04

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STAGE	PEI	UM	T-GRID STRUCTURE					LAY - IN PANELS			
			A	B	C	D	E	1	2	3	4
A3 CORE PROCESS	GWP	kg CO_2 eq	1,95E-02	1,34E-02	2,08E-02	2,77E-02	2,10E-02	1,18E+00	1,06E+00	9,39E-01	6,79E-01
	GWPf	kg CO_2 eq	5,34E-02	4,85E-02	5,44E-02	6,01E-02	5,46E-02	1,57E+00	1,46E+00	1,34E+00	1,09E+00
	GWPb	kg CO_2 eq	-3,42E-02	-3,53E-02	-3,39E-02	-3,26E-02	-3,39E-02	-4,00E-01	-4,02E-01	-4,04E-01	-4,09E-01
	GWPl	kg CO_2 eq	2,41E-04	2,41E-04	2,41E-04	2,41E-04	2,41E-04	2,47E-03	2,47E-03	2,46E-03	2,46E-03
	ODP	kg CFC-11 eq	4,14E-09	4,00E-09	4,17E-09	4,33E-09	4,17E-09	5,13E-08	5,10E-08	5,06E-08	4,99E-08
	AP	mol H + eq	3,26E-04	2,91E-04	3,34E-04	3,74E-04	3,35E-04	2,61E-03	2,51E-03	2,41E-03	2,20E-03
	EPf	Kg P eq	2,07E-06	2,04E-06	2,07E-06	2,10E-06	2,07E-06	2,63E-05	2,61E-05	2,60E-05	2,56E-05
	EPm	Kg N eq	1,51E-04	1,33E-04	1,55E-04	1,76E-04	1,56E-04	1,01E-03	9,64E-04	9,14E-04	8,06E-04
	EPt	mol N eq	1,51E-03	1,32E-03	1,55E-03	1,76E-03	1,56E-03	1,03E-02	9,81E-03	9,29E-03	8,18E-03
	POCP	kg NMVOC eq	3,98E-04	3,46E-04	4,10E-04	4,70E-04	4,12E-04	2,82E-03	2,68E-03	2,54E-03	2,23E-03
	ADPe	Kg Sb eq	1,07E-07	9,82E-08	1,09E-07	1,20E-07	1,10E-07	7,49E-07	7,30E-07	7,11E-07	6,70E-07
	ADPf	MJ	4,42E-01	4,30E-01	4,45E-01	4,59E-01	4,45E-01	8,72E+00	8,68E+00	8,64E+00	8,54E+00
	WDP	m^3	1,19E-01	1,03E-01	1,22E-01	1,40E-01	1,23E-01	8,67E-01	8,26E-01	7,84E-01	6,93E-01
A4 DOWN STREAM PROCESS	GWP	kg CO_2 eq	9,79E-02	8,14E-02	1,01E-01	1,20E-01	1,02E-01	3,25E-01	2,95E-01	2,62E-01	1,93E-01
	GWPf	kg CO_2 eq	9,78E-02	8,14E-02	1,01E-01	1,20E-01	1,02E-01	3,25E-01	2,95E-01	2,62E-01	1,93E-01
	GWPb	kg CO_2 eq	4,03E-05	3,36E-05	4,18E-05	4,96E-05	4,21E-05	1,34E-04	1,21E-04	1,08E-04	7,96E-05
	GWPl	kg CO_2 eq	7,83E-07	6,51E-07	8,11E-07	9,63E-07	8,17E-07	2,60E-06	2,36E-06	2,10E-06	1,55E-06
	ODP	kg CFC-11 eq	2,24E-08	1,86E-08	2,32E-08	2,75E-08	2,34E-08	7,44E-08	6,74E-08	6,00E-08	4,42E-08
	AP	mol H + eq	5,16E-04	4,29E-04	5,35E-04	6,35E-04	5,38E-04	1,72E-03	1,55E-03	1,38E-03	1,02E-03
	EPf	Kg P eq	5,86E-08	4,88E-08	6,08E-08	7,21E-08	6,12E-08	1,95E-07	1,77E-07	1,57E-07	1,16E-07
	EPm	Kg N eq	1,49E-04	1,24E-04	1,54E-04	1,83E-04	1,56E-04	4,96E-04	4,49E-04	4,00E-04	2,94E-04
	EPt	mol N eq	1,65E-03	1,37E-03	1,71E-03	2,03E-03	1,72E-03	5,48E-03	4,96E-03	4,42E-03	3,25E-03
	POCP	kg NMVOC eq	4,40E-04	3,66E-04	4,56E-04	5,41E-04	4,59E-04	1,46E-03	1,32E-03	1,18E-03	8,68E-04
	ADPe	Kg Sb eq	5,59E-09	4,65E-09	5,80E-09	6,88E-09	5,84E-09	1,86E-08	1,69E-08	1,50E-08	1,10E-08
	ADPf	MJ	1,37E+00	1,14E+00	1,42E+00	1,68E+00	1,43E+00	4,55E+00	4,12E+00	3,67E+00	2,70E+00
	WDP	m^3	-3,02E-04	-2,51E-04	-3,13E-04	-3,71E-04	-3,15E-04	-1,00E-03	-9,09E-04	-8,10E-04	-5,96E-04
C1 END FO LIFE STAGE	GWP	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPf	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPb	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPl	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ODP	kg CFC-11 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	AP	mol H + eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPf	Kg P eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPm	Kg N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPt	mol N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	POCP	kg NMVOC eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPe	Kg Sb eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPf	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	WDP	m^3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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LCA IMPACT ASSESSMENT

STAGE	PEI	UM	T-GRID STRUCTURE					LAY - IN PANELS			
			A	B	C	D	E	1	2	3	4
C2 END FO LIFE STAGE	GWP	kg CO_2 eq	3,29E-02	2,73E-02	3,41E-02	4,04E-02	3,43E-02	1,09E-01	9,90E-02	8,82E-02	6,49E-02
	GWPf	kg CO_2 eq	3,29E-02	2,73E-02	3,40E-02	4,04E-02	3,43E-02	1,09E-01	9,90E-02	8,81E-02	6,49E-02
	GWPb	kg CO_2 eq	1,35E-05	1,12E-05	1,40E-05	1,66E-05	1,41E-05	4,50E-05	4,07E-05	3,63E-05	2,67E-05
	GWPl	kg CO_2 eq	2,61E-07	2,17E-07	2,71E-07	3,21E-07	2,73E-07	8,69E-07	7,87E-07	7,01E-07	5,16E-07
	ODP	kg CFC-11 eq	7,65E-09	6,36E-09	7,92E-09	9,41E-09	7,98E-09	2,54E-08	2,30E-08	2,05E-08	1,51E-08
	AP	mol H + eq	1,97E-04	1,64E-04	2,04E-04	2,42E-04	2,05E-04	6,54E-04	5,93E-04	5,28E-04	3,89E-04
	EPf	Kg P eq	1,96E-08	1,63E-08	2,03E-08	2,41E-08	2,05E-08	6,52E-08	5,91E-08	5,26E-08	3,87E-08
	EPm	Kg N eq	8,00E-05	6,66E-05	8,29E-05	9,84E-05	8,35E-05	2,66E-04	2,41E-04	2,15E-04	1,58E-04
	EPt	mol N eq	8,79E-04	7,31E-04	9,11E-04	1,08E-03	9,17E-04	2,92E-03	2,65E-03	2,36E-03	1,74E-03
	POCP	kg NMVOC eq	2,27E-04	1,89E-04	2,36E-04	2,80E-04	2,37E-04	7,56E-04	6,85E-04	6,10E-04	4,49E-04
	ADPe	Kg Sb eq	1,94E-09	1,62E-09	2,01E-09	2,39E-09	2,03E-09	6,46E-09	5,85E-09	5,21E-09	3,84E-09
	ADPf	MJ	4,67E-01	3,88E-01	4,84E-01	5,74E-01	4,87E-01	1,55E+00	1,41E+00	1,25E+00	9,22E-01
	WDP	m^3	-1,03E-04	-8,55E-05	-1,07E-04	-1,26E-04	-1,07E-04	-3,42E-04	-3,10E-04	-2,76E-04	-2,03E-04
C3 END FO LIFE STAGE	GWP	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPf	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPb	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPl	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ODP	kg CFC-11 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	AP	mol H + eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPf	Kg P eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPm	Kg N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPt	mol N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	POCP	kg NMVOC eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPe	Kg Sb eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPf	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	WDP	m^3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	GWP	kg CO_2 eq	4,71E-04	3,94E-04	4,88E-04	5,77E-04	4,91E-04	2,07E-03	1,93E-03	1,78E-03	1,45E-03
	GWPf	kg CO_2 eq	4,71E-04	3,94E-04	4,88E-04	5,77E-04	4,91E-04	2,07E-03	1,93E-03	1,78E-03	1,45E-03
	GWPb	kg CO_2 eq	2,29E-08	1,92E-08	2,37E-08	2,81E-08	2,39E-08	1,01E-07	9,39E-08	8,65E-08	7,06E-08
	GWPl	kg CO_2 eq	7,44E-10	6,21E-10	7,70E-10	9,11E-10	7,75E-10	3,27E-09	3,05E-09	2,81E-09	2,29E-09
	ODP	kg CFC-11 eq	7,60E-11	6,35E-11	7,87E-11	9,32E-11	7,93E-11	3,35E-10	3,11E-10	2,87E-10	2,34E-10
	AP	mol H + eq	4,95E-06	4,13E-06	5,12E-06	6,06E-06	5,16E-06	2,18E-05	2,03E-05	1,87E-05	1,52E-05
	EPf	Kg P eq	8,17E-10	6,83E-10	8,46E-10	1,00E-09	8,52E-10	3,60E-09	3,35E-09	3,08E-09	2,52E-09
	EPm	Kg N eq	2,14E-06	1,79E-06	2,21E-06	2,62E-06	2,23E-06	9,41E-06	8,75E-06	8,06E-06	6,58E-06
	EPt	mol N eq	2,34E-05	1,96E-05	2,43E-05	2,87E-05	2,44E-05	1,03E-04	9,60E-05	8,84E-05	7,22E-05
	POCP	kg NMVOC eq	6,43E-06	5,38E-06	6,66E-06	7,88E-06	6,71E-06	2,83E-05	2,63E-05	2,43E-05	1,98E-05
	ADPe	Kg Sb eq	5,75E-13	4,80E-13	5,95E-13	7,04E-13	5,99E-13	2,53E-12	2,35E-12	2,17E-12	1,77E-12
	ADPf	MJ	6,56E-03	5,48E-03	6,79E-03	8,04E-03	6,84E-03	2,89E-02	2,69E-02	2,47E-02	2,02E-02
	WDP	m^3	3,51E-03	2,94E-03	3,64E-03	4,30E-03	3,66E-03	1,55E-02	1,44E-02	1,33E-02	1,08E-02

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EPD®

STAGE	PEI	UM	T-GRID STRUCTURE					LAY - IN PANELS			
			A	B	C	D	E	1	2	3	4
D REUSE - RECOVERY STAGE	GWP	kg CO_2 eq	-8,59E-01	-6,94E-01	-9,01E-01	-1,18E+00	-9,59E-01	-3,92E+00	-3,53E+00	-3,21E+00	-2,51E+00
	GWPf	kg CO_2 eq	-8,56E-01	-6,92E-01	-8,98E-01	-1,18E+00	-9,57E-01	-3,91E+00	-3,52E+00	-3,20E+00	-2,50E+00
	GWPb	kg CO_2 eq	-2,72E-03	-2,19E-03	-2,89E-03	-3,79E-03	-2,85E-03	-1,26E-02	-1,13E-02	-1,03E-02	-8,04E-03
	GWPl	kg CO_2 eq	-8,35E-05	-6,71E-05	-8,92E-05	-1,17E-04	-8,43E-05	-3,88E-04	-3,50E-04	-3,18E-04	-2,49E-04
	ODP	kg CFC-11 eq	-2,55E-08	-2,06E-08	-2,68E-08	-3,52E-08	-2,81E-08	-1,17E-07	-1,05E-07	-9,56E-08	-7,48E-08
	AP	mol H + eq	-4,12E-03	-3,32E-03	-4,32E-03	-5,67E-03	-4,57E-03	-1,88E-02	-1,70E-02	-1,54E-02	-1,21E-02
	EPf	Kg P eq	-5,11E-05	-4,12E-05	-5,37E-05	-7,04E-05	-5,65E-05	-2,34E-04	-2,11E-04	-1,91E-04	-1,50E-04
	EPm	Kg N eq	-7,92E-04	-6,39E-04	-8,31E-04	-1,09E-03	-8,79E-04	-3,62E-03	-3,26E-03	-2,96E-03	-2,32E-03
	EPt	mol N eq	-8,94E-03	-7,22E-03	-9,40E-03	-1,23E-02	-9,92E-03	-4,09E-02	-3,69E-02	-3,35E-02	-2,62E-02
	POCP	kg NMVOC eq	-4,38E-03	-3,54E-03	-4,59E-03	-6,02E-03	-4,90E-03	-2,00E-02	-1,80E-02	-1,64E-02	-1,28E-02
	ADPe	Kg Sb eq	-1,54E-05	-1,24E-05	-1,62E-05	-2,13E-05	-1,68E-05	-7,05E-05	-6,36E-05	-5,77E-05	-4,52E-05
	ADPf	MJ	-6,89E+00	-5,56E+00	-7,24E+00	-9,49E+00	-7,63E+00	-3,15E+01	-2,84E+01	-2,58E+01	-2,02E+01
	WDP	m^3	-7,58E-02	-6,11E-02	-8,02E-02	-1,05E-01	-8,14E-02	-3,49E-01	-3,14E-01	-2,86E-01	-2,23E-01
TOTAL	GWP	kg CO_2 eq	3,83E+00	3,29E+00	3,92E+00	4,55E+00	4,10E+00	1,56E+01	1,44E+01	1,32E+01	1,06E+01
	GWPf	kg CO_2 eq	3,85E+00	3,31E+00	3,94E+00	4,56E+00	4,12E+00	1,59E+01	1,48E+01	1,36E+01	1,10E+01
	GWPb	kg CO_2 eq	-1,85E-02	-2,12E-02	-1,87E-02	-1,56E-02	-1,33E-02	-3,55E-01	-3,60E-01	-3,66E-01	-3,77E-01
	GWPl	kg CO_2 eq	2,77E-03	2,36E-03	2,84E-03	3,32E-03	2,92E-03	1,27E-02	1,19E-02	1,11E-02	9,35E-03
	ODP	kg CFC-11 eq	3,63E-07	3,16E-07	3,72E-07	4,26E-07	3,77E-07	1,59E-06	1,47E-06	1,35E-06	1,09E-06
	AP	mol H + eq	1,96E-02	1,66E-02	2,01E-02	2,35E-02	2,12E-02	7,88E-02	7,30E-02	6,70E-02	5,40E-02
	EPf	Kg P eq	1,80E-04	1,50E-04	1,86E-04	2,21E-04	1,89E-04	7,67E-04	7,11E-04	6,51E-04	5,24E-04
	EPm	Kg N eq	4,24E-03	3,57E-03	4,37E-03	5,16E-03	4,52E-03	1,75E-02	1,62E-02	1,48E-02	1,19E-02
	EPt	mol N eq	4,75E-02	3,99E-02	4,89E-02	5,77E-02	5,06E-02	1,96E-01	1,81E-01	1,66E-01	1,33E-01
	POCP	kg NMVOC eq	1,74E-02	1,46E-02	1,79E-02	2,11E-02	1,83E-02	7,13E-02	6,60E-02	6,05E-02	4,85E-02
	ADPe	Kg Sb eq	8,00E-03	6,46E-03	8,41E-03	1,02E-02	7,91E-03	3,56E-02	3,27E-02	2,97E-02	2,32E-02
	ADPf	MJ	5,11E+01	4,46E+01	5,22E+01	5,98E+01	5,40E+01	2,08E+02	1,94E+02	1,79E+02	1,47E+02
	WDP	m^3	6,39E+00	6,09E+00	6,46E+00	6,81E+00	6,45E+00	1,13E+01	1,06E+01	9,82E+00	8,23E+00

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LCA IMPACT ASSESSMENT

RESOURCE CONSUMPTION

PANEL SYSTEM | T-grid | Lay-in metal ceilings

DECLARED UNIT:
1 m² of metal ceiling.

