



Environmental Product Declaration Type III (EPD) ITB number 259/2021

Vents and skylights mcr PROLIGHT
Vents and skylights mcr ULTRA THERM
Continuous rooflights mcr PROLIGHT
with vents



ITB cooperates with other operators of EPD programmes through the ECO-PLATFORM, (<http://www.eco-platform.org/>) in order to coordinate efforts to support industrial sectors while reducing verification efforts in different countries.

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Basic Information



This declaration is a Type III Environmental Product Declaration (EPD) based on the EN 15804 standard and verified according to ISO 14025 by an independent auditor.

It contains information about the environmental impact of the declared construction materials. These aspects have been verified by an independent body in accordance with ISO 14025. In principle, a comparison or evaluation of EPD data is only possible if all data to be compared have been created in accordance with EN 15804 (see section 5.3 of the standard).

LCA analysis: A1 - A3, A4, A5 according to EN 15804 (cradle to grave with options)

Year of EPD development: 2021

Product standards: PN-EN 12101-2:2005, PN-EN 1873:2009, PN-EN 14963:2006

Declared lifetime of the product: 20 years

PCR: Document ITB-PCR A (based on EN 15804)

Declared unit: one unit of a complete product of defined mass

Reason for implementation: B2B

Representativeness: Polish products, 2020

Producer

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Mercor S.A., based in Gdańsk, has been operating since 1988 and is one of the largest entities in Poland operating in the passive fire protection systems industry.

The company's comprehensive offer includes: smoke and heat exhaust systems, roof lighting systems, fire ventilation systems, and fire protection for building structures. Mercor cooperates closely with designers and building contractors, and most of the product range is tailored to individual needs of customers, who specify the desired parameters with highest safety and quality standards.

All products included in this study are manufactured in the production facility of MERCOR S.A. in Cieplewo near Pruszcz Gdański in Pomeranian voivodeship. Production hall enables manufacturing of a full range of products, in all shapes and sizes, also to individual orders. Finished products are stored at the plant and then transported to customers.



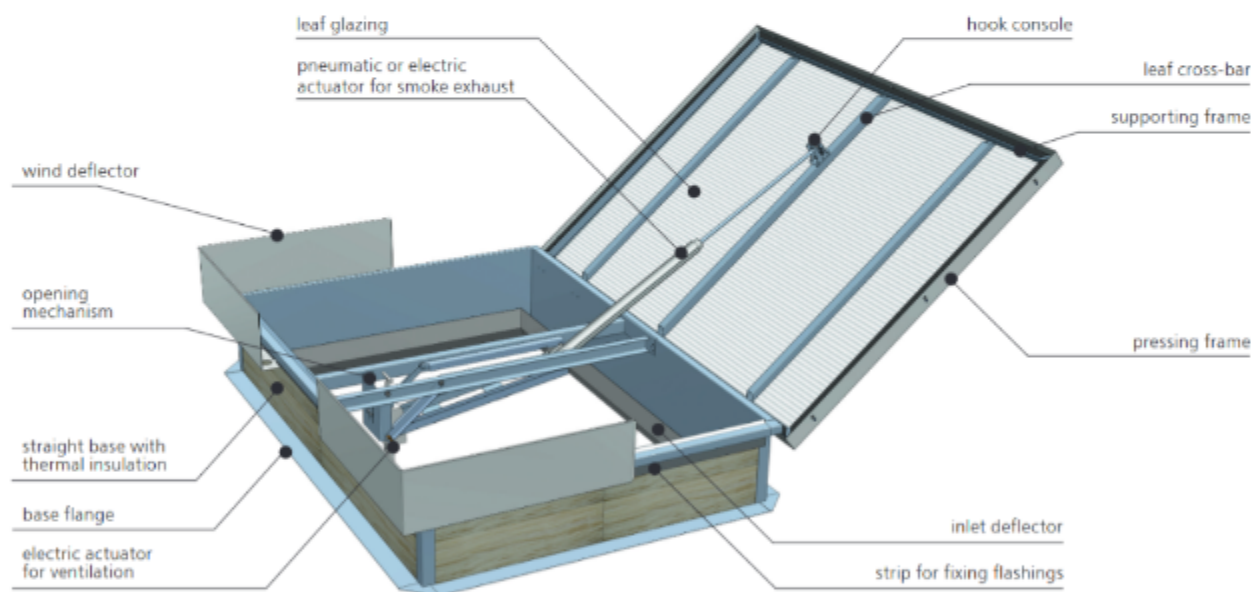
Description of products and application

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mcr PROLIGHT spot products: smoke vents, openable skylights, fixed skylights

mcr PROLIGHT natural smoke and heat exhaust vents are devices used in buildings to remove smoke and heat in the event of fire with the main purpose of use in industrial facilities. The special feature of PROLIGHT spot devices is that the main construction elements (base and leaf frames) are made of metal: steel and aluminium.

mcr PROLIGHT skylights are devices used in buildings to provide daylight and natural ventilation, as well as equipment roof access, with the main purpose of use in industrial facilities, multi-family buildings, office buildings, shopping centres, etc. Structurally, skylights may be treated as simplified smoke vents.



