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NIDA

gypsum plasterboards



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Basic information

This declaration is the type III Environmental Product Declaration (EPD) based on EN 15804:2012+A2:2019 and verified according to ISO 14025 by an external auditor. It contains the information on the impacts of the declared construction materials on the environment. Their aspects were verified by the independent body according to ISO 14025. Basically, a comparison or evaluation of EPD data is possible only if all the compared data were created according to EN 15804:2012+A2:2019 (see point 5.3 of the standard).

Life cycle analysis (LCA): A1-A3, C2-C4 and D modules in accordance with EN 15804:2012+A2:2019 (Cradle to Gate with options)

The year of preparing the EPD: 2020

Product standard: EN 520+A1:2009

Service Life: 10 years

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

Declared unit: 1 m²

Reasons for performing LCA: B2B

Representativeness: Romanian product

MANUFACTURER

ETEX group is a manufacturer of construction products and systems dedicated for both internal and external applications across all construction sectors. Etex operates manufacturing, innovation and test centres around the world. Global and regional brands of Etex include Promat, Siniat, Durlock, Gyplac, Kalsi and Pladur.



Fig. 1. A view of the ETEX Building Performance S.A. production hall in Turceni (Romania).

PRODUCT DESCRIPTION AND APPLICATION

NIDA gypsum plasterboard is a panel made of calcium sulfate dihydrate (gypsum) usually pressed between a facer and a backer. Plasterboard is also known as gypsum board, drywall, wallboard or wall panels. It is usually used indoors for dry wall finishings, the construction of partition walls, fixed or suspended ceilings and tiles. Cardboard gypsum systems have become an alternative to traditional finishes made with masonry, plaster and masonry.

Table 1. Composition of NIDA gypsum plasterboards

Component	Percentage in mass (%)
Stucco (base on FGD)	92.7 – 95.9
Starch	0.1 - 0.7
Fibre glass	0 – 4.6
Vermiculite	0 – 3.4
Paper	2.5 – 5.9
Additives	< 1.3

Table 2. Characteristic of NIDA gypsum plasterboards

Product	Available sizes:	Features:
NIDA gypsum plasterboard	1200 x 2000/2500/2600/2700/2800/3000 1250 x 2000/2600 600 x 1200/2000	Colours: ivory / green / pink / blue ivory / green / pink ivory / green
	Thickness:	Classification:
Nida Standard	9.5 mm; 12.5 mm; 15 mm; 18 mm	class A
Nida Smart	12.5 mm	class A
Nida Flam	12.5 mm; 15 mm; 18 mm	class DF
Nida HydroFlam	12.5 mm; 15 mm	class DFH2
Nida Flam Plus	12.5 mm	class DFR
Nida Acoustic	12.5 mm	class F
Nida Hydro	9.5 mm; 12.5 mm; 15 mm	class AH2
Nida Flex	6.5 mm	class A

TECHNICAL PROPERTIES

The performance of the products identified in *Table 2 -Nida Gypsum plasterboard* is in conformity with the declared performance in *Table 2 – classification*, according to EN 520 + A1: 2009 “Gypsum Plasterboard: definitions and requirements and test methods”

Follow the recommendations made in the Technical Data Sheet and the Safety Data Sheet.

LIFE CYCLE ASSESSMENT (LCA) – general rules applied

Allocation

The allocation rules used for this EPD are based on general ITB PCR A. Production of the NIDA gypsum plasterboards is a line process in one factory of ETEX Building Performance S.A. in Turceni (Romania). Allocation was done on product mass basis. All impacts from raw materials extraction are allocated in A1 module of the LCA. 100% of impacts from line production of ETEX Building Performance S.A. were inventoried and 100% were allocated to the NIDA gypsum plasterboards production. Utilization of packaging material was taken into consideration. Module A2 includes transport of raw materials such as gypsum (natural and FGD), papers, additives and packaging materials from their suppliers to ETEX Building Performance S.A. in Turceni. Municipal wastes of factory were allocated to module A3. Energy supply was inventoried for whole factory and 100% was allocated to the NIDA gypsum plasterboards production. Emissions in the factory are measured and were allocated to module A3.

System limits

The life cycle analysis of the declared products covers “Product Stage”, A1-A3, C2-C4 and D modules (Cradle to Gate with options) in accordance with EN 15804:2012+A2:2019 and ITB PCR A. The details of systems limits are provided in product technical report. All materials and energy consumption inventoried in factory and were included in calculation. In the assessment, all significant parameters from gathered production data are considered, i.e. all material used per formulation, utilized thermal energy, internal fuel and electric power consumption, direct production waste, and all available emission measurements. It can be assumed that the total sum of omitted processes does not exceed 5% of all impact categories. In accordance with EN 15804:2012+A2:2019, machines and facilities (capital goods) required for and during production are excluded, as is transportation of employees.

A1 and A2 Modules: Raw materials supply and transport

Natural gypsum and synthetic gypsum (FGD) come from local suppliers while additives, papers and packaging materials come from foreign suppliers. Data on transport of the different products to the manufacturing plants is collected and modelled for factory by assessor. Means of transport include trucks. For calculation purposes Romanian and European fuel averages are applied.

