

# Environmental product declaration

In accordance with 14025 and EN15804+A2

## ArcelorMittal Promirock N 300 mm

Superior technical performance and fire protection

**Inspiring Smarter Building** 



**Owner of the declaration:** ArcelorMittal Construction Norge AS

Product: ArcelorMittal Promirock N 300 mm

Declared unit: 1 m2

This declaration is based on Product Category Rules: CEN Standard EN 15804:2012+A2:2019 serves as core PCR NPCR 013:2021 Part B for Steel and aluminium construction products **Program operator:** The Norwegian EPD Foundation

Declaration number: NEPD-4327-3561-EN Registration number: NEPD-4327-3561-EN Issue date: 03.04.2023 Valid to: 03.04.2028

**EPD Software:** LCA.no EPD generator ID: 56794

The Norwegian EPD Foundation



## **General information**

Product ArcelorMittal Promirock N 300 mm

#### Program operator:

Post Box 5250 Majorstuen, 0303 Oslo, Norway The Norwegian EPD Foundation Phone: +47 23 08 80 00 web: post@epd-norge.no

Declaration number: NEPD-4327-3561-EN

#### This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR NPCR 013:2021 Part B for Steel and aluminium construction products

#### **Statement of liability:**

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

#### **Declared unit:**

1 m2 ArcelorMittal Promirock N 300 mm

#### Declared unit with option:

A1-A3,A4,A5,C1,C2,C3,C4,D

#### **Functional unit:**

#### General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Individual third party verification of each EPD is not required when the EPD tool is i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPDNorway, and iii) the proccess is reviewed annualy. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools.

#### Verification of EPD tool:

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools. Third party verifier:

#### **Owner of the declaration:**

ArcelorMittal Construction Norge AS Contact person: Stig Tore Sjaastad Phone: +47 41 723939 e-mail: stig-tore.sjaastad@arcelormittal.com

#### Manufacturer:

ArcelorMittal Construction Norge AS Sørumgata 11A 2000 Lillestrøm, Norway

#### Place of production:

ArcelorMittal Construction Sverige AB - Kungshamn Televerksvägen 5 456 33 Kungshamn, Sweden

#### Management system:

ISO 9001, ISO 14001, ISO 45001

#### **Organisation no:**

976289862

#### Issue date: 03.04.2023

Valid to: 03.04.2028

Year of study: 2022

#### **Comparability:**

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

#### **Development and verification of EPD:**

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD Norway.

Developer of EPD: Stig Tore Sjaastad

Reviewer of company-specific input data and EPD: Bendik Hovde

**Approved:** 

Håkon Hauan Managing Director of EPD-Norway

Alexander Borg, Asplan Viak AS (no signature required)



## Product

#### **Product description:**

Promirock N from ArcelorMittal Construction Sverige AB is a double skin, organic coated steel faced sandwich panel solution with a core of mineral wool. The EPD contains several different panel types: Promirock N85 and Promirock N125. Promirock N sandwich panels can be used for facades, inner walls / partition walls and ceiling applications in buildings, such as industrial, warehouse, commercial or sports facilities. With a wide choice of coatings the panels

even can be used for food industry application and buildings with high demand for cleanliness.

#### **Product specification**

Promirock N double skin steel faced sandwich panels consists of a profiled internal and external face made of a steel core according to EN 10346, Steel grade from S280 GD to S350 GD, which is protected against corrosion with Zinc or Zinc-Magnesium and organic coatings (Polyester or equivalent coating).

The thermal insulating core material is made of mineral wool according to EN 13162 with sealing tapes and is bonded with a non-combustible adhesive according to EN 13501-1 to both sides of the steel sheets.

