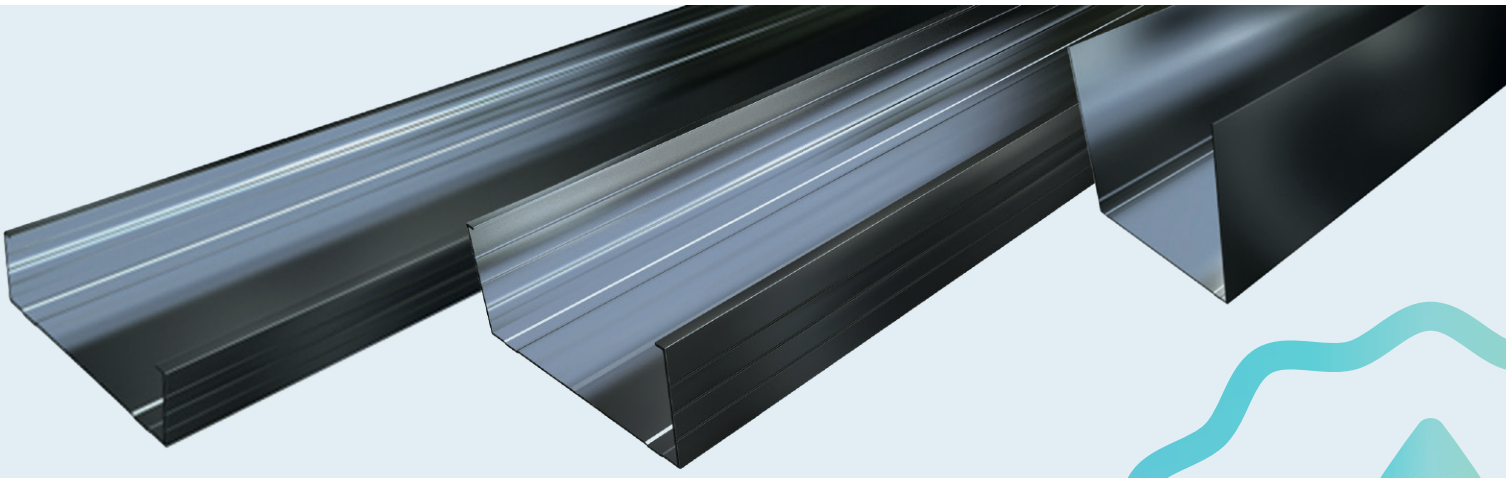
ECO PLATFORM EPD VERIFIED

EPD®

N° VERIFICATION : S-P-05737

ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN 15804 for:
Knauf Steel profiles



> **Programme:**
The International EPD® System
www.environdec.com

> **Programme operator:**
EPD International AB

> **EPD registration number:**
S-P-05737

> **Publication date:**
2022/03/31

> **Valid until:**
2027/03/30

> **Manufacturer:**
Knauf di Knauf S.r.l. S.a.s. - Via Livornese, 20
56040 Castellina Marittima (PI), Italy

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1. GENERAL INFORMATION

Manufacturer: Knauf di Knauf S.r.l. S.a.s.
Programme used: The International EPD® System.
For more information see www.environdec.com

EPD registration number/declaration number: S-P-05737

Product / product family name and manufacturer represented: Steel profiles, manufactured by Knauf di Knauf S.r.l. S.a.s.

Product description and use: steel profiles DX51 D+Z are used to be applied as part assemblies in internal walls and ceiling constructions.

Declaration issued: 2022/03/30

Valid until: 2027/03/30

Owner of the declaration: Knauf di Knauf S.r.l. S.a.s. - Via Livornese 20, 56040 Castellina Marittima (PI), Italy. Tel. 050 69211 - Fax 050 692301, knauf@knauf.it.

EPD prepared by: Ergo S.r.l., www.ergosrl.net

Scope: The LCA is based on 2020 production data for Castellina Marittima manufacturing site in Italy for Knauf steel profiles. This EPD covers information modules A1 to C4 (cradle to gate with module C1-C4, module D and optional modules) as defined in EN 15804:2012+A2:2019 for Knauf steel profiles sold and used in Italy and Europe. The use stage (B1-B7) was not considered in this study.

Functional unit/declared unit: The declared unit (DU) is 1 linear meter of hot-dip galvanized steel profile, 0.6 mm thickness.

CEN standard EN 15804 served as the core Product Category Rules - PCR	
PCR:	PCR 2019:14 Construction products and construction services, Version 1.11.
Product group classification:	The UN CPC code of the product is 42190.
PCR review was conducted by:	The Technical Committee of the International EPD® System. Chair: Claudia A. Peña Email: info@environdec.com
Independent verification of the declaration and data, according to ISO 14025:	☐ EPD process certification ☒ EPD verification
Third party verifier:	RINA Services S.p.A.Via Corsica 12, Genova - Italy, Tel +39 010 5385306, www.rina.org ACCREDIA Registration number: 001H REV. 17
Accredited or approved by:	The International EPD® System

According to EN 15804, EPDs of construction products may not be comparable if they do not comply with this standard. It should be noted that EPDs within the same product category from different programs may not be comparable.

2. ABOUT THE COMPANY

Knauf is one of the world's leading manufacturers of modern insulation materials, dry lining systems, plasters and accessories, thermal insulation composite systems, paints, floor screed, floor systems, and construction equipment and tools. With 150 production facilities and sales organizations in over 86 countries, 27,500 employees worldwide, and sales of 6.5 billion Euro (in 2016), the Knauf Group is without doubt one of the big players on the market - in Europe, the USA, South America, Russia, Asia, Africa, and Australia.
The company's headquarter in Italy is in Castellina Marittima (Pisa). Currently, the Castellina Marittima plant has a global area of 90,000 square meters, covers an area of 30,000 square meters and owns more than 100 hectares of quarries. The products manufactured in Knauf plant in Castellina Marittima are plasterboard, steel profiles required for the implementation of the plasterboards, ceilings, stucco and impregnators.

3. PRODUCT INFORMATION

3.1 Product description

Knauf steel profiles are used to be applied as part assemblies in internal walls and ceiling constructions. Typical applications are residential buildings, industrial and commercial buildings, sports facilities, schools and hospitals. Knauf profiles are made of hot-dip galvanized sheet steel in conformity with EN 10346 cut and bent to attain the right dimensions and characteristics.
Steel profiles analysed are available with zinc (Z) or zinc-aluminium-magnesium (MgZ) based coatings (only except for the profile Z U 15x30 which has only zinc coating) in order to provide a good level of protection against corrosion. The presence of magnesium in the coating promotes the formation of compact corrosion products highly stable over time, thereby substantially reducing coating consumption dynamics and enhancing edge protection. The profiles are available in thicknesses range from 0.6mm to 1mm. Thickness of studied products is 0.6mm.
Figure 1 shows an illustration of one of the products covered by this EPD. Table 1 lists the steel profile system products from Knauf for which this EPD is valid.

Table 1 - Steel profile products covered by this EPD.

Products	Weight (Kg/m)
Prof Z C Plus 50x27 mm	0.505
Prof Z U 27x30 mm	0.358
Prof Z C 75x50 mm	0.794
Prof Z U 75x40 mm	0.648
Prof Z C 50x50 mm	0.686
Prof Z U 50x40 mm	0.540
Prof Z C Plus 50x15 mm	0.410
Prof Z U 15x30 mm	0.307
Prof Z C 100x50 mm	0.902
Prof Z U 100x40 mm	0.890
Prof Z C 150x50 mm	1.118
Prof Z U 150x40 mm	0.971

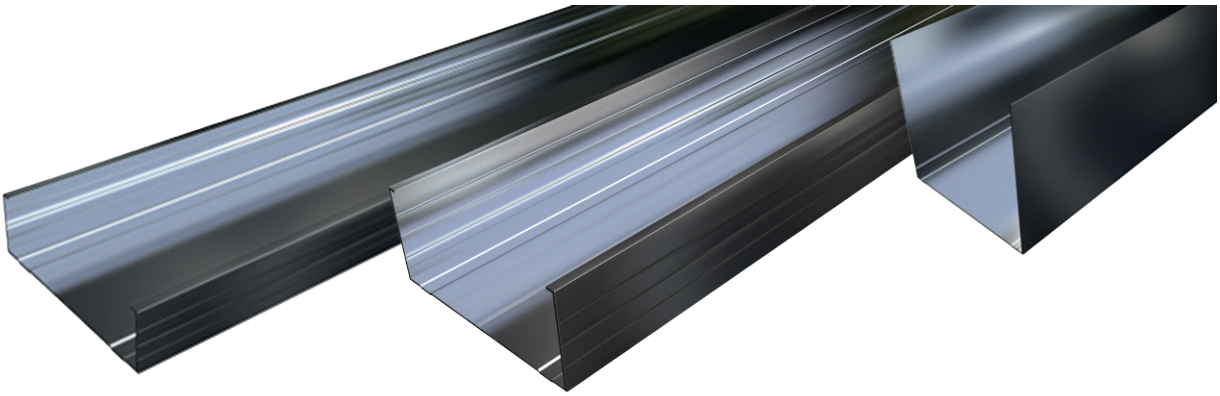


Figure 1. Illustration of one of the products within the product category steel profiles, for which this EPD is valid.

3.2 Technical data

Technical data referred to steel profiles are given in Table 2.

Table 2 - Technical information.

Product identification	DIN 18182-1 UNI EN 14195 UNI EN 10346
Tensile strength	≥ 300 N/mm^2
Quality steel grade	DX51 D+Z100 - M/N-A-C DX51 D+Z100 - M/N-A-C - MgZ
Class of reaction to fire performance	A1

3.3 Delivery Status

The EPD refers to 0.6mm thick steel profiles shown in table 1.

3.4 Base materials / Ancillary materials

The average composition of steel profiles, including the packaging materials, is reported in Table 3:

Table 3 - Content declaration of profile and its packaging.

Product components	**Weight %**	**Post-consumer material, weight %**	**Renewable material, weight %**
Steel	99	53.49	0
Other elements (eg. C, Si, Mn, P, S, Ti)	<1%	0	0
Packaging materials	**Weight %**	**Post-consumer material, weight %**	**Renewable material, weight %**
Plastic strapping	6	0	0
Wooden elements	94	0	94

No substances included in the Candidate List of Substances of Very High Concern for authorisation under the REACH Regulations are present in the steel profiles.

3.5 Packaging

The analysed steel profiles are packaged in plastic wrap and loaded onto wooden element prior to distribution. Packing materials are externally recovered/disposed of.

3.6 Re-use phase

The analysed steel profiles can be recycled without any problems after dismantling.

3.7 Disposal

Waste from steel profiles is fully recyclable. The European waste catalogue code is 17 04 05.

3.8 Further information

Further information can be found through the enquiry desk: +39 050 69211
knauf@knauf.it | www.knauf.it

3.9 Manufacture

The product is manufactured from hot-dip galvanized carbon steel. The steel used to produce hot-dip galvanized profiles is imported by different suppliers located in Italy (95.06%), Europe (0.72%) and Asia (4.22%). Purchased galvanized coils are divide into narrower bands whose width fits the specific profiles. Then, steel profiles are manufactur ed through cold roll forming technique.

3.10 Environment and Health during manufacture

At Knauf, Health and Safety is a core value. The Company's aim is always to be injury-free.
A target of zero accidents at work for employees, visitors and contractors is set by the business. In all aspects of the Company's activities, the Health and Safety rules and relevant regulations must be complied with. In addition, there are a number of definitive Company Safety Procedures and together these determine the minimum standards expected by the Company. In order to achieve this, close co-operation with representatives of the relevant enforcement agencies is ensured. To ensure that the Company's objectives are achieved, documented safety management systems are employed at site and within the central functions. These include a systematic identification of hazards, assessment of the risks and the development of safe systems of work to eliminate or reduce any risks to an acceptable level. Audits and Inspections are used to monitor standards of safety management, adherence to the law and Company procedures. Knauf plants are managed through ISO 14001, ISO 9001 and BS OHSAS 18001 certified systems.

4. LCA INFORMATION

Figure 3 shows a flow diagram of the system under study. The system boundary covers A1- A3 product stages referred as 'Raw material supply', 'Transport' and 'Manufacturing'.
In addition to the manufacturing phase (modules A1-A3), this EPD contains the transport from the manufacturing to the building site (A4) and the installation into the building site (A5) as well as the End-of-life stage (de-construction and demolition as C1; transport to waste processing as C2; waste processing for reuse, recovery and/or recycling as C3; disposal as C4; benefits and loads beyond the system boundary, as module D). Accordingly, the EPD is a cradle-to-gate declaration with module C1-C4, module D and optional modules. The system boundaries in tabular form for all modules are shown in the Table 4 below.

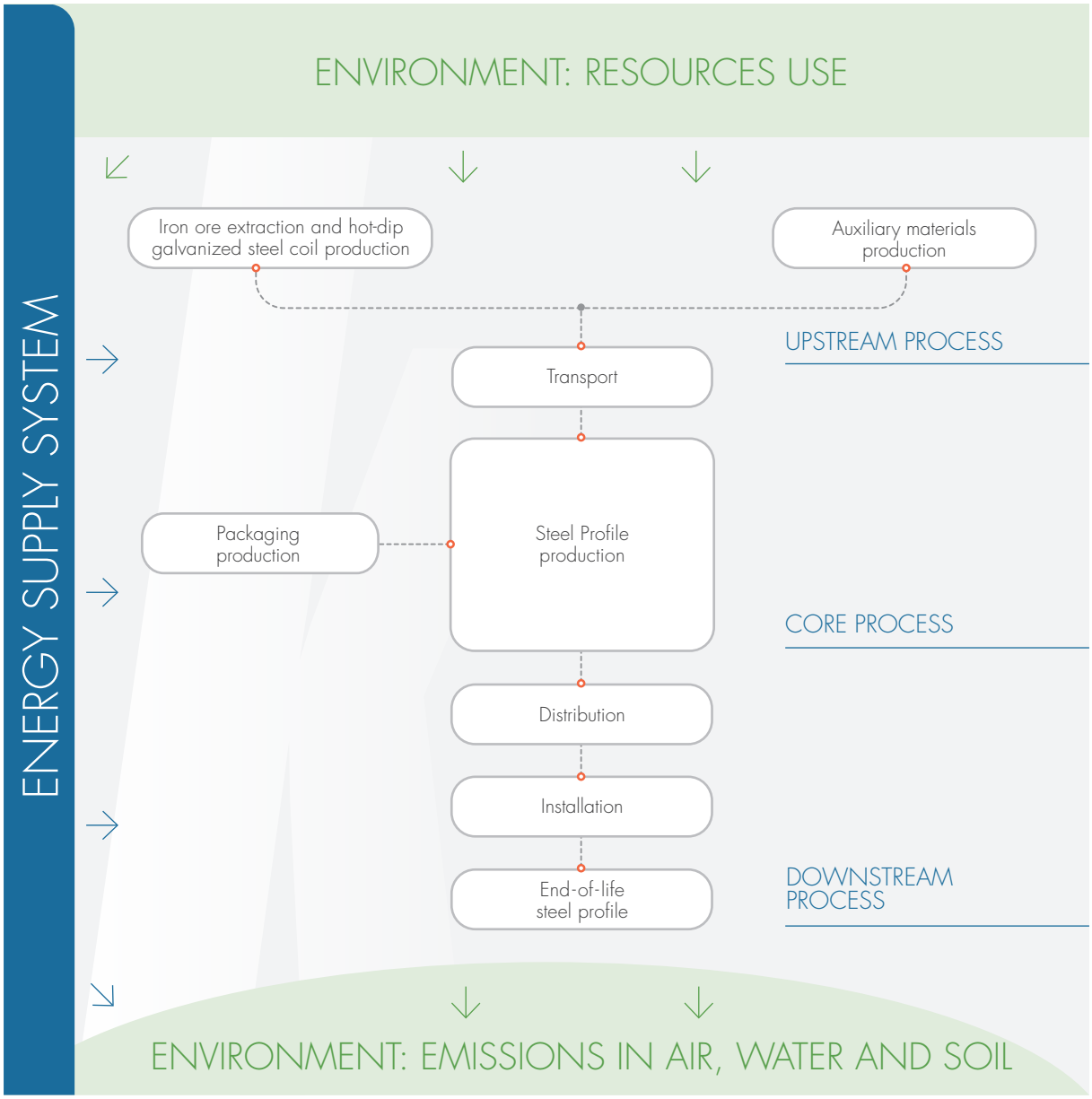


Figure 3 - Flow diagram of system boundary under assessment.

Table 4 - System boundaries chosen for the LCA (X-module included in LCA. MND - module not included).

Product stage			**Construction process stage**		**Use stage**							**End of life stage**				**Benefits and loads beyond the system boundaries**
Raw material supply	Transport	Manufactoring	Transport from the gate to the site	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demo	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	X	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

5. LCA CALCULATION RULES

LCA calculation rules are reported in Table 5.

Table 5 - LCA calculation rules.

5.1	**Functional unit/ declared unit**	The declared unit is 1 m of hot-dip galvanized steel profile 0.6 mm thickness.
5.2	**System boundaries**	Cradle to gate with module C1-C4, module D and optional modules (A4, A5).
5.3	**Estimates and assumptions**	The use stage (module B1-B7) was assumed have no impacts. The profiles have a reference service life of 50 years. This assumes that the product will last in situ with no requirements for maintenance, repair, replacement or refurbishment throughout this period. For the production of auxiliaries and packaging materials (and their disposal), generic data have been used, since their mass flow in relation to the declared unit is limited. Transport of final product to construction site is taken as the transport of 1 m of steel profile from Castellina Marittima plant to the construction site as distance value based on weighted average values for 2020 as transport to customers (A4). An average of 50 km is taken as a distance from construction site to waste processing and disposal sites (C2). Waste processing for reuse, recovery and/or recycling is taken into consideration for the current study (C3). At the end of life of the products, 95% of galvanized steel profiles are collected to be recycled and the rest end up at landfills according to European steel recycling statistics (C4). Potential impacts and avoided burdens resulting from the packaging and steel scrap recycling in the end of life are assigned to module D.
5.4	**Cut-off rules**	All major raw materials and all the essential energy is included. General cut-off criteria are given in standard EN 15804:2012+A2:2019 Clause 6.3.6 In compliance with these criteria, the infrastructure of the manufacturing site and personnel related activities (travel, office operations and supplies) are excluded from the study.

5.5	**Background Data**	All primary product data was provided by Knauf S.r.l. S.a.s. - Castellina Marittima plant. All secondary data was retrieved using SIMAPRO 9 software, with Ecoinvent 3.6 database.
5.6	**Data quality**	Primary data refer to 2020 and have been collected at Knauf S.r.l. S.a.s. plant located in Castellina Marittima (IT), whereas selected generic data have been retrieved from Ecoinvent 3.6 database and using the most updated datasets and - as far as possible- those representatives for at least 5 years into the future. Moreover, as required by the General Programme Instructions, the environmental impacts associated to proxy data do not exceed 10% of the overall environmental impact from the product system. The energy mix of Knauf di Knauf S.r.l. S.a.s. Castellina Marittima plant is characterized by 61,5% of electricity self-produced by cogeneration and 38.5% by electricity purchased from an external energy company. The energy-related data from the energy supplier refer to the supplier energy mix, whereas for the production of raw materials a European energy mix has been accounted for.
5.7	**Period under review**	The data is representative of the manufacturing processes of 2020.
5.8	**Allocations**	Allocations were avoided in the calculation model.
5.9	**Comparability**	A comparison or an evaluation of EPD data is only possible where EN 15804 has been followed, the same building context and product-specific characteristics of performance are taken into account, and the same stages have been included in the system boundary. According to EN 15804, EPD of construction products may not be comparable if they do not comply with this standard. According to ISO 21930, EPD might not be comparable if they are from different programmes.

Description of system boundaries

This EPD evaluates the environmental impacts of 1 linear meter of hot-dip galvanized steel profile from cradle to gate with module C1-C4, module D and optional modules. Within the Life Cycle Assessment of the declared profile, the following processes are considered:

Product stage, A1-A3

Description of the stage

The product stage of the plasterboard products is subdivided into three modules; A1, A2 and A3 respectively “raw material supply”, “transport” and “manufacturing”.

A1, raw material supply
Extraction and processing of raw material occurring upstream from the manufacturing process, including the energy generation needed for these processes (extraction, refining and transport of energy from primary energy sources). Recycling processes of secondary materials from a previous product system that are used in the manufacturing process are also included, however processes that are part of the waste processing in the previous product system are excluded, referring to the polluter-pays principle.

A2, transport to the manufacturer
The external transportation of raw materials and auxiliaries to the manufacturing site.
The modelling includes transportation with truck and ship with processes for each supplier.

A3, manufacturing
Includes the manufacture of products and packaging. The production of packaging material is taken into account at this stage. The processing of any waste arising from this stage is also included.

Construction process stage, A4-A5

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

A4, transport to the building site
Table 6 below quantifies the parameters for transporting the product from production gate to the building site. The distance quoted is a weighted average, calculated using company information and the quantity of product transported. For the distribution of the finished products, an average scenario with EURO 4, EURO 5 and EURO 6 articulated trucks and ship has been accounted for, based on the sale figures in Italy and Europe in the reference year. Specific data was not available for capacity utilisation or fuel consumption, therefore generic European values from Ecoinvent database have been assumed.
Table 6 - Parameters for transporting the product from production gate to the building site.

Parameter	Value (expressed per functional/declared unit)
Type of vehicle	Truck 16-32 tons. EURO4, EURO5, EURO 6 Boat, freight ship
Distanceto central warehouse	360 km weighted average by truck to all markets 41 km weighted average by boat to all markets
Distance to construction site	16 km
Fuel/energy consumption	0.04 l diesel fuel per tkm (truck) 0.0002 l diesel fuel per tkm (boat)
Capacity utilization	70%
Bulk density of transported products	7,860 kg/m^3

A5, installation into the building

Table 7 below quantifies the parameters for installing 1 m of steel profile at the building site. No installation materials are required. Packaging wastes of profile are included in this module.

Table 7 - Parameters for installing the product at the building site.

Parameter	Value (expressed per functional/ declared unit)
Ancillary materials for installation (specified by materials)	None
Water use	None
Other resource use	None
Quantitative description of energy type (regional mix) and consumption during the installation process	None required
Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type)	Plastic strapping: 0.42 g (waste from packaging) Wooden elements: 6.48 g (waste from packaging)
Output materials (specified by type) as results ofwaste processing at the building site e.g. of collection for recycling, for energy recovery, disposal (specified by route)	Plastic strapping: 0.197 g to landfill 0.223 g to recovery Wooden elements: 2.57 g to landfill 3.91 g to recovery **Steel profile Z C Plus 50x27 mm:** 0.038 kg 0.036 kg to recycling (95%) 0.00189 kg to landfill (5%) **Steel profile Z U 27x30 mm:** 0.027 kg 0.025 kg to recycling (95%) 0.00134 kg to landfill (5%) **Steel profile Z C 75x50 mm:** 0.059 kg 0.0566 kg to recycling (95%) 0.00298 kg to landfill (5%) **Steel profile Z U 75x40 mm:** 0.048 kg 0.0462 kg to recycling (95%) 0.00243 kg to landfill (5%) **Steel profile Z C 50x50 mm:** 0.051 kg 0.0489 kg to recycling (95%) 0.00257 kg to landfill (5%) **Steel profile Z U 50x40 mm:** 0.040 kg 0.0385 kg to recycling (95%) 0.00202 kg to landfill (5%) **Steel profile Z C Plus 50x15 mm:** 0.030 kg 0.0292 kg to recycling (95%) 0.00154 kg to landfill (5%) **Steel profile Z U 15x30 mm:** 0.023 kg 0.0219 kg to recycling (95%) 0.00115 kg to landfill (5%) **Steel profile Z C 100x50 mm:** 0.067 kg 0.0643 kg to recycling (95%) 0.00338 kg to landfill (5%)

Parameter	Value (expressed per functional/ declared unit)
Output materials (specified by type) as results ofwaste processing at the building site e.g. of collection for recycling, for energy recovery, disposal (specified by route)	**Steel profile Z U 100x40 mm:** 0.067 kg 0.0634 kg to recycling (95%) 0.00334 to landfill (5%) **Steel profile Z C 150x50 mm:** 0.083 kg 0.0797 kg to recycling (95%) 0.00419 kg to landfill (5%) **Steel profile Z U 150x40 mm:** 0.072 kg 0.0692 kg to recycling (95%) 0.00364 kg to landfill (5%)

Use stage (excluding potential savings), B1-B7

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

B1, use or application of the installed product;
B2, maintenance;
B3, repair;
B4, replacement;
B5, refurbishment;
B6, operational energy use;
B7, operational water use.

