Environmental Product Declaration

STRENGTHENING AND RESTORATION MORTARS

CALCECOLOR RISANA
CALCESAN
INIEZIONE NHL
RINFORZA FRCM
RINFORZA NHL M10
RINFORZA NHL M10 - BULK
RINFORZA NHL M15
RINFORZA NHL M15 - BULK

FORNACI CALCE GRIGOLIN S.P.A.

PRODUCTION SITE
Via Solferino, 88
43014 Ramiola, Medesano PR
Z.I, Loc. Piombinara
00034 Colleferro RM

According ISO 14025:2010 and EN 15804:2012+ A2:2019/AC:2021

Program Operator	**EPDItaly**
Publisher	**EPDItaly**
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Registration number	**EPDITALY1326**
Publication date	28/04/2026
Expiry date	28/04/2031

GENERAL INFORMATION

EPD OWNER	
Company name	Fornaci Calce Grigolin S.p.A.
Legal office	Via Bombardieri 14, Ponte della Priula (TV)
Contacts for information about the EPD	c.fregolent@fornacigrigolin.it
Company website	www.fornacigrigolin.it

PROGRAM OPERATOR	
EPDItaly	EPDItaly - Via Gaetano De Castillia n° 10 - 20124 Milano, Italy

INFORMATION ABOUT THE EPD	
Product name	• CALCECOLOR RISANA • CALCESAN • INIEZIONE NHL • RINFORZA FRCM • RINFORZA NHL M10 • RINFORZA NHL M10 - BULK • RINFORZA NHL M15 • RINFORZA NHL M15 - BULK
Production site	• CALCECOLOR RISANA • CALCESAN • INIEZIONE NHL • RINFORZA FRCM • RINFORZA NHL M15 • RINFORZA NHL M15 - BULK Via Solferino, 88, 43014 Ramiola, Medesano (PR) • RINFORZA NHL M10 • RINFORZA NHL M10 - BULK Z.I, Loc. Piombinara, 00034 Colleferro (RM)
Scope of the product	Premixed materials
EPD type	Specific product EPD based on a qualified tool
Product range	PALLADIO RESTORATION

SUMMARY DESCRIPTION AND TECHNICAL INFORMATION OF THE PRODUCTS

CALCECOLOR RISANA	Water-repellent restoration plaster based on CL 90-S hydrated lime binder and NHL 5 natural hydraulic lime. Class R-CSII according to standard EN 998-1.
CALCESAN	A single-layer, restorative plaster for use as a base coat, plaster, and finish, made from natural hydraulic lime (NHL 5). Class R-CSII according to standard EN 998-1.
INIEZIONE NHL	A mixture for structural consolidation injections in masonry, based on natural hydraulic lime (NHL 5). Class M15 according to standard EN 998-2.
RINFORZA FRCM	Structural, thixotropic, controlled-shrinkage, fiber-reinforced mortar based on natural hydraulic lime (NHL 5). Class M15 according to standard EN 998-2. Class GP-CSIV-W2 according to standard EN 998-1.
RINFORZA NHL M10	Structural, thixotropic, controlled-shrinkage, fiber-reinforced mortar based on natural hydraulic lime (NHL 5).
RINFORZA NHL M10 - BULK	Class M10 according to standard EN 998-2. Class GP-CSIV-W2 according to standard EN 998-1.
RINFORZA NHL M15	Structural, thixotropic, controlled-shrinkage, fiber-reinforced mortar based on natural hydraulic lime (NHL 5).
RINFORZA NHL M15 - BULK	Class M15 according to standard EN 998-2. Class GP-CSIV-W2 according to standard EN 998-1.