After analyzing production orders, the most frequently manufactured product from the mcr PROLIGHT family is the smoke vent. Product with the following specification was treated as a representative:

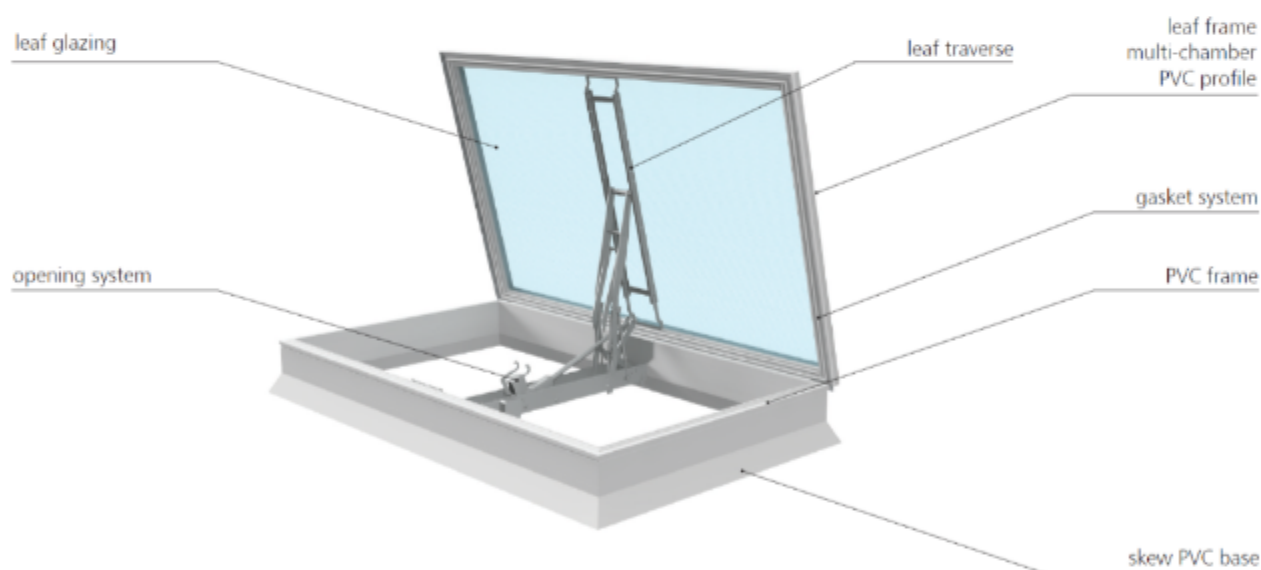
- Type C 100 - single leaf vent with straight base, square in top view, nominal size: 100 x 100 cm,
- base made of galvanized steel sheet, insulated with 20 mm mineral wool,
- base height H=50 cm,
- filling of the flap - 25 mm multi-chamber polycarbonate panel,
- opening: electric actuator 24 V (G20G-550)
- parameters according to EN 12101-2:2003: Aa=0,72 m², SL550, WL1500, B300, Re50, reaction to fire class NPD or E,
- weight: 88 kg,
- overall dimension (SxDxW): 120 x 120 x 58 cm.

Description of products and application

mcr ULTRA THERM spot products: smoke vents, openable skylights, fixed skylights

mcr ULTRA THERM natural smoke and heat exhaust vents are devices used in buildings to remove smoke and heat in the event of fire, for all types of buildings. The special feature of ULTRA THERM devices is that main construction components are made from multi-chamber PVC profiles, which ensures the absence of thermal bridges, high thermal insulation of the device and high aesthetics.

mcr ULTRA THERM skylights are devices used in buildings to provide daylight and natural ventilation, as well as equipment roof access, designed for all types of buildings. Skylights can be fixed or openable (equipped with a tilt leaf and elements - actuators or gas springs to move it). Openable skylights are commonly referred to as ventilation vents or roof access devices.