A3: Production

The technological process for obtaining the plaster is based on the dehydration of synthetic gypsum (FGD). The dehydration of the gypsum is done in the basic equipment, rotary kiln which used steam power passed from pipes. The plaster resulting from dehydration is transported to the grinding stage and then transported to storage silos. The plaster (stucco), used as a raw material for the production of gypsum board is fed in the mixing station from the storage silo with the help of conveyor snakes, weighed on the weighing tape. The raw materials used are purchased from Romania, the countries

of the European Union and Ukraine. The technological scheme for the production of plasterboards: feeding - dosing of basic raw materials - dosing of additives - mixing - molding plate - drying - stacking - packing / palletizing – storage. The production process of NIDA gypsum plasterboards is presented in Fig. 2.

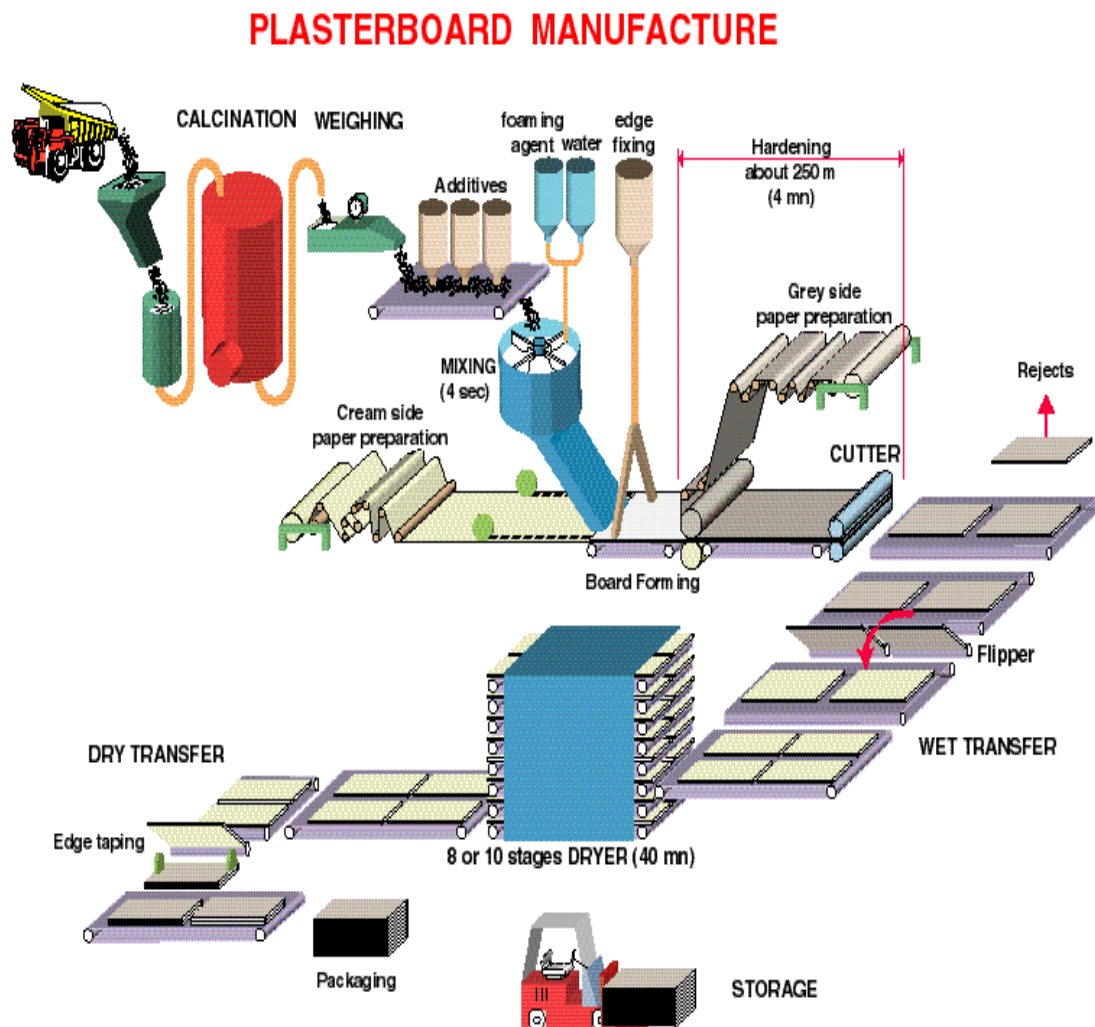


Fig. 2. A scheme of manufacturing of the NIDA gypsum plasterboards by ETEX Building Performance S.A. in Turceni (Romania).

End of life scenarios

It is assumed that at the end of life 50% of the NIDA plasterboards is collected and forwarded to recycling plant (C3) located 200 km away from a demolition site. The remaining 50% of the plasterboards is collected in the form of mixed construction wastes and transported to landfill (C4) at the distance of 50 km. Transportation with < 16 t loaded lorry with 85% capacity utilization and fuel consumption of 25 L per 100 km was included in the calculations (C2). Module D describes recycling potential expressed as net impact.

