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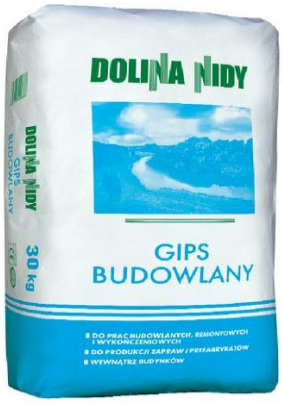

Construction gypsum, Synthetic gypsum and Anhydrite

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ITB is the verified member of The European Platform for EPD program operators and LCA practitioner www.eco-platform.org

Basic information

This declaration is the type III Environmental Product Declaration (EPD) based on EN 15804 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 (see point 5.3 of the standard).

Life cycle analysis (LCA): A1-A3 modules in accordance with EN 15804 (Cradle to Gate)
The year of preparing the EPD: 2019
Product standard: PN-EN 13279
Service Life: under normal conditions, gypsum plaster have an expected service life well in excess of 50 years
PCR: ITB-PCR A (PCR based on EN 15804)
Declared unit: 1 kg
Reasons for performing LCA: B2B
Representativeness: Polish product

MANUFACTURER

The Gypsum Industry Company Dolina Nidy was establish in 1952. Since 2000 Dolina Nidy Sp. z o.o. belongs to Altas Group, the polish manufacturer of construction chemicals. The company offers gypsum binders, projection or manual gypsum plasters, different type of finishing coat, adhesives to plasterboard, and gypsum used in mining.

Dolina Nidy has implemented and maintains a Quality and Environmental Management Systems which fulfills requirements of the following standards:

- ISO 9001:2008 and ISO 14001:2004 + Cor1:2009 (registration number 255019 QM08/UM),
- Occupational health and safety Management System PN-N-18001:2004 (registration number 255019 OH/PL).

Scope of certificates: Formula design, production and sale of gypsum binder and dry mix gypsum. Certification body DQS-PSA accreditation number AC 087, Deutsche Akkreditierungsstelle D-ZM16074-01-00.

Since 2007, Dolina Nidy has implemented European Eco-Management and Audit Scheme (EMAS) which sets additional requirements connected with active involvement of employees, adaption of undertaken actions to legal regulations, transparency of undertaken actions and obtained results, as well as dialogue with the community. EMAS registration number PL 2.26-001-8.

PRODUCT DESCRIPTION

Dolina Nidy is a manufacturer of gypsum and anhydrite binders for further processing (dry powder products). These binders are based on two types of raw materials: natural, exploit from gypsum quarry, and FGD gypsum. FGD gypsum is a synthetic product derived from flue gas desulfurization systems at electric power plants. Both natural and FGD gypsum are inert, non-toxic materials, harmless to human life in their natural state. They have Radiation Hygiene Certificate and in 2010 have been registered in accordance with REACH Regulation (EC) No 1907/2006 (registration number 01-2119444918-26-0138).

Gypsum and anhydrite binders are produced according to EN 13279-1:2008 standard.

Table 1. Characteristic of the gypsum binders

Standard designation	Type of application	Trade name
Gypsum binder	for further processing, e.g. dry powder products, gypsum block and elements	Gips budowlany
Gypsum binder	for further processing, e.g. dry powder products, gypsum block and elements	Gips budowlany syntetyczny

Anhydrite binder has no reference documents. There is a kind of high burn gypsum used as a semi-product for gypsum plasters.

TECHNICAL PARAMETERS AND APPLICATIONS

Technical parameters of the gypsum binders are listed in tables 2 – 5.

Table 2. Application of the gypsum binders

Description	Dry powder
Destination	Gips budowlany, gips budowlany syntetyczny - for direct use or further processing e.g. dry powder products, gypsum blocks, gypsum plasterboards etc. Anhydryt - semi-product for gypsum plasters.
Colour	GIps budowlany syntetyczny - yellow Gips budowlany, Anhydryt - grey

Table 3. Technical parameters of the Gips budowlany

Trade name	Gips budowlany
Description	Gypsum binder - natural
Standard designation	A1 – EN 13279-1:2008
Bulk density	850 kg/m^3
Dry density	1250 kg/m^3
Reaction to fire	A1
Product reference documents	Declaration of conformity no EC 01/CPR, Radiation Hygiene Certificate no HR/B/69/2009, Material Safety Data Sheet