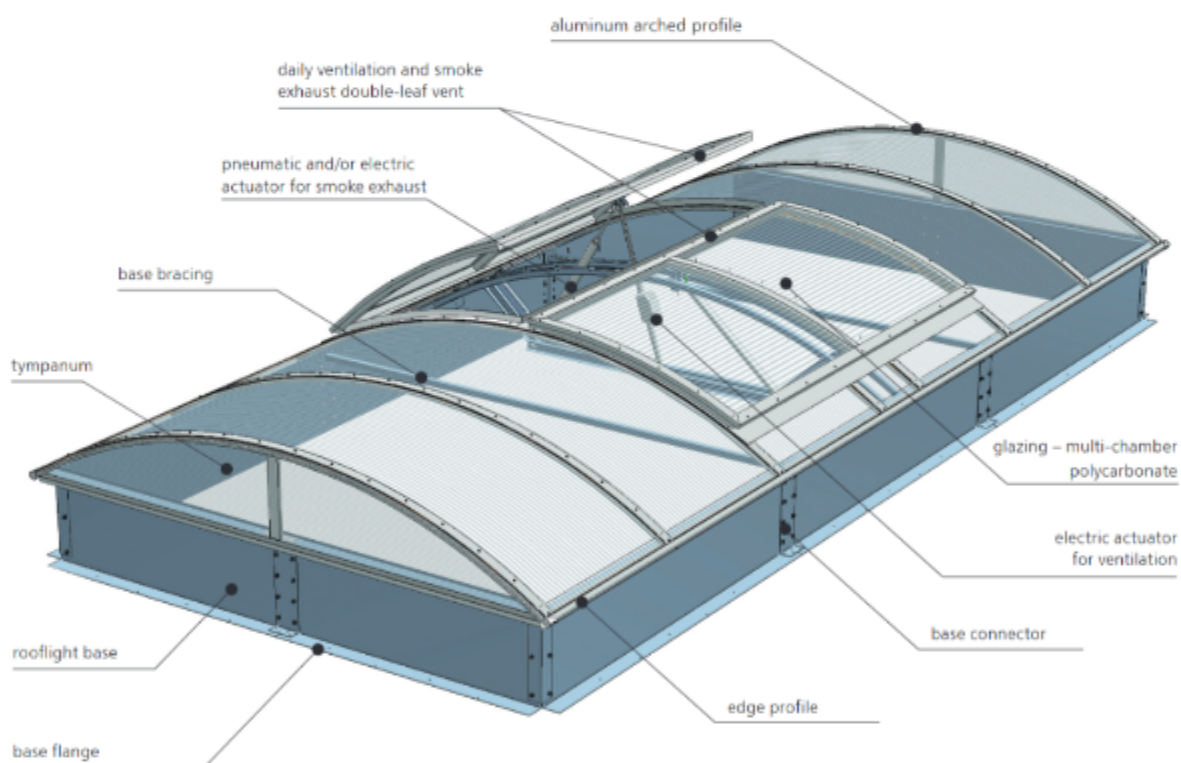
After analyzing production orders, the most frequently manufactured product of the mcr ULTRA THERM family is the smoke vent. Product with the following specification was treated as a representative:

- type NG-A 150x250 - single leaf vent with skew base, nominal size: 150 x 250 cm,
- base made of galvanized steel sheet prepared for 50 mm thermal insulation with PVC frame on the top,
- total base height H 50 cm,
- flap filling - 10 mm multi-chamber polycarbonate panel,
- opening: pneumatic actuator (prod. JOFO),
- parameters according to EN 12101-2:2003: Aa=2,78 m², SL521, WL750, B300, Re50, reaction to fire class NPD or E,
- weight: 185 kg,
- overall dimension (WxLxH): 162 x 262 x 68 cm.

Product description and application

mcr PROLIGHT continuous rooflights with ventilation and smoke exhaust double-leaf vent

mcr PROLIGHT continuous rooflights are installed on the roofs of buildings and provides daylight into the facility. Additionally, the rooflights can be used to install vents for various functions: smoke extraction, both - smoke extraction and ventilation or ventilation only. Devices are produced according to the customer's requirements, in accordance with the design of the building object.



After analyzing production orders, the most frequently manufactured mcr PROLIGHT continuous rooflights is the product with following specification, which has been treated as representative:

- continuous rooflight dimensions 3 m x 22 m, base 77 cm, for insulation 80 cm, self-supporting, painted RAL9010 with safety net,
- glazing: PC 10 mm + polyester board (Broof) + PC 10 mm,
- in continuous rooflight 3 ventilation and smoke exhaust vents with dimensions 1,2 m x 2,2 m,
- pneumatic control SL750, WL750,
- mass: 2335 kg.

Life cycle assessment (LCA) - general principles



Declared unit

The unit of declared product is 1 piece of complete product of given mass, representative for three selected groups of products.

Allocation

Allocation in this study was made in accordance with the ITB PCR A guidelines. The production of mcr PROLIGHT spot products, mcr ULTRA THERM spot products and mcr PROLIGHT continuous rooflights takes place in the manufacturing plant of MERCOR S.A. in Cieplewo near Pruszcz Gdański. The input data and emissions were collected in three separate production lines, respectively for each product group. Allocation to a single, representative product was made on the basis of product weight. All impacts from raw material extraction are allocated in module A1. 100% of the production line receipts were inventoried and allocated to product production. Module A2 contains transport of aluminium profiles, steel profiles, PVC, aluminium sheet from Polish suppliers to the factory in Cieplewo. Energy, fuel and waste deliveries for the whole production process were inventoried and included in module A3.