PRODUCTS REFERENCE TECHNICAL STANDARDS	
CALCECOLOR RISANA	EN 998-1:2016 Specification for mortar for masonry - Part 1: Rendering and plastering mortar
CALCESAN	
RINFORZA FRCM	
INIEZIONE NHL	EN 998-2:2016 Specification for mortar for masonry - Part 2: Masonry mortar
RINFORZA NHL M10	EN 998-1:2016 Specification for mortar for masonry - Part 1: Rendering and plastering mortar EN 998-2:2016 Specification for mortar for masonry - Part 2: Masonry mortar
RINFORZA NHL M10 - BULK	
RINFORZA NHL M15	
RINFORZA NHL M15 - BULK	

CPC Code (number)	37560
Reference PCR	PCR ICMQ-001/15 rev. 3.2 Prodotti e servizi per l'edilizia, EPDItaly. Published on: 03/11/2025.
Declared Unit	1000 kg
Reference year	2023
EPD type	Specific product EPD based on a qualified tool
LCA Tool identification	Fornaci Calce Grigolin S.p.A. - LCA TOOL n.1_Rev.4, developed using SimaPro 10.2.0.2 and Ecoinvent 3.11
Company contact	Tel. 0422.5261 PEC: fornacigrigolin@legalmail.gruppogrigolin.it E-mail: info@fornacigrigolin.it
TECHNICAL SUPPORT:	Greenwich S.r.l. - Tel. +39 035 4948794 Operations office: Via Presolana 2/4, 24030 Medolago (BG) Italy Registered office: Via Vittorio Emanuele II 179, 24033 Calusco d'Adda (BG) Italy tecnicog4@greenwichsrl.it info@greenwichsrl.it

INFORMATION ABOUT THE ASSESSMENT

PCR	PCR ICMQ-001/15 rev. 3.2 Prodotti e servizi per l'edilizia, EPDItaly. Published on: 03/11/2025.
EPDItaly Regulations	Regulation EPDITALY v. 6.0 published on 30/10/2023
Project Report LCA	LCA Report_Analisi del ciclo di vita di premiscelati, cementi e leganti plastici, pitture e tonachini Novembre 2025_rev.05
Verification Statement / Independent Validation	PCR revision was performed by the EPDItaly Technical Committee – info@epditaly.it Independent verification of the declaration and the data was performed according to ISO 14025:2010. ☐ Internal √ External Third party verification/validation done by: ICMQ S.p.A., via Gaetano De Castillia n° 10 - 20124 Milano, Italy. Accredited by Accredia.
Comparability Statement	Environmental declarations published within the same product category, but from different programs may not be comparable. In particular, EPDItaly declarations on construction products may not be comparable if not compliant to EN 15804:2012+A2:2019.
Responsibility Statement	The EPD Owner releases EPDItaly from any non-compliance with environmental legislation. The declaration holder will be responsible for the supporting information and evidence. EPDItaly declines all responsibility for the information, data and results provided by the EPD Owner for the life cycle assessment.
Reference documents	This declaration was developed in compliance to the EPDItaly Regulations rev. 6.0 published on 30/10/2023 and available at www.epditaly.it.

GENERAL INFORMATION

IDENTITY – FORNACI CALCE GRIGOLIN SPA

The Grigolin Group comprises a range of specialized companies operating across all sectors of the building and construction industry, offering integrated, next-generation solutions for production technologies. The Group places particular emphasis on environmental sustainability, the development of human resources, and product quality, thanks in part to the seamless synergy achieved through the integrated management of raw materials, resources, technologies, and professionals, enabling it to meet the needs of a constantly evolving market.

Since 1963, Fornaci Calce Grigolin has been one of the most important Italian and international companies in the construction materials and technologies sector.
It boasts over sixty years of experience, gained on construction sites and in research and development laboratories, and looks to the future with a view to continuous evolution, improving product quality, and implementing support services provided by qualified personnel.

Geographical expansion, technological innovation and the presence of highly qualified personnel have allowed Fornaci Calce Grigolin to become an industry leader and express its value through:
· large systems of synergies;
· diversification and verticalization of production sectors;
· technological development and applied research;
· continuous attention to environmental values.

Today, Fornaci Calce Grigolin is one of the most important Italian and international companies in the construction materials and technologies sector. It boasts a full range of special solutions: lime and derivatives, thermal insulation, underlays and installation of floors and coverings, renovations, green building, decorations, paintings and finishes, deep foundations and consolidations, binders, mortars and plasters.

The company has always paid attention to the environment by minimizing emissions from resource extraction, transportation, and their processing. Furthermore, the lime production process is automated and emissions controls are carried out with continuous monitoring by the relevant authorities, with EPDItaly certification recognized in 2024.