Table 4. Technical parameters of the Gips budowlany syntetyczny

Trade name	Gips budowlany syntetyczny
Description	FGD gypsum binder - synthetic
Standard designation	A1 – EN 13279-1:2008
Bulk density	850 kg/m^3
Dry density	1250 kg/m^3
Reaction to fire	A1
Product reference documents	Declaration of conformity no EC 16/CPR, Radiation Hygiene Certificate no HR/B/70/2009, Material Safety Data Sheet

Table 5. Technical parameters of the Anhydryt

Product name	Anhydryt
Description	Anhydrite binder
Standard designation	No standard reference (semi-product for gypsum plasters production)
Bulk density	850 kg/m^3
Reaction to fire	A1
Product reference document	Material 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 gypsum binders and anhydrite is a line process in two production plants of Dolina Nidy in Leszcze and Konin (Poland). Allocation was done on product mass basis. All impacts from raw materials extraction are allocated in A1 module of the EPD (including materials and energy consumption, transportation, emissions and wastes resulting from the production of the gypsum plasters). 100% of impacts from line production of Dolina Nidy were inventoried and were allocated to the the gypsum binders and anhydrite production. Municipal waste and waste water of Leszcze and Konin factories were allocated to module A3. Energy supply was inventoried for whole production processes. Emissions in the factories were measured and were allocated to module A3.

System limits

The life cycle analysis of the declared products covers “Product Stage”, A1-A3 modules (Cradle to Gate) in accordance with EN 15804+A1 and ITB PCR A. The details of systems limits are provided in product technical report. All materials and energy consumption inventoried in factories 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+A1, 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

Raw materials such as gypsum stone and FGD gypsum used in the production process come from local suppliers while additives and packaging materials originate from more distant 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 and Polish and European fuel averages are applied.

A3: Production

a) Zakład produkcyjny Leszcze

The production plant in Leszcze, built in 2003-2007 is a modern, fully automated complex, consisting of a gypsum stone quarry, a stone storage, a calcination plant, a gypsum binder mixing plant and a storage hall. Gypsum stone after excavation in the quarry is held in the storage from where goes to further processing. The calcination plant provides mechanical processing and heat treatment of stones. The first stage of the gypsum stones treatment is a mechanical process which consists of stones breaking, grinding and drying in a bowl-roll mill. Depending on the mill separator speed, different graining of rocks is obtained, that determines its further use. Then the milled and dried gypsum stone is dispensed to calcinators, where it is heat treated. For various type of binders, some or all crystallization water is removed. In this way, gypsum hemihydrate ($CaSO4 \cdot ½H_2O$) or anhydrite binder ($CaSO_4$ - high-burn gypsum) are obtained. Afterwards

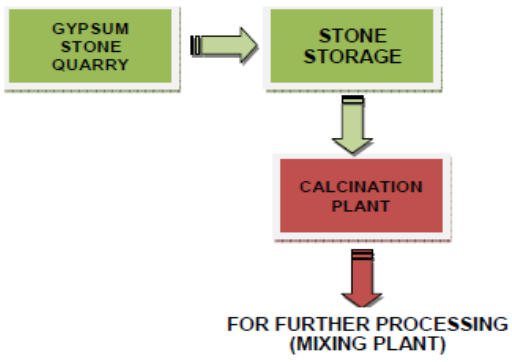

Fig. 1. Diagram of the production process.

gypsum is transported from calcinators to silos, and pneumatically transported to the mixing plant subsequently. In the mixing plant - depending on binder type – gypsum or anhydrite are blended in the mixer with different additives.