System boundaries

The life cycle analysis of the declared products includes the Production Stage (modules A1 - A3) and modules A4, A5 ("from cradle to grave with options") according to EN 15804+A1 and ITB PCR A. All relevant parameters from the collected production data such as materials used in production, electricity, fuels used, waste, available emission measurements are taken into account in the life cycle assessment. It can be assumed that the sum of omitted processes does not exceed 5% of all impact categories.

Modules A1 and A2 Extraction and transport of raw materials

Raw materials such as aluminum, steel, mineral wool, polycarbonate and packaging materials (wood, steel and plastic bands, foil, paper, cardboard, EPS elements) come from Polish suppliers. The choice of supplier is determined not only by the cost of material and the transport distance, but also by the availability of materials, therefore the production plant in Cieplewo is supplied by many suppliers. Data concerning transport of raw materials is recorded by the factory. The means of transport include trucks. Polish fuel averages were taken into account in the calculations.

Module A3 Production

Raw materials such as aluminium, steel, mineral wool, polycarbonate are used to manufacture vents, skylights and rooflights. The production diagram dedicated to each product group is shown on page 10. A complete production process takes place in the production plant, at the end of which the products are packed and stored on the plant site before they are delivered to the customer. The compositions of materials for the production of three representative product groups are given in the tables.

Material composition of a representative product for the mcr PROLIGHT spot products		
Material	Mass, kg	Mass fraction, %
aluminium	3,00	3,42
polyurethane adhesive	0,05	0,06
polyamide	0,09	0,10
polyethylene + rubber glue	0,03	0,03
polypropylene + rubber glue	0,03	0,03
polycarbonate	4,80	5,47
silicone	0,05	0,06
stainless steel	0,06	0,07
galvanised steel	66,85	76,15
mineral wool	4,83	5,50
actuator external multi-component	8,00	9,11
Final total	87,79	100,00

Material composition of the representative product for mcr ULTRA THERM spot products		
Material	Mass, kg	Mass fraction, %
aluminium	28,29	15,29
CO2	0,12	0,07
EPDM	4,09	2,21
rubber (standard)	1,81	0,98
LDPE	0,04	0,02
copper	0,14	0,08
brass	0,01	0,01
polyamide	0,85	0,46
polyethylene+acrylic	0,08	0,04
polyethylene + rubber glue	0,01	0,00
polypropylene + rubber glue	0,01	0,00
polysiloxane	0,48	0,26
polycarbonate	5,45	2,94
rigid PVC	22,65	12,24
actuator - external multi-component	9,00	4,87
galvanised steel	111,38	60,20
spring steel, galvanized	0,20	0,11
pneumatic valve - composite external component	0,39	0,21
Final total	184,98	100,00

Material composition of a representative product of the PROLIGHT continuous rooflight		
Material	Mass, kg	Mass fraction, %
aluminium	582,71	24,95
EPDM rubber	18,35	0,79
rubber	1,80	0,08
glass mat + polyester resin	121,17	5,19
paper	0,05	0,00
polyamide	0,04	0,00
polyethylene	0,47	0,02
polyethylene + rubber glue	1,30	0,06
polypropylene + rubber glue	1,13	0,05
polyurethane	0,77	0,03
polycarbonate	251,40	10,77
stainless steel	5,47	0,23
galvanised steel	1349,27	57,78
sealant (with ethyl acetate)	1,06	0,05
Final total	2335,14	100,00

Modules A4 and A5 Transport and installation in the building

Transport to the place of installation takes place from the production plant in Cieplewo near Pruszcz Gdański at 3a Kwarcowa Street. The Company does not have its own means of transport for finished products; it uses services of transport companies ordered both by Mercor S.A. and by customers. For loading goods, forklifts with combustion motors or electric drive are used. For unloading, machines available at the recipient's site (at the construction site, customer's or subsidiary's storage yard or distributor's) are used. These may include: stationary cranes, cranes on wheeled chassis, fork-lift trucks, elevators. The most convenient form of transport is wheeled transport to the installation site and then unloaded directly from the vehicle by crane onto the roof. During the assembly process, manual or electrically or pyrotechnically driven tools are used. Influences from the operation of machinery and tools, i.e. fuel and electricity, have been included in the analysis. The largest recipients of orders are located in Poland and Central and Eastern Europe. The vast majority of transport is by road or, alternatively, a combination of road and sea. The fuels used depend on the means of transport used, but the vast majority is diesel. The table below shows the average transport distance and average fuel consumption.

Product category	Average transport road length km	Type of transport	Fuel consumption l/100km
PROLIGHT spot products	918	Truck > 16 t	30
ULTRA THERM spot products	426	Truck > 16 t	30
PROLIGHT continuous rooflights	587	Truck > 16 t	30

Period of data collection

Data on the production of declared products relate to the period from January to December 2020. The life cycle assessment has been prepared for Poland as a reference area.