Environmental Product Declaration Type III ITB No. 107/2020

Table 4. End of life scenario for the NIDA gypsum plasterboards

Material	Material recovery	Recycling	Landfilling
NIDA gypsum plasterboards	100%	50%	50%

Data collection period

The data for manufacture of the declared products refer to period between 01.01.2018 – 31.12.2018 (1 year). The life cycle assessments were prepared for Romania as reference area.

Data quality

The values determined to calculate the LCA originate from verified ETEX Building Performance S.A. inventory data.

Assumptions and estimates

The impacts of the representative the NIDA gypsum plasterboards were aggregated using weighted average. Impacts were inventoried and calculated for all products of the NIDA gypsum plasterboards.

Calculation rules

LCA was done in accordance with ITB PCR A document.

Databases

The data for the processes come from the following databases: Ecoinvent v.3.6, specific EPDs, ELCD, ÖKOBAUDAT, Ullmann's, ITB-Data. Specific data quality analysis was a part of external ISO 14001 audit. Characterization factors are CML ver. 4.2 based on EN 15804.

LIFE CYCLE ASSESSMENT (LCA) – Results

Declared unit

The declaration refers to declared unit (DU) – 1 m² of the NIDA gypsum plasterboards manufactured by ETEX Building Performance S.A.

Table 5. System boundaries for the environmental characteristic of the NIDA gypsum plasterboards manufactured by ETEX Building Performance S.A.

Environmental assessment information (MA – Module assessed, MNA – Module not assessed, INA – Indicator Not Assessed)																
Product stage			Construction process		Use stage							End of life			Benefits and loads beyond the system boundary	
Raw material supply	Transport	Manufacturing	Transport to construction site	Construction-installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction 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
MA	MA	MA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MND	MA	MA	MA	MA

NIDA STANDARD

thickness 9.5 mm

Environmental impacts: (DU) 1 m ² (6.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Global warming potential	kg CO ₂ eq.	9.04E-01	7.10E-02	1.20E+00	7.49E-02	2.16E-01	2.67E-02	-4.19E-02
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	1.93E-08	0.00E+00	0.00E+00	0.00E+00	4.01E-08	7.23E-09	-9.34E-09
Acidification potential of soil and water	kg SO ₂ eq.	2.09E-03	5.19E-04	2.67E-03	8.10E-03	1.80E-01	1.97E-04	-6.38E-02
Formation potential of tropospheric ozone	kg Ethene eq.	2.10E-04	3.78E-05	1.56E-09	5.20E-04	7.22E-03	1.26E-05	-2.56E-03
Eutrophication potential	kg (PO ₄) ³⁻ eq.	3.50E-04	9.15E-05	2.80E-04	1.44E-03	3.88E-04	4.39E-05	-6.70E-05
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	1.31E-04	0.00E+00	4.44E-06	0.00E+00	1.61E-06	1.68E-07	0.00E+00
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	8.78E+00	6.46E-01	2.18E+01	4.27E-01	3.46E+00	6.10E-01	0.00E+00
Environmental aspects on resource use: (DU) 1 m ² (6.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.16E+00	4.22E-02	2.75E-01	2.99E-02	4.15E-01	1.04E-02	-7.06E-02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	8.94E+00	6.78E-01	2.29E+01	4.48E-01	3.41E+00	6.41E-01	-9.07E-01
Use of secondary material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	9.97E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	3.39E-02	0.00E+00	2.24E-02	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m ³	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 m ² (6.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Hazardous waste disposed	kg	1.66E-04	6.23E-04	5.85E-04	3.62E-08	9.08E-06	1.09E-06	-1.43E-06
Non-hazardous waste disposed	kg	8.09E-02	5.78E-01	5.88E-01	3.36E-05	9.83E+00	3.16E+00	-3.10E+00
Radioactive waste disposed	kg	5.98E-06	0.00E+00	0.00E+00	0.00E+00	2.22E-05	4.05E-06	-5.50E-06
Components for re-use	kg	0.00E+00	0.00E+00	5.15E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	2.07E-07	0.00E+00	1.95E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	INA	INA	INA	INA	INA	INA	INA