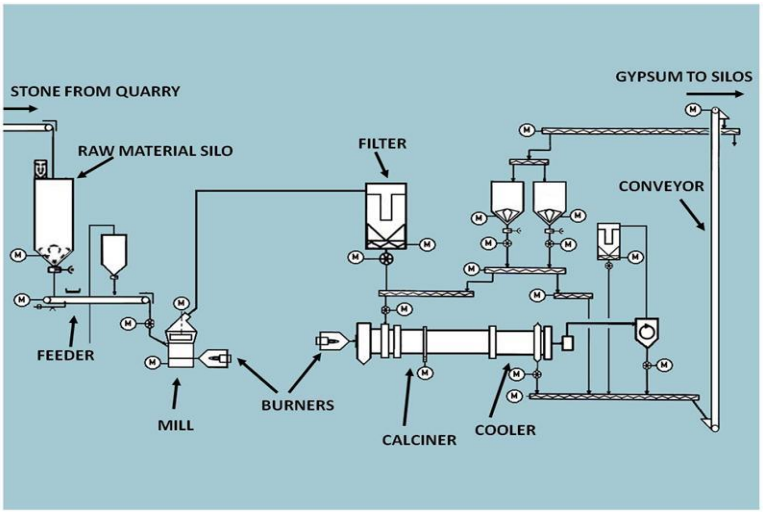

Fig. 2. Calcination process – gypsum and anhydrite binders based on natural stone.

b) Zakład produkcyjny Konin

Gypsum Processing Plant in Konin was built in 2009. The factory produces gypsum binders based on FGD (synthetic) raw material, obtained as by-product in the process of desulfurization of fumes in a power plant. As a heating agent in the calcination process, a saturated water vapour from a power plant is used. It is the only installation of this type in Poland. This innovative process of gypsum calcination provides no emission of CO_2, NO_x, SO_x and combustion dust. Moreover usage of the synthetic gypsum (waste material) leads to reduction of natural resources consumption. The Konin plant consist of a gypsum calcination plant, a mixing plant, a packing and a palletizing line. The raw material is transported directly through a converted belt conveyor to a calcination plant, where is heat treated. Gypsum binder is transported from calcinator to silos and next to mixing plant. After quality control, final products are packed into paper bags or loaded directly into the silo system.

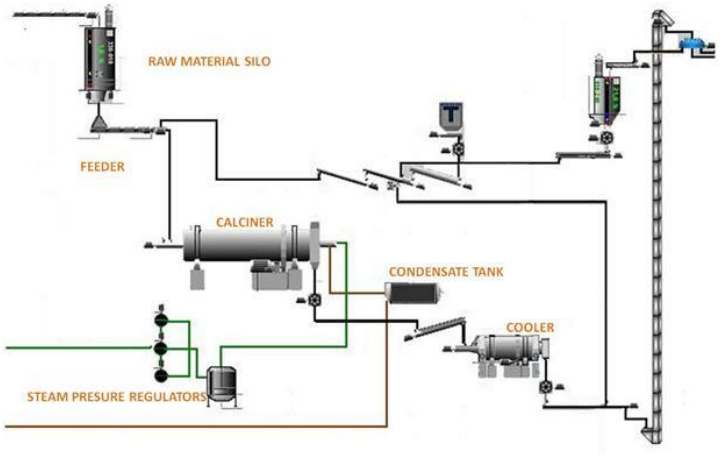

Fig. 3. Calcination process – binders based on FGD gypsum.

Data collection period
The data for manufacture of the declared products refer to period between 01.01.2017 – 31.12.2017 (1 year). The life cycle assessments were prepared for Poland as reference area.

Data quality
The values determined to calculate the LCA originate from verified Dolina Nidy inventory data.

Assumptions and estimates
The impacts of the representative gypsum binders and anhydrite were aggregated using weighted average. Impacts were inventoried and calculated for all products of the gypsum binders and the anhydrite.

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.3.5, specific EPDs, ELCD, 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 15804:2013+A1 version (PN-EN 15804+A1:2014-04).

LIFE CYCLE ASSESSMENT (LCA) – Results

Declared unit
The declaration refers to functional unit (FU) – 1 kg of the gypsum binders and the anhydrite manufactured by Dolina Nidy.

Table 6. System boundaries for the environmental characteristic of the gypsum binders and the anhydrite.

Environmental assessment information (MNA – Module not assessed, MD – Module Declared, 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 process	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
MD	MD	MD	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA

Gips budowlany (natural gypsum binder, Leszcze)