Description of scenarios and additional technical information
The product has a reference service life of 50 years. This assumes that the product will last in situ with no requirements for maintenance, repair, replacement or refurbishment throughout this period. Knauf steel profile is a passive building product; therefore, it has no impact at this stage.

End-of-life stage, C1-C4

Description of the End-of-life stage
The end-of-life stage includes:

C1, de-construction, demolition
It was assumed that building machine was used in deconstruction process. Deconstruction including demolition of the product from the construction, including initial on-site sorting of the materials.
C2, transport to waste processing
Transportation of the discarded product to a recycling site, and transportation of waste to final sorting yard or disposal.
C3, waste processing for reuse, recovery and/or recycling
Steel profile must be mechanically separated from the other construction materials prior to recycling so that the steel can be made available to a downstream product system as secondary material.

This is considered in module C3. Steel profiles are collected as mixed construction waste and delivered to sorting facility, where 95% of products were separated for recycling and 5% left in the process as waste and landfilled.

C4, disposal

Waste disposal, including physical pre-treatment and management of the disposal site, as well as emissions from the disposal.

Parameter	Value (expressed per functional/declared unit)
C1) Collection process specified by type	**Steel profile ZC Plus 50x27mm:** - 0.480 kg collected separately for metal recycling and transported by truck to recycling site - 0.025 kg collected with mixed construction waste and transported by truck to landfill site **Steel profile ZU 27x30 mm:** - 0.340 kg collected separately for metal recycling and transported by truck to recycling site - 0.018 kg collected with mixed construction waste and transported by truck to landfill site **Steel profile Z C 75x50 mm:** - 0.754 kg collected separately for metal recycling and transported by truck to recycling site - 0.040 kg collected with mixed construction waste and transported by truck to landfill site **Steel profile Z U 75x40 mm:** - 0.616 kg collected separately for metal recycling and transported by truck to recycling site - 0.032 kg collected with mixed construction waste and transported by truck to landfill site **Steel profile Z C 50x50 mm:** - 0.651 kg collected separately for metal recycling and transported by truck to recycling site - 0.034 kg collected with mixed construction waste and transported by truck to landfill site **Steel profile Z U 50x40 mm:** - 0.513 kg collected separately for metal recycling and transported by truck to recycling site - 0.027 kg collected with mixed construction waste and transported by truck to landfill site **Steel profile Z C Plus 50x15 mm:** - 0.390 kg collected separately for metal recycling and transported by truck to recycling site - 0.021 kg collected with mixed construction waste and transported by truck to landfill site

Parameter	Value (expressed per funcional/declared unit)
C1) Collection process specified by type	**Steel profile Z U 15x30 mm:** - 0.292 kg collected separately for metal recycling and transported by truck to recycling site - 0.015 kg collected with mixed construction waste and transported by truck to landfill site **Steel profile Z C 100x50 mm:** - 0.857 kg collected separately for metal recycling and transported by truck to recycling site - 0.045 kg collected with mixed construction waste and transported by truck to landfill site **Steel profile Z U 100x40 mm:** - 0.846 kg collected separately for metal recycling and transported by truck to recycling site - 0.045 kg collected with mixed construction waste and transported by truck to landfill site **Steel profile Z C 150x50 mm:** - 1.062 kg collected separately for metal recycling and transported by truck to recycling site - 0.056 kg collected with mixed construction waste and transported by truck to landfill site **Steel profile Z U 150x40 mm:** - 0.922 kg collected separately for metal recycling and transported by truck to recycling site - 0.049 kg collected with mixed construction waste and transported by truck to landfill site
C2) Assumption for scenario development (e.g., transportation)	Diesel consumption 0.04L per tkm; 40 km from demolition site to recycling facility 40 km from demolition site to landfill site
C3) Recovery system specified by type	95% steel profile to recycling
C4) Disposal specified by type	5% of waste to landfill

Reuse/recovery/recycling potential, D

Description of the stage

Module D, relating to information on the potential for reuse/recovery/recycling, is assessed considering the benefits of the avoided impact of future extractions and production of raw materials, brought about by the recycling of the main materials from A to C (e.g., steel scraps, plastic, wood). The processes necessary to make the materials of the product (at the end of life) new raw materials for subsequent life cycles are considered.

6. LCA RESULTS

In the following tables, the environmental impacts per declared unit are reported for the environmental categories recommended by the EPD's General Programme Instruction (version 3.01, September 2019) and those indicated in PCR 2019:14 version 1.11 for Construction Products and construction services. The LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.
EN 15804+A2 (adapted) method has been used as the impact model. The numbers reported in the following tables are the outcome of rounding. For this reason, total results could slightly differ from the sum of contributions of the different phases..

7. LCA RESULTS INTERPRETATION

The following interpretation of results is in general valid for all analysed Knauf steel profiles with zinc coating. Effect of zinc-aluminium-magnesium (MgZ) coating on LCIA results for product stage (A1-A3) are less than ±10%. Therefore, the results showed in the tables below are also representative for profiles with MgZ coating. The LCIA results indicate that most of the impacts of Knauf steel profile is dominated by the raw material production (module A1). Over 90% of GWP comes from steel production as steel manufacturing is quite energy intensive process.

ADDITIONAL INFORMATION

Greenhouse gas emission from the use of electricity in the manufacturing phase

Electricity used in the manufacturing processes has been accounted for using the electricity mix (21.28% renewables, 11.39% coal, 57.92% natural gas, 0.67% oil, 4.56% nuclear, 4.18% other sources) from energy supplier (for the year 2020):

Greenhouse gas emissions: 0.136 kg CO_2 eq/MJ

Table 9 - LCA results of potential environmental impact referred to 1 m of Z C Plus 50x27x0.6 mm and MgZ C Plus 50x27x0.6 mm steel profiles.

Prof Z C Plus 50x27x0.6 mm, MgZ C Plus 50x27x0.6mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Global Warming Potential (GWP) TOT - kg CO_2 eq./ DU	1.12E+00	3.18E-02	1.92E-03	-	-	-	-	-	-	-	1.66E-03	2.50E-02	1.04E-02	1.33E-04	-4.07E-01
	Global Warming Potential = Potential change in the earth's climate due to accumulation of greenhouse gases and subsequent trapping of heat from reflected sunlight that would otherwise have passed out of the earth's atmosphere. Greenhouse gas refers to several different gases including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). For global warming potential, these gas emissions are tracked and their potencies reported in terms of equivalent units of CO_2. The impact category 'Global Warming' covers three sub-categories: fossil, biogenic, land use and land use change.														
Global Warming Potential (GWP) Fossil - kg CO_2 eq./DU	1.12E+00	3.18E-02	1.72E-03	-	-	-	-	-	-	-	1.66E-03	2.50E-02	1.03E-02	1.33E-04	-4.07E-01
	GWP-fossil covers greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling, etc.).														
Global Warming Potential (GWP) biogenic - kg CO_2 eq./DU	2.62E-03	1.17E-05	2.02E-04	-	-	-	-	-	-	-	2.78E-07	2.86E-06	4.34E-05	7.77E-08	-4.56E-04
	GWP-biogenic covers carbon emissions to air (CO_2, CO and CH_4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO_2 uptake from the atmosphere through photosynthesis during biomass growth - i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood.														
Global Warming Potential (GWP) Land use - kg CO_2 eq./DU	6.21E-04	1.13E-05	1.54E-07	-	-	-	-	-	-	-	1.31E-07	2.08E-06	1.24E-05	3.71E-08	-2.05E-04
	GWP-land use and land use change accounts for carbon uptakes and emissions (CO_2, CO and CH_4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions).														
Ozone Depletion Potential (ODP) - kg CFC11 eq./DU	1.30E-07	7.24E-09	3.64E-10	-	-	-	-	-	-	-	3.59E-10	5.29E-09	1.39E-09	5.48E-11	-2.39E-08
	Ozone Depletion Potential = Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which break down when they reach the stratosphere and then catalytically destroy ozone molecules.														
Acidification Potential (AP) - kg mol H+/DU	7.53E-02	1.22E-04	1.04E-05	-	-	-	-	-	-	-	1.74E-05	1.51E-04	1.34E-04	1.26E-06	-1.86E-03
	Acidification Potential = Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.														
Eutrophication freshwater Potential (EP) - kg PO_4^{3-} eq. /DU	1.38E-04	7.74E-07	1.22E-08	-	-	-	-	-	-	-	1.86E-08	1.51E-07	2.42E-06	4.58E-09	-6.73E-05
Eutrophication marine Potential (EP) - kg N eq. / DU	3.10E-03	3.33E-05	4.50E-06	-	-	-	-	-	-	-	7.67E-06	6.46E-05	2.82E-05	4.34E-07	-3.61E-04
Eutrophication terrestrial Potential (EP) - mol N eq. /DU	3.25E-01	3.70E-04	4.84E-05	-	-	-	-	-	-	-	8.41E-05	7.10E-04	3.29E-04	4.79E-06	-3.99E-03
	Eutrophication potential = Excessive enrichment of waters and continental surfaces with nutrients and the associated adverse biological effects.														

Prof Z C Plus 50x27x0.6 mm, MgZ C Plus 50x27x0.6mm - ENVIRONMENTAL IMPACTS															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/ demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Photochemical Ozone Creation Potential (POCP)- kg NMVOC /DU	4.74E-03	1.17E-05	2.31E-05	-	-	-	-	-	-	-	2.31E-05	2.50E-04	8.96E-05	1.39E-06	-1.98E-03
	Photochemical ozone creation potential = Chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.														
Water use Deprivation Potential, m^3 depriv/DU	6.00E-01	1.35E-03	4.96E-05	-	-	-	-	-	-	-	3.06E-05	1.41E-04	1.56E-03	1.67E-04	-4.27E-02
	Water use = It is based on the available water remaining per unit of surface in a given watershed relative to the world average, after human and aquatic ecosystem demands have been met.														
Resource use, minerals and metals, kg Sb eq. /DU	1.67E-03	8.69E-07	1.03E-08	-	-	-	-	-	-	-	2.55E-09	1.50E-07	6.23E-07	1.22E-09	-1.75E-06
	Resource use, minerals and metals = Consumption of non-renewable resources, thereby lowering their availability for future generations.														
Resource use, fossils, MJ, net calorific value/DU	1.46E+01	4.81E-01	2.28E-02	-	-	-	-	-	-	-	2.28E-02	3.30E-01	1.42E-01	3.72E-03	-4.89E+00
	Resource use, fossils = Consumption of non-renewable resources, thereby lowering their availability for future generations.														

Table 10 - LCA results of potential environmental impact referred to 1 m of Z U 27x30x0.6 mm and MgZ U 27x30x0.6 mm steel profiles.

Prof Z U 27x30x0.6 mm, MgZ U 27x30x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Global Warming Potential (GWP) TOT - kg CO_2 eq./ DU	8.44E-01	2.32E-02	1.56E-03	-	-	-	-	-	-	-	1.18E-03	1.77E-02	7.36E-03	9.43E-05	-2.88E-01
	Global Warming Potential = Potential change in the earth's climate due to accumulation of greenhouse gases and subsequent trapping of heat from reflected sunlight that would otherwise have passed out of the earth's atmosphere. Greenhouse gas refers to several different gases including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). For global warming potential, these gas emissions are tracked and their potencies reported in terms of equivalent units of CO_2. The impact category 'Global Warming' covers three sub-categories: fossil, biogenic, land use and land use change.														
Global Warming Potential (GWP) Fossil - kg CO_2 eq./DU	8.41E-01	2.32E-02	1.35E-03	-	-	-	-	-	-	-	1.18E-03	1.77E-02	7.33E-03	9.43E-05	-2.88E-01
	GWP-fossil covers greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling, etc.).														
Global Warming Potential (GWP) biogenic - kg CO_2 eq./DU	2.06E-03	8.51E-06	2.02E-04	-	-	-	-	-	-	-	1.97E-07	2.03E-06	3.08E-05	5.51E-08	-3.17E-04
	GWP-biogenic covers carbon emissions to air (CO_2, CO and CH_4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO_2 uptake from the atmosphere through photosynthesis during biomass growth - i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood.														
Global Warming Potential (GWP) Land use - kg CO_2 eq./DU	4.94E-04	8.25E-06	1.23E-07	-	-	-	-	-	-	-	9.28E-08	1.47E-06	8.82E-06	2.63E-08	-1.48E-04
	GWP-land use and land use change accounts for carbon uptakes and emissions (CO_2, CO and CH_4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions).														
Ozone Depletion Potential (ODP) - kg CFC11 eq./DU	1.03E-07	5.28E-09	2.87E-10	-	-	-	-	-	-	-	2.54E-10	3.75E-09	9.83E-10	3.88E-11	-1.69E-08
	Ozone Depletion Potential = Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which break down when they reach the stratosphere and then catalytically destroy ozone molecules.														
Acidification Potential (AP) - kg mol H+/DU	6.26E-02	8.92E-05	8.18E-06	-	-	-	-	-	-	-	1.23E-05	1.07E-04	9.50E-05	8.95E-07	-1.31E-03
	Acidification Potential = Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.														
Eutrophication freshwater Potential (EP) - kg PO_4^{3-} eq. /DU	1.04E-04	5.64E-07	9.92E-09	-	-	-	-	-	-	-	1.32E-08	1.07E-07	1.71E-06	3.24E-09	-4.77E-05
Eutrophication marine Potential (EP) - kg N eq. / DU	2.51E-03	2.43E-05	3.56E-06	-	-	-	-	-	-	-	5.43E-05	4.58E-05	2.00E-05	3.08E-07	-2.55E-04
Eutrophication terrestrial Potential (EP) - mol N eq. /DU	2.71E-01	2.69E-04	3.81E-05	-	-	-	-	-	-	-	5.96E-05	5.03E-04	2.33E-04	3.39E-06	-2.83E-03
	Eutrophication potential = Excessive enrichment of waters and continental surfaces with nutrients and the associated adverse biological effects.														

Prof Z U 27x30x0.6 mm, MgZ U 27x30x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/ demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Photochemical Ozone Creation Potential (POCP)- kg NMVOC /DU	3.52E-03	8.54E-05	1.34E-05	-	-	-	-	-	-	-	1.64E-05	1.77E-04	6.35E-05	9.86E-07	-1.40E-03
	Photochemical ozone creation potential = Chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.														
Water use Deprivation Potential, m^3 depriv/DU	4.55E-01	9.82E-04	4.39E-05	-	-	-	-	-	-	-	2.17E-05	9.97E-05	1.10E-03	1.18E-04	-3.04E-02
	Water use = It is based on the available water remaining per unit of surface in a given watershed relative to the world average, after human and aquatic ecosystem demands have been met.														
Resource use, minerals and metals, kg Sb eq. /DU	1.40E-03	6.33E-07	8.15E-09	-	-	-	-	-	-	-	1.80E-09	1.06E-07	4.42E-07	8.63E-10	-1.24E-06
	Resource use, minerals and metals = Consumption of non-renewable resources, thereby lowering their availability for future generations.														
Resource use, fossils, MJ, net calorific value/DU	1.13E+01	3.51E-01	1.80E-02	-	-	-	-	-	-	-	1.62E-02	2.34E-01	1.01E-01	2.64E-03	-3.47E+00
	Resource use, fossils = Consumption of non-renewable resources, thereby lowering their availability for future generations.														

Table 11 - LCA results of potential environmental impact referred to 1 m of Z C 75x50x0.6 mm and MgZ C 75x50x0.6 mm steel profiles.

Prof Z C 75x50x0.6 mm, MgZ C 75x50x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Global Warming Potential (GWP) TOT - kg CO_2 eq./ DU	1.80E+00	5.10E-02	2.63E-03	-	-	-	-	-	-	-	2.61E-03	3.93E-02	1.63E-02	2.09E-04	-6.39E-01
	Global Warming Potential = Potential change in the earth's climate due to accumulation of greenhouse gases and subsequent trapping of heat from reflected sunlight that would otherwise have passed out of the earth's atmosphere. Greenhouse gas refers to several different gases including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). For global warming potential, these gas emissions are tracked and their potencies reported in terms of equivalent units of CO_2. The impact category 'Global Warming' covers three sub-categories: fossil, biogenic, land use and land use change.														
Global Warming Potential (GWP) Fossil - kg CO_2 eq./DU	1.79E+00	5.09E-02	2.42E-03	-	-	-	-	-	-	-	2.61E-03	3.93E-02	1.62E-02	2.09E-04	-6.38E-01
	GWP-fossil covers greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling, etc.).														
Global Warming Potential (GWP) biogenic - kg CO_2 eq./DU	4.28E-03	1.87E-05	2.02E-04	-	-	-	-	-	-	-	4.38E-07	4.49E-06	6.83E-05	1.22E-07	-7.25E-04
	GWP-biogenic covers carbon emissions to air (CO_2, CO and CH_4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO_2 uptake from the atmosphere through photosynthesis during biomass growth - i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood.														
Global Warming Potential (GWP) Land use - kg CO_2 eq./DU	1.01E-03	1.81E-05	2.14E-07	-	-	-	-	-	-	-	2.06E-07	3.27E-06	1.96E-05	5.83E-08	-3.15E-04
	GWP-land use and land use change accounts for carbon uptakes and emissions (CO_2, CO and CH_4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions).														
Ozone Depletion Potential (ODP) - kg CFC11 eq./DU	2.13E-07	1.16E-08	5.15E-10	-	-	-	-	-	-	-	5.64E-10	8.32E-09	2.18E-09	8.61E-11	-3.74E-08
	Ozone Depletion Potential = Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which break down when they reach the stratosphere and then catalytically destroy ozone molecules.														
Acidification Potential (AP) - kg mol H+/DU	1.26E-01	1.96E-04	1.47E-05	-	-	-	-	-	-	-	2.73E-05	2.38E-04	2.11E-04	1.98E-06	-2.91E-03
	Acidification Potential = Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.														
Eutrophication freshwater Potential (EP) - kg PO_4^{3-} eq. /DU	2.22E-04	1.24E-06	1.66E-08	-	-	-	-	-	-	-	2.92E-08	2.38E-07	3.80E-06	7.19E-09	-1.05E-04
Eutrophication marine Potential (EP) - kg N eq. / DU	5.13E-03	5.34E-05	6.34E-06	-	-	-	-	-	-	-	1.21E-05	1.02E-04	4.43E-05	6.83E-07	-5.65E-04
Eutrophication terrestrial Potential (EP) - mol N eq. /DU	5.45E-01	5.91E-04	6.86E-05	-	-	-	-	-	-	-	1.32E-04	1.12E-03	5.18E-04	7.53E-06	-6.26E-03
	Eutrophication potential = Excessive enrichment of waters and continental surfaces with nutrients and the associated adverse biological effects.														

Prof Z C 75x50x0.6 mm, MgZ C 75x50x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Photochemical Ozone Creation Potential (POCP)- kg NMVOC /DU	7.56E-03	1.88E-04	2.41E-05	-	-	-	-	-	-	-	3.64E-05	3.93E-04	1.41E-04	2.19E-06	-3.11E-03
	Photochemical ozone creation potential = Chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.														
Water use Deprivation Potential, m^3 depriv/DU	9.67E-01	2.16E-03	6.07E-05	-	-	-	-	-	-	-	4.81E-05	2.21E-04	2.45E-03	2.62E-04	-6.65E-02
	Water use = It is based on the available water remaining per unit of surface in a given watershed relative to the world average, after human and aquatic ecosystem demands have been met.														
Resource use, minerals and metals, kg Sb eq. /DU	2.80E-03	1.39E-06	1.46E-08	-	-	-	-	-	-	-	4.00E-09	2.35E-07	9.80E-07	1.91E-09	-2.74E-06
	Resource use, minerals and metals = Consumption of non-renewable resources, thereby lowering their availability for future generations.														
Resource use, fossils, MJ, net calorific value/DU	2.36E+01	7.70E-01	3.23E-02	-	-	-	-	-	-	-	3.59E-02	5.18E-01	2.23E-01	5.84E-03	-7.66E+00
	Resource use, fossils = Consumption of non-renewable resources, thereby lowering their availability for future generations.														

Table 12 - LCA results of potential environmental impact referred to 1 m of Z U 75x40x0.6 mm and MgZ U 75x40x0.6 mm steel profiles.

Prof Z C 75x40x0.6 mm, MgZ C 75x40x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Global Warming Potential (GWP) TOT - kg CO_2 eq./ DU	1.55E+00	4.17E-02	2.27E-03	-	-	-	-	-	-	-	2.13E-03	3.20E-02	1.33E-02	1.71E-04	-5.22E-01
	Global Warming Potential = Potential change in the earth's climate due to accumulation of greenhouse gases and subsequent trapping of heat from reflected sunlight that would otherwise have passed out of the earth's atmosphere. Greenhouse gas refers to several different gases including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). For global warming potential, these gas emissions are tracked and their potencies reported in terms of equivalent units of CO_2. The impact category 'Global Warming' covers three sub-categories: fossil, biogenic, land use and land use change														
Global Warming Potential (GWP) Fossil - kg CO_2 eq./DU	1.55E+00	4.16E-02	2.07E-03	-	-	-	-	-	-	-	2.13E-03	3.20E-02	1.33E-02	1.71E-04	-5.21E-01
	GWP-fossil covers greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling, etc.).														
Global Warming Potential (GWP) biogenic - kg CO_2 eq./DU	3.69E-03	1.53E-05	2.02E-04	-	-	-	-	-	-	-	3.57E-07	3.67E-06	5.57E-05	9.97E-08	-5.89E-04
	GWP-biogenic covers carbon emissions to air (CO_2, CO and CH_4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO_2 uptake from the atmosphere through photosynthesis during biomass growth - i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood														
Global Warming Potential (GWP) Land use - kg CO_2 eq./DU	8.88E-04	1.48E-05	1.84E-07	-	-	-	-	-	-	-	1.68E-07	2.67E-06	1.60E-05	4.76E-08	-2.59E-04
	GWP-land use and land use change accounts for carbon uptakes and emissions (CO_2, CO and CH_4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions).														
Ozone Depletion Potential (ODP) - kg CFC11 eq./DU	1.91E-07	9.48E-09	4.39E-10	-	-	-	-	-	-	-	4.60E-10	6.79E-09	1.78E-09	7-03E-11	-3.05E-08
	Ozone Depletion Potential = Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which break down when they reach the stratosphere and then catalytically destroy ozone molecules.														
Acidification Potential (AP) - kg mol H+/DU	1.12E-01	1.60E-04	1.25E-05	-	-	-	-	-	-	-	2.23E-05	1.94E-04	1.72E-04	1.62E-06	-2.38E-03
	Acidification Potential = Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.														
Eutrophication freshwater Potential (EP) - kg PO_4^{3-} eq. /DU	1.88E-04	1.01E-06	1.44E-08	-	-	-	-	-	-	-	2.38E-08	1.94E-07	3.10E-06	5.87E-09	-8.62E-05
Eutrophication marine Potential (EP) - kg N eq. / DU	4.60E-03	4.36E-05	5.41E-06	-	-	-	-	-	-	-	9.84E-06	8.29E-05	3.62E-05	5.57E-07	-4.62E-04
Eutrophication terrestrial Potential (EP) - mol N eq. /DU	4.83E-01	4.84E-04	5.84E-05	-	-	-	-	-	-	-	1.08E-04	9.11E-04	4.23E-04	6.14E-06	-5.12E-03
	Eutrophication potential = Excessive enrichment of waters and continental surfaces with nutrients and the associated adverse biological effects.														