Promirock N sandwich panels are manufactured in different thicknesses between 100-300mm in two different mineral wool densities. Promirock N sandwich panels can be used as normal or fire-resistant facade, inner walls / partition walls and ceiling applications. The products are wrapped to protect them during handling and

#### Packaging

A typical bundle with sandwich panels consists of EPS spacer, honeycomb cardboard, a plastic wrapping foil and corner pads made of cardboard if required. Sandwich panel facings are protected with a plastic

strip foil (PE) to protect the steel facings from mechanical damage during loading, unloading, storage and installation.

Packaging material is recycable or alternatively utilised as waste to energy. Packaging materials are sorted at construction sites according to local regulations by the customer.

Materials	kg	%
Binders and Resins	0,38	1,09
Insulation - stone wool	25,50	73,09
Metal - Steel	9,01	25,82
Total	34,89	
Packaging	kg	%
Packaging - Paper	0,46	52,88
De dus vis a Dis stis		22.00
Packaging - Plastic	0,28	32,60
Packaging - Polystyrene	0,28	32,60 14,52

#### Technical data:

Promirock N sandwich panels fulfills the requirement of the harmonized standard EN 14509 and EN 13162.

#### Market:

The products are used for structural, self-supporting and non-supporting applications in roof, wall and ceiling structures.

Sandwich panels in wall and roof applications take on tasks of the building physics, especially sound, heat and moisture safety. They simultaneously perform the function of air tightness of the building envelope.

#### **Reference service life, product**

Double skin steel faced sandwich panels used in lightweight metal constructions must withstand a term of protection of at least 15 years. The term of protection is the period until first slight renewals in the surface are required, only if there is no need of frequent inspections and service. The term of protection depends on the location, weather conditions and the quality of the coating.

#### Reference service life, building or construction works

Double skin steel faced sandwich panels exhibit an estimated service life of 40 - 45 years depending on the use conditions, according to the /BSR table/.

## **LCA: Calculation rules**

#### Declared unit:

1 m2 ArcelorMittal Promirock N 300 mm

#### Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

#### **Allocation:**



The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

#### Data quality:

Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804 and different LCA databases. The data quality of the raw materials in A1 is presented in the table below.

Materials	Source	Data quality	Year
Packaging - Paper	ecoinvent 3.6	Database	2019
Packaging - Plastic	ecoinvent 3.6	Database	2019
Packaging - Polystyrene	ecoinvent 3.6	Database	2019
Binders and Resins	EPD-FEI-20220107-IBG1-EN	EPD	2022
Metal - Steel	Supplier	EPD (EN15804A1) + company dataset (EN15804A2)	2020
Insulation - stone wool	Supplier	Specific	2022



## System boundaries (X=included, MND=module not declared, MNR=module not relevant)

	Product sta	ge	Constr installati			Use stage					End of li	ife stage		Beyond the system boundaries		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De- construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery- Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Х	Х	Х	Х	Х	MND	MND	MND	MND	MND	MND	MND	Х	Х	Х	Х	Х

#### System boundary:

Type of EPD: cradle to gate - with options. All relevant life cycle stages are covered.

The product stage A1-A3 include the following:

- Transporting and Receiving the raw material to the fabrication plant
- All relevant production processes in the plant including energy inputs, emissions and the electricity consumptions

• Waste processing until end of waste state or disposal of any waste residues during the production of the sandwich panels. For the mineral wool a used product take-back system is agreed with the supplier, which enable the recycling of old stone wool slabs, wool dust, boards and cut-offs. Sandwich panel steel sheet is a fully recyclable material and scrap steel has a strong market position and can be re-used

• Production and recycling of packaging

• Manufacturing of the sandwich panel products

The construction installation stage A4-A5 include the following:

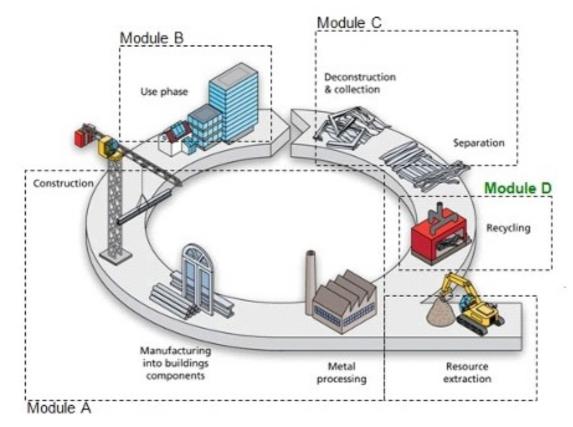
• For the transport to the construction site an assumption of an average truck trailer of 16-32 tonnes payload has been taken into consideration. Transport distance of the finished product to the customer has been estimated with approximate 300km. All values are based on annual average delivery data

• For the assembly stage average values been taken. Accessories, such as fasteners, sealing materials and flashings, used in the phase A5 to complete the installation of the sandwich panels are not included in the life cycle assessment

The end of life stage C1-C4 include the following:

- Stages C1-C4 include average assumptions, provision for all materials and transports, and use of related energy and water
- Assumption is made that the sandwich panels will be disposed 100% to landfill
- The Steel is fully recyclable in form of scrap by separating the steel sheets from the insulation core

• Packaging waste is recycled by the customers through their waste management system and cardboards can be re-used or recycled The use stage B1-B7 have not been included. In addition, module D (Beyond the system boundaries) is included.



Additional technical information:



## LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, HVO, EURO 6 (kgkm) - RER	36,7 %	300	0,043	l/tkm	12,90
Assembly (A5)	Unit	Value			
Waste, municipal solid waste, to average treatment - A3, A5, inkl. transp. (kg)	kg	0,13			
Waste, packaging, paper printed, to average treatment - A5, inkl. transp. (kg)	kg	0,46			
Waste, plastic, mixture, to average treatment - A5, inkl. transp. (kg)	kg	0,28			
De-construction demolition (C1)	Unit	Value			
Demolition of building per kg of steel, C1 (kg)	kg/DU	18,61			
Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Transport to waste processing (C2) Truck, 16-32 tonnes, EURO 6 (km)		Distance (km) 80	Fuel/Energy Consumption 0,043	Unit I/tkm	
	(incl. return) %				(Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km)	(incl. return) % 36,7 %	80			(Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km) Waste processing (C3)	(incl. return) % 36,7 % Unit	80 Value			(Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km) Waste processing (C3) Materials to recycling (kg)	(incl. return) % 36,7 % Unit kg	80 Value 8, 11			(Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km) Waste processing (C3) Materials to recycling (kg) Disposal (C4)	(incl. return) % 36,7 % Unit kg Unit	80 Value 8,11 Value			(Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km) Waste processing (C3) Materials to recycling (kg) Disposal (C4) Waste, inert waste, to landfill (kg)	(incl. return) % 36,7 % Unit kg Unit kg	80 Value 8,11 Value 25,88			(Liter/tonne)