System models: *24 Linear Tegular (9 and 15 mm drop) / 15 Linear Design (9 and 15 mm drop) Plan / Flat / Trim / Escape / 24 Syncro Evo*

CAPTION:

Acronyms

PEI	Potential environment impact
UM	Unit of measure
PERE	Renewable primary energy excluding that one used as raw material
PERM	Renewable primary energy used as raw material
PERT	Total use of renewable primary energy
PENRE	Non-renewable primary energy excluding that one used as raw material
PENRM	Non-renewable primary energy used as raw material
PENRT	Total use of non-renewable primary energy
SM	Use of secondary raw materials
RSF	Use of renewable secondary fuels
NRSF	Use of non-renewable secondary fuels
FW	Net use of fresh water

Sch. 11 - RESOURCE CONSUMPTION OF T-GRID | LAY-IN METAL CEILINGS

STAGE	PEI	UM	T-GRID STRUCTURE					LAY - IN PANELS			
			A	B	C	D	E	1	2	3	4
A1 UPSTREAM PROCESS	**PERE**	**MJ**	4,36E+00	3,66E+00	4,39E+00	5,18E+00	5,17E+00	2,01E+01	1,85E+01	1,67E+01	1,30E+01
	PERM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,97E-01	5,97E-01	5,97E-01	5,97E-01
	PERT	**MJ**	4,36E+00	3,66E+00	4,39E+00	5,18E+00	5,17E+00	2,07E+01	1,91E+01	1,73E+01	1,36E+01
	PENRE	**MJ**	5,18E+01	4,41E+01	5,31E+01	6,19E+01	5,55E+01	2,21E+02	2,05E+02	1,88E+02	1,51E+02
	PENRM	**MJ**	6,58E+00	6,58E+00	6,58E+00	6,58E+00	6,58E+00	1,18E+01	1,18E+01	1,18E+01	1,18E+01
	PENRT	**MJ**	5,84E+01	5,07E+01	5,97E+01	6,85E+01	6,20E+01	2,33E+02	2,17E+02	2,00E+02	1,63E+02
	SM	**Kg**	7,49E-03	6,05E-03	7,87E-03	9,55E-03	7,40E-03	3,33E-02	3,06E-02	2,78E-02	2,17E-02
	RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	**m³**	1,53E-01	1,45E-01	1,55E-01	1,64E-01	1,55E-01	2,67E-01	2,50E-01	2,31E-01	1,92E-01
A2 CORE PROCESS	**PERE**	**MJ**	2,04E-03	1,70E-03	2,13E-03	2,52E-03	2,05E-03	7,96E-03	7,21E-03	6,42E-03	4,73E-03
	PERM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	**MJ**	2,04E-03	1,70E-03	2,13E-03	2,52E-03	2,05E-03	7,96E-03	7,21E-03	6,42E-03	4,73E-03
	PENRE	**MJ**	1,42E+00	1,18E+00	1,48E+00	1,76E+00	1,43E+00	5,56E+00	5,03E+00	4,48E+00	3,30E+00
	PENRM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	**MJ**	1,42E+00	1,18E+00	1,48E+00	1,76E+00	1,43E+00	5,56E+00	5,03E+00	4,48E+00	3,30E+00
	SM	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	**m³**	2,89E-05	2,40E-05	3,01E-05	3,57E-05	2,91E-05	1,13E-04	1,02E-04	9,09E-05	6,69E-05

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tel. + 39 0421 75526 export@atena-it.com

STAGE	PEI	UM	T-GRID STRUCTURE					LAY - IN PANELS			
			A	B	C	D	E	1	2	3	4
A3 CORE PROCESS	PERE	MJ	-2,86E-01	-2,87E-01	-2,86E-01	-2,86E-01	-2,86E-01	-2,64E+00	-2,64E+00	-2,65E+00	-2,66E+00
	PERM	MJ	4,15E-01	4,15E-01	4,15E-01	4,15E-01	4,15E-01	4,24E+00	4,24E+00	4,24E+00	4,24E+00
	PERT	MJ	1,29E-01	1,29E-01	1,29E-01	1,30E-01	1,29E-01	1,60E+00	1,60E+00	1,59E+00	1,58E+00
	PENRE	MJ	4,60E-01	4,53E-01	4,62E-01	4,70E-01	4,62E-01	6,62E+00	6,58E+00	6,55E+00	6,47E+00
	PENRM	MJ	3,42E-02	2,84E-02	3,54E-02	4,20E-02	3,56E-02	2,79E+00	2,78E+00	2,77E+00	2,74E+00
	PENRT	MJ	4,95E-01	4,82E-01	4,97E-01	5,12E-01	4,98E-01	9,41E+00	9,36E+00	9,31E+00	9,21E+00
	SM	Kg	2,93E-02	2,93E-02	2,93E-02	2,93E-02	2,93E-02	2,93E-01	2,93E-01	2,93E-01	2,93E-01
	RSF	MJ	1,75E-02	1,75E-02	1,75E-02	1,75E-02	1,75E-02	1,75E-01	1,75E-01	1,75E-01	1,75E-01
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	2,81E-03	2,45E-03	2,89E-03	3,31E-03	2,91E-03	2,10E-02	2,00E-02	1,90E-02	1,69E-02
A4 DOWN STREAM PROCESS	PERE	MJ	1,91E-03	1,59E-03	1,98E-03	2,35E-03	1,99E-03	6,34E-03	5,74E-03	5,12E-03	3,77E-03
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	1,91E-03	1,59E-03	1,98E-03	2,35E-03	1,99E-03	6,34E-03	5,74E-03	5,12E-03	3,77E-03
	PENRE	MJ	1,34E+00	1,11E+00	1,38E+00	1,64E+00	1,39E+00	4,44E+00	4,02E+00	3,58E+00	2,64E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	1,34E+00	1,11E+00	1,38E+00	1,64E+00	1,39E+00	4,44E+00	4,02E+00	3,58E+00	2,64E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	2,67E-05	2,22E-05	2,77E-05	3,29E-05	2,79E-05	8,88E-05	8,05E-05	7,16E-05	5,27E-05
C1 END FO LIFE STAGE	PERE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C2 END FO LIFE STAGE	PERE	MJ	6,53E-04	5,43E-04	6,77E-04	8,04E-04	6,82E-04	2,17E-03	1,97E-03	1,75E-03	1,29E-03
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	6,53E-04	5,43E-04	6,77E-04	8,04E-04	6,82E-04	2,17E-03	1,97E-03	1,75E-03	1,29E-03
	PENRE	MJ	4,56E-01	3,79E-01	4,72E-01	5,61E-01	4,76E-01	1,52E+00	1,37E+00	1,22E+00	9,00E-01
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	4,56E-01	3,79E-01	4,72E-01	5,61E-01	4,76E-01	1,52E+00	1,37E+00	1,22E+00	9,00E-01
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	9,25E-06	7,69E-06	9,58E-06	1,14E-05	9,65E-06	3,08E-05	2,79E-05	2,48E-05	1,83E-05

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LCA IMPACT ASSESSMENT

STAGE	PEI	UM	T-GRID STRUCTURE					LAY - IN PANELS			
			A	B	C	D	E	1	2	3	4
C3 END FO LIFE STAGE	PERE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	PERE	MJ	1,42E-05	1,19E-05	1,47E-05	1,74E-05	1,48E-05	6,26E-05	5,83E-05	5,37E-05	4,38E-05
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	1,42E-05	1,19E-05	1,47E-05	1,74E-05	1,48E-05	6,26E-05	5,83E-05	5,37E-05	4,38E-05
	PENRE	MJ	6,43E-03	5,37E-03	6,66E-03	7,87E-03	6,70E-03	2,83E-02	2,63E-02	2,42E-02	1,98E-02
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	6,43E-03	5,37E-03	6,66E-03	7,87E-03	6,70E-03	2,83E-02	2,63E-02	2,42E-02	1,98E-02
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	8,20E-05	6,85E-05	8,49E-05	1,00E-04	8,55E-05	3,61E-04	3,36E-04	3,09E-04	2,53E-04
D REUSE - RECOVERY STAGE	PERE	MJ	-6,31E-01	-5,09E-01	-6,67E-01	-8,76E-01	-6,77E-01	-2,90E+00	-2,62E+00	-2,38E+00	-1,86E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	-6,31E-01	-5,09E-01	-6,67E-01	-8,76E-01	-6,77E-01	-2,90E+00	-2,62E+00	-2,38E+00	-1,86E+00
	PENRE	MJ	-1,02E+01	-8,28E+00	-1,08E+01	-1,41E+01	-1,14E+01	-4,69E+01	-4,22E+01	-3,84E+01	-3,00E+01
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	-1,02E+01	-8,28E+00	-1,08E+01	-1,41E+01	-1,14E+01	-4,69E+01	-4,22E+01	-3,84E+01	-3,00E+01
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	-1,58E-03	-1,27E-03	-1,68E-03	-2,20E-03	-1,66E-03	-7,31E-03	-6,59E-03	-5,99E-03	-4,68E-03
TOTAL	PERE	MJ	4,07E+00	3,38E+00	4,10E+00	4,90E+00	4,89E+00	1,75E+01	1,58E+01	1,41E+01	1,03E+01
	PERM	MJ	4,15E-01	4,15E-01	4,15E-01	4,15E-01	4,15E-01	4,84E+00	4,84E+00	4,84E+00	4,84E+00
	PERT	MJ	4,49E+00	3,79E+00	4,52E+00	5,32E+00	5,31E+00	2,23E+01	2,07E+01	1,89E+01	1,52E+01
	PENRE	MJ	5,55E+01	4,73E+01	5,69E+01	6,64E+01	5,92E+01	2,40E+02	2,22E+02	2,04E+02	1,64E+02
	PENRM	MJ	6,62E+00	6,61E+00	6,62E+00	6,62E+00	6,62E+00	1,46E+01	1,46E+01	1,46E+01	1,45E+01
	PENRT	MJ	6,21E+01	5,39E+01	6,35E+01	7,30E+01	6,58E+01	2,54E+02	2,37E+02	2,18E+02	1,79E+02
	SM	Kg	3,68E-02	3,54E-02	3,72E-02	3,89E-02	3,67E-02	3,26E-01	3,24E-01	3,21E-01	3,15E-01
	RSF	MJ	1,75E-02	1,75E-02	1,75E-02	1,75E-02	1,75E-02	1,75E-01	1,75E-01	1,75E-01	1,75E-01
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	1,56E-01	1,48E-01	1,58E-01	1,67E-01	1,58E-01	2,89E-01	2,70E-01	2,51E-01	2,09E-01

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WASTE PRODUCTION

PANEL SYSTEM | T-grid | Lay-in metal ceilings

DECLARED UNIT:
1 m² of metal ceiling.

System models: *24 Linear Tegular (9 and 15 mm drop) | 15 Linear Design (9 and 15 mm drop) Plan | Flat | Trim | Escape | 24 Syncro Evo*

CAPTION:

Acronyms

PEI	Potential environment impact
UM	Unit of measure
HWD	Hazardous waste disposed
NHWD	Non-hazardous waste disposed
RWD	Radioactive waste disposed
CRU	Components for re-use
MFR	Materials for recycling
MER	Materials for energy recovery
EEE	Exported energy, electricals

Sch. 12 - WASTE PRODUCTION OF T-GRID | LAY-IN METAL CEILINGS

STAGE	PEI	UM	T-GRID STRUCTURE					LAY - IN PANELS			
			A	B	C	D	E	1	2	3	4
A1 UPSTREAM PROCESS	**HWD**	**Kg**	6,48E-03	5,23E-03	6,82E-03	8,27E-03	6,40E-03	2,88E-02	2,65E-02	2,40E-02	1,87E-02
	NHWD	**Kg**	3,20E-04	2,58E-04	3,36E-04	4,08E-04	3,16E-04	1,42E-03	1,31E-03	1,19E-03	9,25E-04
	RWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	**Kg**	4,59E-02	3,71E-02	4,82E-02	5,85E-02	4,53E-02	2,04E-01	1,88E-01	1,70E-01	1,33E-01
	MER	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
A2 CORE PROCESS	**HWD**	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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LCA IMPACT ASSESSMENT

STAGE	PEI	UM	T-GRID STRUCTURE					LAY - IN PANELS			
			A	B	C	D	E	1	2	3	4
A3 CORE PROCESS	HWD	Kg	1,97E-12	1,97E-12	1,97E-12	1,97E-12	1,97E-12	1,97E-11	1,97E-11	1,97E-11	1,97E-11
	NHWD	Kg	3,92E-03	3,92E-03	3,92E-03	3,92E-03	3,92E-03	3,92E-02	3,92E-02	3,92E-02	3,92E-02
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	6,50E-04	6,50E-04	6,50E-04	6,50E-04	6,50E-04	1,14E-02	1,14E-02	1,14E-02	1,14E-02
	MFR	Kg	1,01E-02	9,03E-03	1,03E-02	1,15E-02	1,03E-02	5,99E-02	5,80E-02	5,60E-02	5,17E-02
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
A4 DOWN STREAM PROCESS	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C1 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C2 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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STAGE	PEI	UM	T-GRID STRUCTURE					LAY - IN PANELS			
			A	B	C	D	E	1	2	3	4
C3 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	1,91E-01	1,59E-01	1,97E-01	2,34E-01	1,99E-01	8,39E-01	7,81E-01	7,19E-01	5,87E-01
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	1,30E-02	1,30E-02	1,30E-02	1,30E-02	1,30E-02	2,10E-01	2,10E-01	2,10E-01	2,10E-01
D REUSE - RECOVERY STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
TOTAL	HWD	Kg	6,48E-03	5,23E-03	6,82E-03	8,27E-03	6,40E-03	2,88E-02	2,65E-02	2,40E-02	1,87E-02
	NHWD	Kg	1,95E-01	1,63E-01	2,02E-01	2,38E-01	2,03E-01	8,80E-01	8,21E-01	7,60E-01	6,27E-01
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	6,50E-04	6,50E-04	6,50E-04	6,50E-04	6,50E-04	1,14E-02	1,14E-02	1,14E-02	1,14E-02
	MFR	Kg	5,59E-02	4,61E-02	5,85E-02	7,00E-02	5,56E-02	2,64E-01	2,46E-01	2,26E-01	1,84E-01
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	1,30E-02	1,30E-02	1,30E-02	1,30E-02	1,30E-02	2,10E-01	2,10E-01	2,10E-01	2,10E-01

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LCA IMPACT ASSESSMENT

ENVIRONMENTAL IMPACT
PANEL SYSTEM | Clip-in metal ceilings

DECLARED UNIT:
1 m² of metal ceiling.

System models: *Enigma | Enigma Open | Enigma Space*

CAPTION:

Acronyms

PEI	Potential environment impact
UM	Unit of measure
GWP	Global warming potential, total
GWPf	Global warming potential, fossil
GWPb	Global warming potential, biogenic
GWPl	Global warming potential, land use
ODP	Ozone depletion potential
AP	Acidification potential of land and water
EPf	Eutrophication acquatic, freshwater
EPm	Eutrophication acquatic, marine
EPt	Eutrophication acquatic, terrestrial
POCP	Photochemical ozone creation potential
ADPe	Abiotic depletion potential, elements
ADPf	Abiotic depletion potential, fossil
WDP	Water depletion potential

Clip-in structures
A) - TS Single triangle structure
B) - TDW Double triangle with winger
C) - CS Single continental profile
D) - CDW Double continental profile with winger
- CDU Double continental profile with "U" one

Plain and perforated panels
1) 0 ≤ % perforated area ≤ 10%
2) 11 ≤ % perforated area ≤ 20%
3) 21 ≤ % perforated area ≤ 30%
4) 31 ≤ % perforated area ≤ 40%

Sound-absorption components:
Acoustic tissue thermo-applied

Sch. 13 - ENVIRONMENTAL IMPACTS OF CLIP-IN METAL CEILINGS

STAGE	PEI	UM	CLIP-IN STRUCTURE				CLIP- IN PANELS			
			A | TS	B | TDW	C | CS	D | CDW/U	1	2	3	4
A1 UPSTREAM PROCESS	GWP	kg CO_2 eq	1,75E+00	3,26E+00	2,26E+00	3,91E+00	1,45E+01	1,35E+01	1,25E+01	1,24E+01
	GWPf	kg CO_2 eq	1,74E+00	3,25E+00	2,25E+00	3,90E+00	1,45E+01	1,35E+01	1,24E+01	1,23E+01
	GWPb	kg CO_2 eq	5,33E-03	9,95E-03	6,87E-03	1,19E-02	4,70E-02	4,39E-02	4,07E-02	4,04E-02
	GWPl	kg CO_2 eq	1,44E-03	2,69E-03	1,86E-03	3,23E-03	1,09E-02	1,01E-02	9,30E-03	9,30E-03
	ODP	kg CFC-11 eq	1,33E-07	2,47E-07	1,71E-07	2,96E-07	1,44E-06	1,34E-06	1,23E-06	1,17E-06
	AP	mol H + eq	9,72E-03	1,81E-02	1,25E-02	2,17E-02	7,67E-02	7,12E-02	6,54E-02	6,52E-02
	EPf	Kg P eq	1,07E-04	1,99E-04	1,38E-04	2,39E-04	7,97E-04	7,38E-04	6,76E-04	6,75E-04
	EPm	Kg N eq	2,06E-03	3,84E-03	2,65E-03	4,61E-03	1,59E-02	1,48E-02	1,35E-02	1,35E-02
	EPt	mol N eq	2,33E-02	4,34E-02	3,00E-02	5,20E-02	1,79E-01	1,66E-01	1,53E-01	1,52E-01
	POCP	kg NMVOC eq	8,72E-03	1,63E-02	1,12E-02	1,95E-02	6,83E-02	6,34E-02	5,82E-02	5,80E-02
	ADPe	Kg Sb eq	5,48E-03	1,02E-02	7,06E-03	1,22E-02	3,85E-02	3,55E-02	3,23E-02	3,23E-02
	ADPf	MJ	2,10E+01	3,91E+01	2,70E+01	4,69E+01	2,00E+02	1,86E+02	1,72E+02	1,67E+02
	WDP	m³	1,02E+00	1,89E+00	1,31E+00	2,27E+00	1,11E+01	1,04E+01	9,62E+00	9,17E+00
A2 CORE PROCESS	GWP	kg CO_2 eq	6,11E-02	1,14E-01	7,86E-02	1,36E-01	4,36E-01	3,97E-01	3,55E-01	2,67E-01
	GWPf	kg CO_2 eq	6,10E-02	1,14E-01	7,86E-02	1,36E-01	4,35E-01	3,97E-01	3,54E-01	2,66E-01
	GWPb	kg CO_2 eq	2,53E-05	4,71E-05	3,25E-05	5,65E-05	1,80E-04	1,64E-04	1,47E-04	1,10E-04
	GWPl	kg CO_2 eq	4,88E-07	9,10E-07	6,28E-07	1,09E-06	3,48E-06	3,17E-06	2,83E-06	2,13E-06
	ODP	kg CFC-11 eq	1,43E-08	2,66E-08	1,84E-08	3,19E-08	1,02E-07	9,28E-08	8,30E-08	6,24E-08
	AP	mol H + eq	3,53E-04	6,59E-04	4,55E-04	7,90E-04	2,52E-03	2,30E-03	2,05E-03	1,54E-03
	EPf	Kg P eq	3,66E-08	6,83E-08	4,72E-08	8,19E-08	2,61E-07	2,38E-07	2,13E-07	1,60E-07
	EPm	Kg N eq	1,42E-04	2,65E-04	1,83E-04	3,18E-04	1,01E-03	9,24E-04	8,25E-04	6,21E-04
	EPt	mol N eq	1,56E-03	2,91E-03	2,01E-03	3,49E-03	1,11E-02	1,01E-02	9,06E-03	6,81E-03
	POCP	kg NMVOC eq	4,06E-04	7,57E-04	5,23E-04	9,07E-04	2,90E-03	2,64E-03	2,36E-03	1,77E-03
	ADPe	Kg Sb eq	3,63E-09	6,77E-09	4,68E-09	8,11E-09	2,59E-08	2,36E-08	2,11E-08	1,59E-08
	ADPf	MJ	8,72E-01	1,63E+00	1,12E+00	1,95E+00	6,22E+00	5,67E+00	5,07E+00	3,81E+00
	WDP	m³	-1,92E-04	-3,58E-04	-2,47E-04	-4,29E-04	-1,37E-03	-1,25E-03	-1,12E-03	-8,39E-04