NIDA STANDARD

thickness 12.5 mm

Environmental impacts: (DU) 1 m ² (7.5 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Global warming potential	kg CO ₂ eq.	1.12E+00	7.10E-02	1.20E+00	8.92E-02	2.53E-01	3.13E-02	-4.80E-02
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	2.71E-08	0.00E+00	0.00E+00	0.00E+00	4.69E-08	8.46E-09	-1.07E-08
Acidification potential of soil and water	kg SO ₂ eq.	2.71E-03	5.19E-04	2.67E-03	9.65E-03	2.10E-01	2.31E-04	-7.32E-02
Formation potential of tropospheric ozone	kg Ethene eq.	2.78E-04	3.78E-05	1.56E-09	6.18E-04	8.45E-03	1.47E-05	-2.94E-03
Eutrophication potential	kg (PO ₄) ³⁻ eq.	5.66E-04	9.15E-05	2.80E-04	1.71E-03	4.54E-04	5.14E-05	-7.68E-05
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	1.51E-04	0.00E+00	4.44E-06	0.00E+00	1.88E-06	1.97E-07	0.00E+00
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	1.13E+01	6.46E-01	2.18E+01	5.08E-01	4.05E+00	7.14E-01	0.00E+00
Environmental aspects on resource use: (DU) 1 m ² (7.5 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.76E+00	4.22E-02	2.75E-01	3.55E-02	4.86E-01	1.21E-02	-8.10E-02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.13E+01	6.78E-01	2.29E+01	5.33E-01	3.99E+00	7.50E-01	-1.04E+00
Use of secondary material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	1.14E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	3.39E-02	0.00E+00	2.67E-02	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m ³	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 m ² (7.5 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Hazardous waste disposed	kg	3.52E-04	6.23E-04	5.85E-04	3.62E-08	1.06E-05	1.27E-06	-1.64E-06
Non-hazardous waste disposed	kg	9.12E-02	5.78E-01	5.88E-01	3.36E-05	1.15E+01	3.70E+00	-3.56E+00
Radioactive waste disposed	kg	9.14E-06	0.00E+00	0.00E+00	0.00E+00	2.60E-05	4.74E-06	-6.30E-06
Components for re-use	kg	0.00E+00	0.00E+00	5.15E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	2.37E-07	0.00E+00	1.95E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	INA	INA	INA	INA	INA	INA	INA

NIDA SMART
thickness 12.5 mm

Environmental impacts: (DU) 1 m² (9.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Global warming potential	kg CO ₂ eq.	1.40E+00	7.10E-02	1.20E+00	1.07E-01	3.20E-01	3.96E-02	-6.13E-02
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	3.29E-08	0.00E+00	0.00E+00	0.00E+00	5.93E-08	1.07E-08	-1.37E-08
Acidification potential of soil and water	kg SO ₂ eq.	3.31E-03	5.19E-04	2.67E-03	1.16E-02	2.66E-01	2.92E-04	-9.33E-02
Formation potential of tropospheric ozone	kg Ethene eq.	3.49E-04	3.78E-05	1.56E-09	7.42E-04	1.07E-02	1.86E-05	-3.75E-03
Eutrophication potential	kg (PO ₄) ³⁻ eq.	7.06E-04	9.15E-05	2.80E-04	2.05E-03	5.75E-04	6.50E-05	-9.80E-05
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	1.91E-04	0.00E+00	4.44E-06	0.00E+00	2.38E-06	2.49E-07	0.00E+00
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	1.38E+01	6.46E-01	2.18E+01	6.09E-01	5.12E+00	9.03E-01	0.00E+00
Environmental aspects on resource use: (DU) 1 m² (9.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2.25E+00	4.22E-02	2.75E-01	4.27E-02	6.15E-01	1.54E-02	-1.03E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.39E+01	6.78E-01	2.29E+01	6.40E-01	5.05E+00	9.49E-01	-1.33E+00
Use of secondary material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	1.45E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	3.39E-02	0.00E+00	3.20E-02	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m ³	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 m² (9.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Hazardous waste disposed	kg	3.69E-04	6.23E-04	5.85E-04	3.62E-08	1.35E-05	1.61E-06	-2.10E-06
Non-hazardous waste disposed	kg	9.85E-02	5.78E-01	5.88E-01	3.36E-05	1.46E+01	4.69E+00	-4.54E+00
Radioactive waste disposed	kg	9.82E-06	0.00E+00	0.00E+00	0.00E+00	3.29E-05	6.00E-06	-8.04E-06
Components for re-use	kg	0.00E+00	0.00E+00	5.15E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	3.01E-07	0.00E+00	1.95E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	INA	INA	INA	INA	INA	INA	INA