## **LCA: Results**

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Enviro	Environmental impact													
	Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D				
P	GWP-total	kg CO <sub>2</sub> -eq	4,23E+01	4,17E-01	8,96E-01	7,44E-02	4,68E-01	0,00E+00	2,16E-01	-6,95E+00				
P	GWP-fossil	kg CO <sub>2</sub> -eq	4,47E+01	4,16E-01	8,94E-02	7,44E-02	4,67E-01	0,00E+00	2,16E-01	-6,94E+00				
P	GWP-biogenic	kg CO <sub>2</sub> -eq	-2,41E+00	7,05E-04	8,06E-01	1,40E-05	1,93E-04	0,00E+00	2,51E-04	-3,83E-03				
P	GWP-luluc	kg CO <sub>2</sub> -eq	4,14E-02	6,49E-04	5,73E-06	5,87E-06	1,66E-04	0,00E+00	5,29E-05	-3,11E-03				
Ò	ODP	kg CFC11 -eq	3,95E-07	8,58E-08	3,83E-09	1,61E-08	1,06E-07	0,00E+00	8,22E-08	-2,20E-07				
Ê	AP	mol H+ -eq	2,18E-01	2,92E-03	1,06E-04	7,79E-04	1,34E-03	0,00E+00	1,93E-03	-3,45E-02				
	EP-FreshWater	kg P -eq	3,89E-04	1,53E-05	2,64E-07	2,71E-07	3,73E-06	0,00E+00	2,44E-06	-4,27E-04				
	EP-Marine	kg N -eq	3,82E-02	7,72E-04	7,45E-05	3,44E-04	2,66E-04	0,00E+00	7,16E-04	-7,14E-03				
-	EP-Terrestial	mol N -eq	7,17E-01	8,63E-03	4,05E-04	3,72E-03	2,97E-03	0,00E+00	7,90E-03	-7,30E-02				
	РОСР	kg NMVOC -eq	1,04E-01	3,16E-03	1,19E-04	1,04E-03	1,14E-03	0,00E+00	2,26E-03	-3,48E-02				
ь£Э	ADP-minerals&metals <sup>1</sup>	kg Sb -eq	1,73E-03	5,06E-05	3,82E-07	1,14E-07	1,29E-05	0,00E+00	1,95E-06	-1,20E-04				
A	ADP-fossil <sup>1</sup>	MJ	6,03E+02	8,81E+00	2,63E-01	1,02E+00	7,06E+00	0,00E+00	5,97E+00	-5,84E+01				
6	WDP <sup>1</sup>	m <sup>3</sup>	1,32E+03	2,61E+01	6,99E-01	2,18E-01	6,83E+00	0,00E+00	3,63E+01	3,60E+02				

GWP total Global Warming Potential total; GWP fossil Global Warming Potential fossil fuels; GWP biogenic Global Warming Potential biogenic; GWP luluc Global W Potential land use change; ODP Ozone Depletion; AP Acidification; EP freshwater Eutrophication aquatic freshwater; EP marine Eutrophication aquatic marine; EP terrestrial Eutrophication terrestrial ;POCP Photochemical zone formation; ADPE Abiotic Depletion Potential minerals and metals; ADPf Abiotic Depletion Potential fossil fuels;

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

**Remarks to environmental impacts** 



Addition	Additional environmental impact indicators												
In	dicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D			
	PM	Disease incidence	2,11E-06	9,65E-08	1,45E-09	9,43E-08	2,86E-08	0,00E+00	4,11E-08	-5,76E-07			
(**) Q	IRP <sup>2</sup>	kgBq U235 -eq	1,48E+00	2,88E-02	1,10E-03	4,47E-03	3,09E-02	0,00E+00	2,72E-02	2,49E-02			
	ETP-fw <sup>1</sup>	CTUe	1,86E+02	1,29E+01	5,42E-01	5,60E-01	5,24E+00	0,00E+00	3,25E+00	-3,87E+02			
44. ****	HTP-c <sup>1</sup>	CTUh	2,52E-08	0,00E+00	2,30E-11	1,90E-11	0,00E+00	0,00E+00	1,32E-10	-3,34E-08			
42 00	HTP-nc <sup>1</sup>	CTUh	3,37E-07	2,15E-08	8,54E-10	5,21E-10	5,72E-09	0,00E+00	2,34E-09	7,26E-07			
	SQP <sup>1</sup>	dimensionless	4,88E+02	1,64E+01	2,85E-01	1,25E-01	4,94E+00	0,00E+00	2,29E+01	-4,37E+00			

PM Particulate Matter emissions; IRP Ionizing radiation – human health; ETP-fw Eco toxicity – freshwater; HTP-c Human toxicity – cancer effects; HTP-nc Human toxicity – non cancer effects; SQP Soil Quality (dimensionless)

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

2. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.