Data quality

The data for the LCA calculations came from the inventoried statements of the production plant of the company MERCOR S.A. in Cieplewo near Pruszcz Gdanski in the Pomeranian Voivodeship.

Assumptions and estimates

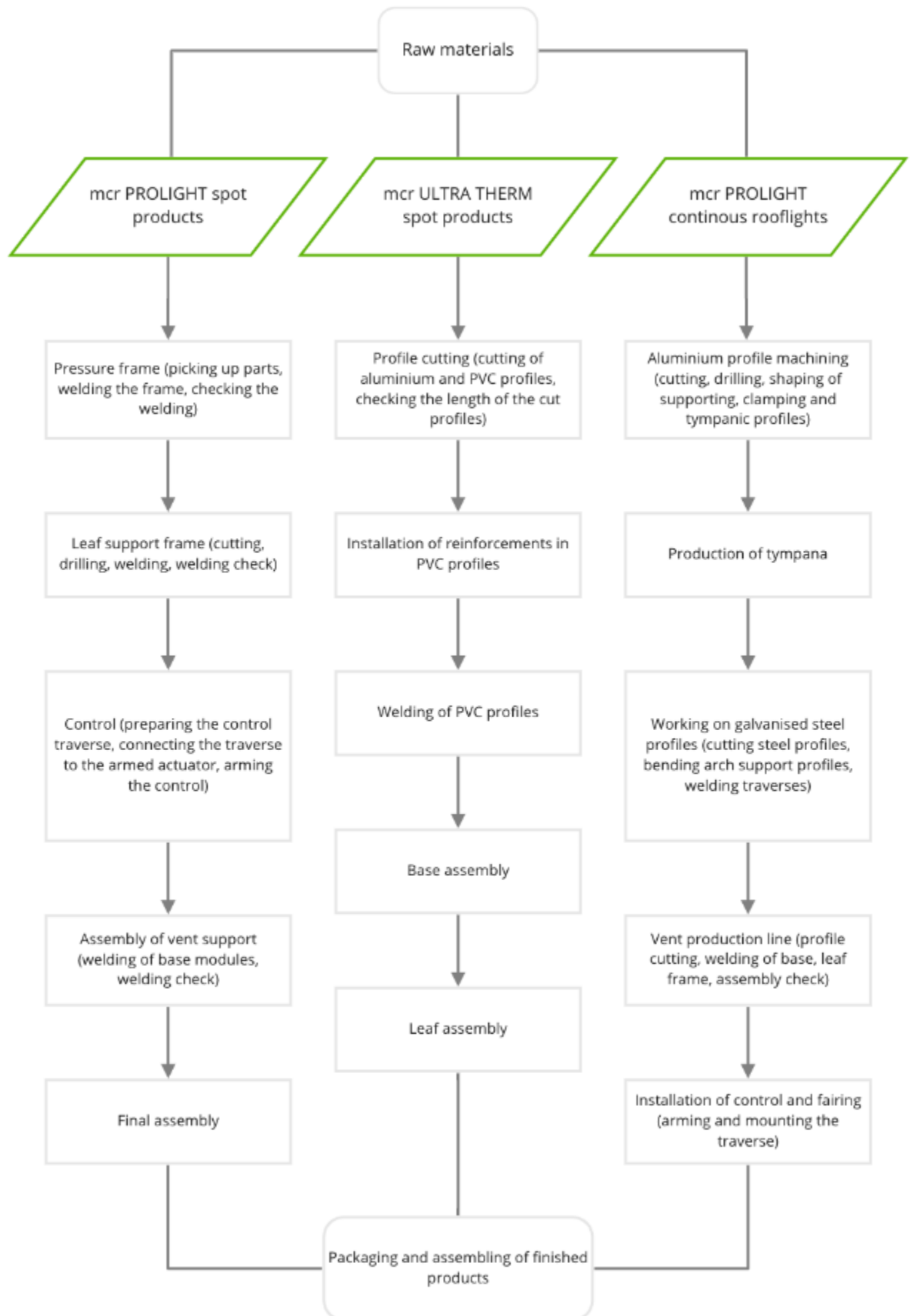
The impacts of representative products were aggregated using a weighted average. The results obtained for the representative products can be related proportionally to all products of the mcr PROLIGHT and mcr ULTRA THERM families (knowing their weight).

Calculation rules

The LCA was performed in accordance with the PN-EN 15805 standard and the ITB PCR A document.

Databases

Data for the calculations came from Ecoinvent v. 3.6 and from databases available in Bionova's OneClickLCA software. The characterising factors are CML ver. 4.2 based on EN 15804:2013



Life cycle assessment (LCA) - results



Declared unit

The declared unit is a representative product of a specified mass for each of the three Mercor S.A. product groups.