Environmental impacts: (FU) 1 kg					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Global warming potential	[kg CO_2 eq.]	5.00E-03	4.55E-03	1.14E-01	1.24E-01
Depletion potential of the stratospheric ozone layer	[kg CFC 11 eq.]	2.28E-10	0.00E+00	0.00E+00	2.28E-10
Acidification potential of soil and water	[kg SO_2 eq.]	1.20E-05	3.32E-05	1.12E-04	1.57E-04
Formation potential of tropospheric ozone	[kg Ethene eq.]	2.73E-06	5.86E-06	9.51E-07	9.54E-06
Eutrophication potential	[kg $(PO_4)^{3-}$ eq.]	1.02E-06	2.42E-06	0.00E+00	3.44E-06
Abiotic depletion potential (ADP-elements) for non-fossil resources	[kg Sb eq.]	1.20E-05	0.00E+00	4.24E-07	1.24E-05
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	[MJ]	1.00E-02	2.97E-02	1.03E+00	1.07E+00
Environmental aspects on resource use: (FU) 1 kg					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	0.00E+00	2.08E-03	1.64E-02	1.85E-02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	1.00E-02	3.12E-02	1.08E+00	1.12E+00
Use of secondary material	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	[MJ]	0.00E+00	1.56E-03	0.00E+00	1.56E-03
Use of non-renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	[m^3]	INA	INA	INA	INA
Other environmental information describing waste categories: (FU) 1 kg					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Hazardous waste disposed	[kg]	5.00E-07	4.92E-08	7.29E-09	5.57E-07
Non-hazardous waste disposed	[kg]	6.00E-06	4.57E-05	8.67E-08	5.18E-05
Radioactive waste disposed	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Components for re-use	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	[kg]	0.00E+00	0.00E+00	7.83E-09	7.83E-09
Materials for energy recover	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	[MJ per energy carrier]	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Gips budowlany syntetyczny (FGD gypsum binder, Konin)

Environmental impacts: (FU) 1 kg					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Global warming potential	[kg CO_2 eq.]	2.00E-03	0.00E+00	7.88E-03	9.88E-03
Depletion potential of the stratospheric ozone layer	[kg CFC 11 eq.]	2.64E-10	0.00E+00	0.00E+00	2.64E-10
Acidification potential of soil and water	[kg SO_2 eq.]	2.12E-05	0.00E+00	0.00E+00	2.12E-05
Formation potential of tropospheric ozone	[kg Ethene eq.]	4.70E-06	0.00E+00	0.00E+00	4.70E-06
Eutrophication potential	[kg $(PO_4)^{3-}$ eq.]	4.24E-07	0.00E+00	0.00E+00	4.24E-07
Abiotic depletion potential (ADP-elements) for non-fossil resources	[kg Sb eq.]	1.36E-05	0.00E+00	2.92E-08	1.36E-05
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	[MJ]	5.30E-02	0.00E+00	7.99E-02	1.33E-01
Environmental aspects on resource use: (FU) 1 kg					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	5.00E-03	0.00E+00	6.15E-03	1.12E-02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	6.30E-02	0.00E+00	8.39E-02	1.47E-01
Use of secondary material	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	[m^3]	INA	INA	INA	INA
Other environmental information describing waste categories: (FU) 1 kg					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Hazardous waste disposed	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste disposed	[kg]	5.00E-03	0.00E+00	0.00E+00	5.00E-03
Radioactive waste disposed	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Components for re-use	[kg]	0.00E+00	0.00E+00	5.23E-09	5.23E-09
Materials for recycling	[kg]	0.00E+00	0.00E+00	1.19E-05	1.19E-05
Materials for energy recover	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	[MJ per energy carrier]	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Gips budowlany syntetyczny (FGD gypsum binder, Leszcze)

Environmental impacts: (FU) 1 kg					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Global warming potential	[kg CO_2 eq.]	6.00E-03	7.11E-03	1.14E-01	1.27E-01
Depletion potential of the stratospheric ozone layer	[kg CFC 11 eq.]	1.88E-09	0.00E+00	0.00E+00	1.88E-09
Acidification potential of soil and water	[kg SO_2 eq.]	6.08E-05	5.19E-05	1.12E-04	2.25E-04
Formation potential of tropospheric ozone	[kg Ethene eq.]	1.67E-05	9.15E-06	9.51E-07	2.68E-05
Eutrophication potential	[kg $(PO_4)^{3-}$ eq.]	9.00E-07	3.78E-06	0.00E+00	4.68E-06
Abiotic depletion potential (ADP-elements) for non-fossil resources	[kg Sb eq.]	1.96E-05	0.00E+00	4.24E-07	2.00E-05
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	[MJ]	6.30E-02	4.64E-02	1.03E+00	1.14E+00
Environmental aspects on resource use: (FU) 1 kg					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	6.00E-03	3.25E-03	1.64E-02	2.57E-02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	7.00E-02	4.87E-02	1.08E+00	1.20E+00
Use of secondary material	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	[MJ]	0.00E+00	2.43E-03	0.00E+00	2.43E-03
Use of non-renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	[m^3]	INA	INA	INA	INA
Other environmental information describing waste categories: (FU) 1 kg					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Hazardous waste disposed	[kg]	2.60E-07	7.70E-08	7.29E-09	3.44E-07
Non-hazardous waste disposed	[kg]	1.88E-03	7.15E-05	8.67E-08	1.95E-03
Radioactive waste disposed	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Components for re-use	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	[kg]	2.61E-08	0.00E+00	7.83E-09	3.39E-08
Materials for energy recover	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	[MJ per energy carrier]	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Anhydryt (Leszcze)