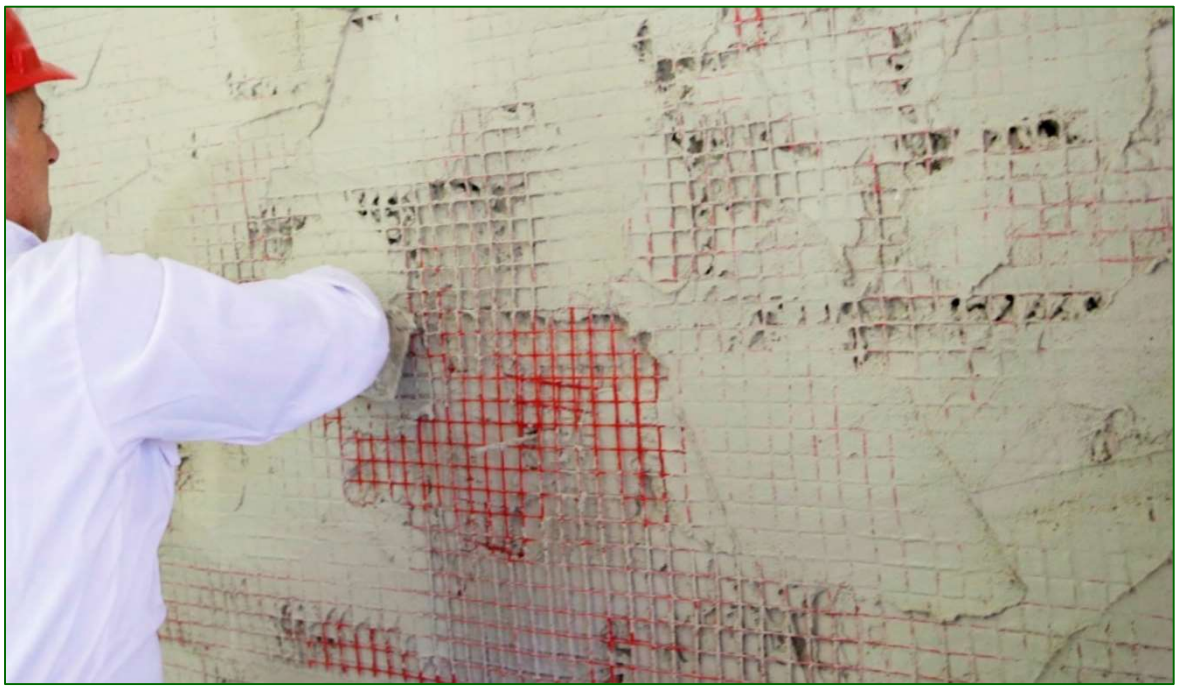
SCOPE AND TYPE OF EPD

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	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
√	√	√	ND	ND	ND	ND	ND	ND	ND	ND	ND	√	√	√	√	√

GEOGRAPHIC VALIDITY FOR PRODUCT STAGE A1-A3	Europe & ITALY
GEOGRAPHIC VALIDITY FOR END OF LIFE C1-C4, D	ITALY
GEOGRAPHIC VALIDITY FOR PRODUCTION SITE	ITALY
EPD TYPE	Product specific EPD based on a qualified tool. From cradle to gate with modules C1-C4 and module D (A1-A3+C1-C4+D)
REFERENCE YEAR	2023
DATABASE	Ecoinvent 3.11
SOFTWARE	The EPD was generated with the LCA-Tool: Fornaci Calce Grigolin S.p.A. - LCA TOOL n.1_Rev.4 Such LCA-Tool was developed using SimaPro 10.2.0.2 and Ecoinvent 3.11