Information on environmental assessment (MD - module declared, MND - module not declared)

Information on system boundaries (X = included in the life cycle, MND = module not declared)																	
Production stage			Distribution stage		Use stage								Disposal phase			Area outside the system boundary	
Raw material supply	Transport	Manufacturing	Transport from manufacturer to place of use	Assembly	Use/Application	Maintenance	Repair	Replacement	Renovation	Energy contribution to building operation	Water contribution to building operation	Dismantling/demolition	Transport	Waste treatment	Removal	Potential for re-use, recovery or recycling	
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
MD	MD	MD	MD	MD	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	

As the raw materials in the production stage provide the main contribution to the results of the ecological balance, there is a linear relationship between the weight of raw materials and the environmental impact. For further results for other dimensions and product types of Mercor S.A., please use the following formula:

$$P(x) = [P(x1)/x1]^*x$$

P(x): indicator for new declared product,

P(x1): the index obtained for a product representing a product family (e.g. global warming potential (GWP))

x: mass of the new declared product

x1: weight of the product representing the product family

Results for mcr PROLIGHT spot products

Environmental impacts: product unit (m=88 kg) representing mcr PROLIGHT spot products family

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5
Global warming potential	kg CO2 eq.	2,59E+02	1,05E+01	1,78E+01	2,87E+02	6,60E+00	5,46E-02
Potential for stratospheric ozone depletion	kg CFC 11 eq.	1,11E-05	1,43E-05	2,76E-07	2,57E-05	8,94E-06	8,69E-09
Potential for acidification of soil and water	kg SO2 eq.	1,14E+00	1,14E-01	1,20E-01	1,37E+00	7,14E-02	1,29E-04
Eutrophication potential	kg (PO4)3- eq.	1,70E-01	1,40E-02	1,57E-02	2,00E-01	8,82E-03	2,46E-05
Tropospheric ozone creation potential	kg Ethene eq.k	1,17E-01	4,62E-03	5,59E-03	1,27E-01	2,09E-03	1,41E-05
Abiotic depletion potential of non-fossil resources	kg Sb eq.	1,11E-01	6,01E-05	1,78E-06	1,11E-01	3,77E-05	9,56E-08
Abiotic depletion potential of fossil fuels	MJ	3,43E+03	1,11E+03	1,64E+02	4,70E+03	7,02E+02	7,22E-01

Environmental aspects concerning the use of resources: product unit (m=88 kg) representing the spot products family mcr PROLIGHT

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5
Renewable primary energy as an energy carrier	MJ	2,83E+02	2,70E+00	1,13E+01	2,97E+02	1,69E+00	4,51E-03
Renewable primary energy for material use	MJ	4,82E+00	0,00E+00	0,00E+00	4,82E+00	0,00E+00	0,00E+00
Completely renewable primary energy	MJ	2,88E+02	2,70E+00	1,13E+01	3,02E+02	1,69E+00	4,51E-03
Non-renewable primary energy as an energy source	MJ	3,36E+03	1,11E+03	1,82E+02	4,65E+03	7,02E+02	7,22E-01
Non-renewable primary energy for material use	MJ	1,31E+02	0,00E+00	0,00E+00	1,31E+02	0,00E+00	0,00E+00
Completely non-renewable primary energy	MJ	3,49E+03	1,11E+03	1,82E+02	4,78E+03	7,37E+02	7,22E-01
Use of secondary raw materials	kg	9,99E+00	6,10E-02	0,00E+00	1,01E+01	3,83E-02	0,00E+00
Renewable secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-renewable secondary fuels	MJ	1,24E+02	0,00E+00	0,00E+00	1,24E+02	0,00E+00	0,00E+00
Use of fresh water resources	m3	2,47E+00	7,24E-02	8,46E-03	2,55E+00	4,54E-02	7,18E-05

Other environmental information describing waste categories: product unit (m=88 kg) representing the spot products family mcr PROLIGHT

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5
Hazardous waste destined for landfill	kg	6,05E-01	2,81E-01	1,83E-03	8,88E-01	1,76E-01	9,01E-04
Non-hazardous waste destined for disposal	kg	2,17E+01	4,58E+00	5,83E-01	2,69E+01	2,87E+00	1,09E-02
Radioactive waste for disposal	kg	0,00E+0	0,00E+0	0,00E+00	4,58E-02	5,06E-03	4,83E-06
Components to be reused	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials to be recycled	kg	4,45E-03	0,00E+00	0,00E+00	4,45E-03	0,00E+00	0,00E+00
Materials intended for energy recovery	kg	3,32E-11	0,00E+00	0,00E+00	3,32E-11	0,00E+00	0,00E+00
Electricity exported	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Results for mcr ULTRA THERM spot products

Environmental impact: product unit (m=185 kg) representing the mcr ULTRA THERM spot products family