Prof Z C 75x40x0.6 mm, MgZ C 75x40x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Photochemical Ozone Creation Potential (POCP)- kg NMVOC /DU	6.69E-03	1.53E-04	2.05E-05	-	-	-	-	-	-	-	2.97E-05	3.20E-04	1.15E-04	1.78E-06	-2.54E-03
	Photochemical ozone creation potential = Chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.														
Water use Deprivation Potential, m^3 depriv/DU	8.19E-01	1.77E-03	5.51E-05	-	-	-	-	-	-	-	3.93E-05	1.81E-04	2.00E-03	2.14E-04	-5.45E-02
	Water use = It is based on the available water remaining per unit of surface in a given watershed relative to the world average, after human and aquatic ecosystem demands have been met.														
Resource use, minerals and metals, kg Sb eq. /DU	2.48E-03	1.14E-06	1.24E-08	-	-	-	-	-	-	-	3.27E-09	1.92E-07	8.00E-07	1.56E-09	-2.24E-06
	Resource use, minerals and metals = Consumption of non-renewable resources, thereby lowering their availability for future generations.														
Resource use, fossils, MJ, net calorific value/DU	2.07E+01	6.30E-01	2.75E-02	-	-	-	-	-	-	-	2.93E-02	4.23E-01	1.82E-01	4.77E-03	-6.27E+00
	Resource use, fossils = Consumption of non-renewable resources, thereby lowering their availability for future generations.														

Table 13 - LCA results of potential environmental impact referred to 1 m of Z C 50x50x0.6 mm and MgZ C 50x50x0.6 mm steel profiles.

Prof Z C 50x50x0.6 mm, MgZ C 50x50x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Global Warming Potential (GWP) TOT - kg CO_2 eq./ DU	1.55E+00	4.41E-02	2.36E-03	-	-	-	-	-	-	-	2.26E-03	3.39E-02	1.41E-02	1.81E-04	-5.53E-01
	Global Warming Potential = Potential change in the earth's climate due to accumulation of greenhouse gases and subsequent trapping of heat from reflected sunlight that would otherwise have passed out of the earth's atmosphere. Greenhouse gas refers to several different gases including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). For global warming potential, these gas emissions are tracked and their potencies reported in terms of equivalent units of CO_2. The impact category 'Global Warming' covers three sub-categories: fossil, biogenic, land use and land use change														
Global Warming Potential (GWP) Fossil - kg CO_2 eq./DU	1.54E+00	4.41E-02	2.16E-03	-	-	-	-	-	-	-	2.26E-03	3.39E-02	1.40E-02	1.81E-04	-5.52E-01
	GWP-fossil covers greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling, etc.).														
Global Warming Potential (GWP) biogenic - kg CO_2 eq./DU	3.68E-03	1.62E-05	2.02E-04	-	-	-	-	-	-	-	3.78E-07	3.88E-06	5.90E-05	1.06E-07	-6.25E-04
	GWP-biogenic covers carbon emissions to air (CO_2, CO and CH_4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO_2 uptake from the atmosphere through photosynthesis during biomass growth - i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood														
Global Warming Potential (GWP) Land use - kg CO_2 eq./DU	8.74E-04	1.57E-05	1.92E-07	-	-	-	-	-	-	-	1.78E-07	2.83E-06	1.69E-05	5.03E-08	-2.74E-04
	GWP-land use and land use change accounts for carbon uptakes and emissions (CO_2, CO and CH_4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions).														
Ozone Depletion Potential (ODP) - kg CFC11 eq./DU	1.83E-07	1.00E-08	4.59E-10	-	-	-	-	-	-	-	4.87E-10	7.19E-09	1.88E-09	7.44E-11	-3.23E-08
	Ozone Depletion Potential = Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which break down when they reach the stratosphere and then catalytically destroy ozone molecules.														
Acidification Potential (AP) - kg mol H+/DU	1.08E-01	1.70E-04	1.31E-05	-	-	-	-	-	-	-	2.36E-05	2.06E-04	1.82E-04	1.71E-06	-2.52E-03
	Acidification Potential = Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.														
Eutrophication freshwater Potential (EP) - kg PO_4^{3-} eq. /DU	1.91E-04	1.07E-06	1.50E-08	-	-	-	-	-	-	-	2.52E-08	2.06E-07	3.28E-06	6.22E-09	-9.12E-05
Eutrophication marine Potential (EP) - kg N eq. / DU	4.41E-03	4.62E-05	5.65E-06	-	-	-	-	-	-	-	1.04E-05	8.78E-05	3.83E-05	5.90E-07	-4.89E-04
Eutrophication terrestrial Potential (EP) - mol N eq. /DU	4.67E-01	5.12E-04	6.10E-05	-	-	-	-	-	-	-	1.14E-04	9.65E-04	4.47E-04	6.50E-06	-5.42E-03
	Eutrophication potential = Excessive enrichment of waters and continental surfaces with nutrients and the associated adverse biological effects.														

Prof Z C 50x50x0.6 mm, MgZ C 50x50x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Photochemical Ozone Creation Potential (POCP)- kg NMVOC /DU	6.53E-03	1.62E-04	2.14E-05	-	-	-	-	-	-	-	3.14E-05	3.39E-04	1.22E-04	1.89E-06	-2.69E-03
	Photochemical ozone creation potential = Chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.														
Water use Deprivation Potential, m³ depriv/DU	8.33E-01	1.87E-03	5.66E-05	-	-	-	-	-	-	-	4.16E-05	1.91E-04	2.12E-03	2.26E-04	-5.76E-02
	Water use = It is based on the available water remaining per unit of surface in a given watershed relative to the world average, after human and aquatic ecosystem demands have been met.														
Resource use, minerals and metals, kg Sb eq. /DU	2.40E-03	1.20E-06	1.30E-08	-	-	-	-	-	-	-	3.46E-09	2.03E-07	8.47E-07	1.65E-09	-2.37E-06
	Resource use, minerals and metals = Consumption of non-renewable resources, thereby lowering their availability for future generations.														
Resource use, fossils, MJ, net calorific value/DU	2.04E+01	6.66E-01	2.87E-02	-	-	-	-	-	-	-	3.10E-02	4.48E-01	1.93E-01	5.05E-03	-6.63E+00
	Resource use, fossils = Consumption of non-renewable resources, thereby lowering their availability for future generations.														

Table 14 - LCA results of potential environmental impact referred to 1 m of Z U 50x40x0.6 mm and MgZ U 50x40x0.6 mm steel profiles.

Prof Z U 50x40x0.6 mm, MgZ U 50x40x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Global Warming Potential (GWP) TOT - kg CO_2 eq./ DU	1.26E+00	3.48E-02	2.00E-03	-	-	-	-	-	-	-	1.78E-03	2.67E-02	1.11E-02	1.42E-04	-4.34E-01
	Global Warming Potential = Potential change in the earth's climate due to accumulation of greenhouse gases and subsequent trapping of heat from reflected sunlight that would otherwise have passed out of the earth's atmosphere. Greenhouse gas refers to several different gases including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). For global warming potential, these gas emissions are tracked and their potencies reported in terms of equivalent units of CO_2. The impact category 'Global Warming' covers three sub-categories: fossil, biogenic, land use and land use change														
Global Warming Potential (GWP) Fossil - kg CO_2 eq./DU	1.26E+00	3.47E-02	1.80E-03	-	-	-	-	-	-	-	1.78E-03	2.67E-02	1.10E-02	1.42E-04	-4.34E-01
	GWP-fossil covers greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling, etc.).														
Global Warming Potential (GWP) biogenic - kg CO_2 eq./DU	3.08E-03	1.27E-05	2.02E-04	-	-	-	-	-	-	-	2.98E-07	3.06E-06	4.64E-05	8.31E-08	-4.87E-04
	GWP-biogenic covers carbon emissions to air (CO_2, CO and CH_4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO_2 uptake from the atmosphere through photosynthesis during biomass growth - i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood														
Global Warming Potential (GWP) Land use - kg CO_2 eq./DU	7.35E-04	1.24E-05	1.61E-07	-	-	-	-	-	-	-	1.40E-07	2.22E-06	1.33E-05	3.96E-08	-2.18E-04
	GWP-land use and land use change accounts for carbon uptakes and emissions (CO_2, CO and CH_4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions).														
Ozone Depletion Potential (ODP) - kg CFC11 eq./DU	1.53E-07	7.91E-09	3.82E-10	-	-	-	-	-	-	-	3.83E-10	5.66E-09	1.48E-09	5.85E-11	-2.54E-08
	Ozone Depletion Potential = Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which break down when they reach the stratosphere and then catalytically destroy ozone molecules.														
Acidification Potential (AP) - kg mol H+/DU	9.33E-02	1.34E-04	1.09E-05	-	-	-	-	-	-	-	1.86E-05	1.62E-04	1.43E-04	1.35E-06	-1.98E-03
	Acidification Potential = Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.														
Eutrophication freshwater Potential (EP) - kg PO_4^{3-} eq. /DU	1.56E-04	8.45E-07	1.27E-08	-	-	-	-	-	-	-	1.98E-08	1.62E-07	2.58E-06	4.89E-09	-7.17E-05
Eutrophication marine Potential (EP) - kg N eq. / DU	3.75E-03	3.64E-05	4.72E-06	-	-	-	-	-	-	-	8.20E-06	6.91E-05	3.02E-05	4.64E-07	-3.84E-04
Eutrophication terrestrial Potential (EP) - mol N eq. /DU	4.04E-01	4.03E-04	5.08E-05	-	-	-	-	-	-	-	8.99E-05	7.59E-04	3.52E-04	5.12E-06	-4.26E-03
	Eutrophication potential = Excessive enrichment of waters and continental surfaces with nutrients and the associated adverse biological effects.														

Prof Z U 50x40x0.6 mm, MgZ U 50x40x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/ demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Photochemical Ozone Creation Potential (POCP)- kg NMVOC /DU	5.28E-03	1.28E-04	1.78E-05	-	-	-	-	-	-	-	2.47E-05	2.67E-04	9.59E-05	1.49E-06	-2.12E-03
	Photochemical ozone creation potential = Chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.														
Water use Deprivation Potential, m^3 depriv/DU	6.82E-01	1.47E-03	5.09E-05	-	-	-	-	-	-	-	3.27E-05	1.50E-04	1.67E-03	1.78E-04	-4.54E-02
	Water use = It is based on the available water remaining per unit of surface in a given watershed relative to the world average, after human and aquatic ecosystem demands have been met.														
Resource use, minerals and metals, kg Sb eq. /DU	2.08E-03	9.49E-07	1.08E-08	-	-	-	-	-	-	-	2.72E-09	1.60E-07	6.67E-07	1.30E-09	-1.86E-06
	Resource use, minerals and metals = Consumption of non-renewable resources, thereby lowering their availability for future generations.														
Resource use, fossils, MJ, net calorific value/DU	1.68E+01	5.25E-01	2.40E-02	-	-	-	-	-	-	-	2.44E-02	3.52E-01	1.52E-01	3.97E-03	-5.22E+00
	Resource use, fossils = Consumption of non-renewable resources, thereby lowering their availability for future generations.														

Table 15 - LCA results of potential environmental impact referred to 1 m of Z C Plus 50x15x0.6 mm and MgZ C Plus 50x15x0.6 mm steel profiles.

Prof Z C Plus 50x15x0.6 mm, MgZ C Plus 50x15x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Global Warming Potential (GWP) TOT - kg CO_2 eq./ DU	8.90E-01	2.65E-02	1.68E-03	-	-	-	-	-	-	-	1.35E-03	2.03E-02	8.43E-03	1.08E-04	-3.30E-01
	Global Warming Potential = Potential change in the earth's climate due to accumulation of greenhouse gases and subsequent trapping of heat from reflected sunlight that would otherwise have passed out of the earth's atmosphere. Greenhouse gas refers to several different gases including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). For global warming potential, these gas emissions are tracked and their potencies reported in terms of equivalent units of CO_2. The impact category 'Global Warming' covers three sub-categories: fossil, biogenic, land use and land use change.														
Global Warming Potential (GWP) Fossil - kg CO_2 eq./DU	8.88E-01	2.65E-02	1.48E-03	-	-	-	-	-	-	-	1.35E-03	2.03E-02	8.39E-03	1.08E-04	-3.29E-01
	GWP-fossil covers greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling, etc.).														
Global Warming Potential (GWP) biogenic - kg CO_2 eq./DU	2.06E-03	9.72E-06	2.02E-04	-	-	-	-	-	-	-	2.26E-07	2.32E-06	3.53E-05	6.31E-08	-3.66E-04
	GWP-biogenic covers carbon emissions to air (CO_2, CO and CH_4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO_2 uptake from the atmosphere through photosynthesis during biomass growth - i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood														
Global Warming Potential (GWP) Land use - kg CO_2 eq./DU	4.87E-04	9.42E-06	1.34E-07	-	-	-	-	-	-	-	1.06E-07	1.69E-06	1.01E-05	3.01E-08	-1.68E-04
	GWP-land use and land use change accounts for carbon uptakes and emissions (CO_2, CO and CH_4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions).														
Ozone Depletion Potential (ODP) - kg CFC11 eq./DU	1.02E-07	6.03E-09	3.14E-10	-	-	-	-	-	-	-	2.91E-10	4.30E-09	1.13E-09	4.45E-11	-1.93E-09
	Ozone Depletion Potential = Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which break down when they reach the stratosphere and then catalytically destroy ozone molecules.														
Acidification Potential (AP) - kg mol H+/DU	5.80E-02	1.02E-04	8.96E-06	-	-	-	-	-	-	-	1.41E-05	1.23E-04	1.09E-04	1.02E-06	-1.50E-03
	Acidification Potential = Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.														
Eutrophication freshwater Potential (EP) - kg PO_4^{3-} eq. /DU	1.10E-04	6.44E-07	1.07E-08	-	-	-	-	-	-	-	1.51E-08	1.23E-07	1.96E-06	3.71E-09	-5.45E-05
Eutrophication marine Potential (EP) - kg N eq. / DU	2.41E-03	2.78E-05	3.89E-06	-	-	-	-	-	-	-	6.22E-06	5.25E-05	2.29E-05	3.52E-07	-2.92E-04
Eutrophication terrestrial Potential (EP) - mol N eq. /DU	2.50E-01	3.08E-04	4.17E-05	-	-	-	-	-	-	-	6.83E-05	5.77E-04	2.67E-04	3.89E-06	-3.23E-03
	Eutrophication potential = Excessive enrichment of waters and continental surfaces with nutrients and the associated adverse biological effects.														

Prof Z C Plus 50x15x0.6 mm, MgZ C Plus 50x15x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/ demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Photochemical Ozone Creation Potential (POCP)- kg NMVOC /DU	3.80E-03	9.76E-05	1.47E-05	-	-	-	-	-	-	-	1.88E-05	2.03E-04	7.28E-05	1.13E-06	-1.61E-03
	Photochemical ozone creation potential = Chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.														
Water use Deprivation Potential, m^3 depriv/DU	4.77E-01	1.12E-03	4.59E-05	-	-	-	-	-	-	-	2.48E-05	1.14E-04	1.26E-03	1.35E-04	-3.46E-02
	Water use = It is based on the available water remaining per unit of surface in a given watershed relative to the world average, after human and aquatic ecosystem demands have been met.														
Resource use, minerals and metals, kg Sb eq. /DU	1.29E-03	7.23E-07	8.92E-09	-	-	-	-	-	-	-	2.07E-09	1.22E-07	5.06E-07	9.88E-10	-1.42E-06
	Resource use, minerals and metals = Consumption of non-renewable resources, thereby lowering their availability for future generations.														
Resource use, fossils, MJ, net calorific value/DU	1.16E+01	4.00E-01	1.97E-02	-	-	-	-	-	-	-	1.86E-02	2.68E-01	1.15E-01	3.02E-03	-3.96E+00
	Resource use, fossils = Consumption of non-renewable resources, thereby lowering their availability for future generations.														

Table 16 - LCA results of potential environmental impact referred to 1 m of Z U 15x30x0.6 mm steel profile.

Prof Z U 15x30x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Global Warming Potential (GWP) TOT - kg CO_2 eq./ DU	6.69E-01	2.00E-02	1.43E-03	-	-	-	-	-	-	-	1.01E-03	1.52E-02	6.32E-03	8.09E-05	-2.48E-01
	Global Warming Potential = Potential change in the earth's climate due to accumulation of greenhouse gases and subsequent trapping of heat from reflected sunlight that would otherwise have passed out of the earth's atmosphere. Greenhouse gas refers to several different gases including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). For global warming potential, these gas emissions are tracked and their potencies reported in terms of equivalent units of CO_2. The impact category 'Global Warming' covers three sub-categories: fossil, biogenic, land use and land use change.														
Global Warming Potential (GWP) Fossil - kg CO_2 eq./DU	6.67E-01	2.00E-02	1.23E-03	-	-	-	-	-	-	-	1.01E-03	1.52E-02	6.28E-03	8.08E-05	-2.47E-01
	GWP-fossil covers greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling, etc.).														
Global Warming Potential (GWP) biogenic - kg CO_2 eq./DU	1.55E-03	7.32E-06	2.02E-04	-	-	-	-	-	-	-	1.69E-07	1.74E-06	2.64E-05	4.73E-08	-2.70E-04
	GWP-biogenic covers carbon emissions to air (CO_2, CO and CH_4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO_2 uptake from the atmosphere through photosynthesis during biomass growth - i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood														
Global Warming Potential (GWP) Land use - kg CO_2 eq./DU	3.68E-04	7.10E-06	1.13E-07	-	-	-	-	-	-	-	7.95E-08	1.26E-06	7.57E-06	2.25E-08	-1.29E-04
	GWP-land use and land use change accounts for carbon uptakes and emissions (CO_2, CO and CH_4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions).														
Ozone Depletion Potential (ODP) - kg CFC11 eq./DU	7.69E-08	4.54E-09	2.60E-10	-	-	-	-	-	-	-	2.18E-10	3.22E-09	8.43E-10	3.33E-11	-1.45E-08
	Ozone Depletion Potential = Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which break down when they reach the stratosphere and then catalytically destroy ozone molecules.														
Acidification Potential (AP) - kg mol H+/DU	4.37E-02	7.68E-05	7.42E-06	-	-	-	-	-	-	-	1.06E-05	9.20E-05	8.15E-05	7.67E-07	1.13E-03
	Acidification Potential = Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.														
Eutrophication freshwater Potential (EP) - kg PO_4^{3-} eq. /DU	8.24E-05	4.86E-07	9.13E-09	-	-	-	-	-	-	-	1.13E-08	9.20E-08	1.47E-06	2.78E-09	-4.10E-05
Eutrophication marine Potential (EP) - kg N eq. / DU	1.82E-03	2.09E-05	3.24E-06	-	-	-	-	-	-	-	4.66E-06	3.93E-05	1.71E-05	2.64E-07	-2.19E-04
Eutrophication terrestrial Potential (EP) - mol N eq. /DU	1.88E-01	2.32E-04	3.45E-05	-	-	-	-	-	-	-	5.11E-05	4.32E-04	2.00E-04	2.91E-06	-2.43E-03
	Eutrophication potential = Excessive enrichment of waters and continental surfaces with nutrients and the associated adverse biological effects.														

Prof Z U 15x30x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/ demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Photochemical Ozone Creation Potential (POCP)- kg NMVOC /DU	2.85E-03	7.35E-05	1.21E-05	-	-	-	-	-	-	-	1.41E-05	1.52E-04	5.45E-05	8.45E-07	-1.21E-03
	Photochemical ozone creation potential = Chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.														
Water use Deprivation Potential, m^3 depriv/DU	3.58E-01	8.46E-04	4.20E-05	-	-	-	-	-	-	-	1.86E-05	8.55E-05	9.47E-04	1.01E-04	-2.62E-02
	Water use = It is based on the available water remaining per unit of surface in a given watershed relative to the world average, after human and aquatic ecosystem demands have been met.														
Resource use, minerals and metals, kg Sb eq. /DU	9.68E-04	5.45E-07	7.39E-09	-	-	-	-	-	-	-	1.55E-09	9.10E-08	3.79E-07	7.40E-10	-1.07E-06
	Resource use, minerals and metals = Consumption of non-renewable resources, thereby lowering their availability for future generations.														
Resource use, fossils, MJ, net calorific value/DU	8.69E+00	3.02E-01	1.63E-02	-	-	-	-	-	-	-	1.39E-02	2.00E-01	8.63E-02	2.26E-03	-2.98E+00
	Resource use, fossils = Consumption of non-renewable resources, thereby lowering their availability for future generations.														

Table 17 - LCA results of potential environmental impact referred to 1 m of Z C 100x50x0.6 mm and MgZ C 100x50x0.6 mm steel profiles.