DETAILED PRODUCT DESCRIPTION

STRENGTHENING AND RESTORATION MORTARS



CALCECOLOR RISANA	A hydrophobic, macroporous restoration plaster, colored throughout with natural earth pigments, sulfate-resistant, with dehumidifying properties, based on CL 90-S micro-lime, natural hydraulic lime (NHL 5), and silica and limestone sands with a maximum particle size of 3 mm. Thanks to its special composition based on natural hydraulic lime NHL 5, CALCECOLOR RISANA ensures optimal physical and chemical compatibility with the masonry of historic buildings. CALCECOLOR RISANA is classified as an R-CSII category plaster in accordance with the EN 998-1 standard.
CALCESAN	A water-repellent restoration plaster with dehumidifying properties, based on CL 90-S micro-lime, natural hydraulic lime (NHL 5), micronized pozzolan, ultra-pure calcined kaolins, and silica and limestone sands with a maximum particle size of 0.8 mm. Thanks to its special composition based on natural hydraulic lime NHL 5, CALCESAN ensures optimal physical and chemical compatibility with the masonry of historic buildings. CALCESAN is classified as category R-CSII plaster in accordance with the EN 998-1 standard.
INIEZIONE NHL	PALLADIO INIEZIONE NHL is a special mixture for structural consolidation injections, designed to be shrinkage-compensated, based on natural hydraulic lime (NHL 5), a hydraulic binder, and micronized fillers. Thanks to its special composition based on natural hydraulic lime (NHL 5), PALLADIO INIEZIONE NHL ensures optimal physical and chemical compatibility with the masonry of historic buildings. Its special formulation, characterized by micronized particle size combined with high fluidity, also ensures, during application, a complete absence of bleeding and segregation, guaranteeing maximum filling of all voids in the masonry. PALLADIO INIEZIONE NHL is classified as a Category M15 mortar in accordance with EN 998-2.
RINFORZA FRCM	A thixotropic, controlled-shrinkage, fiber-reinforced mortar for structural applications, based on natural hydraulic lime (NHL 5), hydraulic binders, and silica and limestone sands with a maximum particle size of 1.2 mm, specifically designed for structural reinforcement, improvement, and seismic retrofitting of masonry buildings. PALLADIO RINFORZA FRCM, thanks to its special composition based on natural hydraulic lime NHL 5, ensures optimal physical-chemical compatibility with the masonry of historic buildings. PALLADIO RINFORZA FRCM is classified as a Category M15 mortar in accordance with EN 998-2 and as a Category GP-CSIV-W2 plaster in accordance with EN 998-1.
RINFORZA NHL M10	A thixotropic, controlled-shrinkage, fiber-reinforced mortar for structural applications, based on natural hydraulic lime (NHL 5), hydraulic binders, and silica and limestone sands with a maximum particle size of 3.0 mm, specifically designed for structural reinforcement, improvement, and seismic retrofitting of masonry buildings. PALLADIO RINFORZA NHL M10, thanks to its special composition based on natural hydraulic lime NHL 5, ensures optimal physical-chemical compatibility with the masonry of historic buildings. PALLADIO RINFORZA NHL M10 is classified as a Category M10 mortar in accordance with EN 998-2 and as a Class GP-CSIV-W2 plaster in accordance with EN 998-1.
RINFORZA NHL M10 - BULK	
RINFORZA NHL M15	PALLADIO RINFORZA NHL M15 is a thixotropic, controlled-shrinkage, fiber-reinforced mortar for structural applications, based on natural hydraulic lime NHL 5, hydraulic binders, and silica and limestone sands with a maximum particle size of 3.0 mm, specifically designed for structural reinforcement, improvement, and seismic retrofitting of masonry buildings. PALLADIO RINFORZA NHL M15, thanks to its special composition based on natural hydraulic lime NHL 5, ensures optimal physical-chemical compatibility with the masonry of historic buildings. PALLADIO RINFORZA NHL M15 is classified as a Category M15 mortar in accordance with EN 998-2 and as a Class GP-CSIV-W2 plaster in accordance with EN 998-1.
RINFORZA NHL M15 - BULK	