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5
Global warming potential	kg CO2 eq.	7,08E+02	2,22E+01	1,46E+01	7,45E+02	3,07E+00	8,95E-2
Potential for stratospheric ozone depletion	kg CFC 11 eq.	4,22E-05	3,01E-05	2,27E-07	7,25E-05	4,16E-06	1,42E-8
Potential for acidification of soil and water	kg SO2 eq.	2,72E+00	2,40E-01	9,88E-02	3,06E+00	3,32E-02	2,11E-4
Eutrophication potential	kg (PO4)3- eq.	3,66E-01	2,96E-02	1,30E-02	4,09E-01	4,09E-03	4,03E-5
Tropospheric ozone creation potential	kg Ethene eq.k	2,59E-01	9,74E-03	4,61E-03	2,73E-01	1,34E-03	2,31E-5
Abiotic depletion potential of non-fossil resources	kg Sb eq.	1,84E-01	1,27E-04	1,47E-06	1,84E-01	1,75E-05	1,57E-7
Abiotic depletion potential of fossil fuels	MJ	9,26E+03	2,35E+03	1,35E+02	1,17E+04	3,25E+02	1,18E+00

Environmental aspects concerning the use of resources: unit of product (m=185 kg) representing the family of spot products mcr ULTRA THERM

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5
Renewable primary energy as an energy carrier	MJ	8,00E-01	5,92E-01	1,50E-03	1,39E+00	7,86E-01	7,40E-03
Renewable primary energy for material use	MJ	9,20E+01	9,65E+00	4,81E-01	1,02E+02	0,00E+00	0,00E+00
Completely renewable primary energy	MJ	3,06E-01	1,70E-02	1,45E-04	3,23E-01	7,86E-01	7,40E-03
Non-renewable primary energy as an energy source	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,25E+02	1,18E+00
Non-renewable primary energy for material use	MJ	7,42E-03	0,00E+00	0,00E+00	7,42E-03	0,00E+00	0,00E+00
Completely non-renewable primary energy	MJ	5,54E-11	0,00E+00	0,00E+00	5,54E-11	3,41E+02	1,18E+00
Use of secondary raw materials	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,78E-02	0,00E+00
Renewable secondary fuels	MJ	8,00E-01	5,92E-01	1,50E-03	1,39E+00	0,00E+00	0,00E+00
Non-renewable secondary fuels	MJ	9,20E+01	9,65E+00	4,81E-01	1,02E+02	0,00E+00	0,00E+00
Use of fresh water resources	m3	3,06E-01	1,70E-02	1,45E-04	3,23E-01	2,11E-02	1,18E-04

Other environmental information describing waste categories: unit of product (m=185 kg) representing the family of spot products mcr ULTRA THERM

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5
Hazardous waste destined for landfill	kg	8,00E-01	5,92E-01	1,50E-03	1,39E+00	8,16E-02	1,48E-03
Non-hazardous waste destined for disposal	kg	9,20E+01	9,65E+00	4,81E-01	1,02E+02	1,33E+00	1,78E-02
Radioactive waste for disposal	kg	0,00E+0	0,00E+0	0,00E+0	3,23E-01	2,35E-03	7,92E-06
Components to be reused	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials to be recycled	kg	7,42E-03	0,00E+00	0,00E+00	7,42E-03	0,00E+00	0,00E+00
Materials intended for energy recovery	kg	5,54E-11	0,00E+00	0,00E+00	5,54E-11	0,00E+00	0,00E+00
Electricity exported	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Results for mcr PROLIGHT continuous rooflights

Environmental impact: product unit (m=2335 kg) representing the mcr PROLIGHT continuous rooflight family

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5
Global warming potential	kg CO2 eq.	1,20E+04	2,80E+02	9,21E+01	1,24E+04	8,45E+00	2,83E-01
Potential for stratospheric ozone depletion	kg CFC 11 eq.	2,40E-04	3,80E-04	1,43E-06	6,21E-04	1,15E-05	4,50E-08
Potential for acidification of soil and water	kg SO2 eq.	4,54E+01	3,03E+00	6,21E-01	4,91E+01	9,14E-02	6,67E-04
Eutrophication potential	kg (PO4)3- eq.	5,11E+00	3,73E-01	8,17E-02	5,56E+00	1,13E-02	1,27E-04
Tropospheric ozone creation potential	kg Ethene eq.k	3,99E+00	1,23E-01	2,90E-02	4,14E+00	3,71E-03	7,31E-05
Abiotic depletion potential of non-fossil resources	kg Sb eq.	2,25E+00	1,60E-03	9,24E-06	2,25E+00	4,82E-04	4,95E-07
Abiotic depletion potential of fossil fuels	MJ	1,49E+05	2,96E+04	8,51E+02	1,79E+05	8,94E+02	3,74E+00

Environmental aspects concerning the use of resources: product unit (m=2335 kg) representing the mcr PROLIGHT continuous rooflight family