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EPD®

STAGE	PEI	UM	CLIP-IN STRUCTURE				CLIP- IN PANELS			
			A | TS	B | TDW	C | CS	D | CDW/U	1	2	3	4
A3 CORE PROCESS	GWP	kg CO_2 eq	4,88E-03	2,34E-02	1,10E-02	3,13E-02	1,29E+00	1,17E+00	1,04E+00	7,71E-01
	GWPf	kg CO_2 eq	4,16E-02	5,65E-02	4,66E-02	6,29E-02	1,68E+00	1,57E+00	1,44E+00	1,18E+00
	GWPb	kg CO_2 eq	-3,69E-02	-3,34E-02	-3,58E-02	-3,19E-02	-3,97E-01	-4,00E-01	-4,02E-01	-4,07E-01
	GWPl	kg CO_2 eq	2,40E-04	2,41E-04	2,40E-04	2,41E-04	2,47E-03	2,47E-03	2,46E-03	2,46E-03
	ODP	kg CFC-11 eq	3,80E-09	4,23E-09	3,94E-09	4,41E-09	5,17E-08	5,13E-08	5,09E-08	5,01E-08
	AP	mol H + eq	2,42E-04	3,49E-04	2,78E-04	3,94E-04	2,70E-03	2,60E-03	2,50E-03	2,27E-03
	EPf	Kg P eq	2,01E-06	2,08E-06	2,03E-06	2,12E-06	2,64E-05	2,62E-05	2,61E-05	2,57E-05
	EPm	Kg N eq	1,07E-04	1,63E-04	1,26E-04	1,87E-04	1,06E-03	1,01E-03	9,56E-04	8,45E-04
	EPt	mol N eq	1,06E-03	1,63E-03	1,25E-03	1,87E-03	1,08E-02	1,03E-02	9,72E-03	8,57E-03
	POCP	kg NMVOC eq	2,71E-04	4,32E-04	3,25E-04	5,01E-04	2,95E-03	2,81E-03	2,66E-03	2,34E-03
	ADPe	Kg Sb eq	8,54E-08	1,13E-07	9,47E-08	1,25E-07	7,67E-07	7,48E-07	7,27E-07	6,85E-07
	ADPf	MJ	4,13E-01	4,50E-01	4,25E-01	4,66E-01	8,76E+00	8,72E+00	8,67E+00	8,58E+00
	WDP	m^3	8,07E-02	1,29E-01	9,67E-02	1,49E-01	9,06E-01	8,65E-01	8,20E-01	7,25E-01
A4 DOWN STREAM PROCESS	GWP	kg CO_2 eq	5,82E-02	1,08E-01	7,49E-02	1,30E-01	3,56E-01	3,24E-01	2,90E-01	2,18E-01
	GWPf	kg CO_2 eq	5,82E-02	1,08E-01	7,49E-02	1,30E-01	3,56E-01	3,24E-01	2,90E-01	2,18E-01
	GWPb	kg CO_2 eq	2,40E-05	4,47E-05	3,09E-05	5,36E-05	1,47E-04	1,34E-04	1,19E-04	8,98E-05
	GWPl	kg CO_2 eq	4,66E-07	8,68E-07	6,00E-07	1,04E-06	2,85E-06	2,59E-06	2,32E-06	1,74E-06
	ODP	kg CFC-11 eq	1,33E-08	2,48E-08	1,71E-08	2,97E-08	8,14E-08	7,41E-08	6,62E-08	4,98E-08
	AP	mol H + eq	3,07E-04	5,72E-04	3,95E-04	6,86E-04	1,88E-03	1,71E-03	1,53E-03	1,15E-03
	EPf	Kg P eq	3,49E-08	6,50E-08	4,49E-08	7,79E-08	2,13E-07	1,94E-07	1,74E-07	1,30E-07
	EPm	Kg N eq	8,86E-05	1,65E-04	1,14E-04	1,98E-04	5,42E-04	4,94E-04	4,41E-04	3,32E-04
	EPt	mol N eq	9,79E-04	1,83E-03	1,26E-03	2,19E-03	5,99E-03	5,46E-03	4,88E-03	3,67E-03
	POCP	kg NMVOC eq	2,61E-04	4,88E-04	3,37E-04	5,85E-04	1,60E-03	1,46E-03	1,30E-03	9,79E-04
	ADPe	Kg Sb eq	3,33E-09	6,20E-09	4,28E-09	7,44E-09	2,03E-08	1,85E-08	1,66E-08	1,24E-08
	ADPf	MJ	8,13E-01	1,52E+00	1,05E+00	1,82E+00	4,97E+00	4,53E+00	4,05E+00	3,04E+00
	WDP	m^3	-1,79E-04	-3,35E-04	-2,31E-04	-4,01E-04	-1,10E-03	-1,00E-03	-8,94E-04	-6,72E-04
C1 END FO LIFE STAGE	GWP	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPf	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPb	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPl	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ODP	kg CFC-11 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	AP	mol H + eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPf	Kg P eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPm	Kg N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPt	mol N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	POCP	kg NMVOC eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPe	Kg Sb eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPf	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	WDP	m^3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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tel. + 39 0421 75526 export@atena-it.com

LCA IMPACT ASSESSMENT

STAGE	PEI	UM	CLIP-IN STRUCTURE				CLIP- IN PANELS			
			A | TS	B | TDW	C | CS	D | CDW/U	1	2	3	4
C2 END FO LIFE STAGE	GWP	kg CO_2 eq	1,95E-02	3,64E-02	2,52E-02	4,37E-02	1,20E-01	1,09E-01	9,73E-02	7,31E-02
	GWPf	kg CO_2 eq	1,95E-02	3,64E-02	2,52E-02	4,37E-02	1,19E-01	1,09E-01	9,72E-02	7,31E-02
	GWPb	kg CO_2 eq	8,04E-06	1,50E-05	1,04E-05	1,80E-05	4,92E-05	4,48E-05	4,00E-05	3,01E-05
	GWPl	kg CO_2 eq	1,55E-07	2,90E-07	2,00E-07	3,47E-07	9,50E-07	8,65E-07	7,73E-07	5,81E-07
	ODP	kg CFC-11 eq	4,55E-09	8,48E-09	5,86E-09	1,02E-08	2,78E-08	2,53E-08	2,26E-08	1,70E-08
	AP	mol H + eq	1,17E-04	2,18E-04	1,51E-04	2,62E-04	7,16E-04	6,52E-04	5,82E-04	4,38E-04
	EPf	Kg P eq	1,17E-08	2,17E-08	1,50E-08	2,61E-08	7,13E-08	6,50E-08	5,81E-08	4,36E-08
	EPm	Kg N eq	4,76E-05	8,87E-05	6,13E-05	1,06E-04	2,91E-04	2,65E-04	2,37E-04	1,78E-04
	EPt	mol N eq	5,23E-04	9,75E-04	6,73E-04	1,17E-03	3,20E-03	2,91E-03	2,60E-03	1,96E-03
	POCP	kg NMVOC eq	1,35E-04	2,52E-04	1,74E-04	3,02E-04	8,27E-04	7,53E-04	6,73E-04	5,06E-04
	ADPe	Kg Sb eq	1,16E-09	2,15E-09	1,49E-09	2,58E-09	7,07E-09	6,44E-09	5,75E-09	4,32E-09
	ADPf	MJ	2,78E-01	5,18E-01	3,58E-01	6,21E-01	1,70E+00	1,55E+00	1,38E+00	1,04E+00
	WDP	m^3	-6,11E-05	-1,14E-04	-7,87E-05	-1,37E-04	-3,74E-04	-3,41E-04	-3,04E-04	-2,29E-04
C3 END FO LIFE STAGE	GWP	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPf	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPb	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPl	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ODP	kg CFC-11 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	AP	mol H + eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPf	Kg P eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPm	Kg N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPt	mol N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	POCP	kg NMVOC eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPe	Kg Sb eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPf	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	WDP	m^3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	GWP	kg CO_2 eq	2,84E-04	5,21E-04	3,63E-04	6,23E-04	2,22E-03	2,07E-03	1,91E-03	1,57E-03
	GWPf	kg CO_2 eq	2,84E-04	5,21E-04	3,63E-04	6,23E-04	2,22E-03	2,07E-03	1,91E-03	1,57E-03
	GWPb	kg CO_2 eq	1,38E-08	2,54E-08	1,77E-08	3,03E-08	1,08E-07	1,01E-07	9,27E-08	7,62E-08
	GWPl	kg CO_2 eq	4,49E-10	8,23E-10	5,73E-10	9,83E-10	3,50E-09	3,26E-09	3,01E-09	2,47E-09
	ODP	kg CFC-11 eq	4,59E-11	8,41E-11	5,86E-11	1,01E-10	3,58E-10	3,34E-10	3,08E-10	2,53E-10
	AP	mol H + eq	2,99E-06	5,47E-06	3,82E-06	6,54E-06	2,33E-05	2,17E-05	2,00E-05	1,65E-05
	EPf	Kg P eq	4,93E-10	9,04E-10	6,30E-10	1,08E-09	3,84E-09	3,58E-09	3,30E-09	2,72E-09
	EPm	Kg N eq	1,29E-06	2,36E-06	1,65E-06	2,82E-06	1,01E-05	9,38E-06	8,64E-06	7,11E-06
	EPt	mol N eq	1,41E-05	2,59E-05	1,81E-05	3,10E-05	1,10E-04	1,03E-04	9,48E-05	7,79E-05
	POCP	kg NMVOC eq	3,88E-06	7,12E-06	4,96E-06	8,50E-06	3,03E-05	2,82E-05	2,60E-05	2,14E-05
	ADPe	Kg Sb eq	3,47E-13	6,36E-13	4,43E-13	7,60E-13	2,70E-12	2,52E-12	2,32E-12	1,91E-12
	ADPf	MJ	3,96E-03	7,26E-03	5,06E-03	8,67E-03	3,09E-02	2,88E-02	2,65E-02	2,18E-02
	WDP	m^3	2,12E-03	3,89E-03	2,71E-03	4,64E-03	1,65E-02	1,54E-02	1,42E-02	1,17E-02

All dimensions are nominal and expressed in millimeters.
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tel. + 39 0421 75526 export@atena-it.com

EPD®

STAGE	PEI	UM	CLIP-IN STRUCTURE				CLIP- IN PANELS			
			A | TS	B | TDW	C | CS	D | CDW/U	1	2	3	4
D REUSE - RECOVERY STAGE	GWP	kg CO_2 eq	-5,87E-01	-1,09E+00	-7,56E-01	-1,31E+00	-4,15E+00	-3,83E+00	-3,48E+00	-2,76E+00
	GWPf	kg CO_2 eq	-5,85E-01	-1,09E+00	-7,53E-01	-1,31E+00	-4,14E+00	-3,82E+00	-3,47E+00	-2,75E+00
	GWPb	kg CO_2 eq	-1,88E-03	-3,50E-03	-2,42E-03	-4,20E-03	-1,33E-02	-1,23E-02	-1,12E-02	-8,83E-03
	GWPl	kg CO_2 eq	-5,81E-05	-1,08E-04	-7,48E-05	-1,30E-04	-4,11E-04	-3,79E-04	-3,45E-04	-2,73E-04
	ODP	kg CFC-11 eq	-1,75E-08	-3,25E-08	-2,25E-08	-3,91E-08	-1,24E-07	-1,14E-07	-1,04E-07	-8,22E-08
	AP	mol H + eq	-2,82E-03	-5,24E-03	-3,63E-03	-6,29E-03	-1,99E-02	-1,84E-02	-1,67E-02	-1,32E-02
	EPf	Kg P eq	-3,50E-05	-6,51E-05	-4,50E-05	-7,81E-05	-2,47E-04	-2,28E-04	-2,08E-04	-1,64E-04
	EPm	Kg N eq	-5,42E-04	-1,01E-03	-6,97E-04	-1,21E-03	-3,83E-03	-3,54E-03	-3,21E-03	-2,55E-03
	EPt	mol N eq	-6,12E-03	-1,14E-02	-7,88E-03	-1,37E-02	-4,33E-02	-4,00E-02	-3,63E-02	-2,88E-02
	POCP	kg NMVOC eq	-2,99E-03	-5,57E-03	-3,85E-03	-6,68E-03	-2,12E-02	-1,95E-02	-1,78E-02	-1,41E-02
	ADPe	Kg Sb eq	-1,06E-05	-1,97E-05	-1,36E-05	-2,36E-05	-7,47E-05	-6,89E-05	-6,27E-05	-4,96E-05
	ADPf	MJ	-4,71E+00	-8,78E+00	-6,07E+00	-1,05E+01	-3,34E+01	-3,08E+01	-2,80E+01	-2,22E+01
	WDP	m^3	-5,22E-02	-9,72E-02	-6,72E-02	-1,17E-01	-3,69E-01	-3,41E-01	-3,10E-01	-2,45E-01
TOTAL	GWP	kg CO_2 eq	1,89E+00	3,55E+00	2,45E+00	4,26E+00	1,67E+01	1,55E+01	1,43E+01	1,37E+01
	GWPf	kg CO_2 eq	1,92E+00	3,57E+00	2,47E+00	4,27E+00	1,71E+01	1,59E+01	1,46E+01	1,41E+01
	GWPb	kg CO_2 eq	-3,16E-02	-2,34E-02	-2,88E-02	-1,99E-02	-3,50E-01	-3,55E-01	-3,61E-01	-3,67E-01
	GWPl	kg CO_2 eq	1,69E-03	2,94E-03	2,10E-03	3,47E-03	1,34E-02	1,26E-02	1,18E-02	1,18E-02
	ODP	kg CFC-11 eq	1,69E-07	3,12E-07	2,16E-07	3,73E-07	1,70E-06	1,58E-06	1,45E-06	1,35E-06
	AP	mol H + eq	1,07E-02	1,99E-02	1,38E-02	2,39E-02	8,45E-02	7,85E-02	7,21E-02	7,06E-02
	EPf	Kg P eq	1,09E-04	2,01E-04	1,40E-04	2,41E-04	8,24E-04	7,64E-04	7,02E-04	7,01E-04
	EPm	Kg N eq	2,45E-03	4,53E-03	3,14E-03	5,42E-03	1,88E-02	1,75E-02	1,60E-02	1,55E-02
	EPt	mol N eq	2,74E-02	5,08E-02	3,52E-02	6,08E-02	2,11E-01	1,95E-01	1,79E-01	1,73E-01
	POCP	kg NMVOC eq	9,80E-03	1,82E-02	1,26E-02	2,18E-02	7,66E-02	7,10E-02	6,52E-02	6,36E-02
	ADPe	Kg Sb eq	5,48E-03	1,02E-02	7,06E-03	1,22E-02	3,85E-02	3,55E-02	3,23E-02	3,23E-02
	ADPf	MJ	2,34E+01	4,32E+01	3,00E+01	5,18E+01	2,22E+02	2,07E+02	1,91E+02	1,84E+02
	WDP	m^3	1,10E+00	2,02E+00	1,41E+00	2,42E+00	1,20E+01	1,12E+01	1,05E+01	9,90E+00

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LCA IMPACT ASSESSMENT

RESOURCE CONSUMPTION
PANEL SYSTEM | Clip-in metal ceilings

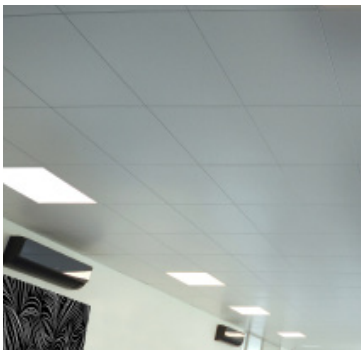
DECLARED UNIT:
1 m² of metal ceiling.

System models: *Enigma | Enigma Open | Enigma Space*

CAPTION:

Acronyms

PEI	Potential environment impact
UM	Unit of measure
PERE	Renewable primary energy excluding that one used as raw material
PERM	Renewable primary energy used as raw material
PERT	Total use of renewable primary energy
PENRE	Non-renewable primary energy excluding that one used as raw material
PENRM	Non-renewable primary energy used as raw material
PENRT	Total use of non-renewable primary energy
SM	Use of secondary raw materials
RSF	Use of renewable secondary fuels
NRSF	Use of non-renewable secondary fuels
FW	Net use of fresh water



Sch. 14 - RESOURCE CONSUMPTION OF CLIP-IN METAL CEILINGS

STAGE	PEI	UM	CLIP-IN STRUCTURE				CLIP-IN PANELS			
			A | TS	B | TDW	C | CS	D | CDW/U	1	2	3	4
A1 UPSTREAM PROCESS	**PERE**	**MJ**	2,44E+00	4,54E+00	3,14E+00	5,45E+00	2,18E+01	2,00E+01	1,82E+01	1,69E+01
	PERM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,97E-01	5,97E-01	5,97E-01	5,97E-01
	PERT	**MJ**	2,44E+00	4,54E+00	3,14E+00	5,45E+00	2,24E+01	2,06E+01	1,88E+01	1,75E+01
	PENRE	**MJ**	2,71E+01	5,05E+01	3,49E+01	6,05E+01	2,38E+02	2,21E+02	2,02E+02	1,97E+02
	PENRM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,18E+01	1,18E+01	1,18E+01	1,18E+01
	PENRT	**MJ**	2,71E+01	5,05E+01	3,49E+01	6,05E+01	2,50E+02	2,32E+02	2,14E+02	2,09E+02
	SM	**Kg**	5,13E-03	9,57E-03	6,61E-03	1,15E-02	3,60E-02	3,32E-02	3,02E-02	3,02E-02
	RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	**m³**	2,75E-02	5,13E-02	3,54E-02	6,15E-02	2,84E-01	2,66E-01	2,47E-01	2,37E-01
A2 CORE PROCESS	**PERE**	**MJ**	1,22E-03	2,28E-03	1,57E-03	2,73E-03	8,71E-03	7,93E-03	7,09E-03	5,33E-03
	PERM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	**MJ**	1,22E-03	2,28E-03	1,57E-03	2,73E-03	8,71E-03	7,93E-03	7,09E-03	5,33E-03
	PENRE	**MJ**	8,52E-01	1,59E+00	1,10E+00	1,90E+00	6,08E+00	5,54E+00	4,95E+00	3,72E+00
	PENRM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	**MJ**	8,52E-01	1,59E+00	1,10E+00	1,90E+00	6,08E+00	5,54E+00	4,95E+00	3,72E+00
	SM	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	**m³**	1,73E-05	3,22E-05	2,23E-05	3,86E-05	1,23E-04	1,12E-04	1,00E-04	7,54E-05

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tel. + 39 0421 75526 export@atena-it.com

STAGE	PEI	UM	CLIP-IN STRUCTURE				CLIP-IN PANELS			
			A | TS	B | TDW	C | CS	D | CDW/U	1	2	3	4
A3 CORE PROCESS	PERE	MJ	-2,88E-01	-2,86E-01	-2,87E-01	-2,86E-01	-2,63E+00	-2,64E+00	-2,64E+00	-2,65E+00
	PERM	MJ	4,15E-01	4,15E-01	4,15E-01	4,15E-01	4,24E+00	4,24E+00	4,24E+00	4,24E+00
	PERT	MJ	1,28E-01	1,29E-01	1,28E-01	1,30E-01	1,61E+00	1,60E+00	1,60E+00	1,59E+00
	PENRE	MJ	4,43E-01	4,65E-01	4,51E-01	4,74E-01	6,68E+00	6,64E+00	6,60E+00	6,51E+00
	PENRM	MJ	2,03E-02	3,79E-02	2,62E-02	4,54E-02	2,78E+00	2,77E+00	2,76E+00	2,73E+00
	PENRT	MJ	4,64E-01	5,03E-01	4,77E-01	5,20E-01	9,46E+00	9,41E+00	9,36E+00	9,25E+00
	SM	Kg	2,93E-02	2,93E-02	2,93E-02	2,93E-02	2,93E-01	2,93E-01	2,93E-01	2,93E-01
	RSF	MJ	1,75E-02	1,75E-02	1,75E-02	1,75E-02	1,75E-01	1,75E-01	1,75E-01	1,75E-01
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m^3	1,93E-03	3,05E-03	2,30E-03	3,53E-03	2,19E-02	2,09E-02	1,99E-02	1,76E-02
A4 DOWN STREAM PROCESS	PERE	MJ	1,13E-03	2,11E-03	1,46E-03	2,53E-03	6,94E-03	6,32E-03	5,65E-03	4,24E-03
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	1,13E-03	2,11E-03	1,46E-03	2,53E-03	6,94E-03	6,32E-03	5,65E-03	4,24E-03
	PENRE	MJ	7,94E-01	1,48E+00	1,02E+00	1,77E+00	4,85E+00	4,42E+00	3,95E+00	2,97E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	7,94E-01	1,48E+00	1,02E+00	1,77E+00	4,85E+00	4,42E+00	3,95E+00	2,97E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m^3	1,59E-05	2,96E-05	2,05E-05	3,55E-05	9,71E-05	8,85E-05	7,91E-05	5,94E-05
C1 END FO LIFE STAGE	PERE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m^3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C2 END FO LIFE STAGE	PERE	MJ	3,88E-04	7,24E-04	5,00E-04	8,68E-04	2,38E-03	2,16E-03	1,93E-03	1,45E-03
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	3,88E-04	7,24E-04	5,00E-04	8,68E-04	2,38E-03	2,16E-03	1,93E-03	1,45E-03
	PENRE	MJ	2,71E-01	5,06E-01	3,49E-01	6,06E-01	1,66E+00	1,51E+00	1,35E+00	1,01E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	2,71E-01	5,06E-01	3,49E-01	6,06E-01	1,66E+00	1,51E+00	1,35E+00	1,01E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m^3	5,50E-06	1,03E-05	7,08E-06	1,23E-05	3,36E-05	3,06E-05	2,74E-05	2,06E-05