FIELDS OF USE

CALCECOLOR RISANA	CALCECOLOR RISANA is used as an anti-salt rough coat, a dehumidifying plaster, and a breathable, water-repellent finish, and is particularly suitable for the restoration and renovation of plasterwork on buildings of historical and monumental significance. CALCECOLOR RISANA can be applied by hand or with a plastering machine to stone, solid brick, or mixed masonry affected by capillary moisture rise for restoration and dehumidification projects. Thanks to its highly porous and breathable structure, it offers high water vapor permeability, which facilitates the passage and subsequent evaporation of moisture present in the masonry, promoting its restoration. The macroporous structure of the plaster allows for the deposition of any salts carried by rising damp, preventing the formation of internal stresses and the appearance of surface efflorescence. The binder, based on natural hydraulic lime (NHL 5) with a low content of water-soluble salts, guarantees high chemical stability, durability, and the effectiveness of the restoration process. When used as an exterior finish, CALCECOLOR RISANA, thanks to its excellent water repellency, prevents the penetration of rainwater, protecting the plaster and the underlying masonry from the effects of atmospheric agents.
CALCESAN	CALCESAN is a single-component, fine-grained product that serves as an anti-salt rough coat, a dehumidifying plaster, and a breathable, water-repellent finish, making it particularly suitable for the restoration and renovation of plasterwork on buildings of historical and monumental significance. CALCESAN can be applied by hand or with a plastering machine to stone, solid brick, or mixed masonry affected by capillary moisture rise for restoration and dehumidification projects. Its high water vapor permeability makes the plaster highly breathable, facilitating the passage and subsequent evaporation of moisture present in the masonry and promoting its drying. The macroporous structure allows for the deposition of any salts carried by rising damp, preventing the formation of internal stresses and the appearance of surface efflorescence. The binder, based on natural hydraulic lime (NHL 5) with a low content of water-soluble salts and components with high pozzolanic reactivity, ensures high chemical stability, durability, and the effectiveness of the restoration process.
INIEZIONE NHL	PALLADIO INIEZIONE NHL is a specialized mixture designed for the structural consolidation of cavity walls in historic buildings through injections that act as a binder, restoring continuity and uniformity to the masonry section affected by voids, material inconsistencies, and poor mechanical performance. PALLADIO INIEZIONE NHL guarantees a significant increase in the mechanical performance of the masonry, without creating localized rigid areas or mechanical inconsistencies.

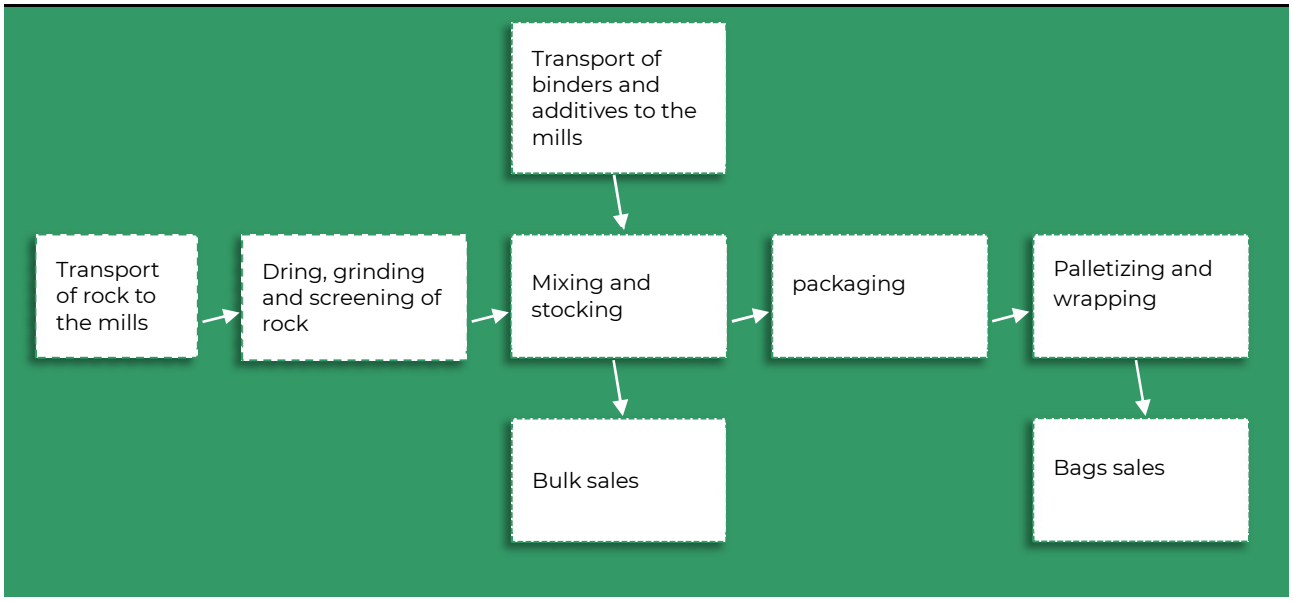
RINFORZA FRCM	PALLADIO RINFORZA FRCM is a fine-grained structural mortar designed for consolidation and structural reinforcement projects requiring high mechanical performance, ensuring excellent chemical and mechanical compatibility with existing masonry. PALLADIO RINFORZA FRCM can be applied by hand or with a plastering machine to stone, tuff, solid brick, or mixed masonry to perform FRCM reinforcement using low-thickness inorganic matrix composite systems in combination with fiberglass or basalt fiber mesh, systems to secure curtain walls and partitions against out-of-plane buckling, repair of damaged wall facings using the "stitch-and-sew" technique, and the creation of reinforced bed joints even in exposed masonry.
RINFORZA NHL M10	PALLADIO RINFORZA NHL M10 is specifically designed for structural reinforcement using the reinforced plaster technique, whether traditional methods combined with galvanized steel mesh or CRM methods combined with composite materials such as fiberglass or basalt mesh, and in all cases where a mortar with high mechanical performance is required that is also compatible with the masonry of historic buildings.
RINFORZA NHL M10 - BULK	PALLADIO RINFORZA NHL M10 can be applied by hand or with a plastering machine on stone, tuff, solid brick, or mixed masonry to perform reinforcement work requiring high mechanical strength and excellent chemical and mechanical compatibility with the existing masonry. PALLADIO RINFORZA NHL M10 is suitable for repairing damaged masonry facades using the "stitch-and-sew" technique, creating reinforced bedding joints even in exposed masonry, and as a structural mortar for bedding stone, brick, and tuff.
RINFORZA NHL M15	PALLADIO RINFORZA NHL M15 is specifically designed for structural reinforcement using the reinforced plaster technique, whether traditional methods combined with galvanized steel mesh or CRM methods combined with composite materials such as fiberglass or basalt mesh, and in all cases where a mortar with high mechanical performance is required that is also compatible with the masonry of historic buildings.
RINFORZA NHL M15 - BULK	PALLADIO RINFORZA NHL M15 can be applied by hand or with a plastering machine to stone, tuff, solid brick, or mixed masonry to perform reinforcement work requiring high mechanical strength and excellent chemical and mechanical compatibility with the existing masonry. PALLADIO RINFORZA NHL M15 is suitable for repairing damaged masonry facades using the "stitch-and-sew" technique, creating reinforced bedding joints even in exposed masonry, and as a structural mortar for bedding stone, brick, and tuff.