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5
Renewable primary energy as an energy carrier	MJ	2,91E+04	7,18E+01	5,87E+01	2,92E+04	2,17E+00	2,34E-02
Renewable primary energy for material use	MJ	2,53E+02	0,00E+00	0,00E+00	2,53E+02	0,00E+00	0,00E+00
Completely renewable primary energy	MJ	2,94E+04	7,18E+01	5,87E+01	2,95E+04	2,17E+00	2,34E-02
Non-renewable primary energy as an energy source	MJ	1,58E+05	2,96E+04	9,43E+02	1,89E+05	8,94E+02	3,74E+00
Non-renewable primary energy for material use	MJ	7,24E+03	0,00E+00	0,00E+00	7,24E+03	0,00E+00	0,00E+00
Completely non-renewable primary energy	MJ	1,65E+05	2,96E+04	9,43E+02	1,96E+05	9,39E+02	3,74E+00
Use of secondary raw materials	kg	2,27E+02	1,62E+00	0,00E+00	2,29E+02	4,90E-01	0,00E+00
Renewable secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-renewable secondary fuels	MJ	2,50E+03	0,00E+00	0,00E+00	2,50E+03	0,00E+00	0,00E+00
Use of fresh water resources	m3	9,17E+02	1,93E+00	4,39E-02	9,19E+02	5,81E-02	3,72E-04

Other environmental information describing waste categories: Product unit (m=2335 kg) representing the mcr PROLIGHT continuous rooflight family

Indicator	Unit	A1	A2	A3	A1-A3	A4	A5
Hazardous waste destined for landfill	kg	2,73E+01	7,48E+00	9,51E-03	3,48E+01	2,26E-01	4,67E-03
Non-hazardous waste destined for disposal	kg	1,72E+03	1,22E+02	3,03E+00	1,85E+03	3,67E+00	5,63E-02
Radioactive waste for disposal	kg	6,22E+00	2,15E-01	9,14E-04	6,44E+00	6,48E-03	2,50E-05
Components to be reused	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials to be recycled	kg	2,32E+00	0,00E+00	0,00E+00	2,32E+00	0,00E+00	0,00E+00
Materials intended for energy recovery	kg	6,71E-10	0,00E+00	0,00E+00	6,71E-10	0,00E+00	0,00E+00
Electricity exported	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Verification

The verification process for this EPD is in accordance with ISO 14025 and ISO 21930. Once verified, this EPD is valid for a period of 5 years.

EN 15804 serves as the basis for ITB PCR A
Independent verification according to ISO 14025 (subsection 8.1.3)
 Internal external

External verification of EPD: Michał Plasecki, Professor ITB, m.plasecki@itb.pl
Verification of input data, LCI audit, LCA: Agnieszka Kaczmarek, JW+A, a.kaczmarek@jw-a.pl
LCA verification: Michał Plasecki, Professor ITB, m.plasecki@itb.pl

The purpose of this declaration is to provide a basis for the assessment of buildings and other building work. Comparison of EPD data only makes sense if all data sets to be compared have been developed in accordance with EN 15804 and product-specific performance characteristics and their impact on construction work are taken into account.

Normative references

- ITB PCR A General Product Category Rules for Construction Products
- ISO 14025:2006 Environmental labels and declarations - Type III environmental declarations - Principles and procedures
- ISO 21930:2017 Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services
- ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines
- ISO 15686-1:2011 Buildings and constructed assets - Service life planning - Part 1: General principles and framework
- ISO 15686-8:2008 Buildings and constructed assets - Service life planning - Part 8: Reference service life and service-life estimation
- BS EN 15804+A1:2014-04 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
- BS EN 15804+A2:2020-03 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
- PN-EN 15942:2012 Sustainability of construction works - Environmental product declarations - Communication format business-to-business
- BS EN 12101-2:2017 Smoke and heat control systems - Part 2: Natural smoke and heat exhaust ventilators
- BS EN 1873:2014+A1:2016 Prefabricated accessories for roofing - Individual rooflights of plastics - Product specification and test methods
- BS EN 14963:2006 Roof coverings. Continuous rooflights of plastics with or without upstands. Classification, requirements and test methods



Instytut Techniki Budowlanej

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Thermal Physics, Acoustics and Environment Department

02-656 Warsaw, Ksawerów 21

CERTIFICATE № 259/2021

of TYPE III ENVIRONMENTAL DECLARATION

Product:

**Vents and skylights type mcr PROLIGHT and mcr ULTRA THERM
Continuous rooflights type mcr PROLIGHT with vents**

Manufacturer:

Mercor S.A.

ul. Grzegorza z Sanoka 2, 80-408 Gdańsk, Poland

confirms the correctness of the data included in the development of
Type III Environmental Declaration and accordance with the requirements of the standard

PN-EN 15804+A1

Sustainability of construction works.

Environmental product declarations.

Core rules for the product category of construction products.

This certificate, issued for the first time on 20th September 2021 is valid for 5 years
or until amendment of mentioned Environmental Declaration

Head of the Thermal Physic, Acoustics
and Environment Department


Agnieszka Winkler-Skalna, PhD



Deputy Director
for Research and Innovation


Krzysztof Kułczyński, PhD

Warsaw, 20 September 2021