Environmental Product Declaration Type III ITB No. 107/2020

NIDA FLAM thickness 12.5 mm

Environmental impacts: (DU) 1 m ² (11.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Global warming potential	kg CO ₂ eq.	1.56E+00	7.10E-02	1.20E+00	1.31E-01	3.84E-01	4.75E-02	-7.40E-02
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	4.01E-08	0.00E+00	0.00E+00	0.00E+00	7.12E-08	1.29E-08	-1.65E-08
Acidification potential of soil and water	kg SO ₂ eq.	4.24E-03	5.19E-04	2.67E-03	1.41E-02	3.20E-01	3.51E-04	-1.13E-01
Formation potential of tropospheric ozone	kg Ethene eq.	3.78E-04	3.78E-05	1.56E-09	9.07E-04	1.28E-02	2.24E-05	-4.53E-03
Eutrophication potential	kg (PO ₄) ³⁻ eq.	8.43E-04	9.15E-05	2.80E-04	2.51E-03	6.90E-04	7.80E-05	-1.18E-04
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	2.01E-04	0.00E+00	4.44E-06	0.00E+00	2.85E-06	2.99E-07	0.00E+00
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	1.63E+01	6.46E-01	2.18E+01	7.45E-01	6.15E+00	1.08E+00	0.00E+00
Environmental aspects on resource use: (DU) 1 m ² (11.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2.16E+00	4.22E-02	2.75E-01	5.21E-02	7.38E-01	1.84E-02	-1.25E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.61E+01	6.78E-01	2.29E+01	7.82E-01	6.06E+00	1.14E+00	-1.60E+00
Use of secondary material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	1.47E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	3.39E-02	0.00E+00	3.91E-02	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m ³	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 m ² (11.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Hazardous waste disposed	kg	3.74E-04	6.23E-04	5.85E-04	3.62E-08	1.93E-06	-2.53E-06	3.73E-04
Non-hazardous waste disposed	kg	6.02E-02	5.78E-01	5.88E-01	3.36E-05	5.62E+00	-5.48E+00	7.42E-02
Radioactive waste disposed	kg	1.30E-05	0.00E+00	0.00E+00	0.00E+00	7.20E-06	-9.71E-06	3.44E-05
Components for re-use	kg	0.00E+00	0.00E+00	5.15E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	3.06E-07	0.00E+00	1.95E+00	0.00E+00	0.00E+00	0.00E+00	3.43E-07
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	INA	INA	INA	INA	INA	INA	INA

Environmental Product Declaration Type III ITB No. 107/2020

NIDA FLAM
thickness 15 mm

Environmental impacts: (DU) 1 m ² (13.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Global warming potential	kg CO ₂ eq.	1.78E+00	7.10E-02	1.20E+00	1.55E-01	4.52E-01	5.59E-02	-8.75E-02
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	4.47E-08	0.00E+00	0.00E+00	0.00E+00	8.38E-08	1.51E-08	-1.95E-08
Acidification potential of soil and water	kg SO ₂ eq.	5.15E-03	5.19E-04	2.67E-03	1.67E-02	3.76E-01	4.12E-04	-1.33E-01
Formation potential of tropospheric ozone	kg Ethene eq.	4.43E-04	3.78E-05	1.56E-09	1.07E-03	1.51E-02	2.63E-05	-5.35E-03
Eutrophication potential	kg (PO ₄) ³⁻ eq.	9.40E-04	9.15E-05	2.80E-04	2.96E-03	8.12E-04	9.18E-05	-1.40E-04
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	2.26E-04	0.00E+00	4.44E-06	0.00E+00	3.36E-06	3.52E-07	0.00E+00
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	1.89E+01	6.46E-01	2.18E+01	8.80E-01	7.23E+00	1.28E+00	0.00E+00
Environmental aspects on resource use: (DU) 1 m ² (13.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2.35E+00	4.22E-02	2.75E-01	6.16E-02	8.68E-01	2.17E-02	-1.47E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.88E+01	6.78E-01	2.29E+01	9.24E-01	7.13E+00	1.34E+00	-1.89E+00
Use of secondary material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	1.65E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	3.39E-02	0.00E+00	4.62E-02	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m ³	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 m ² (13.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Hazardous waste disposed	kg	3.73E-04	6.23E-04	5.85E-04	3.62E-08	1.90E-05	2.27E-06	-2.99E-06
Non-hazardous waste disposed	kg	7.42E-02	5.78E-01	5.88E-01	3.36E-05	2.06E+01	6.62E+00	-6.48E+00
Radioactive waste disposed	kg	3.44E-05	0.00E+00	0.00E+00	0.00E+00	4.64E-05	8.48E-06	-1.15E-05
Components for re-use	kg	0.00E+00	0.00E+00	5.15E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	3.43E-07	0.00E+00	1.95E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	INA	INA	INA	INA	INA	INA	INA

NIDA HYDROFLAM

thickness 12.5 mm

Environmental impacts: (DU) 1 m ² (11.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Global warming potential	kg CO ₂ eq.	1.76E+00	7.10E-02	1.20E+00	1.31E-01	3.83E-01	4.75E-02	-7.39E-02
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	4.01E-08	0.00E+00	0.00E+00	0.00E+00	7.11E-08	1.28E-08	-1.65E-08
Acidification potential of soil and water	kg SO ₂ eq.	5.19E-03	5.19E-04	2.67E-03	1.41E-02	3.19E-01	3.50E-04	-1.13E-01
Formation potential of tropospheric ozone	kg Ethene eq.	4.66E-04	3.78E-05	1.56E-09	9.07E-04	1.28E-02	2.24E-05	-4.52E-03
Eutrophication potential	kg (PO ₄) ³⁻ eq.	9.16E-04	9.15E-05	2.80E-04	2.51E-03	6.89E-04	7.79E-05	-1.18E-04
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	2.14E-04	0.00E+00	4.44E-06	0.00E+00	2.85E-06	2.99E-07	0.00E+00
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	1.96E+01	6.46E-01	2.18E+01	7.45E-01	6.14E+00	1.08E+00	0.00E+00
Environmental aspects on resource use: (DU) 1 m ² (11.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	3.19E+00	4.22E-02	2.75E-01	5.21E-02	7.37E-01	1.84E-02	-1.25E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.98E+01	6.78E-01	2.29E+01	7.82E-01	6.06E+00	1.14E+00	-1.60E+00
Use of secondary material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	1.47E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	3.39E-02	0.00E+00	3.91E-02	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m ³	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 m ² (11.4 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Hazardous waste disposed	kg	3.72E-04	6.23E-04	5.85E-04	3.62E-08	1.61E-05	1.93E-06	-2.53E-06
Non-hazardous waste disposed	kg	9.68E-02	5.78E-01	5.88E-01	3.36E-05	1.75E+01	5.62E+00	-5.48E+00
Radioactive waste disposed	kg	1.88E-04	0.00E+00	0.00E+00	0.00E+00	3.94E-05	7.20E-06	-9.70E-06
Components for re-use	kg	0.00E+00	0.00E+00	5.15E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	3.06E-07	0.00E+00	1.95E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	INA	INA	INA	INA	INA	INA	INA