Resource use										
	ndicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
i S	PERE	MJ	1,99E+02	3,99E-01	6,17E-03	5,58E-03	1,01E-01	0,00E+00	2,11E-01	-4,74E+00
	PERM	MJ	6,76E+00	0,00E+00	-6,48E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
° <b>∓</b> ₃	PERT	MJ	2,28E+02	3,99E-01	-6,47E+00	5,58E-03	1,01E-01	0,00E+00	2,11E-01	-4,74E+00
Ð	PENRE	MJ	2,44E+02	8,81E+00	2,63E-01	1,02E+00	7,07E+00	0,00E+00	5,97E+00	-5,84E+01
eå.	PENRM	MJ	4,07E+01	0,00E+00	-4,87E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
IA	PENRT	MJ	6,03E+02	8,81E+00	-4,61E+00	1,02E+00	7,07E+00	0,00E+00	5,97E+00	-5,84E+01
	SM	kg	2,08E+00	0,00E+00	1,23E-03	5,03E-04	0,00E+00	0,00E+00	2,57E-03	3,28E+00
1	RSF	MJ	1,37E-01	1,30E-02	1,82E-04	1,36E-04	3,62E-03	0,00E+00	4,38E-03	2,51E-01
	NRSF	MJ	9,79E-02	4,47E-02	6,51E-04	-2,05E-03	1,29E-02	0,00E+00	9,49E-03	7,30E+00
96	FW	m <sup>3</sup>	4,00E-01	3,60E-03	2,34E-04	5,27E-05	7,56E-04	0,00E+00	7,34E-03	-1,46E-02

PERE Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM Use of renewable primary energy resources used as raw materials; PERT Total use of renewable primary energy resources; PENRE Use of non renewable primary energy excluding non-renewable primary energy resources used as raw materials; PERT Total use of non renewable primary energy resources; SM use of secondary materials; RSF Use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable primary energy resources; SM use of secondary materials; RSF Use of renewable primary energy resources; SM use of secondary materials; RSF Use of net fresh water

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed



End of life - Was	End of life - Waste												
Inc	dicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D			
A	HWD	kg	8,15E-01	1,24E-03	2,46E-02	3,02E-05	3,64E-04	0,00E+00	4,15E-04	-3,61E-02			
Ū	NHWD	kg	3,15E+00	1,31E+00	1,70E-01	1,21E-03	3,44E-01	0,00E+00	2,68E+01	-2,84E+00			
2	RWD	kg	9,64E-03	3,53E-05	1,65E-06	7,12E-06	4,81E-05	0,00E+00	3,89E-05	1,91E-05			

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed;

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

End	End of life - Output flow													
	Indicat	or	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D			
	$\otimes \triangleright$	CRU	kg	0,00E+00										
	43>	MFR	kg	1,01E+00	0,00E+00	5,73E-01	4,94E-04	0,00E+00	8,11E+00	2,34E-03	3,29E+00			
	DF	MER	kg	3,63E-04	0,00E+00	1,95E-06	1,53E-06	0,00E+00	0,00E+00	4,39E-05	2,09E-03			
	$\mathcal{D}$	EEE	MJ	5,23E-01	0,00E+00	9,30E-02	5,25E-06	0,00E+00	0,00E+00	3,59E-03	-2,39E-03			
	D	EET	MJ	7,91E+00	0,00E+00	1,41E+00	7,95E-05	0,00E+00	0,00E+00	5,44E-02	-3,61E-02			

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported energy Thermal

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

Biogenic Carbon Content								
Indicator	Unit	At the factory gate						
Biogenic carbon content in product	kg C	0,00E+00						
Biogenic carbon content in accompanying packaging	kg C	6,85E-01						

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2



## **Additional Norwegian requirements**

#### Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Data source	Amount	Unit
Electricity, Sweden (kWh)	ecoinvent 3.6	54,94	g CO2-eq/kWh

#### **Dangerous substances**

The product contains no substances given by the REACH Candidate list or the Norwegian priority list.