All dimensions are nominal and expressed in millimeters.
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LCA IMPACT ASSESSMENT

STAGE	PEI	UM	CLIP-IN STRUCTURE				CLIP-IN PANELS			
			A | TS	B | TDW	C | CS	D | CDW/U	1	2	3	4
C3 END FO LIFE STAGE	PERE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	PERE	MJ	8,59E-06	1,57E-05	1,10E-05	1,88E-05	6,70E-05	6,24E-05	5,75E-05	4,73E-05
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	8,59E-06	1,57E-05	1,10E-05	1,88E-05	6,70E-05	6,24E-05	5,75E-05	4,73E-05
	PENRE	MJ	3,88E-03	7,11E-03	4,96E-03	8,50E-03	3,02E-02	2,82E-02	2,60E-02	2,14E-02
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	3,88E-03	7,11E-03	4,96E-03	8,50E-03	3,02E-02	2,82E-02	2,60E-02	2,14E-02
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	4,95E-05	9,07E-05	6,32E-05	1,08E-04	3,86E-04	3,60E-04	3,32E-04	2,73E-04
D REUSE - RECOVERY STAGE	PERE	MJ	-4,35E-01	-8,09E-01	-5,60E-01	-9,71E-01	-3,08E+00	-2,84E+00	-2,58E+00	-2,04E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	-4,35E-01	-8,09E-01	-5,60E-01	-9,71E-01	-3,08E+00	-2,84E+00	-2,58E+00	-2,04E+00
	PENRE	MJ	-7,01E+00	-1,31E+01	-9,03E+00	-1,57E+01	-4,96E+01	-4,58E+01	-4,16E+01	-3,30E+01
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	-7,01E+00	-1,31E+01	-9,03E+00	-1,57E+01	-4,96E+01	-4,58E+01	-4,16E+01	-3,30E+01
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	-1,09E-03	-2,04E-03	-1,41E-03	-2,45E-03	-7,74E-03	-7,15E-03	-6,50E-03	-5,14E-03
TOTAL	PERE	MJ	2,15E+00	4,26E+00	2,85E+00	5,17E+00	1,92E+01	1,74E+01	1,56E+01	1,42E+01
	PERM	MJ	4,15E-01	4,15E-01	4,15E-01	4,15E-01	4,84E+00	4,84E+00	4,84E+00	4,84E+00
	PERT	MJ	2,57E+00	4,68E+00	3,27E+00	5,58E+00	2,40E+01	2,23E+01	2,04E+01	1,91E+01
	PENRE	MJ	2,94E+01	5,45E+01	3,78E+01	6,53E+01	2,57E+02	2,39E+02	2,19E+02	2,12E+02
	PENRM	MJ	2,03E-02	3,79E-02	2,62E-02	4,54E-02	1,46E+01	1,46E+01	1,45E+01	1,45E+01
	PENRT	MJ	2,95E+01	5,46E+01	3,78E+01	6,53E+01	2,72E+02	2,53E+02	2,34E+02	2,26E+02
	SM	Kg	3,44E-02	3,89E-02	3,59E-02	4,08E-02	3,29E-01	3,26E-01	3,23E-01	3,23E-01
	RSF	MJ	1,75E-02	1,75E-02	1,75E-02	1,75E-02	1,75E-01	1,75E-01	1,75E-01	1,75E-01
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	2,95E-02	5,45E-02	3,79E-02	6,52E-02	3,07E-01	2,88E-01	2,67E-01	2,55E-01

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EPD®

WASTE PRODUCTION
PANEL SYSTEM | Clip-in metal ceilings

DECLARED UNIT:
1 m² of metal ceiling.

System models: *Enigma | Enigma Open | Enigma Space*

CAPTION:

Acronyms

PEI	Potential environment impact
UM	Unit of measure
HWD	Hazardous waste disposed
NHWD	Non-hazardous waste disposed
RWD	Radioactive waste disposed
CRU	Components for re-use
MFR	Materials for recycling
MER	Materials for energy recovery
EEE	Exported energy, electricals

Sch. 15 - WASTE PRODUCTION OF CLIP-IN METAL CEILINGS

STAGE	PEI	UM	CLIP-IN STRUCTURE				CLIP-IN PANELS			
			A | TS	B | TDW	C | CS	D | CDW/U	1	2	3	4
A1 UPSTREAM PROCESS	**HWD**	**Kg**	4,44E-03	8,28E-03	5,72E-03	9,93E-03	3,12E-02	2,87E-02	2,61E-02	2,61E-02
	NHWD	**Kg**	2,19E-04	4,09E-04	2,82E-04	4,90E-04	1,54E-03	1,42E-03	1,29E-03	1,29E-03
	RWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	**Kg**	3,14E-02	5,86E-02	4,05E-02	7,03E-02	2,21E-01	2,03E-01	1,85E-01	1,85E-01
	MER	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
A2 CORE PROCESS	**HWD**	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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EPD®

LCA IMPACT ASSESSMENT

STAGE	PEI	UM	CLIP-IN STRUCTURE				CLIP-IN PANELS			
			A | TS	B | TDW	C | CS	D | CDW/U	1	2	3	4
A3 CORE PROCESS	HWD	Kg	1,97E-12	1,97E-12	1,97E-12	1,97E-12	1,97E-11	1,97E-11	1,97E-11	1,97E-11
	NHWD	Kg	3,92E-03	3,92E-03	3,92E-03	3,92E-03	3,92E-02	3,92E-02	3,92E-02	3,92E-02
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	6,50E-04	6,50E-04	6,50E-04	6,50E-04	1,14E-02	1,14E-02	1,14E-02	1,14E-02
	MFR	Kg	7,59E-03	1,07E-02	8,63E-03	1,21E-02	6,18E-02	5,99E-02	5,77E-02	5,32E-02
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
A4 DOWN STREAM PROCESS	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C1 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C2 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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STAGE	PEI	UM	CLIP-IN STRUCTURE				CLIP-IN PANELS			
			A | TS	B | TDW	C | CS	D | CDW/U	1	2	3	4
C3 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	1,15E-01	2,11E-01	1,47E-01	2,52E-01	8,97E-01	8,37E-01	7,71E-01	6,34E-01
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	1,30E-02	1,30E-02	1,30E-02	1,30E-02	2,10E-01	2,10E-01	2,10E-01	2,10E-01
D REUSE - RECOVERY STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
TOTAL	HWD	Kg	4,44E-03	8,28E-03	5,72E-03	9,93E-03	3,12E-02	2,87E-02	2,61E-02	2,61E-02
	NHWD	Kg	1,19E-01	2,15E-01	1,51E-01	2,56E-01	9,38E-01	8,77E-01	8,12E-01	6,75E-01
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	6,50E-04	6,50E-04	6,50E-04	6,50E-04	1,14E-02	1,14E-02	1,14E-02	1,14E-02
	MFR	Kg	3,90E-02	6,93E-02	4,91E-02	8,23E-02	2,83E-01	2,63E-01	2,43E-01	2,38E-01
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	1,30E-02	1,30E-02	1,30E-02	1,30E-02	2,10E-01	2,10E-01	2,10E-01	2,10E-01

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LCA IMPACT ASSESSMENT

ENVIRONMENTAL IMPACT
PANEL SYSTEM | Matrox metal ceilings

DECLARED UNIT:
1 m² of metal ceiling.

System models: *Matrox | Matrox a tenuta*

CAPTION:

Acronyms

PEI	Potential environment impact
UM	Unit of measure
GWP	Global warming potential, total
GWPf	Global warming potential, fossil
GWPb	Global warming potential, biogenic
GWPl	Global warming potential, land use
ODP	Ozone depletion potential
AP	Acidification potential of land and water
EPf	Eutrophication acquatic, freshwater
EPm	Eutrophication acquatic, marine
EPt	Eutrophication acquatic, terrestrial
POCP	Photochemical ozone creation potential
ADPe	Abiotic depletion potential, elements
ADPf	Abiotic depletion potential, fossil
WDP	Water depletion potential

Clip-in structures
E) - MATROX Matrox structure

Plain and perforated panels
1) 0 ≤ % perforated area ≤ 10%
2) 11 ≤ % perforated area ≤ 20%
3) 21 ≤ % perforated area ≤ 30%
4) 31 ≤ % perforated area ≤ 40%

Sound-absorption components:
Acoustic tissue thermo-applied

Sch. 16 - ENVIRONMENTAL IMPACTS OF MATROX METAL CEILINGS

STAGE	PEI	UM	CLIP-IN STRUCTURE	MATROX PANELS			
			E | Matrox	1	2	3	4
A1 UPSTREAM PROCESS	GWP	kg CO_2 eq	4,48E+00	1,45E+01	1,35E+01	1,25E+01	1,24E+01
	GWPf	kg CO_2 eq	4,46E+00	1,45E+01	1,35E+01	1,24E+01	1,23E+01
	GWPb	kg CO_2 eq	1,50E-02	4,70E-02	4,39E-02	4,07E-02	4,04E-02
	GWPl	kg CO_2 eq	3,56E-03	1,09E-02	1,01E-02	9,30E-03	9,30E-03
	ODP	kg CFC-11 eq	3,51E-07	1,44E-06	1,34E-06	1,23E-06	1,17E-06
	AP	mol H + eq	2,42E-02	7,67E-02	7,12E-02	6,54E-02	6,52E-02
	EPf	Kg P eq	2,60E-04	7,97E-04	7,38E-04	6,76E-04	6,75E-04
	EPm	Kg N eq	5,08E-03	1,59E-02	1,48E-02	1,35E-02	1,35E-02
	EPt	mol N eq	5,74E-02	1,79E-01	1,66E-01	1,53E-01	1,52E-01
	POCP	kg NMVOC eq	2,16E-02	6,83E-02	6,34E-02	5,82E-02	5,80E-02
	ADPe	Kg Sb eq	1,30E-02	3,85E-02	3,55E-02	3,23E-02	3,23E-02
	ADPf	MJ	5,52E+01	2,00E+02	1,86E+02	1,72E+02	1,67E+02
	WDP	m^3	4,00E+00	1,11E+01	1,04E+01	9,62E+00	9,17E+00
A2 CORE PROCESS	GWP	kg CO_2 eq	1,49E-01	4,36E-01	3,97E-01	3,55E-01	2,67E-01
	GWPf	kg CO_2 eq	1,49E-01	4,35E-01	3,97E-01	3,54E-01	2,66E-01
	GWPb	kg CO_2 eq	6,17E-05	1,80E-04	1,64E-04	1,47E-04	1,10E-04
	GWPl	kg CO_2 eq	1,19E-06	3,48E-06	3,17E-06	2,83E-06	2,13E-06
	ODP	kg CFC-11 eq	3,49E-08	1,02E-07	9,28E-08	8,30E-08	6,24E-08
	AP	mol H + eq	8,64E-04	2,52E-03	2,30E-03	2,05E-03	1,54E-03
	EPf	Kg P eq	8,95E-08	2,61E-07	2,38E-07	2,13E-07	1,60E-07
	EPm	Kg N eq	3,47E-04	1,01E-03	9,24E-04	8,25E-04	6,21E-04
	EPt	mol N eq	3,81E-03	1,11E-02	1,01E-02	9,06E-03	6,81E-03
	POCP	kg NMVOC eq	9,92E-04	2,90E-03	2,64E-03	2,36E-03	1,77E-03
	ADPe	Kg Sb eq	8,87E-09	2,59E-08	2,36E-08	2,11E-08	1,59E-08
	ADPf	MJ	2,13E+00	6,22E+00	5,67E+00	5,07E+00	3,81E+00
	WDP	m^3	-4,69E-04	-1,37E-03	-1,25E-03	-1,12E-03	-8,39E-04

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STAGE	PEI	UM	CLIP-IN STRUCTURE	MATROX PANELS			
			E | Matrox	1	2	3	4
A3 CORE PROCESS	GWP	kg CO_2 eq	3,57E-02	1,29E+00	1,17E+00	1,04E+00	7,71E-01
	GWPf	kg CO_2 eq	6,65E-02	1,68E+00	1,57E+00	1,44E+00	1,18E+00
	GWPb	kg CO_2 eq	-3,11E-02	-3,97E-01	-4,00E-01	-4,02E-01	-4,07E-01
	GWPl	kg CO_2 eq	2,42E-04	2,47E-03	2,47E-03	2,46E-03	2,46E-03
	ODP	kg CFC-11 eq	4,51E-09	5,17E-08	5,13E-08	5,09E-08	5,01E-08
	AP	mol H + eq	4,20E-04	2,70E-03	2,60E-03	2,50E-03	2,27E-03
	EPf	Kg P eq	2,14E-06	2,64E-05	2,62E-05	2,61E-05	2,57E-05
	EPm	Kg N eq	2,01E-04	1,06E-03	1,01E-03	9,56E-04	8,45E-04
	EPt	mol N eq	2,00E-03	1,08E-02	1,03E-02	9,72E-03	8,57E-03
	POCP	kg NMVOC eq	5,40E-04	2,95E-03	2,81E-03	2,66E-03	2,34E-03
	ADPe	Kg Sb eq	1,32E-07	7,67E-07	7,48E-07	7,27E-07	6,85E-07
	ADPf	MJ	4,75E-01	8,76E+00	8,72E+00	8,67E+00	8,58E+00
	WDP	m^3	1,61E-01	9,06E-01	8,65E-01	8,20E-01	7,25E-01
A4 DOWN STREAM PROCESS	GWP	kg CO_2 eq	1,42E-01	3,56E-01	3,24E-01	2,90E-01	2,18E-01
	GWPf	kg CO_2 eq	1,42E-01	3,56E-01	3,24E-01	2,90E-01	2,18E-01
	GWPb	kg CO_2 eq	5,86E-05	1,47E-04	1,34E-04	1,19E-04	8,98E-05
	GWPl	kg CO_2 eq	1,14E-06	2,85E-06	2,59E-06	2,32E-06	1,74E-06
	ODP	kg CFC-11 eq	3,25E-08	8,14E-08	7,41E-08	6,62E-08	4,98E-08
	AP	mol H + eq	7,50E-04	1,88E-03	1,71E-03	1,53E-03	1,15E-03
	EPf	Kg P eq	8,52E-08	2,13E-07	1,94E-07	1,74E-07	1,30E-07
	EPm	Kg N eq	2,17E-04	5,42E-04	4,94E-04	4,41E-04	3,32E-04
	EPt	mol N eq	2,39E-03	5,99E-03	5,46E-03	4,88E-03	3,67E-03
	POCP	kg NMVOC eq	6,39E-04	1,60E-03	1,46E-03	1,30E-03	9,79E-04
	ADPe	Kg Sb eq	8,13E-09	2,03E-08	1,85E-08	1,66E-08	1,24E-08
	ADPf	MJ	1,99E+00	4,97E+00	4,53E+00	4,05E+00	3,04E+00
	WDP	m^3	-4,39E-04	-1,10E-03	-1,00E-03	-8,94E-04	-6,72E-04
C1 END FO LIFE STAGE	GWP	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPf	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPb	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPl	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ODP	kg CFC-11 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	AP	mol H + eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPf	Kg P eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPm	Kg N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPt	mol N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	POCP	kg NMVOC eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPe	Kg Sb eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPf	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	WDP	m^3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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LCA IMPACT ASSESSMENT

STAGE	PEI	UM	CLIP-IN STRUCTURE	MATROX PANELS			
			E | Matrox	1	2	3	4
C2 END FO LIFE STAGE	GWP	kg CO_2 eq	4,78E-02	1,20E-01	1,09E-01	9,73E-02	7,31E-02
	GWPf	kg CO_2 eq	4,77E-02	1,19E-01	1,09E-01	9,72E-02	7,31E-02
	GWPb	kg CO_2 eq	1,96E-05	4,92E-05	4,48E-05	4,00E-05	3,01E-05
	GWPl	kg CO_2 eq	3,79E-07	9,50E-07	8,65E-07	7,73E-07	5,81E-07
	ODP	kg CFC-11 eq	1,11E-08	2,78E-08	2,53E-08	2,26E-08	1,70E-08
	AP	mol H + eq	2,86E-04	7,16E-04	6,52E-04	5,82E-04	4,38E-04
	EPf	Kg P eq	2,85E-08	7,13E-08	6,50E-08	5,81E-08	4,36E-08
	EPm	Kg N eq	1,16E-04	2,91E-04	2,65E-04	2,37E-04	1,78E-04
	EPt	mol N eq	1,28E-03	3,20E-03	2,91E-03	2,60E-03	1,96E-03
	POCP	kg NMVOC eq	3,30E-04	8,27E-04	7,53E-04	6,73E-04	5,06E-04
	ADPe	Kg Sb eq	2,82E-09	7,07E-09	6,44E-09	5,75E-09	4,32E-09
	ADPf	MJ	6,79E-01	1,70E+00	1,55E+00	1,38E+00	1,04E+00
	WDP	m^3	-1,49E-04	-3,74E-04	-3,41E-04	-3,04E-04	-2,29E-04
C3 END FO LIFE STAGE	GWP	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPf	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPb	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPl	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ODP	kg CFC-11 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	AP	mol H + eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPf	Kg P eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPm	Kg N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPt	mol N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	POCP	kg NMVOC eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPe	Kg Sb eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPf	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	WDP	m^3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	GWP	kg CO_2 eq	6,80E-04	2,22E-03	2,07E-03	1,91E-03	1,57E-03
	GWPf	kg CO_2 eq	6,80E-04	2,22E-03	2,07E-03	1,91E-03	1,57E-03
	GWPb	kg CO_2 eq	3,31E-08	1,08E-07	1,01E-07	9,27E-08	7,62E-08
	GWPl	kg CO_2 eq	1,07E-09	3,50E-09	3,26E-09	3,01E-09	2,47E-09
	ODP	kg CFC-11 eq	1,10E-10	3,58E-10	3,34E-10	3,08E-10	2,53E-10
	AP	mol H + eq	7,14E-06	2,33E-05	2,17E-05	2,00E-05	1,65E-05
	EPf	Kg P eq	1,18E-09	3,84E-09	3,58E-09	3,30E-09	2,72E-09
	EPm	Kg N eq	3,08E-06	1,01E-05	9,38E-06	8,64E-06	7,11E-06
	EPt	mol N eq	3,38E-05	1,10E-04	1,03E-04	9,48E-05	7,79E-05
	POCP	kg NMVOC eq	9,28E-06	3,03E-05	2,82E-05	2,60E-05	2,14E-05
	ADPe	Kg Sb eq	8,29E-13	2,70E-12	2,52E-12	2,32E-12	1,91E-12
	ADPf	MJ	9,46E-03	3,09E-02	2,88E-02	2,65E-02	2,18E-02
	WDP	m^3	5,07E-03	1,65E-02	1,54E-02	1,42E-02	1,17E-02