NIDA FLAM PLUS

thickness 12.5 mm

Environmental impacts: (DU) 1 m ² (11 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Global warming potential	kg CO ₂ eq.	1.58E+00	7.10E-02	1.20E+00	1.31E-01	3.59E-01	4.45E-02	-6.92E-02
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	4.40E-08	0.00E+00	0.00E+00	0.00E+00	6.67E-08	1.20E-08	-1.54E-08
Acidification potential of soil and water	kg SO ₂ eq.	5.25E-03	5.19E-04	2.67E-03	1.41E-02	2.99E-01	3.28E-04	-1.05E-01
Formation potential of tropospheric ozone	kg Ethene eq.	4.18E-04	3.78E-05	1.56E-09	9.07E-04	1.20E-02	2.10E-05	-4.23E-03
Eutrophication potential	kg (PO ₄) ³⁻ eq.	9.52E-04	9.15E-05	2.80E-04	2.51E-03	6.46E-04	7.31E-05	-1.11E-04
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	1.88E-04	0.00E+00	4.44E-06	0.00E+00	2.67E-06	2.80E-07	0.00E+00
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	1.64E+01	6.46E-01	2.18E+01	7.45E-01	5.76E+00	1.02E+00	0.00E+00
Environmental aspects on resource use: (DU) 1 m ² (11 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2.13E+00	4.22E-02	2.75E-01	5.21E-02	6.91E-01	1.73E-02	-1.17E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.61E+01	6.78E-01	2.29E+01	7.82E-01	5.68E+00	1.07E+00	-1.50E+00
Use of secondary material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	1.42E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	3.39E-02	0.00E+00	3.91E-02	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m ³	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 m ² (11 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Hazardous waste disposed	kg	3.72E-04	6.23E-04	5.85E-04	3.62E-08	1.51E-05	1.81E-06	-2.36E-06
Non-hazardous waste disposed	kg	5.60E-02	5.78E-01	5.88E-01	3.36E-05	1.64E+01	5.27E+00	-5.12E+00
Radioactive waste disposed	kg	1.64E-05	0.00E+00	0.00E+00	0.00E+00	3.70E-05	6.75E-06	-9.07E-06
Components for re-use	kg	0.00E+00	0.00E+00	5.15E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	2.94E-07	0.00E+00	1.95E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	INA	INA	INA	INA	INA	INA	INA

NIDA ACOUSTIC
thickness 12.5 mm

Environmental impacts: (DU) 1 m² (11 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Global warming potential	kg CO ₂ eq.	1.40E+00	7.10E-02	1.20E+00	1.31E-01	3.73E-01	4.62E-02	-7.19E-02
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	3.15E-08	0.00E+00	0.00E+00	0.00E+00	6.92E-08	1.25E-08	-1.60E-08
Acidification potential of soil and water	kg SO ₂ eq.	3.13E-03	5.19E-04	2.67E-03	1.41E-02	3.11E-01	3.41E-04	-1.09E-01
Formation potential of tropospheric ozone	kg Ethene eq.	3.26E-04	3.78E-05	1.56E-09	9.07E-04	1.25E-02	2.17E-05	-4.40E-03
Eutrophication potential	kg (PO ₄) ³⁻ eq.	5.85E-04	9.15E-05	2.80E-04	2.51E-03	6.71E-04	7.58E-05	-1.15E-04
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	1.90E-04	0.00E+00	4.44E-06	0.00E+00	2.77E-06	2.91E-07	0.00E+00
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	1.39E+01	6.46E-01	2.18E+01	7.45E-01	5.98E+00	1.05E+00	0.00E+00
Environmental aspects on resource use: (DU) 1 m² (11 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.86E+00	4.22E-02	2.75E-01	5.21E-02	7.17E-01	1.79E-02	-1.21E-01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.40E+01	6.78E-01	2.29E+01	7.82E-01	5.89E+00	1.11E+00	-1.56E+00
Use of secondary material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	1.49E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	3.39E-02	0.00E+00	3.91E-02	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m ³	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 m² (11 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Hazardous waste disposed	kg	3.69E-04	6.23E-04	5.85E-04	3.62E-08	1.57E-05	1.88E-06	-2.46E-06
Non-hazardous waste disposed	kg	4.01E-02	5.78E-01	5.88E-01	3.36E-05	1.70E+01	5.47E+00	-5.32E+00
Radioactive waste disposed	kg	9.37E-06	0.00E+00	0.00E+00	0.00E+00	3.84E-05	7.00E-06	-9.43E-06
Components for re-use	kg	0.00E+00	0.00E+00	5.15E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	3.09E-07	0.00E+00	1.95E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	INA	INA	INA	INA	INA	INA	INA