#### Indoor environment

#### **Additional Environmental Information**

Environmental impac	nvironmental impact indicators EN 15804+A1 and NPCR Part A v2.0											
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D			
GWP	kg CO <sub>2</sub> -eq	2,84E+01	4,00E-01	9,37E-02	7,35E-02	4,63E-01	0,00E+00	2,12E-01	-6,50E+00			
ODP	kg CFC11 -eq	3,15E-07	6,44E-08	3,12E-09	1,28E-08	8,58E-08	0,00E+00	6,62E-08	-2,23E-07			
POCP	kg C <sub>2</sub> H <sub>4</sub> -eq	6,92E-03	1,46E-04	7,08E-06	1,13E-05	5,65E-05	0,00E+00	4,98E-05	-4,29E-03			
AP	kg SO <sub>2</sub> -eq	6,65E-02	1,62E-03	5,85E-05	1,09E-04	9,23E-04	0,00E+00	5,89E-04	-2,60E-02			
EP	kg PO <sub>4</sub> <sup>3-</sup> -eq	7,99E-03	2,40E-04	2,99E-05	1,21E-05	9,82E-05	0,00E+00	6,95E-05	-3,86E-03			
ADPM	kg Sb -eq	1,73E-03	5,06E-05	3,82E-07	1,14E-07	1,29E-05	0,00E+00	1,95E-06	-1,20E-04			
ADPE	MJ	3,57E+02	8,07E+00	2,55E-01	1,02E+00	6,92E+00	0,00E+00	5,72E+00	-6,35E+01			
GWPIOBC	kg CO <sub>2</sub> -eq	2,90E+00	4,17E-01	0,00E+00	9,99E+01	4,68E-01	0,00E+00	0,00E+00	-1,04E+01			

GWP Global warming potential; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non fossil resources; ADPE Abiotic depletion potential for fossil resources; GWP-IOBC/GHG Global warming potential calculated according to the principle of instantanious oxidation (except emissions and uptake of biogenic carbon)



## Bibliography

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.

EN 15804:2012 + A2:2019 Environmental product declaration - Core rules for the product category of construction products. ISO 21930:2017 Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction

products.

ecoinvent v3, Allocation, cut-off by classification, Swiss Centre of Life Cycle Inventories.

Iversen et al., (2021) eEPD v2021.09 Background information for EPD generator tool system verification, LCA.no Report number: 07.21 Graafland and Iversen, (2022) EPD generator for EPD generator for NPCR 013 Part B for Steel and Aluminum, Background information for EPD generator application and LCA data, LCA.no report number: 08.22

NPCR Part A: Construction products and services. Ver. 2.0. April 2021, EPD-Norge.

NPCR 013 Part B for Steel and Aluminium Construction Products , Ver. 4.0, 06.10.2021, EPD Norway.

and new over	Program operator and publisher		Phone:	+47 23 08 80 00
C epd-norway	The Norwegian EPD Foundation		e-mail:	post@epd-norge.no
Global Program Operator	Post Box 5250 Majorstuen, 0303 Oslo, Norway		web:	www.epd-norge.no
	Owner of the declaration:	Phone:	+47 4	1 723939
ArcelorMittal	ArcelorMittal Construction Norge AS	e-mail:	stig- tore.sja	aastad@arcelormittal.com
	Sørumgata 11A, 2000 Lillestrøm	web:		
LCA	Author of the Life Cycle Assessment		Phone:	+47 916 50 916
	LCA.no AS		e-mail:	post@lca.no
no	Dokka 6B, 1671		web:	www.lca.no
$\frown$	Developer of EPD generator		Phone:	+47 916 50 916
	LCA.no AS		e-mail:	post@lca.no
	Dokka 6B,1671 Kråkerøy		web:	www.lca.no
	ECO Platform		web:	www.eco-platform.org
	ECO Portal		web:	ECO Portal
VERTIED				