Prof Z C 100x50x0.6 mm, MgZ C 100x50x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Global Warming Potential (GWP) TOT - kg CO_2 eq./ DU	2.05E+00	5.78E-02	2.89E-03	-	-	-	-	-	-	-	2.97E-03	4.46E-02	1.86E-02	2.38E-04	-7.26E-01
	Global Warming Potential = Potential change in the earth's climate due to accumulation of greenhouse gases and subsequent trapping of heat from reflected sunlight that would otherwise have passed out of the earth's atmosphere. Greenhouse gas refers to several different gases including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). For global warming potential, these gas emissions are tracked and their potencies reported in terms of equivalent units of CO_2. The impact category 'Global Warming' covers three sub-categories: fossil, biogenic, land use and land use change.														
Global Warming Potential (GWP) Fossil - kg CO_2 eq./DU	2.04E+00	5.78E-02	2.69E-03	-	-	-	-	-	-	-	2.97E-03	4.46E-02	1.85E-02	2.37E-04	-7.25E-01
	GWP-fossil covers greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling, etc.).														
Global Warming Potential (GWP) biogenic - kg CO_2 eq./DU	4.88E-03	2.12E-05	2.02E-04	-	-	-	-	-	-	-	4.97E-07	5.10E-06	7.76E-05	1.39E-07	-8.26E-04
	GWP-biogenic covers carbon emissions to air (CO_2, CO and CH_4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO_2 uptake from the atmosphere through photosynthesis during biomass growth - i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood														
Global Warming Potential (GWP) Land use - kg CO_2 eq./DU	1.16E-03	2.06E-05	2.37E-07	-	-	-	-	-	-	-	2.34E-07	3.72E-06	2.22E-05	6.62E-08	-3.56E-04
	GWP-land use and land use change accounts for carbon uptakes and emissions (CO_2, CO and CH_4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions).														
Ozone Depletion Potential (ODP) - kg CFC11 eq./DU	2.43E-07	1.32E-08	5.72E-10	-	-	-	-	-	-	-	6.40E-10	9.45E-09	2.48E-09	9.78E-11	-4.25E-08
	Ozone Depletion Potential = Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which break down when they reach the stratosphere and then catalytically destroy ozone molecules.														
Acidification Potential (AP) - kg mol H+/DU	1.44E-01	2.22E-04	1.63E-05	-	-	-	-	-	-	-	3.10E-05	2.70E-04	2.39E-04	2.25E-06	-3.31E-03
	Acidification Potential = Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.														
Eutrophication freshwater Potential (EP) - kg PO_4^{3-} eq. /DU	2.53E-04	1.41E-06	1.83E-08	-	-	-	-	-	-	-	3.31E-08	2.70E-07	4.32E-06	8.17E-09	-1.20E-04
Eutrophication marine Potential (EP) - kg N eq. / DU	5.86E-03	6.06E-05	7.03E-06	-	-	-	-	-	-	-	1.37E-05	1.15E-04	5.04E-05	7.75E-07	-6.43E-04
Eutrophication terrestrial Potential (EP) - mol N eq. /DU	6.22E-01	6.71E-04	7.61E-05	-	-	-	-	-	-	-	1.50E-04	1.27E-03	5.88E-04	8.55E-06	-7.12E-03
	Eutrophication potential = Excessive enrichment of waters and continental surfaces with nutrients and the associated adverse biological effects.														

Prof Z C 100x50x0.6 mm, MgZ C 100x50x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Photochemical Ozone Creation Potential (POCP)- kg NMVOC /DU	8.62E-03	2.13E-04	2.67E-05	-	-	-	-	-	-	-	4.13E-05	4.46E-04	1.60E-04	2.48E-06	-3.54E-03
	Photochemical ozone creation potential = Chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.														
Water use Deprivation Potential, m^3 depriv/DU	1.10E+00	2.45E-03	6.49E-05	-	-	-	-	-	-	-	5.47E-05	2.51E-04	2.78E-03	2.98E-04	-7.55E-02
	Water use = It is based on the available water remaining per unit of surface in a given watershed relative to the world average, after human and aquatic ecosystem demands have been met.														
Resource use, minerals and metals, kg Sb eq. /DU	3.20E-03	1.58E-06	1.62E-08	-	-	-	-	-	-	-	4.55E-09	2.67E-07	1.11E-06	2.17E-09	-3.11E-06
	Resource use, minerals and metals = Consumption of non-renewable resources, thereby lowering their availability for future generations.														
Resource use, fossils, MJ, net calorific value/DU	2.70E+01	8.74E-01	3.58E-02	-	-	-	-	-	-	-	4.08E-02	5.89E-01	2.54E-01	6.64E-03	-8.71E+00
	Resource use, fossils = Consumption of non-renewable resources, thereby lowering their availability for future generations.														

Table 18 - LCA results of potential environmental impact referred to 1 m of Z U 100x40x0.6 mm and MgZ U 100x40x0.6 mm steel profiles.

Prof Z U 100x40x0.6 mm, MgZ U 100x40x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Global Warming Potential (GWP) TOT - kg CO_2 eq./ DU	1.95E+00	5.69E-02	2.86E-03	-	-	-	-	-	-	-	2.93E-03	4.40E-02	1.83E-02	2.35E-04	-7.11E-01
	Global Warming Potential= Potential change in the earth's climate due to accumulation of greenhouse gases and subsequent trapping of heat from reflected sunlight that would otherwise have passed out of the earth's atmosphere. Greenhouse gas refers to several different gases including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). For global warming potential, these gas emissions are tracked and their potencies reported in terms of equivalent units of CO_2. The impact category 'Global Warming' covers three sub-categories: fossil, biogenic, land use and land use change.														
Global Warming Potential (GWP) Fossil - kg CO_2 eq./DU	1.95E+00	5.68E-02	2.66E-03	-	-	-	-	-	-	-	2.93E-03	4.40E-02	1.82E-02	2.34E-04	-7.10E-01
	GWP-fossil covers greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling, etc.).														
Global Warming Potential (GWP) biogenic - kg CO_2 eq./DU	4.53E-03	2.08E-05	2.02E-04	-	-	-	-	-	-	-	4.91E-07	5.04E-06	7.65E-05	1.37E-07	-8.09E-04
	GWP-biogenic covers carbon emissions to air (CO_2, CO and CH_4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO_2 uptake from the atmosphere through photosynthesis during biomass growth - i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood														
Global Warming Potential (GWP) Land use - kg CO_2 eq./DU	1.07E-03	2.02E-05	2.34E-07	-	-	-	-	-	-	-	2.31E-07	3.67E-06	2.19E-05	6.53E-08	-3.49E-04
	GWP-land use and land use change accounts for carbon uptakes and emissions (CO_2, CO and CH_4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions).														
Ozone Depletion Potential (ODP) - kg CFC11 eq./DU	2.27E-07	1.29E-08	5.66E-10	-	-	-	-	-	-	-	6.32E-10	9.32E-09	2.44E-09	9.65E-11	-4.16E-08
	Ozone Depletion Potential = Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which break down when they reach the stratosphere and then catalytically destroy ozone molecules.														
Acidification Potential (AP) - kg mol H+/DU	1.30E-01	2.19E-04	1.61E-05	-	-	-	-	-	-	-	3.06E-05	2.67E-04	2.36E-04	2.22E-06	-3.24E-03
	Acidification Potential = Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.														
Eutrophication freshwater Potential (EP) - kg PO_4^{3-} eq. /DU	2.40E-04	1.38E-06	1.81E-08	-	-	-	-	-	-	-	3.27E-08	2.67E-07	4.26E-06	8.06E-09	-1.17E-04
Eutrophication marine Potential (EP) - kg N eq. / DU	5.37E-03	5.95E-05	6.95E-06	-	-	-	-	-	-	-	1.35E-05	1.14E-04	4.97E-05	7.65E-07	-6.29E-04
Eutrophication terrestrial Potential (EP) - mol N eq. /DU	5.59E-01	6.60E-04	7.53E-05	-	-	-	-	-	-	-	1.48E-04	1.25E-03	5.80E-04	8.44E-06	-6.97E-03
	Eutrophication potential = Excessive enrichment of waters and continental surfaces with nutrients and the associated adverse biological effects.														

Prof Z U 100x40x0.6 mm, MgZ U 100x40x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Photochemical Ozone Creation Potential (POCP)- kg NMVOC /DU	8.32E-03	2.09E-04	2.64E-05	-	-	-	-	-	-	-	4.08E-05	4.40E-04	1.58E-04	2.45E-06	-3.46E-03
	Photochemical ozone creation potential = Chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.														
Water use Deprivation Potential, m^3 depriv/DU	1.04E+00	2.41E-03	6.44E-05	-	-	-	-	-	-	-	5.39E-05	2.48E-04	2.75E-03	2.94E-04	-7.40E-02
	Water use = It is based on the available water remaining per unit of surface in a given watershed relative to the world average, after human and aquatic ecosystem demands have been met.														
Resource use, minerals and metals, kg Sb eq. /DU	2.87E-03	1.55E-06	1.60E-08	-	-	-	-	-	-	-	4.49E-09	2.64E-07	1.10E-06	2.14E-09	-3.05E-06
	Resource use, minerals and metals = Consumption of non-renewable resources, thereby lowering their availability for future generations.														
Resource use, fossils, MJ, net calorific value/DU	2.55E+01	8.59E-01	3.54E-02	-	-	-	-	-	-	-	4.03E-02	5.81E-01	2.50E-01	6.55E-03	-8.53E+00
	Resource use, fossils = Consumption of non-renewable resources, thereby lowering their availability for future generations.														

Table 19 - LCA results of potential environmental impact referred to 1 m of Z C 150x50x0.6 mm and MgZ C 150x50x0.6 mm steel profiles.

Prof Z C 150x50x0.6 mm, MgZ C 150x50x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Global Warming Potential (GWP) TOT - kg CO_2 eq./ DU	2.54E+00	7.16E-02	3.42E-03	-	-	-	-	-	-	-	3.68E-03	5.53E-02	2.30E-02	2.95E-04	-9.00E-01
	Global Warming Potential = Potential change in the earth's climate due to accumulation of greenhouse gases and subsequent trapping of heat from reflected sunlight that would otherwise have passed out of the earth's atmosphere. Greenhouse gas refers to several different gases including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). For global warming potential, these gas emissions are tracked and their potencies reported in terms of equivalent units of CO_2. The impact category 'Global Warming' covers three sub-categories: fossil, biogenic, land use and land use change.														
Global Warming Potential (GWP) Fossil - kg CO_2 eq./DU	2.54E+00	7.15E-02	3.22E-03	-	-	-	-	-	-	-	3.68E-03	5.53E-02	2.29E-02	2.94E-04	-8.98E-01
	GWP-fossil covers greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling, etc.).														
Global Warming Potential (GWP) biogenic - kg CO_2 eq./DU	6.08E-03	2.62E-05	2.02E-04	-	-	-	-	-	-	-	6.17E-07	6.33E-06	9.61E-05	1.72E-07	-1.03E-03
	GWP-biogenic covers carbon emissions to air (CO_2, CO and CH_4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO_2 uptake from the atmosphere through photosynthesis during biomass growth - i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood.														
Global Warming Potential (GWP) Land use - kg CO_2 eq./DU	1.44E-03	2.54E-05	2.82E-07	-	-	-	-	-	-	-	2.90E-07	4.61E-06	2.76E-05	8.21E-08	-4.39E-04
	GWP-land use and land use change accounts for carbon uptakes and emissions (CO_2, CO and CH_4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions).														
Ozone Depletion Potential (ODP) - kg CFC11 eq./DU	3.02E-07	1.63E-08	6.85E-10	-	-	-	-	-	-	-	7.94E-10	1.17E-08	3.07E-09	1.21E-10	-5.26E-08
	Ozone Depletion Potential = Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which break down when they reach the stratosphere and then catalytically destroy ozone molecules.														
Acidification Potential (AP) - kg mol H+/DU	1.80E-01	2.75E-04	1.95E-05	-	-	-	-	-	-	-	3.84E-05	3.35E-04	2.97E-04	2.79E-06	-4.10E-03
	Acidification Potential = Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.														
Eutrophication freshwater Potential (EP) - kg PO_4^{3-} eq. /DU	3.14E-04	1.74E-06	2.16E-08	-	-	-	-	-	-	-	4.11E-08	3.35E-07	5.35E-06	1.01E-08	-1.48E-04
Eutrophication marine Potential (EP) - kg N eq. / DU	7.31E-03	7.50E-05	8.40E-06	-	-	-	-	-	-	-	1.70E-05	1.43E-04	6.24E-05	9.61E-07	-7.96E-04
Eutrophication terrestrial Potential (EP) - mol N eq. /DU	7.77E-01	8.31E-04	9.12E-05	-	-	-	-	-	-	-	1.86E-04	1.57E-03	7.29E-04	1.06E-05	-8.82E-03
	Eutrophication potential = Excessive enrichment of waters and continental surfaces with nutrients and the associated adverse biological effects.														

Prof Z C 150x50x0.6 mm, MgZ C 150x50x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Photochemical Ozone Creation Potential (POCP) - kg NMVOC /DU	1.07E-02	2.64E-04	3.20E-05	-	-	-	-	-	-	-	5.12E-05	5.53E-04	1.98E-04	3.08E-06	-4.38E-03
	Photochemical ozone creation potential = Chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.														
Water use Deprivation Potential, m^3 depriv/DU	1.37E+00	3.03E-03	7.32E-05	-	-	-	-	-	-	-	6.78E-05	3.11E-04	3.45E-03	3.69E-04	-9.34E-02
	Water use = It is based on the available water remaining per unit of surface in a given watershed relative to the world average, after human and aquatic ecosystem demands have been met.														
Resource use, minerals and metals, kg Sb eq. /DU	4.00E-03	1.95E-06	1.94E-08	-	-	-	-	-	-	-	5.64E-09	3.31E-07	1.38E-06	2.69E-09	-3.86E-06
	Resource use, minerals and metals = Consumption of non-renewable resources, thereby lowering their availability for future generations.														
Resource use, fossils, MJ, net calorific value/DU	3.35E+01	1.08E+00	4.28E-02	-	-	-	-	-	-	-	5.06E-02	7.29E-01	3.14E-01	8.23E-03	-1.08E+01
	Resource use, fossils = Consumption of non-renewable resources, thereby lowering their availability for future generations.														

Table 20 - LCA results of potential environmental impact referred to 1 m of Z U 150x40x0.6 mm and MgZ U 150x40x0.6 mm steel profiles.

Prof Z U 150x40x0.6 mm, MgZ U 150x40x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Global Warming Potential (GWP) TOT - kg CO_2 eq./ DU	2.25E+00	6.23E-02	3.06E-03	-	-	-	-	-	-	-	3.19E-03	4.80E-02	2.00E-02	2.56E-04	-7.82E-01
	Global Warming Potential = Potential change in the earth's climate due to accumulation of greenhouse gases and subsequent trapping of heat from reflected sunlight that would otherwise have passed out of the earth's atmosphere. Greenhouse gas refers to several different gases including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). For global warming potential, these gas emissions are tracked and their potencies reported in terms of equivalent units of CO_2. The impact category 'Global Warming' covers three sub-categories: fossil, biogenic, land use and land use change.														
Global Warming Potential (GWP) Fossil - kg CO_2 eq./DU	2.24E+00	6.23E-02	2.86E-03	-	-	-	-	-	-	-	3.19E-03	4.80E-02	1.99E-02	2.56E-04	-7.81E-01
	GWP-fossil covers greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling, etc.).														
Global Warming Potential (GWP) biogenic - kg CO_2 eq./DU	5.48E-03	2.28E-05	2.02E-04	-	-	-	-	-	-	-	5.35E-07	5.49E-06	8.35E-05	1.49E-07	-8.92E-04
	GWP-biogenic covers carbon emissions to air (CO_2, CO and CH_4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO_2 uptake from the atmosphere through photosynthesis during biomass growth - i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood.														
Global Warming Potential (GWP) Land use - kg CO_2 eq./DU	1.30E-03	2.21E-05	2.51E-07	-	-	-	-	-	-	-	2.52E-07	4.00E-06	2.39E-05	7.13E-08	-3.83E-04
	GWP-land use and land use change accounts for carbon uptakes and emissions (CO_2, CO and CH_4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions).														
Ozone Depletion Potential (ODP) - kg CFC11 eq./DU	2.71E-07	1.42E-08	6.08E-10	-	-	-	-	-	-	-	6.89E-10	1.02E-08	2.67E-09	1.05E-10	-4.57E-08
	Ozone Depletion Potential = Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which break down when they reach the stratosphere and then catalytically destroy ozone molecules.														
Acidification Potential (AP) - kg mol H+/DU	1.65E-01	2.39E-04	1.73E-05	-	-	-	-	-	-	-	3.34E-05	2.91E-04	2.58E-04	2.43E-06	-3.56E-03
	Acidification Potential = Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.														
Eutrophication freshwater Potential (EP) - kg PO_4^3 - eq. /DU	2.79E-04	1.51E-06	1.94E-08	-	-	-	-	-	-	-	3.57E-08	2.91E-07	4.65E-06	8.80E-09	-1.29E-04
Eutrophication marine Potential (EP) - kg N eq. / DU	6.63E-03	6.52E-05	7.46E-06	-	-	-	-	-	-	-	1.47E-05	1.24E-04	5.42E-05	8.35E-07	-6.92E-04
Eutrophication terrestrial Potential (EP) - mol N eq. /DU	7.15E-01	7.23E-04	8.10E-05	-	-	-	-	-	-	-	1.62E-04	1.37E-03	6.33E-04	9.20E-06	-7.67E-03
	Eutrophication potential = Excessive enrichment of waters and continental surfaces with nutrients and the associated adverse biological effects.														

Prof Z U 150x40x0.6 mm, MgZ U 150x40x0.6 mm - ENVIRONMENTAL IMPACTS															
Parameters	**Product stage**	**Construction process stage**		**Use stage**							**End-of-life stage**				**D Reuse, recovery, recycling**
	A1/A2/A3	**A4 Transport**	**A5 Installation**	**B1 Use**	**B2 Maintenance**	**B3 Repair**	**B4 Replacement**	**B5 Refurbishment**	**B6 Operation energy use**	**B7 Operational water use**	**C1 Deconstruction/ demolition**	**C2 Transport**	**C3 Waste processing**	**C4 Disposal**	
Photochemical Ozone Creation Potential (POCP) - kg NMVOC /DU	9.38E-03	2.29E-04	2.84E-05	-	-	-	-	-	-	-	4.45E-05	4.80E-04	1.72E-04	2.67E-06	-3.81E-03
	Photochemical ozone creation potential = Chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.														
Water use Deprivation Potential, m^3 depriv/DU	1.22E+00	2.64E-03	6.75E-05	-	-	-	-	-	-	-	5.88E-05	2.71E-04	3.00E-03	3.20E-04	-8.13E-02
	Water use = It is based on the available water remaining per unit of surface in a given watershed relative to the world average, after human and aquatic ecosystem demands have been met.														
Resource use, minerals and metals, kg Sb eq. /DU	3.68E-03	1.70E-06	1.72E-08	-	-	-	-	-	-	-	4.90E-09	2.88E-07	1.20E-06	2.34E-09	-3.35E-06
	Resource use, minerals and metals = Consumption of non-renewable resources, thereby lowering their availability for future generations.														
Resource use, fossils, MJ, net calorific value/DU	2.98E+01	9.41E-01	3.80E-02	-	-	-	-	-	-	-	4.39E-02	6.34E-01	2.73E-01	7.15E-03	-9.38E+00
	Resource use, fossils = Consumption of non-renewable resources, thereby lowering their availability for future generations.														

Table 21 - LCA results of use of resources referred to 1 m of Z C Plus 50x27x0.6 mm and MgZ C Plus 50x27x0.6 mm steel profiles.

Prof Z C Plus 50x27x0.6 mm, MgZ C Plus 50x27x0.6 mm - RESOURCES USE															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials MJ/DU	1.03E+00	6.84E-03	1.28E-04	-	-	-	-	-	-	-	1.24E-04	1.69E-03	2.53E-02	3.01E-05	-3.42E-01
Use of renewable primary energy used as raw materials MJ/DU	2.16E-04	1.83E-06	2.86E-08	-	-	-	-	-	-	-	2.81E-08	3.81E-07	2.53E-06	7.46E-09	-8.59E-05
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/DU	1.03E+00	6.84E-03	1.28E-04	-	-	-	-	-	-	-	1.24E-04	1.69E-03	2.53E-02	3.01E-05	-3.42E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials - MJ/DU	1.46E+01	4.81E-01	2.28E-02	-	-	-	-	-	-	-	2.28E-02	3.30E-01	1.42E-01	3.72E-03	-4.89E+00
Use of non-renewable primary energy used as raw materials MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - MJ/DU	1.46E+01	4.81E-01	2.28E-02	-	-	-	-	-	-	-	2.28E-02	3.30E-01	1.42E-01	3.72E-03	-4.89E+00
Use of secondary material kg/DU	2.70E-01	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of non-renew-able secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of net fresh water m^3/DU	1.45E-02	4.54E-05	3.80E-06	-	-	-	-	-	-	-	1.22E-06	4.23E-05	6.29E-05	3.94E-06	-1.42E-03

Table 22 - LCA results of use of resources referred to 1 m of Z U 27x30x0.6 mm and MgZ U 27x30x0.6 mm steel profiles.

Prof Z U 27x30x0.6 mm, MgZ U 27x30x0.6 mm - RESOURCES USE															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials MJ/DU	8.35E-01	4.98E-03	1.03E-04	-	-	-	-	-	-	-	8.77E-05	1.20E-03	1.79E-02	2.13E-05	-2.68E-01
Use of renewable primary energy used as raw materials MJ/DU	1.66E-04	1.33E-06	2.30E-08	-	-	-	-	-	-	-	1.99E-08	2.70E-07	1.79E-06	5.29E-09	-6.09E-05
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/DU	8.35E-01	4.98E-03	1.03E-04	-	-	-	-	-	-	-	8.77E-05	1.20E-03	1.79E-02	2.13E-05	-2.68E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials - MJ/DU	1.13E+01	3.51E-01	1.80E-02	-	-	-	-	-	-	-	1.62E-02	2.34E-01	1.01E-01	2.64E-03	-3.47E+00
Use of non-renewable primary energy used as raw materials MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - MJ/DU	1.13E+01	3.51E-01	1.80E-02	-	-	-	-	-	-	-	1.62E-02	2.34E-01	1.01E-01	2.64E-03	-3.47E+00
Use of secondary material kg/DU	1.91E-01	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of non-renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of net fresh water m^3/DU	1.10E-02	3.31E-05	3.11E-06	-	-	-	-	-	-	-	8.64E-07	3.00E-05	4.46E-05	2.79E-06	-1.01E-03

Table 23 - LCA results of use of resources referred to 1 m of Z C 75x50x0.6 mm and MgZ C 75x50x0.6 mm steel profiles.

Prof Z C 75x50x0.6 mm, MgZ C 75x50x0.6 mm - RESOURCES USE															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials MJ/DU	1.58E+00	1.09E-02	1.77E-04	-	-	-	-	-	-	-	1.94E-04	2.66E-03	3.98E-02	4.73E-05	-4.86E-01
Use of renewable primary energy used as raw materials MJ/DU	3.50E-04	2.93E-06	3.96E-08	-	-	-	-	-	-	-	4.42E-08	5.99E-07	3.98E-06	1.17E-08	-1.34E-04
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/DU	1.58E+00	1.09E-02	1.77E-04	-	-	-	-	-	-	-	1.94E-04	2.66E-03	3.98E-02	4.73E-05	-4.86E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials - MJ/DU	2.36E+01	7.70E-01	3.23E-02	-	-	-	-	-	-	-	3.59E-02	5.18E-01	2.23E-01	5.84E-03	-7.66E+00
Use of non-renewable primary energy used as raw materials MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - MJ/DU	2.36E+01	7.70E-01	3.23E-02	-	-	-	-	-	-	-	3.59E-02	5.18E-01	2.23E-01	5.84E-03	-7.66E+00
Use of secondary material kg/DU	4.25E-01	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of non-renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of net fresh water m^3/DU	2.34E-02	7.26E-05	5.16E-06	-	-	-	-	-	-	-	1.92E-06	6.65E-05	9.90E-05	6.20E-06	-2.22E-03

Table 24 - LCA results of use of resources referred to 1 m of Z U 75x40x0.6 mm and MgZ U 75x40x0.6 mm steel profiles.