NIDA HYDRO
thickness 9.5 mm

Environmental impacts: (DU) 1 m² (7.1 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Global warming potential	kg CO ₂ eq.	1.27E+00	7.10E-02	1.20E+00	8.32E-02	2.39E-01	2.96E-02	-4.53E-02
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	2.63E-08	0.00E+00	0.00E+00	0.00E+00	4.44E-08	8.01E-09	-1.01E-08
Acidification potential of soil and water	kg SO ₂ eq.	3.57E-03	5.19E-04	2.67E-03	9.00E-03	1.99E-01	2.18E-04	-6.90E-02
Formation potential of tropospheric ozone	kg Ethene eq.	3.56E-04	3.78E-05	1.56E-09	5.77E-04	7.99E-03	1.39E-05	-2.77E-03
Eutrophication potential	kg (PO ₄) ³⁻ eq.	6.37E-04	9.15E-05	2.80E-04	1.60E-03	4.30E-04	4.86E-05	-7.25E-05
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	1.56E-04	0.00E+00	4.44E-06	0.00E+00	1.78E-06	1.86E-07	0.00E+00
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	1.42E+01	6.46E-01	2.18E+01	4.74E-01	3.83E+00	6.75E-01	0.00E+00
Environmental aspects on resource use: (DU) 1 m² (7.1 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2.77E+00	4.22E-02	2.75E-01	3.32E-02	4.59E-01	1.15E-02	-7.64E-02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.46E+01	6.78E-01	2.29E+01	4.98E-01	3.78E+00	7.10E-01	-9.81E-01
Use of secondary material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	1.08E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	3.39E-02	0.00E+00	2.49E-02	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m ³	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 m² (7.1 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Hazardous waste disposed	kg	3.53E-04	6.23E-04	5.85E-04	3.62E-08	1.01E-05	1.20E-06	-1.55E-06
Non-hazardous waste disposed	kg	1.27E-01	5.78E-01	5.88E-01	3.36E-05	1.09E+01	3.50E+00	-3.36E+00
Radioactive waste disposed	kg	1.84E-04	0.00E+00	0.00E+00	0.00E+00	2.46E-05	4.49E-06	-5.95E-06
Components for re-use	kg	0.00E+00	0.00E+00	5.15E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	4.50E-08	0.00E+00	1.95E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	INA	INA	INA	INA	INA	INA	INA

NIDA HYDRO
thickness 12.5 mm

Environmental impacts: (DU) 1 m² (8.8 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Global warming potential	kg CO ₂ eq.	1.26E+00	7.10E-02	1.20E+00	1.07E-01	2.98E-01	3.69E-02	-5.69E-02
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	2.73E-08	0.00E+00	0.00E+00	0.00E+00	5.52E-08	9.97E-09	-1.27E-08
Acidification potential of soil and water	kg SO ₂ eq.	3.54E-03	5.19E-04	2.67E-03	1.16E-02	2.48E-01	2.72E-04	-8.66E-02
Formation potential of tropospheric ozone	kg Ethene eq.	3.59E-04	3.78E-05	1.56E-09	7.42E-04	9.96E-03	1.74E-05	-3.48E-03
Eutrophication potential	kg (PO ₄) ³⁻ eq.	6.78E-04	9.15E-05	2.80E-04	2.05E-03	5.35E-04	6.05E-05	-9.10E-05
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	1.55E-04	0.00E+00	4.44E-06	0.00E+00	2.21E-06	2.32E-07	0.00E+00
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	1.40E+01	6.46E-01	2.18E+01	6.09E-01	4.77E+00	8.41E-01	0.00E+00
Environmental aspects on resource use: (DU) 1 m² (8.8 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2.79E+00	4.22E-02	2.75E-01	4.27E-02	5.72E-01	1.43E-02	-9.59E-02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.43E+01	6.78E-01	2.29E+01	6.40E-01	4.71E+00	8.84E-01	-1.23E+00
Use of secondary material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	1.07E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	3.39E-02	0.00E+00	3.20E-02	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m ³	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 m² (8.8 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Hazardous waste disposed	kg	3.69E-04	6.23E-04	5.85E-04	3.62E-08	1.25E-05	1.50E-06	-1.94E-06
Non-hazardous waste disposed	kg	1.25E-01	5.78E-01	5.88E-01	3.36E-05	1.36E+01	4.36E+00	-4.21E+00
Radioactive waste disposed	kg	1.66E-04	0.00E+00	0.00E+00	0.00E+00	3.06E-05	5.59E-06	-7.46E-06
Components for re-use	kg	0.00E+00	0.00E+00	5.15E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	2.22E-07	0.00E+00	1.95E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	INA	INA	INA	INA	INA	INA	INA