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tel. + 39 0421 75526 export@atena-it.com

STAGE	PEI	UM	CLIP-IN STRUCTURE	MATROX PANELS			
			E | Matrox	1	2	3	4
D REUSE - RECOVERY STAGE	GWP	kg CO_2 eq	-1,39E+00	-4,15E+00	-3,83E+00	-3,48E+00	-2,76E+00
	GWPf	kg CO_2 eq	-1,39E+00	-4,14E+00	-3,82E+00	-3,47E+00	-2,75E+00
	GWPb	kg CO_2 eq	-4,46E-03	-1,33E-02	-1,23E-02	-1,12E-02	-8,83E-03
	GWPl	kg CO_2 eq	-1,38E-04	-4,11E-04	-3,79E-04	-3,45E-04	-2,73E-04
	ODP	kg CFC-11 eq	-4,15E-08	-1,24E-07	-1,14E-07	-1,04E-07	-8,22E-08
	AP	mol H + eq	-6,68E-03	-1,99E-02	-1,84E-02	-1,67E-02	-1,32E-02
	EPf	Kg P eq	-8,29E-05	-2,47E-04	-2,28E-04	-2,08E-04	-1,64E-04
	EPm	Kg N eq	-1,28E-03	-3,83E-03	-3,54E-03	-3,21E-03	-2,55E-03
	EPt	mol N eq	-1,45E-02	-4,33E-02	-4,00E-02	-3,63E-02	-2,88E-02
	POCP	kg NMVOC eq	-7,10E-03	-2,12E-02	-1,95E-02	-1,78E-02	-1,41E-02
	ADPe	Kg Sb eq	-2,50E-05	-7,47E-05	-6,89E-05	-6,27E-05	-4,96E-05
	ADPf	MJ	-1,12E+01	-3,34E+01	-3,08E+01	-2,80E+01	-2,22E+01
	WDP	m³	-1,24E-01	-3,69E-01	-3,41E-01	-3,10E-01	-2,45E-01
TOTAL	GWP	kg CO_2 eq	4,86E+00	1,67E+01	1,55E+01	1,43E+01	1,37E+01
	GWPf	kg CO_2 eq	4,87E+00	1,71E+01	1,59E+01	1,46E+01	1,41E+01
	GWPb	kg CO_2 eq	-1,59E-02	-3,50E-01	-3,55E-01	-3,61E-01	-3,67E-01
	GWPl	kg CO_2 eq	3,80E-03	1,34E-02	1,26E-02	1,18E-02	1,18E-02
	ODP	kg CFC-11 eq	4,34E-07	1,70E-06	1,58E-06	1,45E-06	1,35E-06
	AP	mol H + eq	2,66E-02	8,45E-02	7,85E-02	7,21E-02	7,06E-02
	EPf	Kg P eq	2,63E-04	8,24E-04	7,64E-04	7,02E-04	7,01E-04
	EPm	Kg N eq	5,97E-03	1,88E-02	1,75E-02	1,60E-02	1,55E-02
	EPt	mol N eq	6,69E-02	2,11E-01	1,95E-01	1,79E-01	1,73E-01
	POCP	kg NMVOC eq	2,41E-02	7,66E-02	7,10E-02	6,52E-02	6,36E-02
	ADPe	Kg Sb eq	1,30E-02	3,85E-02	3,55E-02	3,23E-02	3,23E-02
	ADPf	MJ	6,05E+01	2,22E+02	2,07E+02	1,91E+02	1,84E+02
	WDP	m³	4,17E+00	1,20E+01	1,12E+01	1,05E+01	9,90E+00

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LCA IMPACT ASSESSMENT

RESOURCE CONSUMPTION
PANEL SYSTEM | Matrox metal ceilings

DECLARED UNIT:
1 m² of metal ceiling.

System models: *Matrox | Matrox a tenuta*

CAPTION:

Acronyms

PEI	Potential environment impact
UM	Unit of measure
PERE	Renewable primary energy excluding that one used as raw material
PERM	Renewable primary energy used as raw material
PERT	Total use of renewable primary energy
PENRE	Non-renewable primary energy excluding that one used as raw material
PENRM	Non-renewable primary energy used as raw material
PENRT	Total use of non-renewable primary energy
SM	Use of secondary raw materials
RSF	Use of renewable secondary fuels
NRSF	Use of non-renewable secondary fuels
FW	Net use of fresh water

Sch. 17 - RESOURCE CONSUMPTION OF CLIP-IN MATROX METAL CEILINGS

STAGE	PEI	UM	CLIP - IN STRUCTURE	MATROX PANELS			
			E | Matrox	1	2	3	4
A1 UPSTREAM PROCESS	**PERE**	**MJ**	6,00E+00	2,18E+01	2,00E+01	1,82E+01	1,69E+01
	PERM	**MJ**	0,00E+00	5,97E-01	5,97E-01	5,97E-01	5,97E-01
	PERT	**MJ**	6,00E+00	2,24E+01	2,06E+01	1,88E+01	1,75E+01
	PENRE	**MJ**	6,81E+01	2,38E+02	2,21E+02	2,02E+02	1,97E+02
	PENRM	**MJ**	2,19E+00	1,18E+01	1,18E+01	1,18E+01	1,18E+01
	PENRT	**MJ**	7,03E+01	2,50E+02	2,32E+02	2,14E+02	2,09E+02
	SM	**Kg**	1,22E-02	3,60E-02	3,32E-02	3,02E-02	3,02E-02
	RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	**m³**	1,03E-01	2,84E-01	2,66E-01	2,47E-01	2,37E-01
A2 CORE PROCESS	**PERE**	**MJ**	2,98E-03	8,71E-03	7,93E-03	7,09E-03	5,33E-03
	PERM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	**MJ**	2,98E-03	8,71E-03	7,93E-03	7,09E-03	5,33E-03
	PENRE	**MJ**	2,08E+00	6,08E+00	5,54E+00	4,95E+00	3,72E+00
	PENRM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	**MJ**	2,08E+00	6,08E+00	5,54E+00	4,95E+00	3,72E+00
	SM	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	**m³**	4,22E-05	1,23E-04	1,12E-04	1,00E-04	7,54E-05

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STAGE	PEI	UM	CLIP - IN STRUCTURE	MATROX PANELS			
			E | Matrox	1	2	3	4
A3 CORE PROCESS	PERE	MJ	-2,85E-01	-2,63E+00	-2,64E+00	-2,64E+00	-2,65E+00
	PERM	MJ	4,15E-01	4,24E+00	4,24E+00	4,24E+00	4,24E+00
	PERT	MJ	1,30E-01	1,61E+00	1,60E+00	1,60E+00	1,59E+00
	PENRE	MJ	4,79E-01	6,68E+00	6,64E+00	6,60E+00	6,51E+00
	PENRM	MJ	4,96E-02	2,78E+00	2,77E+00	2,76E+00	2,73E+00
	PENRT	MJ	5,29E-01	9,46E+00	9,41E+00	9,36E+00	9,25E+00
	SM	Kg	2,93E-02	2,93E-01	2,93E-01	2,93E-01	2,93E-01
	RSF	MJ	1,75E-02	1,75E-01	1,75E-01	1,75E-01	1,75E-01
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m^3	3,80E-03	2,19E-02	2,09E-02	1,99E-02	1,76E-02
A4 DOWN STREAM PROCESS	PERE	MJ	2,77E-03	6,94E-03	6,32E-03	5,65E-03	4,24E-03
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	2,77E-03	6,94E-03	6,32E-03	5,65E-03	4,24E-03
	PENRE	MJ	1,94E+00	4,85E+00	4,42E+00	3,95E+00	2,97E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	1,94E+00	4,85E+00	4,42E+00	3,95E+00	2,97E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m^3	3,88E-05	9,71E-05	8,85E-05	7,91E-05	5,94E-05
C1 END FO LIFE STAGE	PERE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m^3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C2 END FO LIFE STAGE	PERE	MJ	9,49E-04	2,38E-03	2,16E-03	1,93E-03	1,45E-03
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	9,49E-04	2,38E-03	2,16E-03	1,93E-03	1,45E-03
	PENRE	MJ	6,63E-01	1,66E+00	1,51E+00	1,35E+00	1,01E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	6,63E-01	1,66E+00	1,51E+00	1,35E+00	1,01E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m^3	1,34E-05	3,36E-05	3,06E-05	2,74E-05	2,06E-05

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LCA IMPACT ASSESSMENT

STAGE	PEI	UM	CLIP - IN STRUCTURE	MATROX PANELS			
			E | Matrox	1	2	3	4
C3 END FO LIFE STAGE	PERE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	PERE	MJ	2,05E-05	6,70E-05	6,24E-05	5,75E-05	4,73E-05
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	2,05E-05	6,70E-05	6,24E-05	5,75E-05	4,73E-05
	PENRE	MJ	9,28E-03	3,02E-02	2,82E-02	2,60E-02	2,14E-02
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	9,28E-03	3,02E-02	2,82E-02	2,60E-02	2,14E-02
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	1,18E-04	3,86E-04	3,60E-04	3,32E-04	2,73E-04
D REUSE - RECOVERY STAGE	PERE	MJ	-1,03E+00	-3,08E+00	-2,84E+00	-2,58E+00	-2,04E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	-1,03E+00	-3,08E+00	-2,84E+00	-2,58E+00	-2,04E+00
	PENRE	MJ	-1,66E+01	-4,96E+01	-4,58E+01	-4,16E+01	-3,30E+01
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	-1,66E+01	-4,96E+01	-4,58E+01	-4,16E+01	-3,30E+01
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	-2,60E-03	-7,74E-03	-7,15E-03	-6,50E-03	-5,14E-03
TOTAL	PERE	MJ	5,72E+00	1,92E+01	1,74E+01	1,56E+01	1,42E+01
	PERM	MJ	4,15E-01	4,84E+00	4,84E+00	4,84E+00	4,84E+00
	PERT	MJ	6,14E+00	2,40E+01	2,23E+01	2,04E+01	1,91E+01
	PENRE	MJ	7,33E+01	2,57E+02	2,39E+02	2,19E+02	2,12E+02
	PENRM	MJ	2,24E+00	1,46E+01	1,46E+01	1,45E+01	1,45E+01
	PENRT	MJ	7,56E+01	2,72E+02	2,53E+02	2,34E+02	2,26E+02
	SM	Kg	4,15E-02	3,29E-01	3,26E-01	3,23E-01	3,23E-01
	RSF	MJ	1,75E-02	1,75E-01	1,75E-01	1,75E-01	1,75E-01
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	1,07E-01	3,07E-01	2,88E-01	2,67E-01	2,55E-01

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WASTE PRODUCTION
PANEL SYSTEM | Matrox metal ceilings

DECLARED UNIT:
1 m² of metal ceiling.

System models: *Matrox | Matrox a tenuta*

CAPTION:

Acronyms

PEI	Potential environment impact
UM	Unit of measure
HWD	Hazardous waste disposed
NHWD	Non-hazardous waste disposed
RWD	Radioactive waste disposed
CRU	Components for re-use
MFR	Materials for recycling
MER	Materials for energy recovery
EEE	Exported energy, electricals

Sch. 18 - WASTE PRODUCTION OF CLIP-IN MATROX METAL CEILINGS

STAGE	PEI	UM	CLIP - IN STRUCTURE	MATROX PANELS			
			E | Matrox	1	2	3	4
A1 UPSTREAM PROCESS	**HWD**	**Kg**	1,05E-02	3,12E-02	2,87E-02	2,61E-02	2,61E-02
	NHWD	**Kg**	5,20E-04	1,54E-03	1,42E-03	1,29E-03	1,29E-03
	RWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	**Kg**	7,47E-02	2,21E-01	2,03E-01	1,85E-01	1,85E-01
	MER	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
A2 CORE PROCESS	**HWD**	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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LCA IMPACT ASSESSMENT

STAGE	PEI	UM	CLIP - IN STRUCTURE	MATROX PANELS			
			E | Matrox	1	2	3	4
A3 CORE PROCESS	HWD	Kg	1,97E-12	1,97E-11	1,97E-11	1,97E-11	1,97E-11
	NHWD	Kg	3,92E-03	3,92E-02	3,92E-02	3,92E-02	3,92E-02
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	6,50E-04	1,14E-02	1,14E-02	1,14E-02	1,14E-02
	MFR	Kg	1,28E-02	6,18E-02	5,99E-02	5,77E-02	5,32E-02
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
A4 DOWN STREAM PROCESS	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C1 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C2 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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STAGE	PEI	UM	CLIP - IN STRUCTURE	MATROX PANELS			
			E | Matrox	1	2	3	4
C3 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	2,75E-01	8,97E-01	8,37E-01	7,71E-01	6,34E-01
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	1,30E-02	2,10E-01	2,10E-01	2,10E-01	2,10E-01
D REUSE - RECOVERY STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
TOTAL	HWD	Kg	1,05E-02	3,12E-02	2,87E-02	2,61E-02	2,61E-02
	NHWD	Kg	2,80E-01	9,38E-01	8,77E-01	8,12E-01	6,75E-01
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	6,50E-04	1,14E-02	1,14E-02	1,14E-02	1,14E-02
	MFR	Kg	8,75E-02	2,83E-01	2,63E-01	2,43E-01	2,38E-01
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	1,30E-02	2,10E-01	2,10E-01	2,10E-01	2,10E-01

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LCA IMPACT ASSESSMENT

ENVIRONMENTAL IMPACT
STAVES SYSTEM

DECLARED UNIT:
1 m² of metal ceiling.

Hook on models: *A 90 / AR 90 / AR 100 / AC 100 / AC 150 / C 100 / C 150 / C 200 / N 75 / N 150 SR 80 / SR 90 / SR 100 / ST 32 / ST 50 / STV 60 / T 150 / T 200 / V 50 / 100 S 30 H14 / S 30 H38 / 30 H40 / S 30 H64 / S 30 H80 / S 40 H40 / S 80 H14 / S 80 H80 / S 80 H100 S 130 H14 / S 130 H80 / S 130 H100 / S 180 H14 / S 180 H80 / S 180 H100*

Self supporting models: *AP 100 / AP 150 / AP 200 / CR 150 / CR 200 / APR 150 / APR 200*

Sch. 19 - ENVIRONMENTAL IMPACTS OF METAL STAVE CEILINGS

STAGE	PEI	UM	CARRIER						
			A1	A2	B	C1	C2	C3	C4
A1 UPSTREAM PROCESS	GWP	kg CO_2 eq	1,49E+00	1,17E+00	1,50E+00	1,63E+00	6,47E+00	2,11E+00	1,79E+00
	GWPf	kg CO_2 eq	1,49E+00	1,17E+00	1,49E+00	1,57E+00	6,45E+00	2,10E+00	1,78E+00
	GWPb	kg CO_2 eq	5,61E-03	3,57E-03	4,56E-03	5,12E-02	1,04E-02	7,49E-03	5,44E-03
	GWPl	kg CO_2 eq	1,08E-03	9,66E-04	1,24E-03	3,63E-03	1,80E-02	1,59E-03	1,47E-03
	ODP	kg CFC-11 eq	1,25E-07	8,87E-08	1,13E-07	1,01E-07	2,21E-07	1,72E-07	1,35E-07
	AP	mol H + eq	7,62E-03	6,49E-03	8,31E-03	8,41E-03	4,12E-02	1,10E-02	9,91E-03
	EPf	Kg P eq	7,74E-05	7,14E-05	9,13E-05	5,37E-05	2,07E-04	1,15E-04	1,09E-04
	EPm	Kg N eq	1,56E-03	1,38E-03	1,76E-03	1,37E-03	6,23E-03	2,29E-03	2,10E-03
	EPt	mol N eq	1,76E-02	1,56E-02	1,99E-02	1,44E-02	6,89E-02	2,58E-02	2,37E-02
	POCP	kg NMVOC eq	6,71E-03	5,83E-03	7,46E-03	4,49E-03	2,01E-02	9,78E-03	8,89E-03
	ADPe	Kg Sb eq	3,66E-03	3,66E-03	4,69E-03	5,95E-05	7,35E-06	5,59E-03	5,59E-03
	ADPf	MJ	1,94E+01	1,40E+01	1,79E+01	1,85E+01	5,92E+01	2,67E+01	2,14E+01
	WDP	m³	8,67E-01	6,79E-01	8,68E-01	4,18E-01	8,23E-01	1,22E+00	1,04E+00
A2 CORE PROCESS	GWP	kg CO_2 eq	3,75E-02	3,40E-02	4,35E-02	1,73E-02	1,82E-02	5,54E-02	5,19E-02
	GWPf	kg CO_2 eq	3,75E-02	3,40E-02	4,35E-02	1,73E-02	1,82E-02	5,54E-02	5,19E-02
	GWPb	kg CO_2 eq	1,55E-05	1,41E-05	1,80E-05	7,18E-06	7,52E-06	2,29E-05	2,15E-05
	GWPl	kg CO_2 eq	3,00E-07	2,72E-07	3,48E-07	1,39E-07	1,45E-07	4,43E-07	4,15E-07
	ODP	kg CFC-11 eq	8,78E-09	7,96E-09	1,02E-08	4,06E-09	4,25E-09	1,30E-08	1,21E-08
	AP	mol H + eq	2,17E-04	1,97E-04	2,52E-04	1,00E-04	1,05E-04	3,21E-04	3,00E-04
	EPf	Kg P eq	2,25E-08	2,04E-08	2,61E-08	1,04E-08	1,09E-08	3,33E-08	3,12E-08
	EPm	Kg N eq	8,73E-05	7,92E-05	1,01E-04	4,04E-05	4,23E-05	1,29E-04	1,21E-04
	EPt	mol N eq	9,59E-04	8,69E-04	1,11E-03	4,43E-04	4,65E-04	1,42E-03	1,33E-03
	POCP	kg NMVOC eq	2,49E-04	2,26E-04	2,89E-04	1,15E-04	1,21E-04	3,68E-04	3,45E-04
	ADPe	Kg Sb eq	2,23E-09	2,02E-09	2,59E-09	1,03E-09	1,08E-09	3,30E-09	3,09E-09
	ADPf	MJ	5,36E-01	4,86E-01	6,22E-01	2,48E-01	2,60E-01	7,92E-01	7,42E-01
	WDP	m³	-1,18E-04	-1,07E-04	-1,37E-04	-5,46E-05	-5,72E-05	-1,74E-04	-1,63E-04