Prof Z U 75x40x0.6 mm, MgZ U 75x40x0.6 mm - RESOURCES USE															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials MJ/DU	1.39E+00	8.95E-03	1.52E-04	-	-	-	-	-	-	-	1.59E-04	2.17E-03	3.25E-02	3.86E-05	-4.13E-01
Use of renewable primary energy used as raw materials MJ/DU	3.03E-04	2.39E-06	3.40E-08	-	-	-	-	-	-	-	3.61E-08	4.89E-07	3.24E-06	9.58E-09	-1.10E-04
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/DU	1.39E+00	8.95E-03	1.52E-04	-	-	-	-	-	-	-	1.59E-04	2.17E-03	3.25E-02	3.86E-05	-4.14E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials - MJ/DU	2.07E+01	6.30E-01	2.75E-02	-	-	-	-	-	-	-	2.93E-02	4.23E-01	1.82E-01	4.77E-03	-6.27E+00
Use of non-renewable primary energy used as raw materials MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - MJ/DU	2.07E+01	6.30E-01	2.75E-02	-	-	-	-	-	-	-	2.93E-02	4.23E-01	1.82E-01	4.77E-03	-6.27E+00
Use of secondary material kg/DU	3.47E-01	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of non-renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of net fresh water m^3/DU	1.99E-02	5.94E-05	4.47E-06	-	-	-	-	-	-	-	1.56E-06	5.43E-05	8.08E-05	5.06E-06	-1.81E-03

Table 25 - LCA results of use of resources referred to 1 m of Z C 50x50x0.6 mm and MgZ C 50x50x0.6 mm steel profiles.

Prof Z C 50x50x0.6 mm, MgZ C 50x50x0.6 mm - RESOURCES USE															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials MJ/DU	1.38E+00	9.47E-03	1.59E-04	-	-	-	-	-	-	-	1.68E-04	2.29E-03	3.44E-02	4.09E-05	-4.33E-01
Use of renewable primary energy used as raw materials MJ/DU	3.01E-04	2.53E-06	3.55E-08	-	-	-	-	-	-	-	3.82E-08	5.18E-07	3.44E-06	1.01E-08	-1.16E-04
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/DU	1.38E+00	9.47E-03	1.59E-04	-	-	-	-	-	-	-	1.68E-04	2.30E-03	3.44E-02	4.09E-05	-4.33E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials - MJ/DU	2.04E+01	6.66E-01	2.87E-02	-	-	-	-	-	-	-	3.10E-02	4.48E-01	1.93E-01	5.05E-03	-6.63E+00
Use of non-renewable primary energy used as raw materials MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - MJ/DU	2.04E+01	6.66E-01	2.87E-02	-	-	-	-	-	-	-	3.10E-02	4.48E-01	1.93E-01	5.05E-03	-6.63E+00
Use of secondary material kg/DU	3.67E-01	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of non-renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of net fresh water m^3/DU	2.02E-02	6.29E-05	4.65E-06	-	-	-	-	-	-	-	1.66E-06	5.75E-05	8.55E-05	5.36E-06	-1.92E-03

Table 26 - LCA results of use of resources referred to 1 m of Z U 50x40x0.6 mm and MgZ U 50x40x0.6 mm steel profiles.

Prof Z U 50x40x0.6 mm, MgZ U 50x40x0.6 mm - RESOURCES USE															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials MJ/DU	1.17E+00	7.47E-03	1.34E-04	-	-	-	-	-	-	-	1.32E-04	1.81E-03	2.71E-02	3.22E-05	-3.59E-01
Use of renewable primary energy used as raw materials MJ/DU	2.49E-04	2.00E-06	2.99E-08	-	-	-	-	-	-	-	3.82E-08	4.08E-07	2.70E-06	7.98E-09	-9.15E-05
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/DU	1.17E+00	7.47E-03	1.34E-04	-	-	-	-	-	-	-	1.32E-04	1.81E-03	2.71E-02	3.22E-05	-3.59E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials - MJ/DU	1.68E+01	5.25E-01	2.40E-02	-	-	-	-	-	-	-	2.44E-02	3.52E-01	1.52E-01	3.97E-03	-5.22E+00
Use of non-renewable primary energy used as raw materials MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - MJ/DU	1.68E+01	5.25E-01	2.40E-02	-	-	-	-	-	-	-	2.44E-02	3.52E-01	1.52E-01	3.97E-03	-5.22E+00
Use of secondary material kg/DU	2.89E-01	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of non-renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of net fresh water m^3/DU	1.66E-02	4.96E-05	3.96E-06	-	-	-	-	-	-	-	1.30E-06	4.53E-05	6.73E-05	4.22E-06	-1.51E-03

Table 27 - LCA results of use of resources referred to 1 m of Z C Plus 50x15x0.6 mm and MgZ C Plus 50x15x0.6 mm steel profiles.

Prof Z C Plus 50x15x0.6 mm, MgZ C Plus 50x15x0.6 mm - RESOURCES USE															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials MJ/DU	8.39E-01	5.69E-03	1.12E-04	-	-	-	-	-	-	-	1.00E-04	1.37E-03	2.06E-02	2.44E- 05	-2.94E-01
Use of renewable primary energy used as raw materials MJ/DU	1.71E-04	1.52E-06	2.49E-08	-	-	-	-	-	-	-	2.28E-08	3.09E-07	2.05E-06	6.06E- 09	-6.96E-05
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/DU	8.39E-01	5.69E-03	1.12E-04	-	-	-	-	-	-	-	1.00E-04	1.37E-03	2.06E-02	2.44E- 05	-2.94E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials - MJ/DU	1.16E+01	4.00E-01	1.97E-02	-	-	-	-	-	-	-	1.86E-02	2.68E-01	1.15E-01	3.02E- 03	-3.96E+00
Use of non-renewable primary energy used as raw materials MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - MJ/DU	1.16E+01	4.00E-01	1.97E-02	-	-	-	-	-	-	-	1.86E-02	2.68E-01	1.15E-01	3.02E- 03	-3.96E+00
Use of secondary material kg/DU	2.19E-01	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of non-renew-able secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of net fresh water m^3/DU	1.15E-02	3.78E-05	3.35E-06	-	-	-	-	-	-	-	9.89E-07	3.44E-05	5.11E-05	3.20E- 06	1.15E-02

Table 28 - LCA results of use of resources referred to 1 m of Z U 15x30x0.6 mm steel profile.

Prof Z U 15x30x0.6 mm - RESOURCES USE															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials MJ/DU	6.68E-01	4.29E-03	9.46E-05	-	-	-	-	-	-	-	7.52E-05	1.03E-03	1.54E-02	1.83E-05	-2.42E-01
Use of renewable primary energy used as raw materials MJ/DU	1.29E-04	1.15E-06	2.10E-08	-	-	-	-	-	-	-	1.71E-08	2.32E-07	1.54E-06	4.54E- 09	-5.23E-05
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/DU	6.68E-01	4.29E-03	9.47E-05	-	-	-	-	-	-	-	7.52E-05	1.03E-03	1.54E-02	1.83E- 05	-2.42E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials - MJ/DU	8.69E+00	3.02E-01	1.63E-02	-	-	-	-	-	-	-	1.39E-02	2.00E-01	8.63E-02	2.26E- 03	-2.98E+00
Use of non-renewable primary energy used as raw materials MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - MJ/DU	8.69E+00	3.02E-01	1.63E-02	-	-	-	-	-	-	-	1.39E-02	2.00E-01	8.63E-02	2.26E- 03	-2.98E+00
Use of secondary material kg/DU	1.64E-01	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of non-renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of net fresh water m^3/DU	8.67E-03	2.85E-05	2.87E-06	-	-	-	-	-	-	-	7.41E-07	2.57E-05	3.83E-05	2.40E- 06	-8.67E-04

Table 29 - LCA results of use of resources referred to 1 m of Z U 100x50x0.6 mm and MgZ U 100x50x0.6 mm steel profiles.

Prof Z U 100x50x0.6 mm, MgZ U 100x50x0.6 mm - RESOURCES USE															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials MJ/DU	1.78E+00	1.24E-02	1.95E-04	-	-	-	-	-	-	-	2.21E-04	3.02E-03	4.52E-02	5.37E-05	-5.41E-01
Use of renewable primary energy used as raw materials MJ/DU	3.99E-04	3.32E-06	4.38E-08	-	-	-	-	-	-	-	5.03E-08	6.81E-07	4.52E-06	1.33E-08	-1.53E-04
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/DU	1.78E+00	1.24E-02	1.95E-04	-	-	-	-	-	-	-	2.21E-04	3.02E-03	4.52E-02	5.37E-05	-5.41E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials - MJ/DU	2.70E+01	8.74E-01	3.58E-02	-	-	-	-	-	-	-	4.08E-02	5.89E-01	2.54E-01	6.64E-03	-8.71E+00
Use of non-renewable primary energy used as raw materials MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - MJ/DU	2.70E+01	8.74E-01	3.58E-02	-	-	-	-	-	-	-	4.08E-02	5.89E-01	2.54E-01	6.64E-03	-8.71E+00
Use of secondary material kg/DU	4.82E-01	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of non-renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of net fresh water m^3/DU	2.67E-02	8.24E-05	5.67E-06	-	-	-	-	-	-	-	2.18E-06	7.56E-05	1.12E-04	7.04E-06	-2.52E-03

Table 30 - LCA results of use of resources referred to 1 m of Z U 100x40x0.6 mm and MgZ 100x40x0.6 mm steel profiles.

Prof Z U 100x40x0.6 mm, MgZ 100x40x0.6 mm - RESOURCES USE															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials MJ/DU	1.67E+00	1.22E-02	1.93E-04	-	-	-	-	-	-	-	2.18E-04	2.98E-03	4.46E-02	5.30E- 05	-5.32E-01
Use of renewable primary energy used as raw materials MJ/DU	3.76E-04	3.26E-06	4.33E-08	-	-	-	-	-	-	-	4.96E-08	6.72E-07	4.46E-06	1.32E- 08	-1.50E-04
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/DU	1.67E+00	1.22E-02	1.93E-04	-	-	-	-	-	-	-	2.18E-04	2.98E-03	4.46E-02	5.30E- 05	-5.32E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials - MJ/DU	2.55E+01	8.59E-01	3.54E-02	-	-	-	-	-	-	-	4.03E-02	5.81E-01	2.50E-01	6.55E-03	-8.53E+00
Use of non-renewable primary energy used as raw materials MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - MJ/DU	2.55E+01	8.59E-01	3.54E-02	-	-	-	-	-	-	-	4.03E-02	5.81E-01	2.50E-01	6.55E-03	-8.53E+00
Use of secondary material kg/DU	4.76E-01	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of non-renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of net fresh water m^3/DU	2.53E-02	8.10E-05	5.61E-06	-	-	-	-	-	-	-	2.15E-06	7.46E-05	1.11E-04	6.95E-06	-2.47E-03

Table 31 - LCA results of use of resources referred to 1 m of Z C 150x50x0.6 mm and MgZ C 150x50x0.6 mm steel profiles.

Prof Z C 150x50x0.6 mm, MgZ C 150x50x0.6 mm - RESOURCES USE															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials MJ/DU	2.18E+00	1.54E-02	2.32E-04	-	-	-	-	-	-	-	2.74E-04	3.74E-03	5.60E-02	6.66E-05	-6.49E-01
Use of renewable primary energy used as raw materials MJ/DU	4.96E-04	4.11E-06	5.20E-08	-	-	-	-	-	-	-	6.23E-08	8.44E-07	5.60E-06	1.65E-08	-1.89E-04
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/DU	2.18E+00	1.54E-02	2.32E-04	-	-	-	-	-	-	-	2.74E-04	3.74E-03	5.60E-02	6.66E-05	-6.49E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials - MJ/DU	3.35E+01	1.08E-00	4.28E-02	-	-	-	-	-	-	-	5.06E-02	7.29E-01	3.14E-01	8.23E-03	-1.08E+01
Use of non-renewable primary energy used as raw materials MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - MJ/DU	3.35E+01	1.08E-00	4.28E-02	-	-	-	-	-	-	-	5.06E-02	7.29E-01	3.14E-01	8.23E-03	-1.08E+01
Use of secondary material kg/DU	5.98E-01	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of non-renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of net fresh water m^3/DU	3.32E-02	1.02E-04	6.69E-06	-	-	-	-	-	-	-	2.70E-06	9.37E-05	1.39E-04	8.73E-06	-3.12E-03

Table 32 - LCA results of use of resources referred to 1 m of Z U 150x40x0.6 mm and MgZ U 150x40x0.6 mm steel profiles.

Prof Z U 150x40x0.6 mm, MgZ U 150x40x0.6 - RESOURCES USE															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials MJ/DU	1.97E+00	1.34E-02	2.07E-04	-	-	-	-	-	-	-	2.38E-04	3.25E-03	4.87E-02	5.78E-05	-5.76E-01
Use of renewable primary energy used as raw materials MJ/DU	4.42E-04	3.58E-06	4.64E-08	-	-	-	-	-	-	-	5.41E-08	7.33E-07	4.86E-06	1.43E-08	-1.65E-04
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) MJ/DU	1.97E+00	1.34E-02	2.07E-04	-	-	-	-	-	-	-	2.38E-04	3.25E-03	4.87E-02	5.78E-05	-5.76E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials - MJ/DU	2.98E+01	9.41E-01	3.80E-02	-	-	-	-	-	-	-	4.39E-02	6.34E-01	2.73E-01	7.15E- 03	-9.38E+00
Use of non-renewable primary energy used as raw materials MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) - MJ/DU	2.98E+01	9.41E-01	3.80E-02	-	-	-	-	-	-	-	4.39E-02	6.34E-01	2.73E-01	7.15E- 03	-9.38E+00
Use of secondary material kg/DU	5.19E-01	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of non-renewable secondary fuels - MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Use of net fresh water m^3/DU	2.96E-02	8.88E-05	5.99E-06	-	-	-	-	-	-	-	2.34E-06	8.14E-05	1.21E-04	7.58E- 06	-2.71E-03

Table 33 - LCA results of waste categories referred to 1 m of Z C Plus 50x27x0.6 mm and MgZ C Plus 50x27x0.6 mm steel profiles.

Prof Z C Plus 50x27x0.6 mm, MgZ C Plus 50x27x0.6 mm - WASTE CATEGORIES														
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Hazardous waste disposed kg/DU	2.70E-04	1.26E-06	9.27E-09	-	-	-	-	-	-	-	6.22E-08	1.18E-07	4.38E-07	5.55E-09	-3.36E-05
Non-hazardous (excluding inert) waste disposed kg/DU	1.70E-01	2.31E-02	4.77E-03	-	-	-	-	-	-	-	2.71E-05	1.59E-03	3.55E-03	2.52E-02	-6.41E-02
Radioactive waste disposed kg/DU	3.92E-05	3.28E-06	1.62E-07	-	-	-	-	-	-	-	1.59E-07	2.35E-06	8.30E-07	2.44E-08	-1.28E-05

Table 34 - LCA results of waste categories referred to 1 m of Z U 27x30x0.6 mm and MgZ U 27x30x0.6 mm steel profiles.

Prof Z U 27x30x0.6 mm, MgZ U 27x30x0.6 mm - WASTE CATEGORIES														
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Hazardous waste disposed kg/DU	2.19E-04	9.16E-07	7.46E-09	-	-	-	-	-	-	-	4.41E-08	8.35E-08	3.11E-07	3.94E-09	-2.38E-05
Non-hazardous (excluding inert) waste disposed kg/DU	1.24E-01	1.68E-02	4.19E-03	-	-	-	-	-	-	-	1.92E-05	1.13E-03	2.52E-03	1.79E-02	-4.53E-02
Radioactive waste disposed kg/DU	3.06E-05	2.39E-06	1.28E-07	-	-	-	-	-	-	-	1.12E-07	1.67E-06	5.88E-07	1.73E-08	-9.08E-06

Table 35 - LCA results of waste categories referred to 1 m of Z C 75x50x0.6 mm and MgZ C 75x50x0.6 mm steel profiless.

Prof Z C 75x50x0.6 mm, MgZ C 75x50x0.6 mm - WASTE CATEGORIES														
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Hazardous waste disposed kg/DU	4.47E-04	2.01E-06	1.28E-08	-	-	-	-	-	-	-	9.78E-08	1.85E-07	6.89E-07	8.73E-09	-5.27E-05
Non-hazardous (excluding inert) waste disposed kg/DU	2.69E-01	3.70E-02	5.90E-03	-	-	-	-	-	-	-	4.25E-05	2.51E-03	5.58E-03	3.97E-02	-1.01E-01
Radioactive waste disposed kg/DU	6.37E-05	5.25E-06	2.29E-07	-	-	-	-	-	-	-	2.49E-07	3.70E-06	1.30E-06	3.84E-08	-2.01E-05

Table 36 - LCA results of waste categories referred to 1 m of Z U 75x40x0.6 mm and MgZ U 75x40x0.6 mm steel profiles.

Prof Z U 75x40x0.6 mm, MgZ U 75x40x0.6 mm - WASTE CATEGORIES														
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Hazardous waste disposed kg/DU	3.92E-04	1.65E-06	1.10E-08	-	-	-	-	-	-	-	7.99E-08	1.51E-07	5.62E-07	7.13E-09	-4.30E-05
Non-hazardous (excluding inert) waste disposed kg/DU	2.24E-01	3.03E-02	5.33E-03	-	-	-	-	-	-	-	3.47E-05	2.05E-03	4.56E-03	3.24E-02	-8.21E-02
Radioactive waste disposed kg/DU	5.62E-05	4.29E-06	1.95E-07	-	-	-	-	-	-	-	2.04E-07	3.02E-06	1.06E-06	3.13E-08	-1.64E-05

Table 37 - LCA results of waste categories referred to 1 m of Z C 50x50x0.6 mm and MgZ C 50x50x0.6 mm steel profiles.

Prof Z C 50x50x0.6 mm, MgZ C 50x50x0.6 mm - WASTE CATEGORIES														
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Hazardous waste disposed kg/DU	3.92E-04	1.65E-06	1.10E-08	-	-	-	-	-	-	-	7.99E-08	1.51E-07	5.62E-07	7.13E-09	-4.30E-05
Non-hazardous (excluding inert) waste disposed kg/DU	2.24E-01	3.03E-02	5.33E-03	-	-	-	-	-	-	-	3.47E-05	2.05E-03	4.56E-03	3.24E-02	-8.21E-02
Radioactive waste disposed kg/DU	5.62E-05	4.29E-06	1.95E-07	-	-	-	-	-	-	-	2.04E-07	3.02E-06	1.06E-06	3.13E-08	-1.64E-05

Table 38 - LCA results of waste categories referred to 1 m of Z U 50x40x0.6 mm and MgZ U 50x40x0.6 mm steel profiles.

Prof Z U 50x40x0.6 mm, MgZ U 50x40x0.6 mm - WASTE CATEGORIES														
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Hazardous waste disposed kg/DU	3.27E-04	1.37E-06	9.70E-09	-	-	-	-	-	-	-	6.65E-08	1.26E-07	4.69E-07	5.94E-09	-3.58E-05
Non-hazardous (excluding inert) waste disposed kg/DU	1.86E-01	2.52E-02	4.90E-03	-	-	-	-	-	-	-	2.89E-05	1.71E-03	3.80E-03	2.70E-02	-6.83E-02
Radioactive waste disposed kg/DU	4.57E-05	3.58E-06	1.70E-07	-	-	-	-	-	-	-	1.70E-07	2.51E-06	8.87E-07	2.61E-08	-1.37E-05

Table 39 - LCA results of waste categories referred to 1 m of Z C Plus 50x15x0.6 mm and MgZ C Plus 50x15x0.6 mm steel profiles.

Prof Z C Plus 50x15x0.6 mm, MgZ C Plus 50x15x0.6 mm - WASTE CATEGORIES															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Hazardous waste disposed kg/DU	2.10E-04	1.05E-06	8.10E-09	-	-	-	-	-	-	-	5.05E-08	9.56E-08	3.56E-07	4.51E-09	-2.72E-05
Non-hazardous (excluding inert) waste disposed kg/DU	1.36E-01	1.92E-02	4.40E-03	-	-	-	-	-	-	-	2.20E-05	1.29E-03	2.88E-03	2.05E-02	-5.18E-02
Radioactive waste disposed kg/DU	3.09E-05	2.73E-06	1.40E-07	-	-	-	-	-	-	-	1.29E-07	1.91E-06	6.74E-07	1.98E-08	-1.04E-05

Table 40 - LCA results of waste categories referred to 1 m of Z U 15x30x0.6 mm steel profile.

Prof Z U 15x30x0.6 mm - WASTE CATEGORIES															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Hazardous waste disposed kg/DU	1.58E-04	7.89E-07	6.83E-09	-	-	-	-	-	-	-	3.78E-08	7.16E-08	2.66E-07	3.38E-09	-2.04E-05
Non-hazardous (excluding inert) waste disposed kg/DU	1.02E-01	1.45E-02	4.00E-03	-	-	-	-	-	-	-	1.64E-05	9.69E-04	2.16E-03	1.53E-02	-3.89E-02
Radioactive waste disposed kg/DU	2.33E-05	2.06E-06	1.16E-07	-	-	-	-	-	-	-	9.64E-08	1.43E-06	5.04E-07	1.48E-08	-7.80E-06

Table 41 - LCA results of waste categories referred to 1 m of Z C 100x50x0.6 mm and MgZ C 100x50x0.6 mm steel profiles.

Prof Z C 100x50x0.6 mm, MgZ C 100x50x0.6 mm - WASTE CATEGORIES														
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Hazardous waste disposed kg/DU	5.11E-04	2.28E-06	1.41E-08	-	-	-	-	-	-	-	1.11E-07	2.10E-07	7.83E-07	9.92E-09	-5.99E-05
Non-hazardous (excluding inert) waste disposed kg/DU	3.06E-01	4.20E-02	6.32E-03	-	-	-	-	-	-	-	4.83E-05	2.85E-03	6.34E-03	4.51E-02	-1.14E-01
Radioactive waste disposed kg/DU	7.27E-05	5.96E-06	2.54E-07	-	-	-	-	-	-	-	2.83E-07	4.20E-06	1.48E-06	4.36E-08	-2.28E-05

Table 42 - LCA results of waste categories referred to 1 m of Z U 100x40x0.6 mm and MgZ U 100x40x0.6 mm steel profiles.

Prof Z U 100x40x0.6 mm, MgZ U 100x40x0.6 mm - WASTE CATEGORIES														
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Hazardous waste disposed kg/DU	4.66E-04	2.25E-06	1.40E-08	-	-	-	-	-	-	-	1.10E-07	2.08E-07	7.72E-07	9.79E-09	-5.86E-05
Non-hazardous (excluding inert) waste disposed kg/DU	2.96E-01	4.13E-02	6.27E-03	-	-	-	-	-	-	-	4.77E-05	2.81E-03	6.26E-03	4.45E-02	-1.12E-01
Radioactive waste disposed kg/DU	6.82E-05	5.85E-06	2.51E-07	-	-	-	-	-	-	-	2.80E-07	4.14E-06	1.46E-06	4.30E-08	-2.24E-05

Table 43 - LCA results of waste categories referred to 1 m of Z C 150x50x0.6 mm and MgZ C 150x50x0.6 mm steel profiles.