NIDA FLEX
thickness 6.5 mm

Environmental impacts: (DU) 1 m² (5.5 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Global warming potential	kg CO ₂ eq.	8.62E-01	7.10E-02	1.20E+00	6.54E-02	1.86E-01	2.30E-02	-3.48E-02
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	2.25E-08	0.00E+00	0.00E+00	0.00E+00	3.45E-08	6.23E-09	-7.75E-09
Acidification potential of soil and water	kg SO ₂ eq.	2.14E-03	5.19E-04	2.67E-03	7.07E-03	1.55E-01	1.70E-04	-5.30E-02
Formation potential of tropospheric ozone	kg Ethene eq.	2.17E-04	3.78E-05	1.56E-09	4.54E-04	6.22E-03	1.08E-05	-2.13E-03
Eutrophication potential	kg (PO ₄) ³⁻ eq.	5.16E-04	9.15E-05	2.80E-04	1.25E-03	3.34E-04	3.78E-05	-5.56E-05
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	1.07E-04	0.00E+00	4.44E-06	0.00E+00	1.38E-06	1.45E-07	0.00E+00
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	8.96E+00	6.46E-01	2.18E+01	3.72E-01	2.98E+00	5.26E-01	0.00E+00
Environmental aspects on resource use: (DU) 1 m² (5.5 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.63E+00	4.22E-02	2.75E-01	2.61E-02	3.57E-01	8.93E-03	-5.86E-02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	8.84E+00	6.78E-01	2.29E+01	3.91E-01	2.94E+00	5.52E-01	-7.53E-01
Use of secondary material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	8.26E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	3.39E-02	0.00E+00	1.95E-02	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m ³	INA	INA	INA	INA	INA	INA	INA
Other environmental information describing waste categories: (DU) 1 m² (5.5 kg)								
Indicator	Unit	A1	A2	A3	C2	C3	C4	D
Hazardous waste disposed	kg	3.51E-04	6.23E-04	5.85E-04	3.62E-08	7.82E-06	9.36E-07	-1.19E-06
Non-hazardous waste disposed	kg	2.95E-02	5.78E-01	5.88E-01	3.36E-05	8.47E+00	2.73E+00	-2.58E+00
Radioactive waste disposed	kg	8.78E-06	0.00E+00	0.00E+00	0.00E+00	1.91E-05	3.49E-06	-4.56E-06
Components for re-use	kg	0.00E+00	0.00E+00	5.15E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	1.71E-07	0.00E+00	1.95E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ per energy carrier	INA	INA	INA	INA	INA	INA	INA

Verification

The process of verification of this EPD is in accordance with ISO 14025 and ISO 21930. After verification, this EPD is valid for a 5-year-period. EPD does not have to be recalculated after 5 years, if the underlying data have not changed significantly.

The basis for LCA analysis was EN 15804:2012+A2:2019 and ITB PCRA
Independent verification corresponding to ISO 14025 (subclause 8.1.3.) <input checked="" type="checkbox"/> external <input type="checkbox"/> internal
External verification of EPD: Ph.D. Eng. Halina Prejzner LCA, LCI audit and input data verification: Ph.D. Eng. Justyna Tomaszewska. j.tomaszewska@itb.pl Verification of LCA: Ph.D. Eng. Michał Piasecki. m.piasecki@itb.pl

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
- EN 15804:2012+A2:2019 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
- KOBIZE Wskaźniki emisyjności CO₂, SO₂, NO_x, CO i pyłu całkowitego dla energii elektrycznej, grudzień 2017
- CoM Default Emission Factors for the Member States of the European Union - Version 2017. European Commission. Joint Research Centre (JRC) [Dataset] PID: <http://data.europa.eu/89h/jrc-com-ef-comw-ef-2017>
- EPA Emission Factors for Greenhouse Gas Inventories. https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf
- EN 520+A1:2009 Gypsum plasterboards - Definitions, requirements and test methods

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CERTIFICATE No 107/2020 of TYPE III ENVIRONMENTAL DECLARATION

Product:

NIDA gypsum plasterboards

Manufacturer:

ETEX Building Performance S.A.

Vulturilor STREET 98, 5th – 6th floor, 3th DISTRICT, Bucharest, Romania

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

EN 15804:2012+A2:2019

Sustainability of construction works.

Environmental product declarations.

Core rules for the product category of construction products.

This certificate, issued for the first time on 24th February 2020 is valid for 5 years
or until amendment of mentioned Environmental Declaration

Head of the Thermal Physic, Acoustics
and Environment Department

Barbara Pietruszka, PhD



Deputy Director
for Research and Innovation

Krzysztof Kuczyński, PhD

Warsaw, February 2020