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(TB | TA | TF | TE | TD| TTN | TNR | TNS)

CAPTION:

Acronyms

PEI	Potential environment impact
UM	Unit of measure
GWP	Global warming potential, total
GWPf	Global warming potential, fossil
GWPb	Global warming potential, biogenic
GWPl	Global warming potential, land use
ODP	Ozone depletion potential
AP	Acidification potential of land and water
EPf	Eutrophication acquatic, freshwater
EPm	Eutrophication acquatic, marine
EPt	Eutrophication acquatic, terrestrial
POCP	Photochemical ozone creation potential
ADPe	Abiotic depletion potential, elements
ADPf	Abiotic depletion potential, fossil
WDP	Water depletion potential

Carrier

A1 - **TB | TA | TF | TE | TD| TN | TG | TNR | TNS**
6/10 pre-painted galvanized steel

A2 - **TB | TA | TF | TE | TD| TN | TG | TNR | TNS**
6/10 galvanized steel

B - **TD| TN | TNR | TNS | TC| TCA | TS | HQ**
7/10 galvanized steel

C1 - **TC | TCA | TS | HQ**
8/10 pre-painted aluminum

C2 - **TC | TCA | TS | HQ**
10/10 aluminum

C3 - **TC | TCA | TS | HQ**
8/10 pre-painted galvanized steel

C4 - **TC | TCA | TS | HQ**
8/10 galvanized steel

Plain and perforated Staves made in 5/10 prepainted aluminum

A 1,47 ≤ Kg/m² ≤ 1,69
B 1,72 ≤ Kg/m² ≤ 1,97
C 2,00 ≤ Kg/m² ≤ 2,29
D 2,39 ≤ Kg/m² ≤ 2,72
E 3,03 ≤ Kg/m² ≤ 3,40
F 3,60 ≤ Kg/m² ≤ 3,95
G 4,54 ≤ Kg/m² ≤ 5,42

Sound-absorption components: Acoustic tissue thermo-applied

STAGE	PEI	UM	STAVES						
			A	B	C	D	E	F	G
A1 UPSTREAM PROCESS	GWP	kg CO_2 eq	9,13E+00	1,06E+01	1,17E+01	1,42E+01	1,72E+01	1,99E+01	2,61E+01
	GWPf	kg CO_2 eq	8,82E+00	1,02E+01	1,12E+01	1,37E+01	1,66E+01	1,91E+01	2,51E+01
	GWPb	kg CO_2 eq	2,95E-01	3,49E-01	3,90E-01	4,87E-01	5,98E-01	6,99E-01	9,32E-01
	GWPl	kg CO_2 eq	2,16E-02	2,55E-02	2,84E-02	3,53E-02	4,33E-02	5,05E-02	6,71E-02
	ODP	kg CFC-11 eq	5,18E-07	5,90E-07	6,44E-07	7,72E-07	9,20E-07	1,05E-06	1,36E-06
	AP	mol H + eq	4,94E-02	5,74E-02	6,34E-02	7,78E-02	9,43E-02	1,09E-01	1,44E-01
	EPf	Kg P eq	3,35E-04	3,87E-04	4,27E-04	5,21E-04	6,30E-04	7,27E-04	9,53E-04
	EPm	Kg N eq	8,21E-03	9,51E-03	1,05E-02	1,28E-02	1,55E-02	1,79E-02	2,36E-02
	EPt	mol N eq	8,64E-02	9,99E-02	1,10E-01	1,35E-01	1,63E-01	1,88E-01	2,46E-01
	POCP	kg NMVOC eq	2,66E-02	3,06E-02	3,36E-02	4,06E-02	4,88E-02	5,62E-02	7,32E-02
	ADPe	Kg Sb eq	2,28E-03	2,34E-03	2,39E-03	2,51E-03	2,64E-03	2,77E-03	3,04E-03
	ADPf	MJ	9,83E+01	1,13E+02	1,24E+02	1,50E+02	1,80E+02	2,07E+02	2,69E+02
	WDP	m³	2,13E+00	2,38E+00	2,58E+00	3,03E+00	3,55E+00	4,03E+00	5,12E+00
A2 CORE PROCESS	GWP	kg CO_2 eq	1,33E-01	1,57E-01	1,75E-01	2,18E-01	2,68E-01	3,12E-01	4,16E-01
	GWPf	kg CO_2 eq	1,33E-01	1,57E-01	1,75E-01	2,18E-01	2,68E-01	3,12E-01	4,15E-01
	GWPb	kg CO_2 eq	5,51E-05	6,50E-05	7,25E-05	9,03E-05	1,11E-04	1,29E-04	1,72E-04
	GWPl	kg CO_2 eq	1,06E-06	1,26E-06	1,40E-06	1,74E-06	2,14E-06	2,50E-06	3,32E-06
	ODP	kg CFC-11 eq	3,11E-08	3,67E-08	4,10E-08	5,10E-08	6,26E-08	7,31E-08	9,72E-08
	AP	mol H + eq	7,70E-04	9,09E-04	1,01E-03	1,26E-03	1,55E-03	1,81E-03	2,41E-03
	EPf	Kg P eq	7,99E-08	9,42E-08	1,05E-07	1,31E-07	1,61E-07	1,87E-07	2,49E-07
	EPm	Kg N eq	3,10E-04	3,66E-04	4,08E-04	5,08E-04	6,23E-04	7,27E-04	9,67E-04
	EPt	mol N eq	3,40E-03	4,01E-03	4,48E-03	5,58E-03	6,84E-03	7,98E-03	1,06E-02
	POCP	kg NMVOC eq	8,85E-04	1,04E-03	1,16E-03	1,45E-03	1,78E-03	2,08E-03	2,76E-03
	ADPe	Kg Sb eq	7,91E-09	9,34E-09	1,04E-08	1,30E-08	1,59E-08	1,86E-08	2,47E-08
	ADPf	MJ	1,90E+00	2,24E+00	2,50E+00	3,12E+00	3,83E+00	4,46E+00	5,94E+00
	WDP	m³	-4,19E-04	-4,94E-04	-5,51E-04	-6,86E-04	-8,42E-04	-9,83E-04	-1,31E-03

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EPD®

LCA IMPACT ASSESSMENT

STAGE	PEI	UM	CARRIER						
			A1	A2	B	C1	C2	C3	C4
A3 CORE PROCESS	GWP	kg CO_2 eq	1,58E-02	1,43E-02	1,83E-02	9,10E-03	9,54E-03	2,33E-02	2,18E-02
	GWPf	kg CO_2 eq	1,27E-02	1,15E-02	1,48E-02	7,36E-03	7,72E-03	1,88E-02	1,76E-02
	GWPb	kg CO_2 eq	3,01E-03	2,73E-03	3,49E-03	1,74E-03	1,82E-03	4,45E-03	4,16E-03
	GWPl	kg CO_2 eq	6,87E-07	6,23E-07	7,96E-07	3,97E-07	4,16E-07	1,01E-06	9,50E-07
	ODP	kg CFC-11 eq	3,65E-10	3,31E-10	4,23E-10	2,11E-10	2,21E-10	5,39E-10	5,05E-10
	AP	mol H + eq	9,05E-05	8,21E-05	1,05E-04	5,23E-05	5,48E-05	1,34E-04	1,25E-04
	EPf	Kg P eq	6,66E-08	6,04E-08	7,72E-08	3,85E-08	4,03E-08	9,83E-08	9,21E-08
	EPm	Kg N eq	4,78E-05	4,33E-05	5,54E-05	2,76E-05	2,90E-05	7,06E-05	6,61E-05
	EPt	mol N eq	4,80E-04	4,35E-04	5,56E-04	2,77E-04	2,90E-04	7,08E-04	6,64E-04
	POCP	kg NMVOC eq	1,37E-04	1,25E-04	1,59E-04	7,94E-05	8,32E-05	2,03E-04	1,90E-04
	ADPe	Kg Sb eq	2,38E-08	2,16E-08	2,76E-08	1,38E-08	1,44E-08	3,51E-08	3,29E-08
	ADPf	MJ	3,20E-02	2,90E-02	3,72E-02	1,85E-02	1,94E-02	4,73E-02	4,43E-02
	WDP	m^3	4,09E-02	3,71E-02	4,75E-02	2,37E-02	2,48E-02	6,05E-02	5,66E-02
A4 DOWN STREAM PROCESS	GWP	kg CO_2 eq	6,67E-02	6,05E-02	7,74E-02	3,86E-02	4,04E-02	9,86E-02	9,23E-02
	GWPf	kg CO_2 eq	6,67E-02	6,05E-02	7,74E-02	3,86E-02	4,04E-02	9,85E-02	9,23E-02
	GWPb	kg CO_2 eq	2,73E-05	2,47E-05	3,16E-05	1,58E-05	1,65E-05	4,03E-05	3,77E-05
	GWPl	kg CO_2 eq	5,28E-07	4,78E-07	6,12E-07	3,05E-07	3,19E-07	7,79E-07	7,30E-07
	ODP	kg CFC-11 eq	1,53E-08	1,39E-08	1,78E-08	8,85E-09	9,28E-09	2,26E-08	2,12E-08
	AP	mol H + eq	2,68E-04	2,43E-04	3,11E-04	1,55E-04	1,62E-04	3,96E-04	3,71E-04
	EPf	Kg P eq	3,96E-08	3,59E-08	4,59E-08	2,29E-08	2,40E-08	5,85E-08	5,48E-08
	EPm	Kg N eq	8,17E-05	7,41E-05	9,48E-05	4,72E-05	4,95E-05	1,21E-04	1,13E-04
	EPt	mol N eq	9,01E-04	8,17E-04	1,04E-03	5,21E-04	5,46E-04	1,33E-03	1,25E-03
	POCP	kg NMVOC eq	2,44E-04	2,21E-04	2,83E-04	1,41E-04	1,48E-04	3,60E-04	3,38E-04
	ADPe	Kg Sb eq	3,87E-09	3,51E-09	4,49E-09	2,24E-09	2,34E-09	5,72E-09	5,36E-09
	ADPf	MJ	9,36E-01	8,48E-01	1,08E+00	5,41E-01	5,67E-01	1,38E+00	1,29E+00
	WDP	m^3	-2,06E-04	-1,87E-04	-2,39E-04	-1,19E-04	-1,25E-04	-3,05E-04	-2,85E-04
C1 END FO LIFE STAGE	GWP	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPf	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPb	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPl	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ODP	kg CFC-11 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	AP	mol H + eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPf	Kg P eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPm	Kg N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPt	mol N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	POCP	kg NMVOC eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPe	Kg Sb eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPf	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	WDP	m^3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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STAGE	PEI	UM	STAVES A	B	C	D	E	F	G
A3 CORE PROCESS	GWP	kg CO_2 eq	6,22E-01	6,30E-01	6,37E-01	6,52E-01	6,69E-01	6,85E-01	7,21E-01
	GWPf	kg CO_2 eq	6,36E-01	6,43E-01	6,48E-01	6,60E-01	6,74E-01	6,87E-01	7,16E-01
	GWPb	kg CO_2 eq	-1,40E-02	-1,24E-02	-1,12E-02	-8,31E-03	-5,00E-03	-2,02E-03	4,89E-03
	GWPl	kg CO_2 eq	6,32E-05	6,36E-05	6,39E-05	6,45E-05	6,53E-05	6,60E-05	6,76E-05
	ODP	kg CFC-11 eq	2,01E-08	2,03E-08	2,04E-08	2,08E-08	2,12E-08	2,15E-08	2,24E-08
	AP	mol H + eq	2,14E-03	2,18E-03	2,22E-03	2,31E-03	2,41E-03	2,50E-03	2,70E-03
	EPf	Kg P eq	8,84E-06	8,88E-06	8,91E-06	8,97E-06	9,04E-06	9,11E-06	9,26E-06
	EPm	Kg N eq	5,01E-04	5,27E-04	5,46E-04	5,91E-04	6,44E-04	6,91E-04	8,01E-04
	EPt	mol N eq	5,32E-03	5,58E-03	5,77E-03	6,23E-03	6,75E-03	7,23E-03	8,33E-03
	POCP	kg NMVOC eq	2,07E-03	2,14E-03	2,20E-03	2,33E-03	2,48E-03	2,61E-03	2,93E-03
	ADPe	Kg Sb eq	1,37E-07	1,50E-07	1,59E-07	1,82E-07	2,08E-07	2,32E-07	2,87E-07
	ADPf	MJ	1,97E+01	1,97E+01	1,97E+01	1,98E+01	1,98E+01	1,98E+01	1,99E+01
	WDP	m^3	5,98E-01	6,19E-01	6,36E-01	6,75E-01	7,20E-01	7,61E-01	8,54E-01
A4 DOWN STREAM PROCESS	GWP	kg CO_2 eq	1,97E-01	2,33E-01	2,60E-01	3,23E-01	3,97E-01	4,63E-01	6,16E-01
	GWPf	kg CO_2 eq	1,97E-01	2,33E-01	2,60E-01	3,23E-01	3,97E-01	4,63E-01	6,16E-01
	GWPb	kg CO_2 eq	8,06E-05	9,51E-05	1,06E-04	1,32E-04	1,62E-04	1,89E-04	2,52E-04
	GWPl	kg CO_2 eq	1,56E-06	1,84E-06	2,05E-06	2,56E-06	3,14E-06	3,66E-06	4,87E-06
	ODP	kg CFC-11 eq	4,53E-08	5,34E-08	5,96E-08	7,42E-08	9,11E-08	1,06E-07	1,41E-07
	AP	mol H + eq	7,92E-04	9,35E-04	1,04E-03	1,30E-03	1,59E-03	1,86E-03	2,47E-03
	EPf	Kg P eq	1,17E-07	1,38E-07	1,54E-07	1,92E-07	2,35E-07	2,75E-07	3,65E-07
	EPm	Kg N eq	2,42E-04	2,85E-04	3,18E-04	3,96E-04	4,86E-04	5,67E-04	7,54E-04
	EPt	mol N eq	2,66E-03	3,14E-03	3,51E-03	4,37E-03	5,36E-03	6,25E-03	8,32E-03
	POCP	kg NMVOC eq	7,21E-04	8,51E-04	9,50E-04	1,18E-03	1,45E-03	1,69E-03	2,25E-03
	ADPe	Kg Sb eq	1,14E-08	1,35E-08	1,51E-08	1,88E-08	2,30E-08	2,69E-08	3,57E-08
	ADPf	MJ	2,77E+00	3,26E+00	3,64E+00	4,53E+00	5,56E+00	6,49E+00	8,64E+00
	WDP	m^3	-6,10E-04	-7,19E-04	-8,03E-04	-9,99E-04	-1,23E-03	-1,43E-03	-1,90E-03
C1 END FO LIFE STAGE	GWP	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPf	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPb	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPl	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ODP	kg CFC-11 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	AP	mol H + eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPf	Kg P eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPm	Kg N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPt	mol N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	POCP	kg NMVOC eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPe	Kg Sb eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPf	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	WDP	m^3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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EPD®

LCA IMPACT ASSESSMENT

STAGE	PEI	UM	CARRIER						
			A1	A2	B	C1	C2	C3	C4
C2 END FO LIFE STAGE	GWP	kg CO_2 eq	1,44E-02	1,31E-02	1,67E-02	8,33E-03	8,73E-03	2,13E-02	1,99E-02
	GWPf	kg CO_2 eq	1,44E-02	1,31E-02	1,67E-02	8,33E-03	8,72E-03	2,13E-02	1,99E-02
	GWPb	kg CO_2 eq	5,93E-06	5,37E-06	6,87E-06	3,43E-06	3,59E-06	8,76E-06	8,20E-06
	GWPl	kg CO_2 eq	1,15E-07	1,04E-07	1,33E-07	6,62E-08	6,93E-08	1,69E-07	1,58E-07
	ODP	kg CFC-11 eq	3,35E-09	3,04E-09	3,89E-09	1,94E-09	2,03E-09	4,95E-09	4,64E-09
	AP	mol H + eq	8,63E-05	7,82E-05	1,00E-04	4,99E-05	5,22E-05	1,27E-04	1,19E-04
	EPf	Kg P eq	8,60E-09	7,79E-09	9,97E-09	4,97E-09	5,21E-09	1,27E-08	1,19E-08
	EPm	Kg N eq	3,51E-05	3,18E-05	4,07E-05	2,03E-05	2,12E-05	5,18E-05	4,85E-05
	EPt	mol N eq	3,85E-04	3,49E-04	4,47E-04	2,23E-04	2,33E-04	5,69E-04	5,33E-04
	POCP	kg NMVOC eq	9,97E-05	9,04E-05	1,16E-04	5,76E-05	6,04E-05	1,47E-04	1,38E-04
	ADPe	Kg Sb eq	8,52E-10	7,72E-10	9,88E-10	4,92E-10	5,16E-10	1,26E-09	1,18E-09
	ADPf	MJ	2,05E-01	1,86E-01	2,37E-01	1,18E-01	1,24E-01	3,02E-01	2,83E-01
	WDP	m^3	-4,51E-05	-4,09E-05	-5,23E-05	-2,61E-05	-2,73E-05	-6,66E-05	-6,24E-05
C3 END FO LIFE STAGE	GWP	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPf	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPb	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPl	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ODP	kg CFC-11 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	AP	mol H + eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPf	Kg P eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPm	Kg N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPt	mol N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	POCP	kg NMVOC eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPe	Kg Sb eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPf	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	WDP	m^3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	GWP	kg CO_2 eq	2,02E-04	1,83E-04	2,34E-04	1,17E-04	1,22E-04	2,98E-04	2,80E-04
	GWPf	kg CO_2 eq	2,02E-04	1,83E-04	2,34E-04	1,17E-04	1,22E-04	2,98E-04	2,80E-04
	GWPb	kg CO_2 eq	9,83E-09	8,91E-09	1,14E-08	5,68E-09	5,95E-09	1,45E-08	1,36E-08
	GWPl	kg CO_2 eq	3,19E-10	2,89E-10	3,70E-10	1,84E-10	1,93E-10	4,71E-10	4,41E-10
	ODP	kg CFC-11 eq	3,26E-11	2,96E-11	3,78E-11	1,88E-11	1,97E-11	4,82E-11	4,51E-11
	AP	mol H + eq	2,12E-06	1,92E-06	2,46E-06	1,23E-06	1,28E-06	3,13E-06	2,94E-06
	EPf	Kg P eq	3,50E-10	3,17E-10	4,06E-10	2,02E-10	2,12E-10	5,17E-10	4,85E-10
	EPm	Kg N eq	9,16E-07	8,31E-07	1,06E-06	5,30E-07	5,55E-07	1,35E-06	1,27E-06
	EPt	mol N eq	1,00E-05	9,11E-06	1,17E-05	5,81E-06	6,08E-06	1,48E-05	1,39E-05
	POCP	kg NMVOC eq	2,76E-06	2,50E-06	3,20E-06	1,59E-06	1,67E-06	4,07E-06	3,82E-06
	ADPe	Kg Sb eq	2,46E-13	2,23E-13	2,86E-13	1,42E-13	1,49E-13	3,64E-13	3,41E-13
	ADPf	MJ	2,81E-03	2,55E-03	3,26E-03	1,63E-03	1,70E-03	4,15E-03	3,89E-03
	WDP	m^3	1,51E-03	1,37E-03	1,75E-03	8,71E-04	9,12E-04	2,23E-03	2,08E-03