Prof Z C 150x50x0.6 mm, MgZ C 150x50x0.6 mm - WASTE CATEGORIES														
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Hazardous waste disposed kg/DU	6.37E-04	2.83E-06	1.68E-08	-	-	-	-	-	-	-	1.38E-07	2.61E-07	9.70E-07	1.23E-08	-7.42E-05
Non-hazardous (excluding inert) waste disposed kg/DU	3.80E-01	5.20E-02	7.16E-03	-	-	-	-	-	-	-	5.99E-05	3.53E-03	7.86E-03	5.59E-02	-1.42E-01
Radioactive waste disposed kg/DU	9.05E-05	7.37E-06	3.04E-07	-	-	-	-	-	-	-	3.51E-07	5.20E-06	1.84E-06	5.40E-08	-2.83E-05

Table 44 - LCA results of waste categories referred to 1 m of Z U 150x40x0.6 mm and MgZ U 150x40x0.6 mm steel profiles.

Prof Z U 150x40x0.6 mm, MgZ U 150x40x0.6 mm - WASTE CATEGORIES														
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Hazardous waste disposed kg/DU	5.81E-04	2.46E-06	1.50E-08	-	-	-	-	-	-	-	1.20E-07	2.26E-07	8.42E-07	1.07E-08	-6.45E-05
Non-hazardous (excluding inert) waste disposed kg/DU	3.34E-01	4.52E-02	6.59E-03	-	-	-	-	-	-	-	5.20E-05	3.07E-03	6.83E-03	4.85E-02	-1.23E-01
Radioactive waste disposed kg/DU	8.09E-05	6.41E-06	2.70E-07	-	-	-	-	-	-	-	3.05E-07	4.52E-06	1.60E-06	4.69E-08	-2.46E-05

Table 45 - LCA results of output flows referred to 1 m of Z C Plus 50x27x0.6 mm and MgZ C Plus 50x27x0.6 mm steel profiles.

Prof Z C Plus 50x27x0.6 mm, MgZ C Plus 50x27x0.6 mm - OUTPUT FLOWS															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Components for re-use kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Materials for recycling kg/DU	1.14E-02	0	4.04E-02	-	-	-	-	-	-	-	0	0	4.80E-01	0	0
Materials for energy recovery kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Exported energy MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0

Table 46 - LCA results of output flows referred to 1 m of Z U 27x30x0.6 mm and MgZ U 27x30x0.6 mm steel profiles.

Prof Z U 27x30x0.6 mm, MgZ U 27x30x0.6 mm - OUTPUT FLOWS															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Components for re-use kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Materials for recycling kg/DU	7.60E-03	0	2.99E-02	-	-	-	-	-	-	-	0	0	3.40E-01	0	0
Materials for energy recovery kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Exported energy MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0

Table 47 - LCA results of output flows referred to 1 m of Z C 75x50x0.6 mm and MgZ C 75x50x0.6 mm steel profiles.

Prof Z C 75x50x0.6 mm, MgZ C 75x50x0.6 mm - OUTPUT FLOWS															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Components for re-use kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Materials for recycling kg/DU	1.71E-02	0	6.10E-02	-	-	-	-	-	-	-	0	0	7.54E-01	0	0
Materials for energy recovery kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Exported energy MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0

Table 48 - LCA results of output flows referred to 1 m of Z U 75x40x0.6 mm and MgZ U 75x40x0.6 mm steel profiles.

Prof Z U 75x40x0.6 mm - OUTPUT FLOWS															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Components for re-use kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Materials for recycling kg/DU	1.43E-02	0	5.06E-02	-	-	-	-	-	-	-	0	0	6.16E-01	0	0
Materials for energy recovery kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Exported energy MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0

Table 49 - LCA results of output flows referred to 1 m of Z C 50x50x0.6 mm and MgZ C 50x50x0.6 mm steel profiles.

Prof Z C 50x50x0.6 mm, MgZ C 50x50x0.6 mm - OUTPUT FLOWS														
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Components for re-use kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Materials for recycling kg/DU	1.52E-02	0	5.33E-02	-	-	-	-	-	-	-	0	0	6.52E-01	0	0
Materials for energy recovery kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Exported energy MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0

Table 50 - LCA results of output flows referred to 1 m of Z U 50x40x0.6 mm and MgZ U 50x40x0.6 mm steel profiles.

Prof Z C 50x40x0.6 mm, MgZ C 50x40x0.6 mm - OUTPUT FLOWS														
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Components for re-use kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Materials for recycling kg/DU	1.14E-02	0	4.29E-02	-	-	-	-	-	-	-	0	0	5.13E-01	0	0
Materials for energy recovery kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Exported energy MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0

Table 51 - LCA results of output flows referred to 1 m of Z C Plus 50x15x0.6 mm and MgZ C Plus 50x15x0.6 mm steel profiles.

Prof Z C Plus 50x15x0.6 mm, MgZ C Plus 50x15x0.6 mm - OUTPUT FLOWS															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Components for re-use kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Materials for recycling kg/DU	8.55E-03	0	3.36E-02	-	-	-	-	-	-	-	0	0	3.90E-01	0	0
Materials for energy recovery kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Exported energy MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0

Table 52 - LCA results of output flows referred to 1 m of Z U 15x30x0.6 mm steel profile.

Prof Z U 15x30x0.6 mm - OUTPUT FLOWS															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Components for re-use kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Materials for recycling kg/DU	6.65E-03	0	2.63E-02	-	-	-	-	-	-	-	0	0	2.92E-01	0	0
Materials for energy recovery kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Exported energy MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0

Table 53 - LCA results of output flows referred to 1 m of Z C 100x50x0.6 mm and MgZ C 100x50x0.6 mm steel profiles.

Prof Z C 100x50x0.6 mm, MgZ C 100x50x0.6 mm - OUTPUT FLOWS														
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Components for re-use kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Materials for recycling kg/DU	2.00E-02	0	6.87E-02	-	-	-	-	-	-	-	0	0	8.57E-01	0	0
Materials for energy recovery kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Exported energy MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0

Table 54 - LCA results of output flows referred to 1 m of Z U 100x40x0.6 mm and MgZ U 100x40x0.6 mm steel profiles.

Prof Z U 100x40x0.6 mm, MgZ U 100x40x0.6 mm - OUTPUT FLOWS														
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Components for re-use kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Materials for recycling kg/DU	1.62E-02	0	6.78E-02	-	-	-	-	-	-	-	0	0	8.46E-01	0	0
Materials for energy recovery kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Exported energy MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0

Table 55 - LCA results of output flows referred to 1 m of Z C 150x50x0.6 mm and MgZ C 150x50x0.6 mm steel profiles.

Prof Z C 150x50x0.6 mm, MgZ C 150x50x0.6 mm - OUTPUT FLOWS															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Components for re-use kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Materials for recycling kg/DU	2.47E-02	0	8.41E-02	-	-	-	-	-	-	-	0	0	1.06E+00	0	0
Materials for energy recovery kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Exported energy MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0

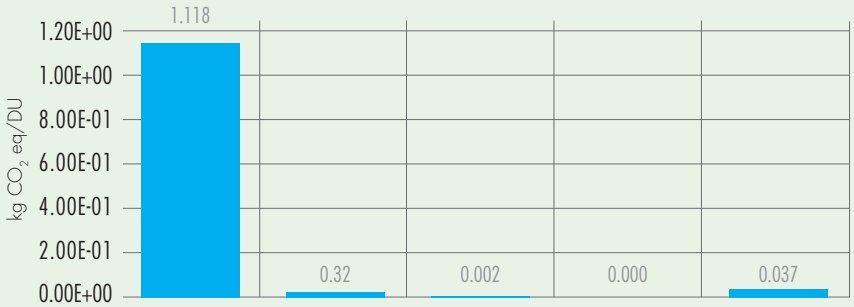
Table 56 - LCA results of output flows referred to 1 m of Z U 150x40x0.6 mm and MgZ U 150x40x0.6 mm steel profiles.

Prof Z U 150x40x0.6 mm, MgZ U 150x40x0.6 mm - OUTPUT FLOWS															
Parameters	Product stage	Construction process stage		Use stage							End-of-life stage				D Reuse, recovery, recycling
	A1/A2/A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operation energy use	B7 Operational water use	C1 Deconstruction/demolition	C2 Transport	C3 Waste processing	C4 Disposal	
Components for re-use kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Materials for recycling kg/DU	2.19E-02	0	7.36E-02	-	-	-	-	-	-	-	0	0	9.22E-01	0	0
Materials for energy recovery kg/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0
Exported energy MJ/DU	0	0	0	-	-	-	-	-	-	-	0	0	0	0	0

The images below demonstrate the impact of each life cycle stage on 5 key parameters, producing a clear view of how each stage contributes to the overall environmental impacts of Knauf steel profiles.

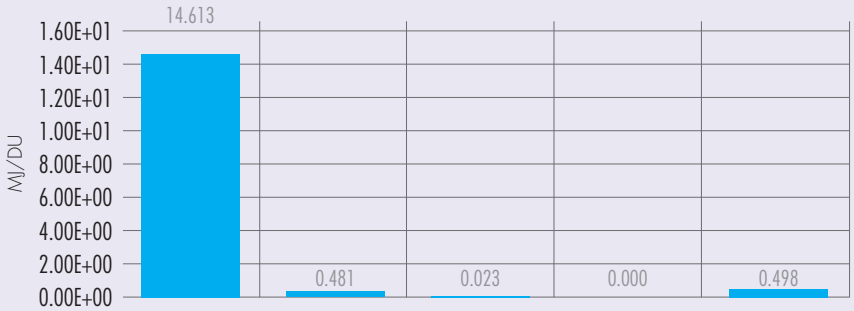
Z C Plus 50x27x0.6 mm MgZ Plus 50x27x0.6 mm	Product (A1-A3)	Transport (A4)	Installation (A5)	Use (B)	End-of-life (C)

GLOBAL WARMING



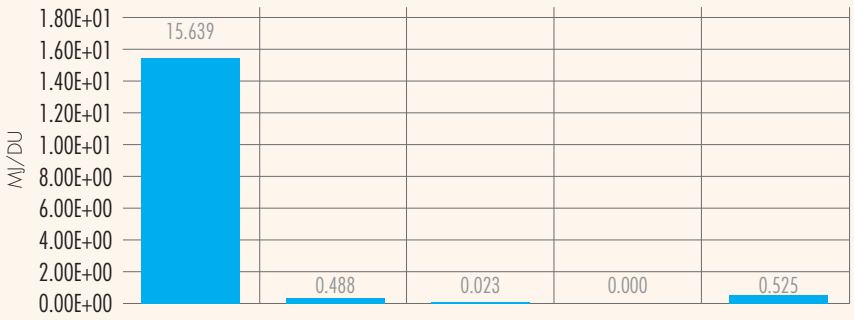
NON RENEWABLE RESOURCES CONSUMPTION[1]

[1] This indicator corresponds to the abiotic depletion potential of fossil resources.



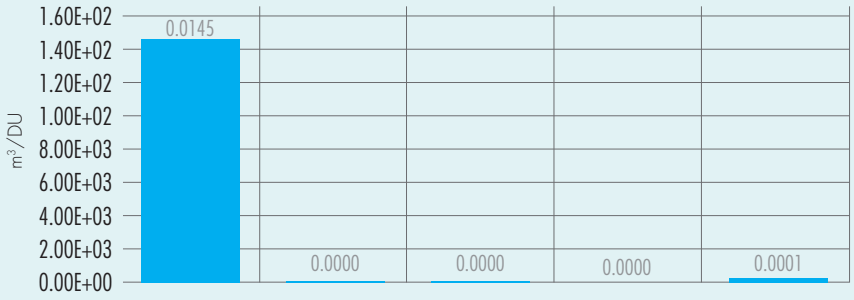
ENERGY CONSUMPTION[2]

[2] This indicator corresponds to the total use of primary energy.



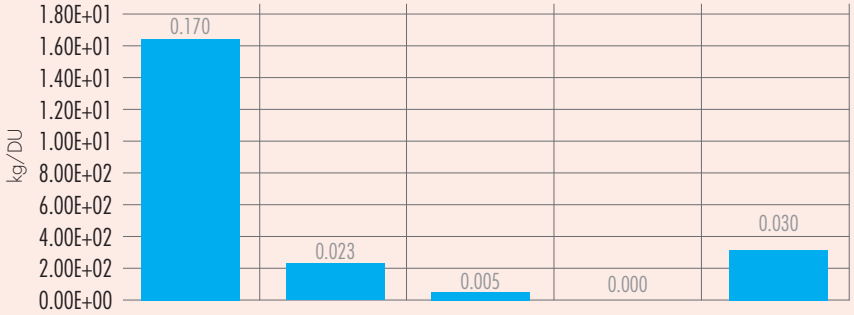
WATER CONSUMPTION [3]

[3] This indicator corresponds to the net use of fresh water.



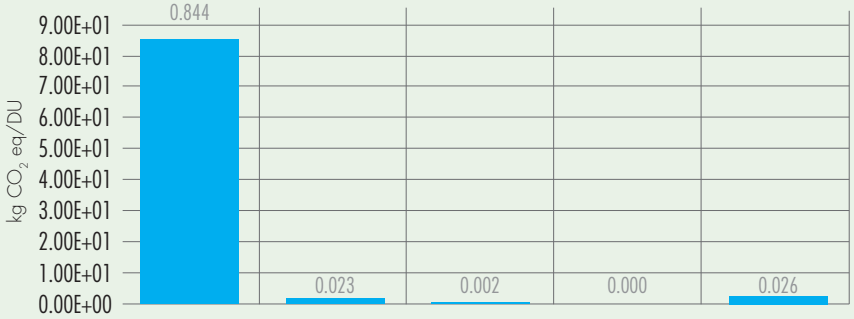
WASTE PRODUCTION[4]

[4] This indicator corresponds to the sum of hazardous, non- hazardous and radioactive waste disposed.



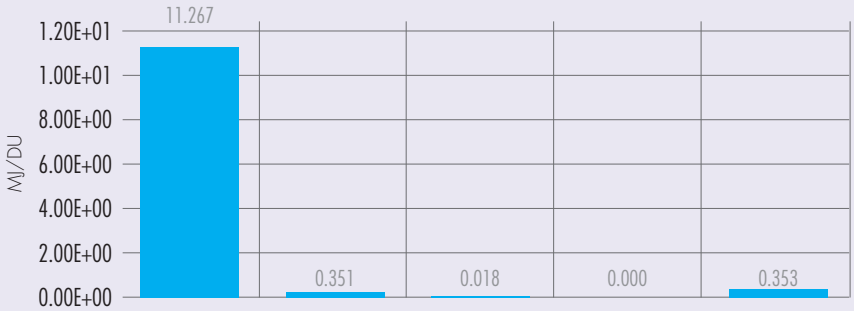
Z U 27x30x0.6 mm MgZ 27x30x0.6 mm	Product (A1-A3)	Transport (A4)	Installation (A5)	Use (B)	End-of-life (C)

GLOBAL WARMING



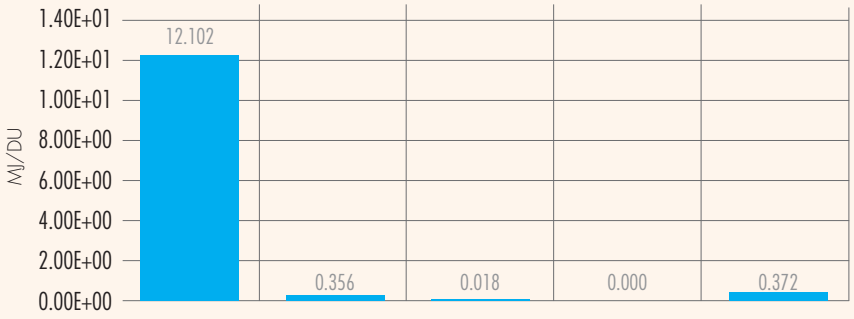
NON RENEWABLE RESOURCES CONSUMPTION[1]

[1] This indicator corresponds to the abiotic depletion potential of fossil resources.



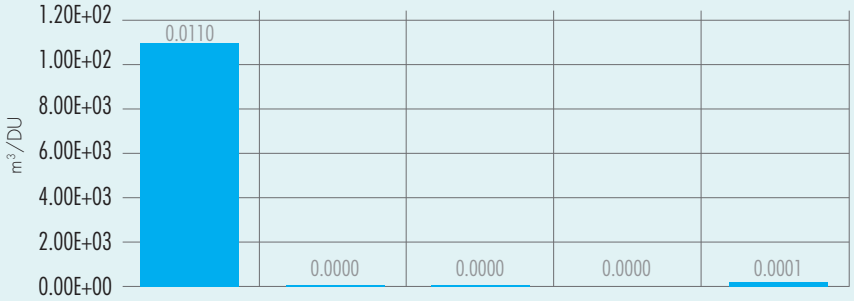
ENERGY CONSUMPTION[2]

[2] This indicator corresponds to the total use of primary energy.



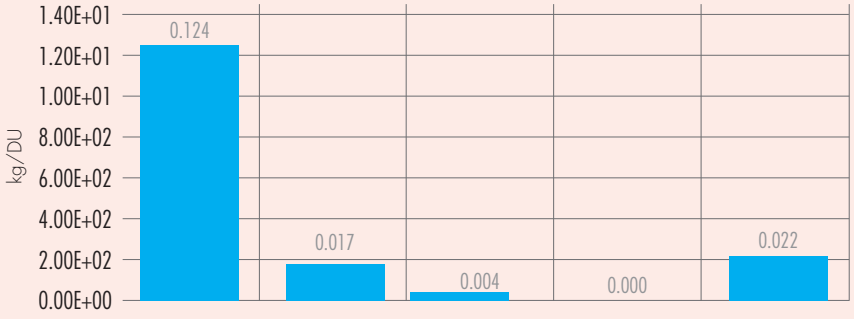
WATER CONSUMPTION [3]

[3] This indicator corresponds to the net use of fresh water.



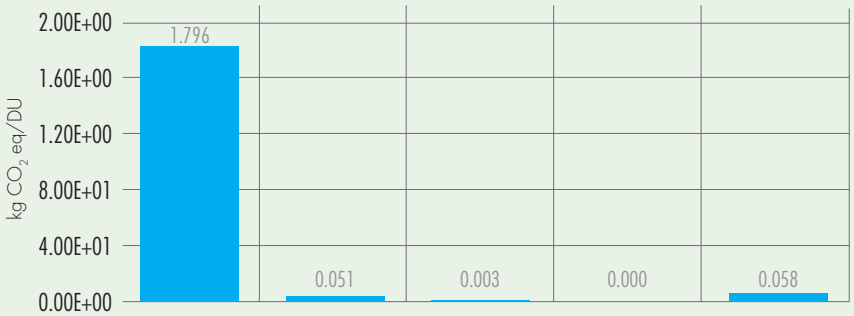
WASTE PRODUCTION[4]

[4] This indicator corresponds to the sum of hazardous, non- hazardous and radioactive waste disposed.



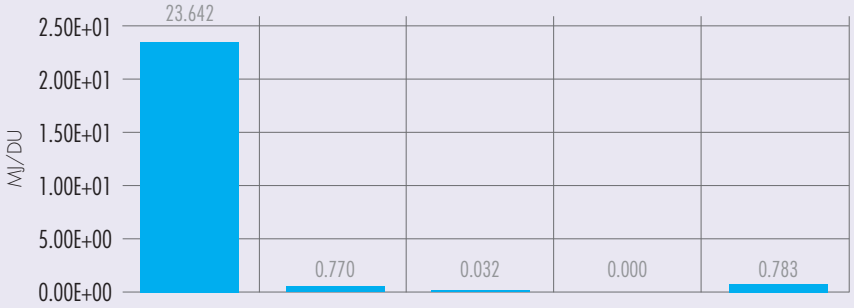
Z C 75x50x0.6 mm MgZ C 75x50x0.6 mm	Product (A1-A3)	Transport (A4)	Installation (A5)	Use (B)	End-of-life (C)

GLOBAL WARMING



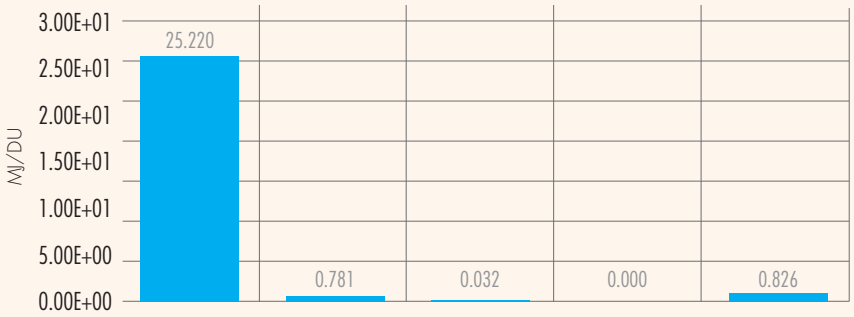
NON RENEWABLE RESOURCES CONSUMPTION[1]

[1] This indicator corresponds to the abiotic depletion potential of fossil resources.



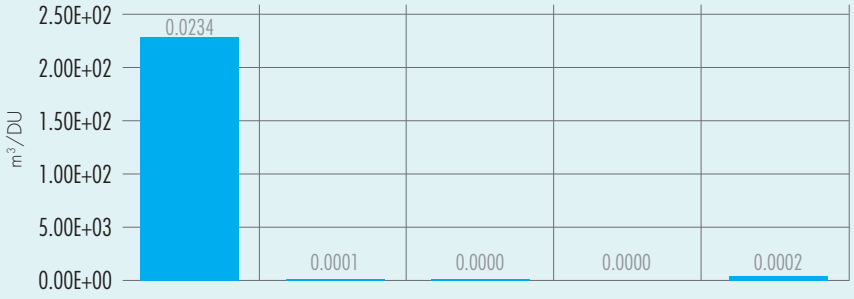
ENERGY CONSUMPTION[2]

[2] This indicator corresponds to the total use of primary energy.



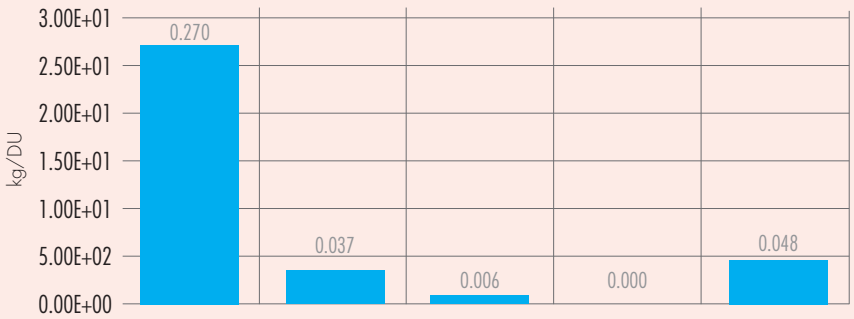
WATER CONSUMPTION [3]

[3] This indicator corresponds to the net use of fresh water.



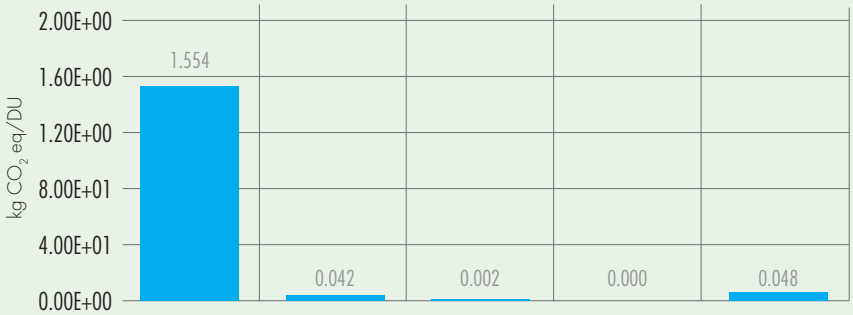
WASTE PRODUCTION[4]

[4] This indicator corresponds to the sum of hazardous, non- hazardous and radioactive waste disposed.