Environmental impacts: (FU) 1 kg					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Global warming potential	[kg CO_2 eq.]	6.00E-03	4.69E-03	1.14E-01	1.25E-01
Depletion potential of the stratospheric ozone layer	[kg CFC 11 eq.]	1.85E-09	0.00E+00	0.00E+00	1.85E-09
Acidification potential of soil and water	[kg SO_2 eq.]	5.99E-05	3.43E-05	1.12E-04	2.06E-04
Formation potential of tropospheric ozone	[kg Ethene eq.]	1.64E-05	6.04E-06	9.51E-07	2.34E-05
Eutrophication potential	[kg $(PO_4)^{3-}$ eq.]	8.89E-07	2.50E-06	0.00E+00	3.39E-06
Abiotic depletion potential (ADP-elements) for non-fossil resources	[kg Sb eq.]	1.94E-05	0.00E+00	4.24E-07	1.98E-05
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	[MJ]	6.00E-02	3.06E-02	1.03E+00	1.12E+00
Environmental aspects on resource use: (FU) 1 kg					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	1.00E-02	2.14E-03	1.64E-02	2.86E-02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	[MJ]	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	[MJ]	7.00E-02	3.21E-02	1.08E+00	1.19E+00
Use of secondary material	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	[MJ]	0.00E+00	1.61E-03	0.00E+00	1.61E-03
Use of non-renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	[m^3]	INA	INA	INA	INA
Other environmental information describing waste categories: (FU) 1 kg					
Indicator	**Unit**	**A1**	**A2**	**A3**	**A1-A3**
Hazardous waste disposed	[kg]	2.55E-07	9.77E-09	7.29E-09	2.72E-07
Non-hazardous waste disposed	[kg]	1.92E-03	9.07E-06	8.67E-08	1.93E-03
Radioactive waste disposed	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Components for re-use	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	[kg]	2.56E-08	0.00E+00	7.83E-09	3.34E-08
Materials for energy recover	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	[MJ per energy carrier]	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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 and ITB PCR A
Independent verification corresponding to ISO 14025 (subclause 8.1.3.) [x] external [ ] internal
External verification of EPD: PhD. Eng. Halina Prejzner LCA. LCI audit and input data verification: PhD. Eng. Justyna Tomaszewska. j.tomaszewska@itb.pl Verification of LCA: PhD. 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+A1:2013 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 CO_2. SO_2. NO_x. CO i pyłu całkowitego dla energii elektrycznej. grudzień 2017
- PN-EN 13279-1:2009 – Spoiwa gipsowe i tynki gipsowe -- Część 1: Definicje i wymagania

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KIEROWNIK
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CERTIFICATE № 084/2019
of TYPE III ENVIRONMENTAL DECLARATION

Product:

Construction gypsum, Synthetic construction gypsum and Anhydrite DOLINA NIDY

Manufacturer:

DOLINA NIDY Sp. z o.o.

Leszcze 15, 28-400 Pińczów, 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+A1:2014-04

Sustainability of construction works.
Environmental product declarations.
Core rules for the product category of construction products.

This certificate, issued for the first time on 15th May 2019 is valid for 5 years or until amendment of mentioned Environmental Declaration

Head of the Thermal Physic, Acoustics and Environment Department
Michał Piasecki, PhD

INSTYTUT TECHNIKI BUDOWLANEJ

Deputy Director for Research and Innovation
Krzysztof Kuczyński, PhD

Warsaw, May 2019