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STAGE	PEI	UM	STAVES						
			A	B	C	D	E	F	G
C2 END FO LIFE STAGE	GWP	kg CO_2 eq	4,26E-02	5,03E-02	5,61E-02	6,98E-02	8,57E-02	1,00E-01	1,33E-01
	GWPf	kg CO_2 eq	4,26E-02	5,02E-02	5,61E-02	6,98E-02	8,57E-02	9,99E-02	1,33E-01
	GWPb	kg CO_2 eq	1,75E-05	2,07E-05	2,31E-05	2,87E-05	3,53E-05	4,11E-05	5,47E-05
	GWPl	kg CO_2 eq	3,39E-07	3,99E-07	4,46E-07	5,55E-07	6,81E-07	7,94E-07	1,06E-06
	ODP	kg CFC-11 eq	9,91E-09	1,17E-08	1,30E-08	1,62E-08	1,99E-08	2,33E-08	3,10E-08
	AP	mol H + eq	2,55E-04	3,01E-04	3,36E-04	4,18E-04	5,13E-04	5,99E-04	7,96E-04
	EPf	Kg P eq	2,54E-08	3,00E-08	3,35E-08	4,17E-08	5,11E-08	5,97E-08	7,94E-08
	EPm	Kg N eq	1,04E-04	1,22E-04	1,37E-04	1,70E-04	2,09E-04	2,43E-04	3,24E-04
	EPt	mol N eq	1,14E-03	1,34E-03	1,50E-03	1,87E-03	2,29E-03	2,67E-03	3,56E-03
	POCP	kg NMVOC eq	2,95E-04	3,48E-04	3,88E-04	4,83E-04	5,93E-04	6,92E-04	9,21E-04
	ADPe	Kg Sb eq	2,52E-09	2,97E-09	3,32E-09	4,13E-09	5,07E-09	5,91E-09	7,87E-09
	ADPf	MJ	6,05E-01	7,14E-01	7,97E-01	9,92E-01	1,22E+00	1,42E+00	1,89E+00
	WDP	m^3	-1,33E-04	-1,57E-04	-1,75E-04	-2,18E-04	-2,68E-04	-3,13E-04	-4,16E-04
C3 END FO LIFE STAGE	GWP	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPf	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPb	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	GWPl	kg CO_2 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ODP	kg CFC-11 eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	AP	mol H + eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPf	Kg P eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPm	Kg N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EPt	mol N eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	POCP	kg NMVOC eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPe	Kg Sb eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	ADPf	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	WDP	m^3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	GWP	kg CO_2 eq	8,28E-04	9,35E-04	1,02E-03	1,21E-03	1,43E-03	1,63E-03	2,10E-03
	GWPf	kg CO_2 eq	8,27E-04	9,35E-04	1,02E-03	1,21E-03	1,43E-03	1,63E-03	2,10E-03
	GWPb	kg CO_2 eq	4,02E-08	4,55E-08	4,94E-08	5,88E-08	6,96E-08	7,94E-08	1,02E-07
	GWPl	kg CO_2 eq	1,31E-09	1,48E-09	1,60E-09	1,91E-09	2,26E-09	2,58E-09	3,31E-09
	ODP	kg CFC-11 eq	1,34E-10	1,51E-10	1,64E-10	1,95E-10	2,31E-10	2,63E-10	3,38E-10
	AP	mol H + eq	8,69E-06	9,82E-06	1,07E-05	1,27E-05	1,50E-05	1,71E-05	2,20E-05
	EPf	Kg P eq	1,43E-09	1,62E-09	1,76E-09	2,10E-09	2,48E-09	2,83E-09	3,63E-09
	EPm	Kg N eq	3,75E-06	4,24E-06	4,61E-06	5,48E-06	6,49E-06	7,40E-06	9,50E-06
	EPt	mol N eq	4,12E-05	4,65E-05	5,06E-05	6,01E-05	7,12E-05	8,12E-05	1,04E-04
	POCP	kg NMVOC eq	1,13E-05	1,28E-05	1,39E-05	1,65E-05	1,95E-05	2,23E-05	2,86E-05
	ADPe	Kg Sb eq	1,01E-12	1,14E-12	1,24E-12	1,47E-12	1,75E-12	1,99E-12	2,56E-12
	ADPf	MJ	1,15E-02	1,30E-02	1,42E-02	1,68E-02	1,99E-02	2,27E-02	2,92E-02
	WDP	m^3	6,17E-03	6,97E-03	7,58E-03	9,02E-03	1,07E-02	1,22E-02	1,56E-02

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LCA IMPACT ASSESSMENT

STAGE	PEI	UM	CARRIER						
			A1	A2	B	C1	C2	C3	C4
D REUSE - RECOVERY STAGE	GWP	kg CO_2 eq	-4,56E-01	-4,62E-01	-5,14E-01	-2,48E+00	-5,72E+00	-6,82E-01	-6,04E-01
	GWPf	kg CO_2 eq	-4,55E-01	-4,61E-01	-5,12E-01	-2,47E+00	-5,69E+00	-6,80E-01	-6,02E-01
	GWPb	kg CO_2 eq	-1,46E-03	-1,48E-03	-1,65E-03	-3,96E-03	-9,12E-03	-2,18E-03	-1,93E-03
	GWPl	kg CO_2 eq	-4,52E-05	-4,57E-05	-5,09E-05	-6,90E-03	-1,59E-02	-6,75E-05	-5,98E-05
	ODP	kg CFC-11 eq	-1,36E-08	-1,38E-08	-1,53E-08	-8,43E-08	-1,94E-07	-2,03E-08	-1,80E-08
	AP	mol H + eq	-2,19E-03	-2,22E-03	-2,47E-03	-1,58E-02	-3,64E-02	-3,27E-03	-2,90E-03
	EPf	Kg P eq	-2,72E-05	-2,75E-05	-3,06E-05	-7,94E-05	-1,83E-04	-4,06E-05	-3,60E-05
	EPm	Kg N eq	-4,21E-04	-4,26E-04	-4,74E-04	-2,39E-03	-5,50E-03	-6,30E-04	-5,58E-04
	EPt	mol N eq	-4,76E-03	-4,82E-03	-5,36E-03	-2,64E-02	-6,08E-02	-7,12E-03	-6,30E-03
	POCP	kg NMVOC eq	-2,33E-03	-2,36E-03	-2,62E-03	-7,72E-03	-1,78E-02	-3,48E-03	-3,08E-03
	ADPe	Kg Sb eq	-8,21E-06	-8,31E-06	-9,24E-06	-2,82E-06	-6,49E-06	-1,23E-05	-1,09E-05
	ADPf	MJ	-3,66E+00	-3,71E+00	-4,13E+00	-2,27E+01	-5,22E+01	-5,48E+00	-4,85E+00
	WDP	m^3	-4,06E-02	-4,11E-02	-4,57E-02	-2,95E-01	-6,78E-01	-6,07E-02	-5,38E-02
TOTAL	GWP	kg CO_2 eq	1,63E+00	1,29E+00	1,65E+00	1,70E+00	6,55E+00	2,31E+00	1,97E+00
	GWPf	kg CO_2 eq	1,62E+00	1,29E+00	1,64E+00	1,65E+00	6,52E+00	2,29E+00	1,96E+00
	GWPb	kg CO_2 eq	8,67E-03	6,34E-03	8,11E-03	5,30E-02	1,22E-02	1,20E-02	9,67E-03
	GWPl	kg CO_2 eq	1,08E-03	9,67E-04	1,24E-03	3,63E-03	1,80E-02	1,59E-03	1,48E-03
	ODP	kg CFC-11 eq	1,53E-07	1,14E-07	1,46E-07	1,16E-07	2,37E-07	2,13E-07	1,74E-07
	AP	mol H + eq	8,28E-03	7,10E-03	9,08E-03	8,76E-03	4,16E-02	1,20E-02	1,08E-02
	EPf	Kg P eq	7,75E-05	7,15E-05	9,15E-05	5,38E-05	2,07E-04	1,15E-04	1,09E-04
	EPm	Kg N eq	1,81E-03	1,61E-03	2,06E-03	1,51E-03	6,37E-03	2,66E-03	2,45E-03
	EPt	mol N eq	2,03E-02	1,80E-02	2,31E-02	1,58E-02	7,04E-02	2,98E-02	2,75E-02
	POCP	kg NMVOC eq	7,45E-03	6,49E-03	8,31E-03	4,88E-03	2,05E-02	1,09E-02	9,91E-03
	ADPe	Kg Sb eq	3,66E-03	3,66E-03	4,69E-03	5,95E-05	7,37E-06	5,59E-03	5,59E-03
	ADPf	MJ	2,11E+01	1,56E+01	1,99E+01	1,94E+01	6,02E+01	2,93E+01	2,38E+01
	WDP	m^3	9,09E-01	7,17E-01	9,17E-01	4,43E-01	8,49E-01	1,29E+00	1,09E+00

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STAGE	PEI	UM	STAVES A	B	C	D	E	F	G
D REUSE - RECOVERY STAGE	GWP	kg CO_2 eq	2,61E+00	3,13E+00	3,52E+00	4,45E+00	5,51E+00	6,47E+00	8,68E+00
	GWPf	kg CO_2 eq	2,60E+00	3,12E+00	3,51E+00	4,43E+00	5,49E+00	6,44E+00	8,64E+00
	GWPb	kg CO_2 eq	3,90E-03	4,74E-03	5,36E-03	6,83E-03	8,53E-03	1,01E-02	1,36E-02
	GWPl	kg CO_2 eq	7,68E-03	9,14E-03	1,02E-02	1,28E-02	1,57E-02	1,84E-02	2,46E-02
	ODP	kg CFC-11 eq	8,92E-08	1,07E-07	1,20E-07	1,52E-07	1,88E-07	2,20E-07	2,95E-07
	AP	mol H + eq	1,69E-02	2,02E-02	2,27E-02	2,86E-02	3,54E-02	4,15E-02	5,55E-02
	EPf	Kg P eq	7,89E-05	9,56E-05	1,08E-04	1,38E-04	1,72E-04	2,02E-04	2,73E-04
	EPm	Kg N eq	2,52E-03	3,02E-03	3,40E-03	4,29E-03	5,31E-03	6,23E-03	8,36E-03
	EPt	mol N eq	2,78E-02	3,33E-02	3,75E-02	4,73E-02	5,87E-02	6,88E-02	9,24E-02
	POCP	kg NMVOC eq	7,78E-03	9,40E-03	1,06E-02	1,35E-02	1,68E-02	1,98E-02	2,66E-02
	ADPe	Kg Sb eq	2,44E-07	8,38E-07	1,28E-06	2,33E-06	3,54E-06	4,63E-06	7,13E-06
	ADPf	MJ	2,40E+01	2,88E+01	3,23E+01	4,08E+01	5,05E+01	5,92E+01	7,94E+01
	WDP	m³	3,14E-01	3,76E-01	4,22E-01	5,32E-01	6,58E-01	7,72E-01	1,03E+00
TOTAL	GWP	kg CO_2 eq	1,01E+01	1,16E+01	1,28E+01	1,55E+01	1,86E+01	2,14E+01	2,79E+01
	GWPf	kg CO_2 eq	9,83E+00	1,13E+01	1,24E+01	1,50E+01	1,80E+01	2,07E+01	2,69E+01
	GWPb	kg CO_2 eq	2,81E-01	3,37E-01	3,79E-01	4,78E-01	5,94E-01	6,97E-01	9,37E-01
	GWPl	kg CO_2 eq	2,17E-02	2,55E-02	2,85E-02	3,54E-02	4,34E-02	5,06E-02	6,72E-02
	ODP	kg CFC-11 eq	6,25E-07	7,12E-07	7,78E-07	9,35E-07	1,12E-06	1,28E-06	1,65E-06
	AP	mol H + eq	5,33E-02	6,17E-02	6,81E-02	8,31E-02	1,00E-01	1,16E-01	1,52E-01
	EPf	Kg P eq	3,44E-04	3,96E-04	4,36E-04	5,30E-04	6,39E-04	7,37E-04	9,63E-04
	EPm	Kg N eq	9,37E-03	1,08E-02	1,19E-02	1,45E-02	1,75E-02	2,02E-02	2,64E-02
	EPt	mol N eq	9,90E-02	1,14E-01	1,26E-01	1,53E-01	1,84E-01	2,12E-01	2,77E-01
	POCP	kg NMVOC eq	3,06E-02	3,50E-02	3,83E-02	4,61E-02	5,51E-02	6,33E-02	8,21E-02
	ADPe	Kg Sb eq	2,28E-03	2,34E-03	2,39E-03	2,51E-03	2,64E-03	2,77E-03	3,05E-03
	ADPf	MJ	1,23E+02	1,39E+02	1,50E+02	1,78E+02	2,10E+02	2,39E+02	3,05E+02
	WDP	m³	2,73E+00	3,01E+00	3,22E+00	3,71E+00	4,28E+00	4,80E+00	5,98E+00

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LCA IMPACT ASSESSMENT

RESOURCE CONSUMPTION
STAVES SYSTEM

DECLARED UNIT:
1 m² of metal ceiling.

Hook on models: *A 90 / AR 90 / AR 100 / AC 100 / AC 150 / C 100 / C 150 / C 200 / N 75 / N 150 SR 80 / SR 90 / SR 100 / ST 32 / ST 50 / STV 60 / T 150 / T 200 / V 50 / 100 S 30 H14 / S 30 H38 / 30 H40 / S 30 H64 / S 30 H80 / S 40 H40 / S 80 H14 / S 80 H80 / S 80 H100 S 130 H14 / S 130 H80 / S 130 H100 / S 180 H14 / S 180 H80 / S 180 H100*

Self supporting models: *AP 100 / AP 150 / AP 200 / CR 150 / CR 200 / APR 150 / APR 200*

CAPTION:

Acronyms

PEI	Potential environment impact
UM	Unit of measure
PERE	Renewable primary energy excluding that one used as raw material
PERM	Renewable primary energy used as raw material
PERT	Total use of renewable primary energy
PENRE	Non-renewable primary energy excluding that one used as raw material
PENRM	Non-renewable primary energy used as raw material
PENRT	Total use of non-renewable primary energy
SM	Use of secondary raw materials
RSF	Use of renewable secondary fuels
NRSF	Use of non-renewable secondary fuels
FW	Net use of fresh water

Sch. 20 - RESOURCE CONSUMPTION OF METAL STAVE CEILINGS

STAGE	PEI	UM	CARRIER						
			A1	A2	B	C1	C2	C3	C4
A1 UPSTREAM PROCESS	**PERE**	**MJ**	1,82E+00	1,63E+00	2,08E+00	1,73E+00	6,18E+00	2,68E+00	2,49E+00
	PERM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	**MJ**	1,82E+00	1,63E+00	2,08E+00	1,73E+00	6,18E+00	2,68E+00	2,49E+00
	PENRE	**MJ**	2,19E+01	1,81E+01	2,32E+01	2,11E+01	8,21E+01	3,14E+01	2,76E+01
	PENRM	**MJ**	2,19E+00	0,00E+00	0,00E+00	2,19E+00	0,00E+00	2,19E+00	0,00E+00
	PENRT	**MJ**	2,41E+01	1,81E+01	2,32E+01	2,33E+01	8,21E+01	3,36E+01	2,76E+01
	SM	**Kg**	3,43E-03	3,43E-03	4,39E-03	0,00E+00	0,00E+00	5,24E-03	5,24E-03
	RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	**m³**	2,31E-02	1,84E-02	2,35E-02	1,42E-02	3,62E-02	3,28E-02	2,81E-02
A2 CORE PROCESS	**PERE**	**MJ**	7,50E-04	6,80E-04	8,70E-04	3,47E-04	3,63E-04	1,11E-03	1,04E-03
	PERM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	**MJ**	7,50E-04	6,80E-04	8,70E-04	3,47E-04	3,63E-04	1,11E-03	1,04E-03
	PENRE	**MJ**	5,23E-01	4,74E-01	6,07E-01	2,42E-01	2,54E-01	7,73E-01	7,24E-01
	PENRM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	**MJ**	5,23E-01	4,74E-01	6,07E-01	2,42E-01	2,54E-01	7,73E-01	7,24E-01
	SM	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	**m³**	1,06E-05	9,62E-06	1,23E-05	4,91E-06	5,14E-06	1,57E-05	1,47E-05

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EPD®

STAGE	PEI	UM	STAVES						
			A	B	C	D	E	F	G
A1 UPSTREAM PROCESS	**PERE**	**MJ**	9,76E+00	1,14E+01	1,27E+01	1,58E+01	1,93E+01	2,24E+01	2,97E+01
	PERM	**MJ**	5,97E-01	5,97E-01	5,97E-01	5,97E-01	5,97E-01	5,97E-01	5,97E-01
	PERT	**MJ**	1,04E+01	1,20E+01	1,33E+01	1,64E+01	1,99E+01	2,30E+01	3,03E+01
	PENRE	**MJ**	1,22E+02	1,41E+02	1,55E+02	1,89E+02	2,29E+02	2,64E+02	3,46E+02
	PENRM	**MJ**	4,74E+00	4,74E+00	4,74E+00	4,74E+00	4,74E+00	4,74E+00	4,74E+00
	PENRT	**MJ**	1,27E+02	1,46E+02	1,60E+02	1,94E+02	2,34E+02	2,69E+02	3,51E+02
	SM	**Kg**	1,81E-03	1,81E-03	1,81E-03	1,81E-03	1,81E-03	1,81E-03	1,81E-03
	RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	**m³**	7,62E-02	8,66E-02	9,45E-02	1,13E-01	1,35E-01	1,54E-01	1,99E-01
A2 CORE PROCESS	**PERE**	**MJ**	2,66E-03	3,14E-03	3,50E-03	4,36E-03	5,35E-03	6,24E-03	8,31E-03
	PERM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	**MJ**	2,66E-03	3,14E-03	3,50E-03	4,36E-03	5,35E-03	6,24E-03	8,31E-03
	PENRE	**MJ**	1,86E+00	2,19E+00	2,44E+00	3,04E+00	3,74E+00	4,36E+00	5,80E+00
	PENRM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	**MJ**	1,86E+00	2,19E+00	2,44E+00	3,04E+00	3,74E+00	4,36E+00	5,80E+00
	SM	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	**m³**	3,77E-05	4,44E-05	4,96E-05	6,17E-05	7,58E-05	8,84E-05	1,18E-04