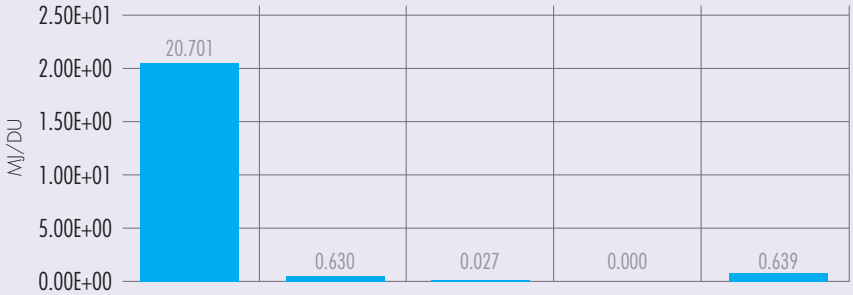
Z U 75x40x0.6 mm MgZ U 75x40x0.6 mm	Product (A1-A3)	Transport (A4)	Installation (A5)	Use (B)	End-of-life (C)

GLOBAL WARMING



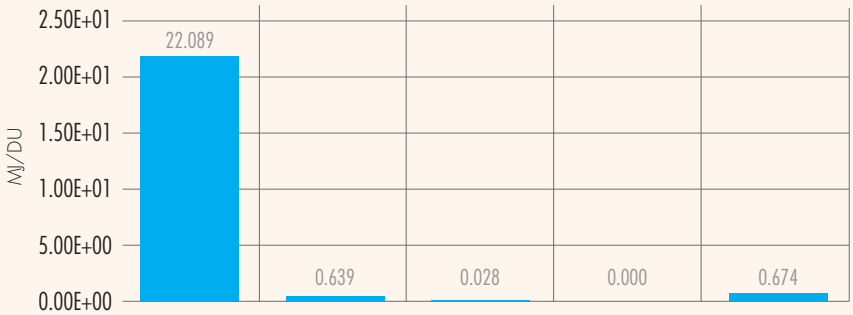
NON RENEWABLE RESOURCES CONSUMPTION[1]

[1] This indicator corresponds to the abiotic depletion potential of fossil resources.



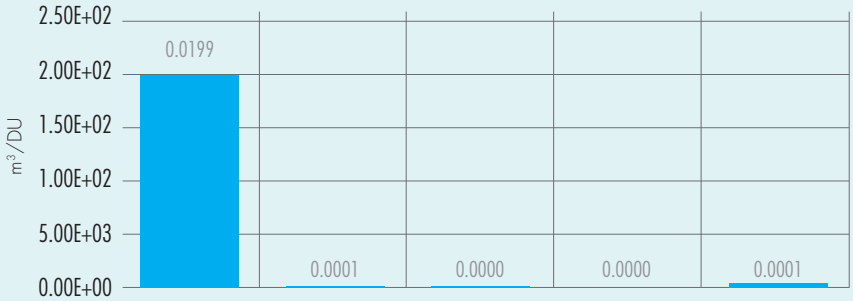
ENERGY CONSUMPTION[2]

[2] This indicator corresponds to the total use of primary energy.



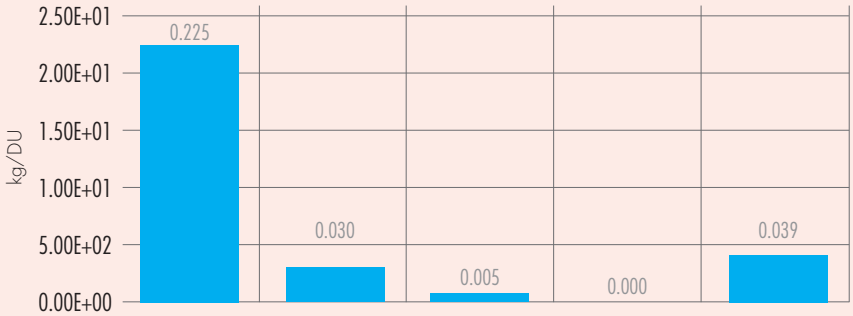
WATER CONSUMPTION [3]

[3] This indicator corresponds to the net use of fresh water.



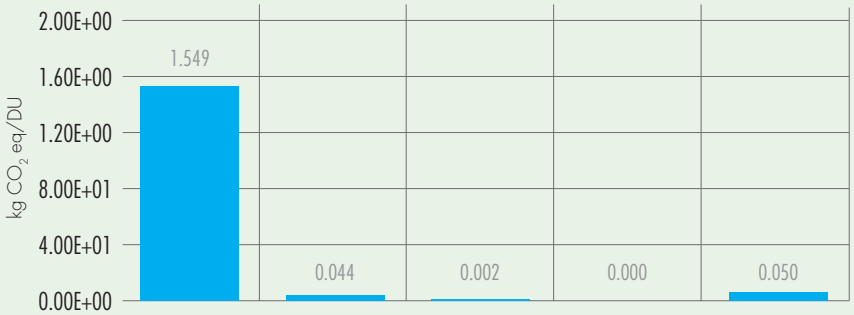
WASTE PRODUCTION[4]

[4] This indicator corresponds to the sum of hazardous, non- hazardous and radioactive waste disposed.



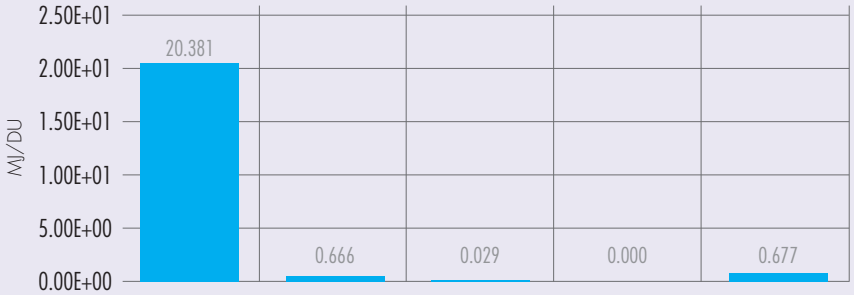
Z C 50x50x0.6 mm MgZ C 50x50x0.6 mm	Product (A1-A3)	Transport (A4)	Installation (A5)	Use (B)	End-of-life (C)

GLOBAL WARMING



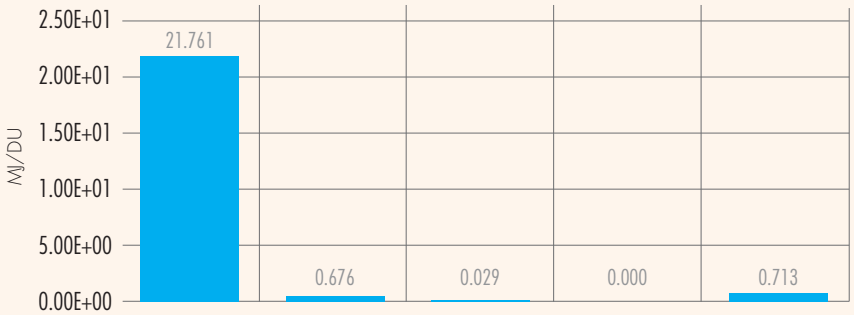
NON RENEWABLE RESOURCES CONSUMPTION[1]

[1] This indicator corresponds to the abiotic depletion potential of fossil resources.



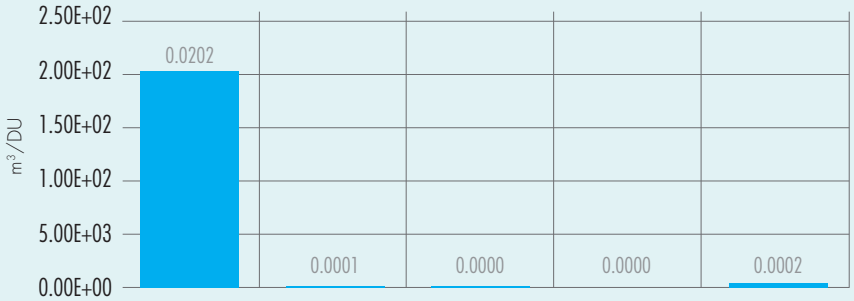
ENERGY CONSUMPTION[2]

[2] This indicator corresponds to the total use of primary energy.



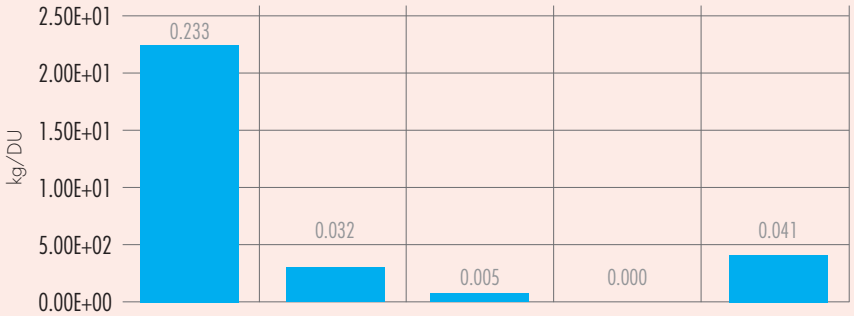
WATER CONSUMPTION [3]

[3] This indicator corresponds to the net use of fresh water.



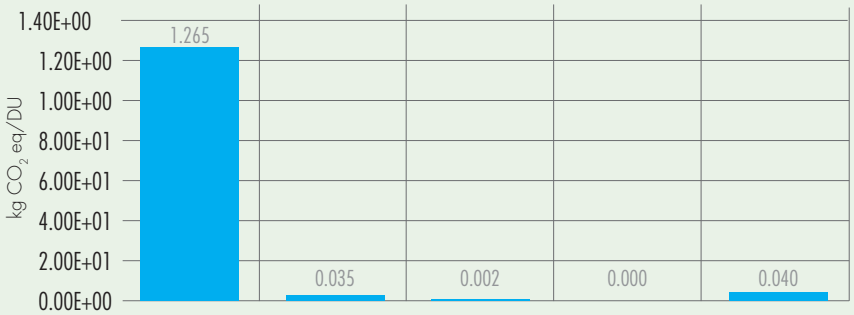
WASTE PRODUCTION[4]

[4] This indicator corresponds to the sum of hazardous, non- hazardous and radioactive waste disposed.



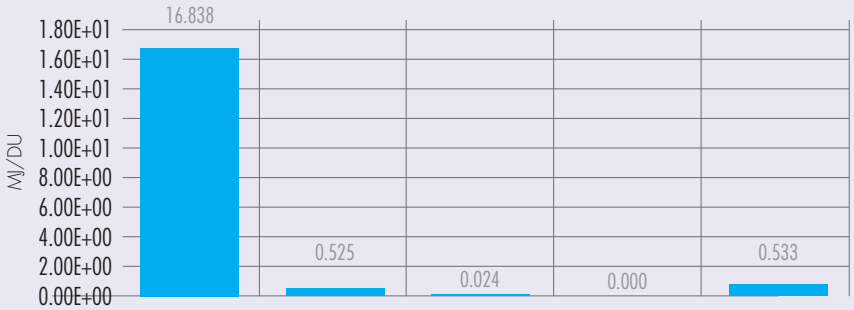
Z U 50x40x0.6 mm MgZ U 50x40x0.6 mm	Product (A1-A3)	Transport (A4)	Installation (A5)	Use (B)	End-of-life (C)

GLOBAL WARMING



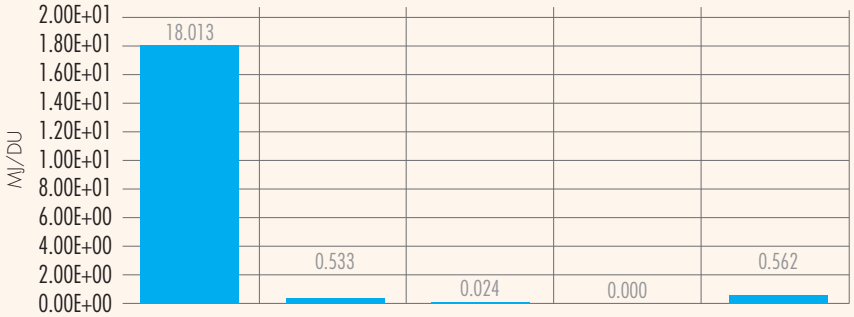
NON RENEWABLE RESOURCES CONSUMPTION[1]

[1] This indicator corresponds to the abiotic depletion potential of fossil resources.



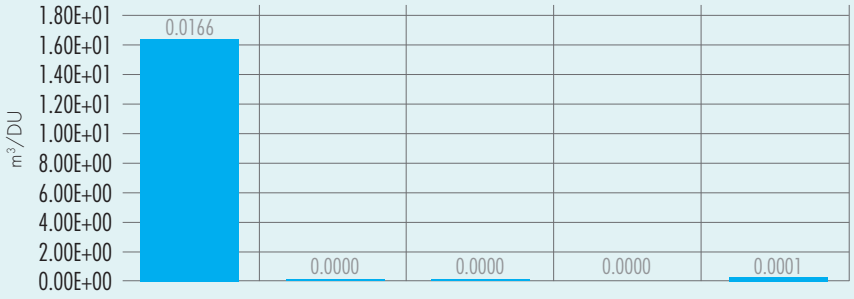
ENERGY CONSUMPTION[2]

[2] This indicator corresponds to the total use of primary energy.



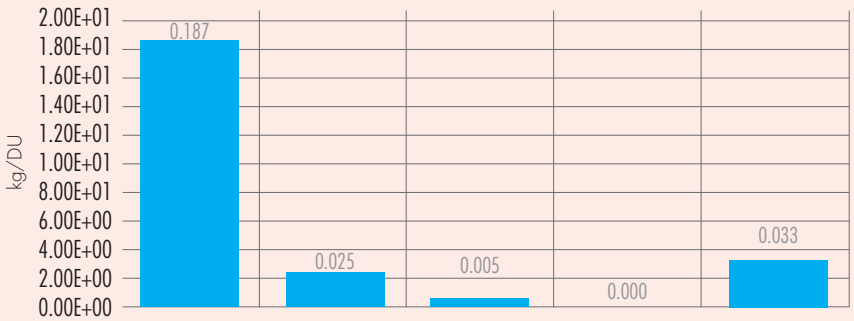
WATER CONSUMPTION [3]

[3] This indicator corresponds to the net use of fresh water.



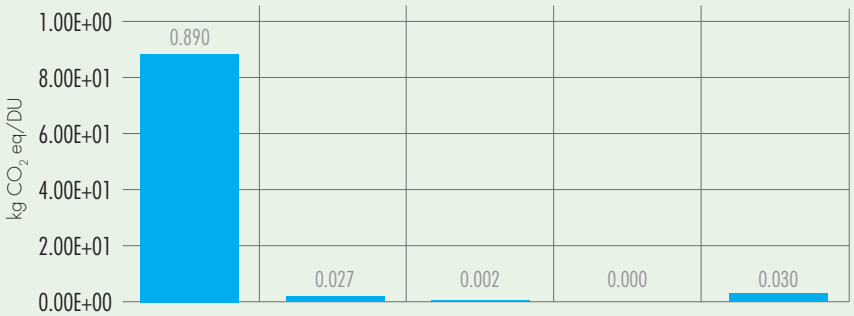
WASTE PRODUCTION[4]

[4] This indicator corresponds to the sum of hazardous, non- hazardous and radioactive waste disposed.



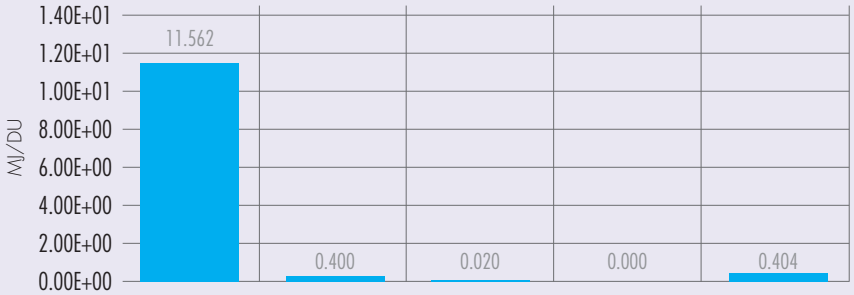
Z C Plus 50x15x0.6 mm MgZ C Plus 50x15x0.6 mm	Product (A1-A3)	Transport (A4)	Installation (A5)	Use (B)	End-of-life (C)

GLOBAL WARMING



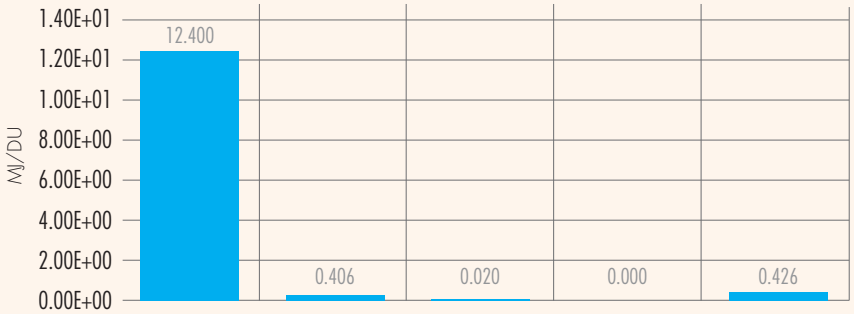
NON RENEWABLE RESOURCES CONSUMPTION[1]

[1] This indicator corresponds to the abiotic depletion potential of fossil resources.



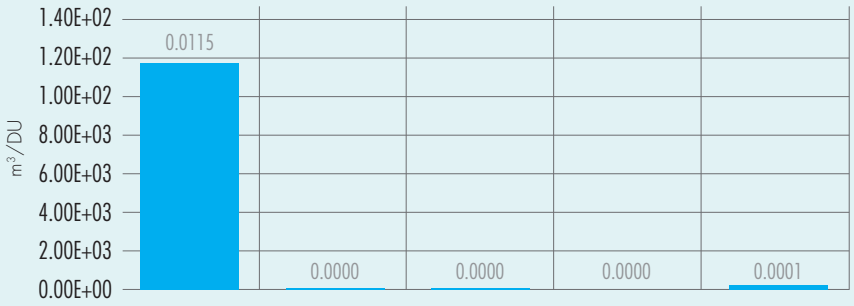
ENERGY CONSUMPTION[2]

[2] This indicator corresponds to the total use of primary energy.



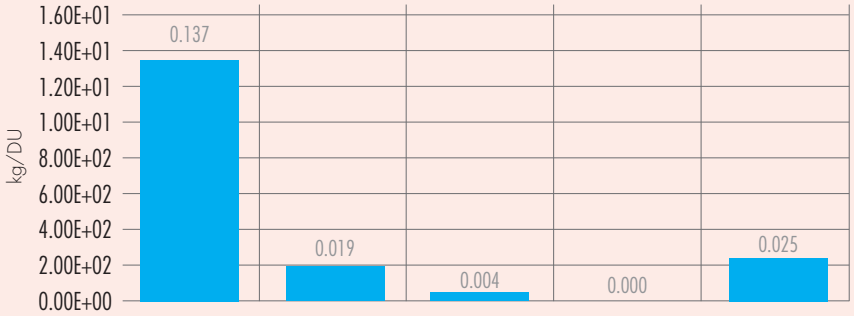
WATER CONSUMPTION [3]

[3] This indicator corresponds to the net use of fresh water.



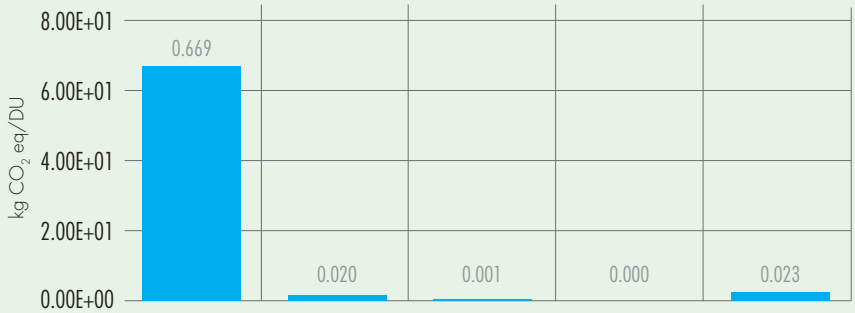
WASTE PRODUCTION[4]

[4] This indicator corresponds to the sum of hazardous, non- hazardous and radioactive waste disposed.



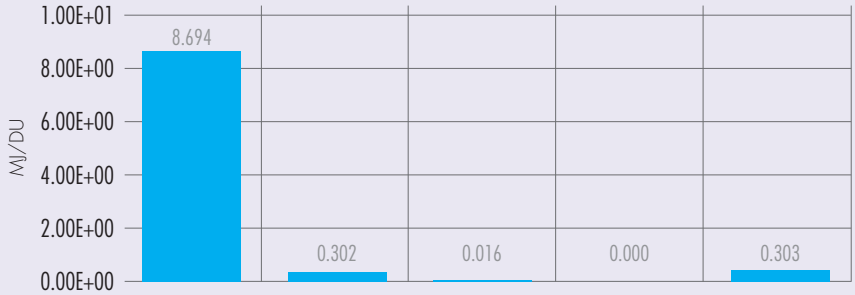
Z U 15x30x0.6 mm	Product (A1-A3)	Transport (A4)	Installation (A5)	Use (B)	End-of-life (C)

GLOBAL WARMING



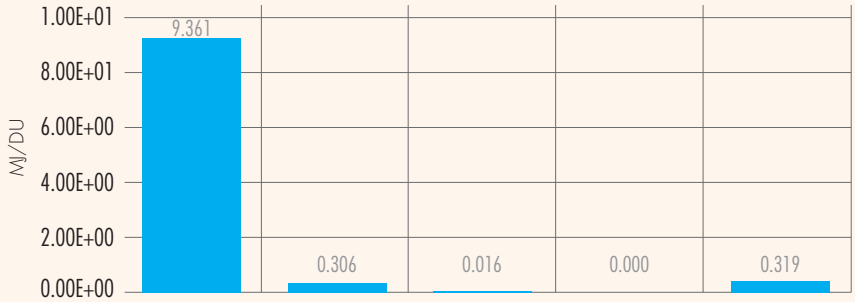
NON RENEWABLE RESOURCES CONSUMPTION[1]

[1] This indicator corresponds to the abiotic depletion potential of fossil resources.



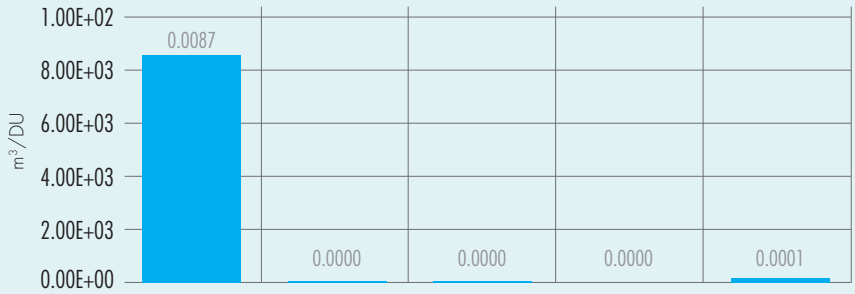
ENERGY CONSUMPTION[2]

[2] This indicator corresponds to the total use of primary energy.