DESCRIPTION OF THE MANUFACTURING PROCESS

The production process for the premixed products under study consists of the following stages:

1. Transport of rock to the mills;
2. Drying, grinding, and screening of rock;
3. Mixing of rock, binders and additives, and storage of the premix;
4. Packaging;
5. Palletizing and wrapping.

The ground limestone, sorted by particle size, is conveyed to the storage silo via elevators located downstream of the grinding and screening process. The semi-finished products, which may be further sorted by particle size, are fed into dedicated silos. The plant is fully automated and operates in a closed-loop system. The production of premixed products involves mixing the raw materials, which are weighed according to the formulation and blended in a mixer. After the mixing process, the finished product can be sent to the bagging line, to bulk storage silos, or loaded directly into a tanker. A portion of the mixed product is stored in silos to meet various bulk requests from customers. Most of the finished product is bagged using a bagging machine and subsequently palletized.



PRODUCT COMPOSITION (excluding packaging)	Material	Min [kg]	Max [kg]
	Aggregates	6,78E+02	8,17E+02
	Binders	1,40E+02	3,20E+02
	Additives	2,00E+00	1,13E+02

PACKAGING COMPOSITION	Material	Min [kg]	Max [kg]
	Wood	0,00E+00	1,77E+01
	Cardboard	0,00E+00	3,12E+00
	Polyethylene	0,00E+00	1,15E-01
	Total	0,00E+00	2,09E+01

CALCULATION RULES

DECLARED UNIT	1000 kg
ASSUMPTIONS	No assumptions have been done
CUT-OFF RULES	No cut-off contributions have been considered
LCA METHOD	Cut-off by classification
CHARACTERISATION FACTORS	EF 3.1
EMPLOYEE COMMUTING	• Staff movements; • Production of capital goods and buildings.
DATA QUALITY	UPSTREAM phase: • Site-specific data regarding weight, quantity, raw materials, raw materials packaging, raw materials transportation, electrical and thermal energy. CORE phase: • Site-specific data regarding auxiliary materials, emissions to the atmosphere, internal transport, waste transport and treatment.
ALLOCATION	The allocation of input and output flows to the studied system was carried out on a mass basis considering the entire production of the plant.
GENERIC DATA	Criteria of geographical equivalence, technological equivalence, and equivalence with respect to system boundaries.