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LCA IMPACT ASSESSMENT

STAGE	PEI	UM	CARRIER						
			A1	A2	B	C1	C2	C3	C4
A3 CORE PROCESS	PERE	MJ	1,16E-03	1,05E-03	1,34E-03	6,68E-04	7,00E-04	1,71E-03	1,60E-03
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	1,16E-03	1,05E-03	1,34E-03	6,68E-04	7,00E-04	1,71E-03	1,60E-03
	PENRE	MJ	1,84E-02	1,67E-02	2,14E-02	1,07E-02	1,12E-02	2,72E-02	2,55E-02
	PENRM	MJ	1,50E-02	1,36E-02	1,74E-02	8,66E-03	9,07E-03	2,21E-02	2,07E-02
	PENRT	MJ	3,34E-02	3,03E-02	3,88E-02	1,93E-02	2,02E-02	4,94E-02	4,62E-02
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m^3	9,57E-04	8,67E-04	1,11E-03	5,53E-04	5,79E-04	1,41E-03	1,32E-03
A4 DOWN STREAM PROCESS	PERE	MJ	1,31E-03	1,19E-03	1,52E-03	7,56E-04	7,92E-04	1,93E-03	1,81E-03
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	1,31E-03	1,19E-03	1,52E-03	7,56E-04	7,92E-04	1,93E-03	1,81E-03
	PENRE	MJ	9,14E-01	8,28E-01	1,06E+00	5,28E-01	5,53E-01	1,35E+00	1,26E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	9,14E-01	8,28E-01	1,06E+00	5,28E-01	5,53E-01	1,35E+00	1,26E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m^3	1,84E-05	1,67E-05	2,14E-05	1,07E-05	1,12E-05	2,72E-05	2,55E-05
C1 END FO LIFE STAGE	PERE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m^3	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C2 END FO LIFE STAGE	PERE	MJ	2,86E-04	2,60E-04	3,32E-04	1,66E-04	1,73E-04	4,23E-04	3,96E-04
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	2,86E-04	2,60E-04	3,32E-04	1,66E-04	1,73E-04	4,23E-04	3,96E-04
	PENRE	MJ	2,00E-01	1,81E-01	2,32E-01	1,16E-01	1,21E-01	2,95E-01	2,77E-01
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	2,00E-01	1,81E-01	2,32E-01	1,16E-01	1,21E-01	2,95E-01	2,77E-01
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m^3	4,05E-06	3,68E-06	4,70E-06	2,34E-06	2,46E-06	5,99E-06	5,61E-06

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STAGE	PEI	UM	STAVES						
			A	B	C	D	E	F	G
A3 CORE PROCESS	**PERE**	**MJ**	6,43E-01	6,43E-01	6,44E-01	6,45E-01	6,46E-01	6,47E-01	6,50E-01
	PERM	**MJ**	6,97E-03	6,97E-03	6,97E-03	6,97E-03	6,97E-03	6,97E-03	6,97E-03
	PERT	**MJ**	6,50E-01	6,50E-01	6,51E-01	6,52E-01	6,53E-01	6,54E-01	6,57E-01
	PENRE	**MJ**	8,87E+00	8,88E+00	8,88E+00	8,90E+00	8,92E+00	8,94E+00	8,98E+00
	PENRM	**MJ**	1,10E+01	1,10E+01	1,10E+01	1,10E+01	1,11E+01	1,11E+01	1,11E+01
	PENRT	**MJ**	1,99E+01	1,99E+01	1,99E+01	1,99E+01	2,00E+01	2,00E+01	2,01E+01
	SM	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	**m³**	1,42E-02	1,47E-02	1,51E-02	1,60E-02	1,71E-02	1,80E-02	2,02E-02
A4 DOWN STREAM PROCESS	**PERE**	**MJ**	3,87E-03	4,56E-03	5,09E-03	6,34E-03	7,78E-03	9,07E-03	1,21E-02
	PERM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	**MJ**	3,87E-03	4,56E-03	5,09E-03	6,34E-03	7,78E-03	9,07E-03	1,21E-02
	PENRE	**MJ**	2,70E+00	3,19E+00	3,56E+00	4,43E+00	5,43E+00	6,34E+00	8,43E+00
	PENRM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	**MJ**	2,70E+00	3,19E+00	3,56E+00	4,43E+00	5,43E+00	6,34E+00	8,43E+00
	SM	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	**m³**	5,45E-05	6,43E-05	7,18E-05	8,94E-05	1,10E-04	1,28E-04	1,70E-04
C1 END FO LIFE STAGE	**PERE**	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRE	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	SM	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	**m³**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C2 END FO LIFE STAGE	**PERE**	**MJ**	8,47E-04	9,99E-04	1,11E-03	1,39E-03	1,70E-03	1,99E-03	2,64E-03
	PERM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	**MJ**	8,47E-04	9,99E-04	1,11E-03	1,39E-03	1,70E-03	1,99E-03	2,64E-03
	PENRE	**MJ**	5,91E-01	6,97E-01	7,78E-01	9,69E-01	1,19E+00	1,39E+00	1,85E+00
	PENRM	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	**MJ**	5,91E-01	6,97E-01	7,78E-01	9,69E-01	1,19E+00	1,39E+00	1,85E+00
	SM	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	**m³**	1,20E-05	1,41E-05	1,58E-05	1,96E-05	2,41E-05	2,81E-05	3,74E-05

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LCA IMPACT ASSESSMENT

STAGE	PEI	UM	CARRIER						
			A1	A2	B	C1	C2	C3	C4
C3 END FO LIFE STAGE	PERE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	PERE	MJ	6,10E-06	5,53E-06	7,08E-06	3,53E-06	3,69E-06	9,01E-06	8,44E-06
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	6,10E-06	5,53E-06	7,08E-06	3,53E-06	3,69E-06	9,01E-06	8,44E-06
	PENRE	MJ	2,76E-03	2,50E-03	3,20E-03	1,59E-03	1,67E-03	4,07E-03	3,81E-03
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	2,76E-03	2,50E-03	3,20E-03	1,59E-03	1,67E-03	4,07E-03	3,81E-03
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	3,52E-05	3,19E-05	4,08E-05	2,03E-05	2,13E-05	5,19E-05	4,86E-05
D REUSE - RECOVERY STAGE	PERE	MJ	-3,38E-01	-3,42E-01	-3,81E-01	-2,31E+00	-5,31E+00	-5,05E-01	-4,48E-01
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	-3,38E-01	-3,42E-01	-3,81E-01	-2,31E+00	-5,31E+00	-5,05E-01	-4,48E-01
	PENRE	MJ	-5,45E+00	-5,52E+00	-6,14E+00	-3,15E+01	-7,25E+01	-8,15E+00	-7,22E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	-5,45E+00	-5,52E+00	-6,14E+00	-3,15E+01	-7,25E+01	-8,15E+00	-7,22E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	-8,51E-04	-8,62E-04	-9,58E-04	-1,34E-02	-3,09E-02	-1,27E-03	-1,13E-03
TOTAL	PERE	MJ	1,83E+00	1,63E+00	2,09E+00	1,73E+00	6,18E+00	2,68E+00	2,49E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	1,83E+00	1,63E+00	2,09E+00	1,73E+00	6,18E+00	2,68E+00	2,49E+00
	PENRE	MJ	2,35E+01	1,96E+01	2,51E+01	2,20E+01	8,31E+01	3,38E+01	2,99E+01
	PENRM	MJ	2,21E+00	1,36E-02	1,74E-02	2,20E+00	9,07E-03	2,22E+00	2,07E-02
	PENRT	MJ	2,57E+01	1,96E+01	2,51E+01	2,42E+01	8,31E+01	3,61E+01	2,99E+01
	SM	Kg	3,43E-03	3,43E-03	4,39E-03	0,00E+00	0,00E+00	5,24E-03	5,24E-03
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	2,42E-02	1,93E-02	2,47E-02	1,48E-02	3,68E-02	3,43E-02	2,95E-02

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STAGE	PEI	UM	STAVES						
			A	B	C	D	E	F	G
C3 END FO LIFE STAGE	PERE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	PERE	MJ	2,50E-05	2,82E-05	3,07E-05	3,65E-05	4,32E-05	4,93E-05	6,33E-05
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	2,50E-05	2,82E-05	3,07E-05	3,65E-05	4,32E-05	4,93E-05	6,33E-05
	PENRE	MJ	1,13E-02	1,28E-02	1,39E-02	1,65E-02	1,95E-02	2,23E-02	2,86E-02
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	1,13E-02	1,28E-02	1,39E-02	1,65E-02	1,95E-02	2,23E-02	2,86E-02
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	1,44E-04	1,63E-04	1,77E-04	2,10E-04	2,49E-04	2,84E-04	3,65E-04
D REUSE - RECOVERY STAGE	PERE	MJ	2,45E+00	2,94E+00	3,30E+00	4,16E+00	5,15E+00	6,04E+00	8,09E+00
	PERM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PERT	MJ	2,45E+00	2,94E+00	3,30E+00	4,16E+00	5,15E+00	6,04E+00	8,09E+00
	PENRE	MJ	3,32E+01	3,98E+01	4,47E+01	5,64E+01	6,99E+01	8,21E+01	1,10E+02
	PENRM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	PENRT	MJ	3,32E+01	3,98E+01	4,47E+01	5,64E+01	6,99E+01	8,21E+01	1,10E+02
	SM	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	1,46E-02	1,75E-02	1,96E-02	2,46E-02	3,03E-02	3,55E-02	4,74E-02
TOTAL	PERE	MJ	1,04E+01	1,21E+01	1,34E+01	1,64E+01	1,99E+01	2,31E+01	3,04E+01
	PERM	MJ	6,04E-01	6,04E-01	6,04E-01	6,04E-01	6,04E-01	6,04E-01	6,04E-01
	PERT	MJ	1,10E+01	1,27E+01	1,40E+01	1,70E+01	2,05E+01	2,37E+01	3,10E+01
	PENRE	MJ	1,36E+02	1,56E+02	1,71E+02	2,07E+02	2,48E+02	2,85E+02	3,71E+02
	PENRM	MJ	1,58E+01	1,58E+01	1,58E+01	1,58E+01	1,58E+01	1,58E+01	1,58E+01
	PENRT	MJ	1,52E+02	1,72E+02	1,87E+02	2,23E+02	2,64E+02	3,01E+02	3,87E+02
	SM	Kg	1,81E-03	1,81E-03	1,81E-03	1,81E-03	1,81E-03	1,81E-03	1,81E-03
	RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	FW	m³	9,07E-02	1,02E-01	1,10E-01	1,30E-01	1,52E-01	1,73E-01	2,20E-01

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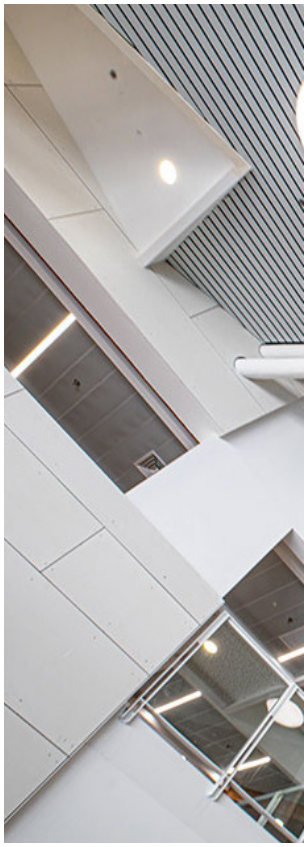
LCA IMPACT ASSESSMENT

WASTE PRODUCTION
STAVES SYSTEM

DECLARED UNIT:
1 m² of metal ceiling.



System models: Staves: *A 90 / AR 90 / AR 100 / AC 100 / AC 150 / C 100 / C 150 / C 200 / N 75 / N 150 SR 80 / SR 90 / SR 100 / ST 32 / ST 50 / STV 60 / T 150 / T 200 / V 50/100 S 30 H14 / S 30 H38 / 30 H40 / S 30 H64 / S 30 H80 / S 40 H40 / S 80 H14 / S 80 H80 / S 80 H100 S 130 H14 / S 130 H80 / S 130 H100 / S 180 H14 / S 180 H80 / S 180 H100*

Self supporting models: *AP 100 / AP 150 / AP 200 / CR 150 / CR 200 / APR 150 / APR 200*

CAPTION:

Acronyms

PEI	Potential environment impact
UM	Unit of measure
HWD	Hazardous waste disposed
NHWD	Non-hazardous waste disposed
RWD	Radioactive waste disposed
CRU	Components for re-use
MFR	Materials for recycling
MER	Materials for energy recovery
EEE	Exported energy, electricals

Sch. 21 - WASTE PRODUCTION OF METAL STAVE CEILINGS

STAGE	PEI	UM	CARRIER							
			A1	A2	B	C1	C2	C3	C4	
A1 UPSTREAM PROCESS	**HWD**	**Kg**	2,97E-03	2,97E-03	3,80E-03	0,00E+00	0,00E+00	4,53E-03	4,53E-03	
	NHWD	**Kg**	1,46E-04	1,46E-04	1,87E-04	0,00E+00	0,00E+00	2,24E-04	2,24E-04	
	RWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
	CRU	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
	MFR	**Kg**	2,10E-02	2,10E-02	2,69E-02	0,00E+00	0,00E+00	3,21E-02	3,21E-02	
	MER	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
	EEE	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
A2 CORE PROCESS	**HWD**	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
	NHWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
	RWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
	CRU	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
	MFR	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
	MER	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
	EEE	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	

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EPD®

RINA

	STAGE	PEI	UM	STAVES						
				A	B	C	D	E	F	G
	A1 UPSTREAM PROCESS	**HWD**	**Kg**	1,56E-03	1,56E-03	1,56E-03	1,56E-03	1,56E-03	1,56E-03	1,56E-03
		NHWD	**Kg**	7,71E-05	7,71E-05	7,71E-05	7,71E-05	7,71E-05	7,71E-05	7,71E-05
		RWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
		CRU	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
		MFR	**Kg**	1,11E-02	1,11E-02	1,11E-02	1,11E-02	1,11E-02	1,11E-02	1,11E-02
		MER	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
		EEE	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	A2 CORE PROCESS	**HWD**	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
		NHWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
		RWD	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
		CRU	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
		MFR	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
		MER	**Kg**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
		EEE	**MJ**	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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EPD®

LCA IMPACT ASSESSMENT

STAGE	PEI	UM	CARRIER						
			A1	A2	B	C1	C2	C3	C4
A3 CORE PROCESS	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	2,67E-03	2,42E-03	3,09E-03	1,54E-03	1,62E-03	3,94E-03	3,69E-03
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
A4 DOWN STREAM PROCESS	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C1 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C2 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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STAGE	PEI	UM	STAVES						
			A	B	C	D	E	F	G
A3 CORE PROCESS	HWD	Kg	1,63E-04	1,63E-04	1,63E-04	1,63E-04	1,63E-04	1,63E-04	1,63E-04
	NHWD	Kg	1,81E-03	1,81E-03	1,81E-03	1,81E-03	1,81E-03	1,81E-03	1,81E-03
	RWD	Kg	1,06E-04	1,06E-04	1,06E-04	1,06E-04	1,06E-04	1,06E-04	1,06E-04
	CRU	Kg	2,69E-01	2,69E-01	2,69E-01	2,69E-01	2,69E-01	2,69E-01	2,69E-01
	MFR	Kg	7,89E-03	9,31E-03	1,04E-02	1,29E-02	1,59E-02	1,85E-02	2,46E-02
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
A4 DOWN STREAM PROCESS	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C1 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C2 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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LCA IMPACT ASSESSMENT

STAGE	PEI	UM	CARRIER						
			A1	A2	B	C1	C2	C3	C4
C3 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	8,18E-02	7,41E-02	9,48E-02	4,73E-02	4,95E-02	1,21E-01	1,13E-01
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
D REUSE - RECOVERY STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
TOTAL	HWD	Kg	2,97E-03	2,97E-03	3,80E-03	0,00E+00	0,00E+00	4,53E-03	4,53E-03
	NHWD	Kg	8,19E-02	7,42E-02	9,50E-02	4,73E-02	4,95E-02	1,21E-01	1,13E-01
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	2,37E-02	2,34E-02	3,00E-02	1,54E-03	1,62E-03	3,60E-02	3,58E-02
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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STAGE	PEI	UM	STAVES						
			A	B	C	D	E	F	G
C3 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
C4 END FO LIFE STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	3,35E-01	3,78E-01	4,11E-01	4,89E-01	5,79E-01	6,60E-01	8,48E-01
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	1,78E-01	1,78E-01	1,78E-01	1,78E-01	1,78E-01	1,78E-01	1,78E-01
D REUSE - RECOVERY STAGE	HWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	NHWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RWD	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	CRU	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
TOTAL	HWD	Kg	1,73E-03	1,73E-03	1,73E-03	1,73E-03	1,73E-03	1,73E-03	1,73E-03
	NHWD	Kg	3,37E-01	3,80E-01	4,13E-01	4,91E-01	5,81E-01	6,62E-01	8,50E-01
	RWD	Kg	1,06E-04	1,06E-04	1,06E-04	1,06E-04	1,06E-04	1,06E-04	1,06E-04
	CRU	Kg	2,69E-01	2,69E-01	2,69E-01	2,69E-01	2,69E-01	2,69E-01	2,69E-01
	MFR	Kg	1,90E-02	2,04E-02	2,14E-02	2,40E-02	2,69E-02	2,96E-02	3,57E-02
	MER	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	EEE	MJ	1,78E-01	1,78E-01	1,78E-01	1,78E-01	1,78E-01	1,78E-01	1,78E-01

All dimensions are nominal and expressed in millimeters.
All technical specification data and information can be changed without advise.
For further information please contact sales department:
tel. + 39 0421 75526 export@atena-it.com

REFERENCES

- ISO 14025: 2010
- ISO 21930: 2007
- ISO 14040: 2006
- ISO 14044: 2006
- EN15804: 2014
- General Programme Instructions v.3.01. 2019
- PCR 2019:14 V 1.1.
  Construction products and construction services.
- Life Cycle Assessment
  applied to Atena products for EPD® purposes.

RINA
HEAD OFFICE
Via Corsica, 12
16128 GENOVA

ENVIRONMENTAL PRODUCT DECLARATION (EPD)

VALIDATION IN COMPLIANCE

WITH THE REQUIREMENTS GENERAL PROGRAMME INSTRUCTIONS FOR EPD V. 3.0

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Laura Severino
Sustainability & Food Certification Compliance, Head

RINA Services S.p.A.

Genoa, 11/1/2021

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For further information please contact sales department:
tel. + 39 0421 75526 export@atena-it.com

TO BE INSPIRED
atena-it.com

Atena S.p.A.
Via A. De Gasperi, 52 - 30020 Gruaro (VE) Italy
Ph: +39 0421 75526 - Fax: +39 0421 75692
atena-it.com - info@atena-it.com