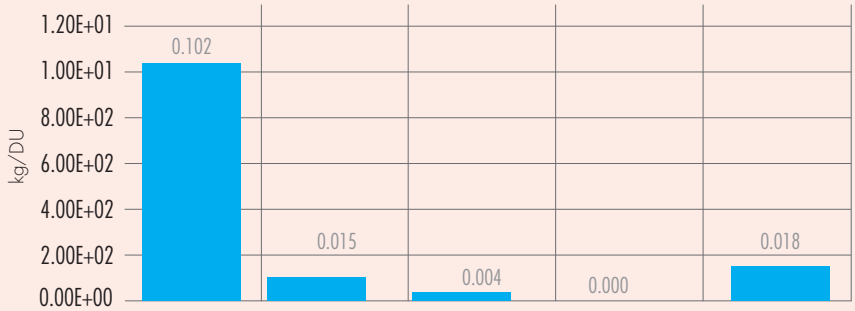
WATER CONSUMPTION [3]

[3] This indicator corresponds to the net use of fresh water.



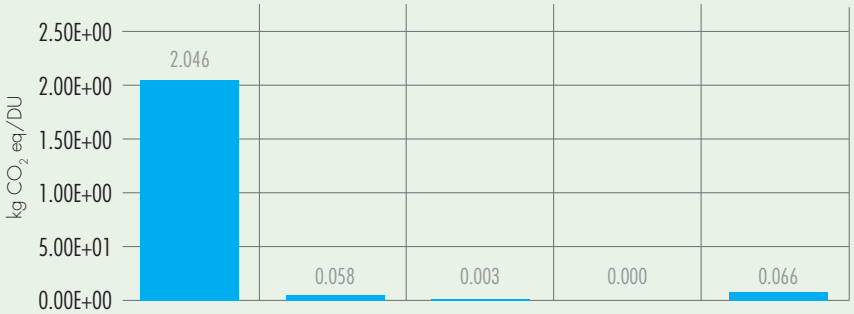
WASTE PRODUCTION[4]

[4] This indicator corresponds to the sum of hazardous, non- hazardous and radioactive waste disposed.



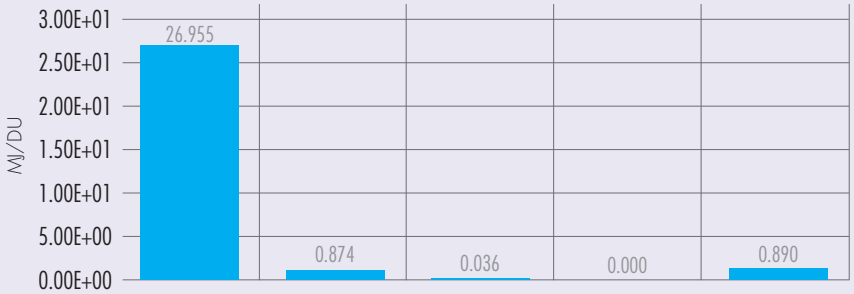
Z C 100x50x0.6 mm MgZ 100x50x0.6 mm	Product (A1-A3)	Transport (A4)	Installation (A5)	Use (B)	End-of-life (C)

GLOBAL WARMING



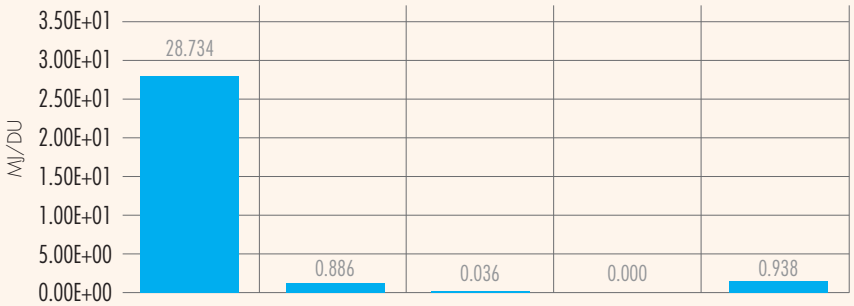
NON RENEWABLE RESOURCES CONSUMPTION[1]

[1] This indicator corresponds to the abiotic depletion potential of fossil resources.



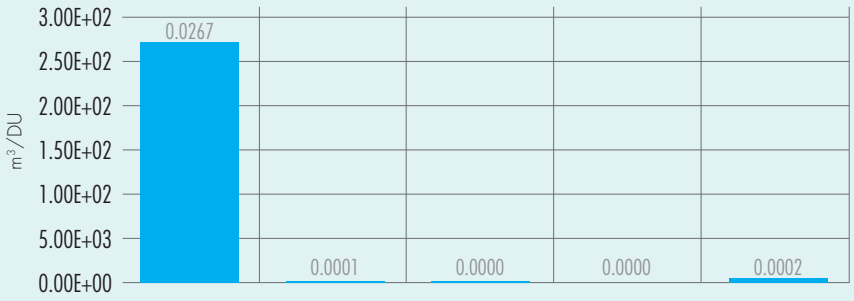
ENERGY CONSUMPTION[2]

[2] This indicator corresponds to the total use of primary energy.



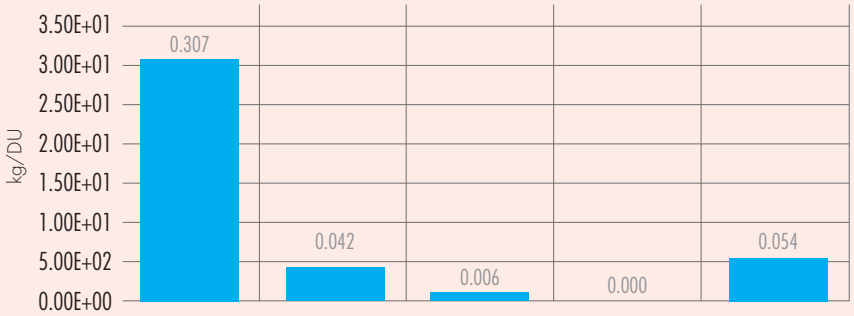
WATER CONSUMPTION [3]

[3] This indicator corresponds to the net use of fresh water.



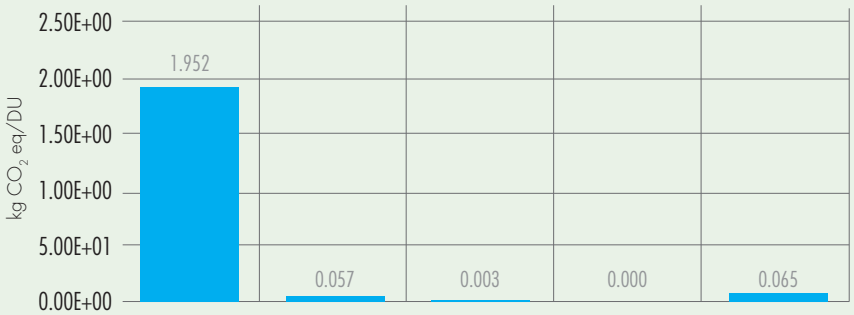
WASTE PRODUCTION[4]

[4] This indicator corresponds to the sum of hazardous, non- hazardous and radioactive waste disposed.



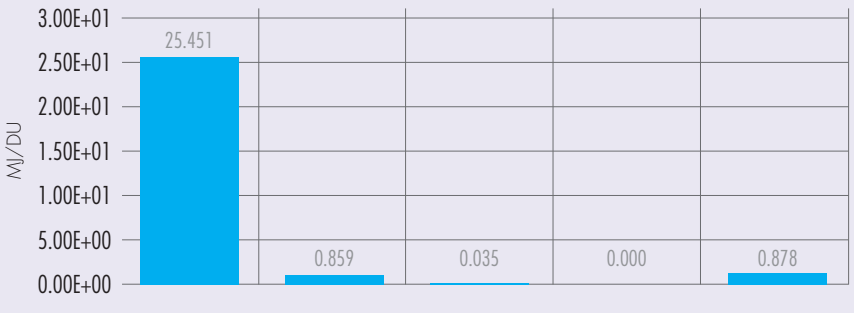
Z U 100x40x0.6 mm MgZ U 100x40x0.6 mm	Product (A1-A3)	Transport (A4)	Installation (A5)	Use (B)	End-of-life (C)

GLOBAL WARMING



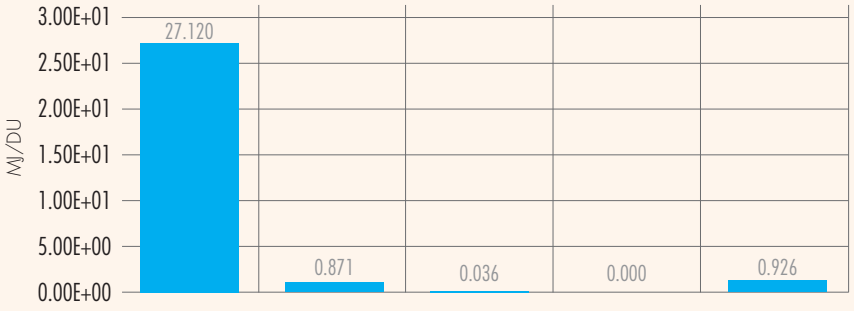
NON RENEWABLE RESOURCES CONSUMPTION[1]

[1] This indicator corresponds to the abiotic depletion potential of fossil resources.



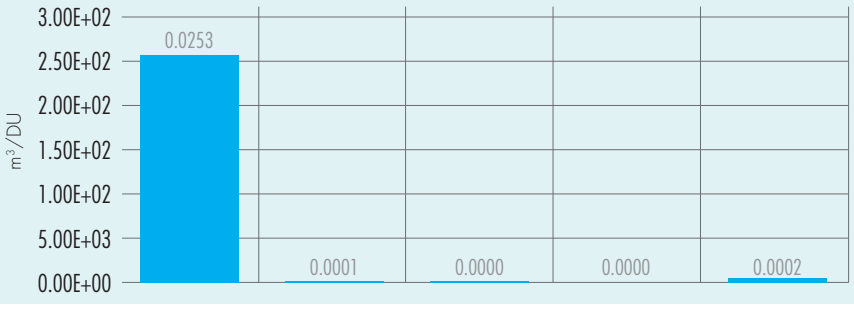
ENERGY CONSUMPTION[2]

[2] This indicator corresponds to the total use of primary energy.



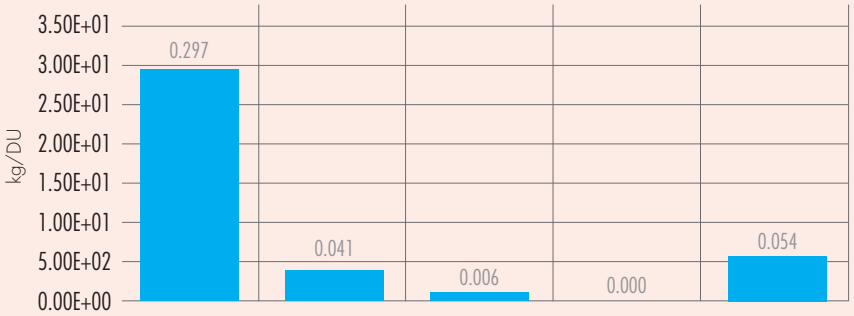
WATER CONSUMPTION [3]

[3] This indicator corresponds to the net use of fresh water.



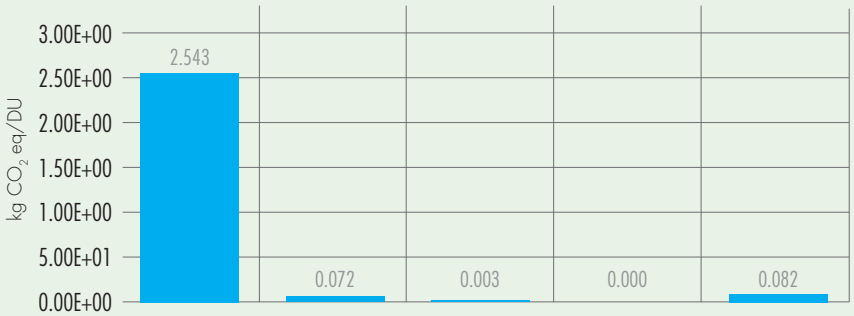
WASTE PRODUCTION[4]

[4] This indicator corresponds to the sum of hazardous, non- hazardous and radioactive waste disposed.



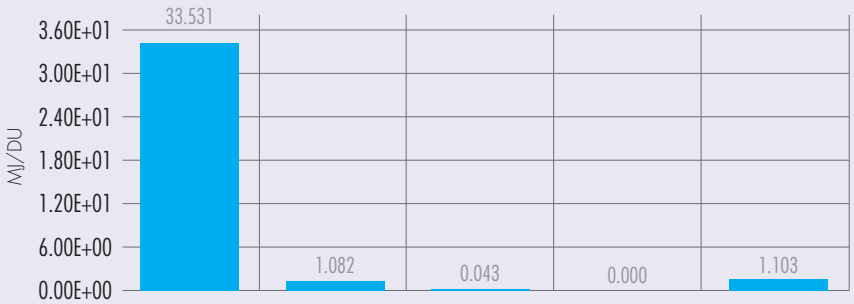
Z C 150x50x0.6 mm MgZ 150x50x0.6 mm	Product (A1-A3)	Transport (A4)	Installation (A5)	Use (B)	End-of-life (C)

GLOBAL WARMING



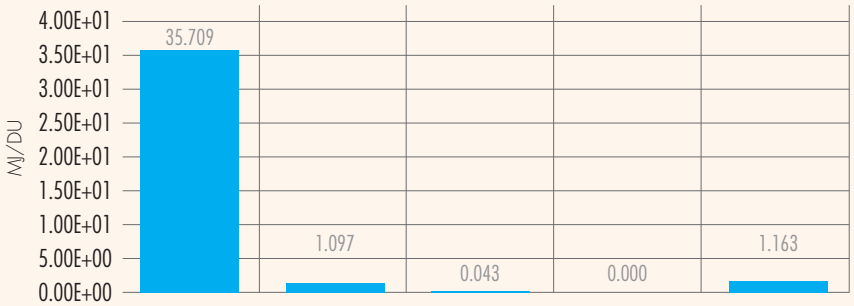
NON RENEWABLE RESOURCES CONSUMPTION[1]

[1] This indicator corresponds to the abiotic depletion potential of fossil resources.



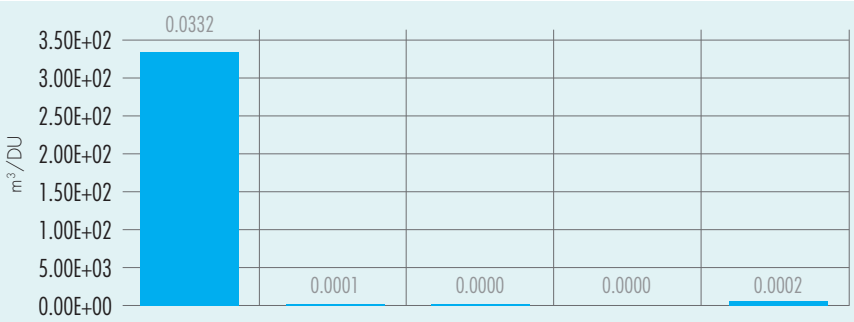
ENERGY CONSUMPTION[2]

[2] This indicator corresponds to the total use of primary energy.



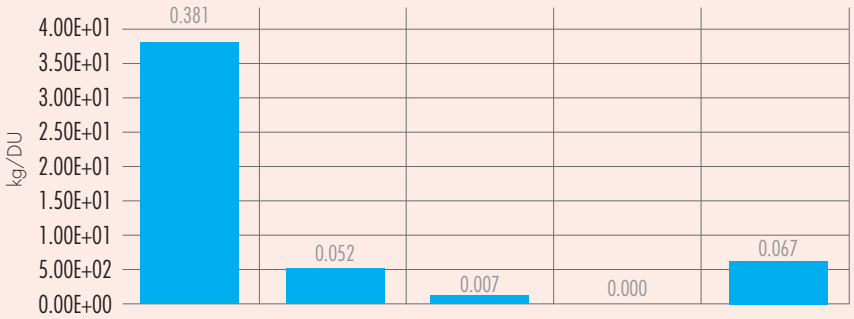
WATER CONSUMPTION [3]

[3] This indicator corresponds to the net use of fresh water.



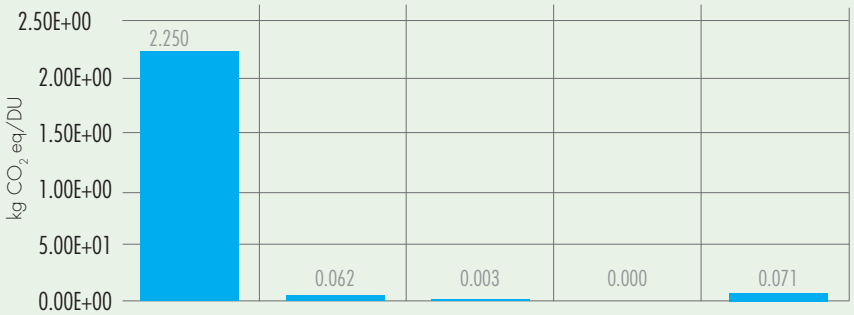
WASTE PRODUCTION[4]

[4] This indicator corresponds to the sum of hazardous, non- hazardous and radioactive waste disposed.



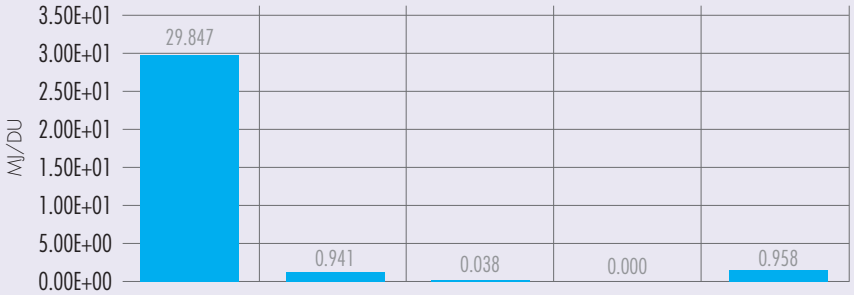
Z U 150x40x0.6 mm MgZ U 150x40x0.6 mm	Product (A1-A3)	Transport (A4)	Installation (A5)	Use (B)	End-of-life (C)

GLOBAL WARMING



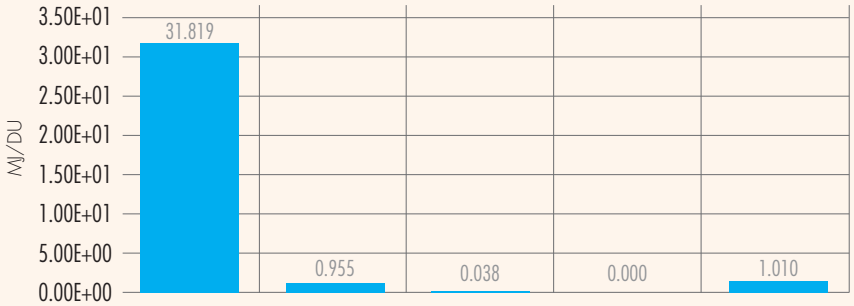
NON RENEWABLE RESOURCES CONSUMPTION[1]

[1] This indicator corresponds to the abiotic depletion potential of fossil resources.



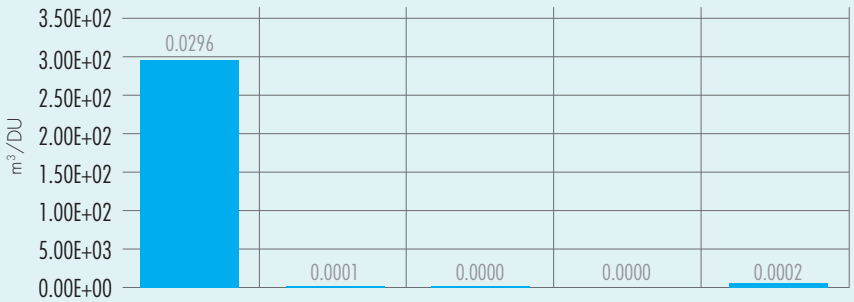
ENERGY CONSUMPTION[2]

[2] This indicator corresponds to the total use of primary energy.



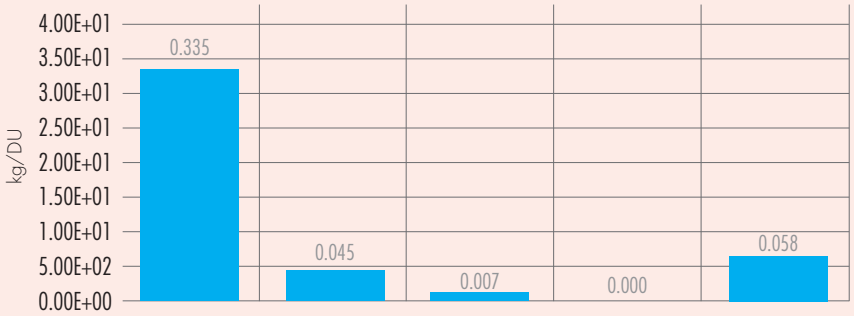
WATER CONSUMPTION [3]

[3] This indicator corresponds to the net use of fresh water.



WASTE PRODUCTION[4]

[4] This indicator corresponds to the sum of hazardous, non- hazardous and radioactive waste disposed.



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IVL Swedish Environmental Research Institute, Swedish Environmental Protection Agency, SP Trä. Swedish Wood Preservation Institute, Swedisol, SCDA. Svenskt Limträ AB. SSAB (2019).

Standards:
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ISO 14025:2011-10. Environmental labels and declarations - Type III environmental declarations - Principles and procedures.
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ISO 14001:2015. Environmental management systems - Requirements with guidance for use
ISO 9001:2015. Quality management systems - Requirements
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ISO 14044:2018. Environmental management - Life cycle assessment - Requirements and guidelines

Contacts for environmental product declaration:
Francesco Paolo Bucci - Knauf di Knauf S.r.l. S.a.s
e-mail: francesco.bucci@knauf.com
Francesco Testa - Ergo S.r.l.
e-mail: francesco.testa@ergosrl.net; f.testa@sssup.it

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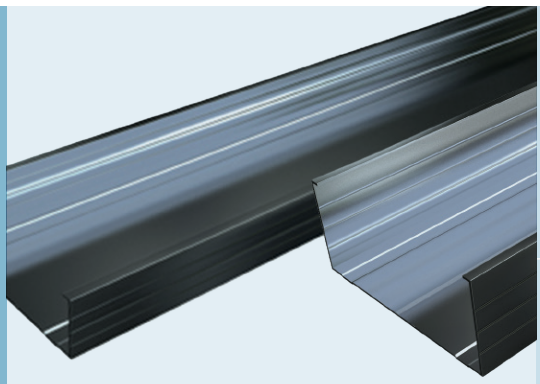

Le nostre certificazioni

www.knauf.it

knauf@knauf.it

03/2022

SEGUICI SU:

Sede:
Castellina Marittima (PI)
Tel. 050 69211
Fax 050 692301

Stabilimento Sistemi a Secco:
Castellina Marittima (PI)
Tel. 050 69211
Fax 050 692301

Stabilimento Sistemi Intonaci:
Gambassi terme (FI)
Tel. 0571 6307
Fax 0571 678014

K-Centri:
Knauf Milano
Rozzano (MI)
Tel. 02 52823711

Knauf Pisa
Castellina Marittima (PI)
Tel. 050 69211