SCENARIOS AND OTHER TECHNICAL INFORMATION

INCLUDED PROCESSES A1-A3

The UPSTREAM phase (A1) includes:

- the extraction and transformation of raw materials into a raw material, not yet definable as a finished product, including the packaging used for the individual materials;
- the generation and supply of energy required for the extraction and refining of the raw material;
- the generation of energy used for the production of the finished product; specific electricity mix: 0,683 kg CO2 eq/kWh;
- the production of waste resulting from these processes.

The CORE phase (A2 and A3) includes:

- external and internal transportation;
- product manufacturing;
- production of auxiliary materials required to obtain the finished product;
- production of the finished product packaging;
- waste management related to the production process.

END OF LIFE SCENARIO C1-C4, D

The construction and demolition waste scenario from Eionet (European Environment Information and Observation Network) was used: "Construction and Demolition Waste: challenges and opportunities in a circular economy" (2020).

Phase	Scenario	Modelling	
C1	Dismantling	Diesel consumption, 0,044 MJ/kg product	
C2	Waste transport	kg product per 100 km	
Phase	**Scenario**	**Concrete**	**Phase**
C3	Recycling [%]	95,00%	**C3**
	Energy recovery [%]	0,00%	0,00%
C4	Landfill [%]	5,00%	**C4**

ENVIRONMENTAL IMPACT INDICATORS

Impact categories

GWP	Potential global warming at 100 years	**GWP – Global Warming Potential** GWP quantifies the contribution of a greenhouse gas (e.g., CH_4, N_2O, CFCs, etc.) to the greenhouse effect relative to that of CO_2, which has a reference potential of 1. The ultimate goal is to estimate the impacts caused by the rise in average temperature on humans, ecosystems, and materials. The method for characterizing the impacts of greenhouse gases is based on the EF 3.1 method, which uses kilograms of CO2 equivalent over a 100-year time horizon as the impact indicator.
GWP-fossil	Potential global warming at 100 years - Fossil	
GWP-biogenic	Potential global warming at 100 years - Biogenic	
GWP-land use	Potential global warming at 100 years – soil use and change in soil use	
ODP	Potential for depletion of the stratospheric ozone layer	**Ozone Layer Depletion** Ozone is a gas found in the stratosphere that protects the Earth from the ultraviolet rays emitted by the sun. The depletion of the ozone layer caused by unstable compounds (such as CFCs, HCFCs, etc.) allows more UV rays to reach the Earth's surface, resulting in adverse effects on humans, ecosystems, and materials. The method for characterizing these impacts is based on the guidelines of the World Meteorological Organization (WMO), which uses kilograms of CFC-11 equivalent (ODP, Ozone Depletion Potential—based on a relative scale that compares the gas in question to CFC-11) as an impact indicator.
AP	Potential for soil and water acidification	**Soil acidification** The acidification indicator is linked to atmospheric emissions of specific acidifying substances that cause changes in the pH of rain, soil, and water. The method for characterizing the impacts of acidification is based on the findings of the Centre for Environmental Sciences in Leiden, NL (CML), which uses kilograms of SO2 equivalent (AP, Acidification Potential—based on a relative scale that compares the substance in question with an equal mass of SO2 equivalent) as an impact indicator.
EP-freshwater	Eutrophication potential, freshwater	**Water Eutrophication** This refers to a condition of excessive nitrate and phosphate levels in an aquatic environment, which leads to the proliferation of microscopic algae and increased bacterial activity; the resulting decrease in oxygen levels in the water and soil causes environmental degradation with serious impacts on ecosystems. The method for characterizing the impacts of eutrophication is based on the findings of the Centre for Environmental Sciences in Leiden, NL (CML), which uses kilograms of phosphorus equivalent (EP, Eutrophication Potential—based on a relative scale that compares the substance in question with an equal mass of P) as an impact indicator.
EP-marine	Eutrophication potential, saltwater	
EP-terrestrial	Eutrophication potential, terrestrial	
POCP	Photochemical formation of ozone	**Formation of photochemical oxidants** This phenomenon results from the reaction of unburned hydrocarbons and nitrogen oxides present in exhaust fumes when exposed to solar radiation, leading to the formation of ozone, which is harmful to health. The method for characterizing the impacts of photochemical smog is based on the guidelines established by the United Nations Economic Commission for Europe (UNECE), which uses kilograms of C2H4-equivalent POCP (Photochemical Ozone Creation Potential—based on a relative scale that compares the substance in question with an equal mass of C2H4-equivalent POCP) as an impact indicator.
ADPF	Potential depletion of fossil abiotic resources	**ADP – Abiotic Depletion**
ADPE	Potential depletion of non-fossil abiotic resources	
Water Use	Water use	**Water Use**

LCA RESULTS
IMPACT CATEGORY INDICATORS

	CALCECOLOR RISANA
	CALCESAN
	INIEZIONE NHL
	RINFORZA FRCM
	RINFORZA NHL M10 RINFORZA NHL M10 - BULK
	RINFORZA NHL M15 RINFORZA NHL M15 - BULK

CALCECOLOR RISANA Medesano
Results by Declared Unit: 1000 kg

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	2,04E+02	3,56E+01	6,00E+00	2,45E+02	4,43E+00	1,90E+01	1,79E+01	1,13E+00	-4,95E+00
GWP-biogenic	kg CO_2 eq.	-7,12E+00	2,35E-02	7,10E+00	1,00E-03	8,98E-04	1,30E-02	6,01E-02	1,30E-03	-1,43E-01
GWP-luluc	kg CO_2 eq.	2,18E+00	1,13E-02	4,60E-02	2,23E+00	4,53E-04	6,30E-03	6,82E-03	2,38E-03	-2,21E-03
GWP-total	kg CO_2 eq.	1,99E+02	3,57E+01	1,31E+01	2,47E+02	4,43E+00	1,90E+01	1,80E+01	1,14E+00	-5,08E+00
ODP	kg CFC 11 eq.	2,28E-05	7,78E-07	2,44E-07	2,38E-05	6,60E-08	4,15E-07	3,73E-07	2,12E-08	-7,13E-08
AP	mol H+ eq.	5,28E-01	1,28E-01	3,03E-02	6,86E-01	3,96E-02	6,11E-02	1,46E-01	6,90E-03	-3,33E-02
EP-freshwater	kg P eq.	2,87E-02	2,33E-03	3,69E-03	3,47E-02	1,43E-04	1,30E-03	8,10E-03	1,01E-04	-1,26E-03
EP-marine	kg N eq.	2,19E-01	4,48E-02	1,09E-02	2,74E-01	1,84E-02	2,06E-02	5,54E-02	2,79E-03	-8,84E-03
EP-terrestrial	mol N eq.	1,78E+00	4,89E-01	9,87E-02	2,36E+00	2,02E-01	2,24E-01	6,01E-01	3,03E-02	-1,14E-01
POCP	kg NMVOC eq.	5,29E-01	1,92E-01	3,72E-02	7,58E-01	6,04E-02	9,26E-02	1,92E-01	1,02E-02	-3,17E-02
ADP-minerals&metals [1]	kg Sb eq.	4,04E-04	1,14E-04	2,69E-05	5,45E-04	1,58E-06	6,41E-05	3,99E-05	2,47E-06	-5,14E-05
ADP-fossil [1]	MJ	5,28E+02	3,81E+01	3,03E+01	5,96E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
WDP [1]	m3 world eq deprived	2,86E+01	1,88E+00	4,51E+00	3,50E+01	1,23E-01	1,05E+00	-4,78E+01	3,83E-01	-1,42E+01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
PERE	MJ	1,65E+02	7,92E+00	1,09E+02	2,82E+02	3,63E-01	4,41E+00	1,06E+01	1,69E+02	-9,94E+00
PERM	MJ	3,69E+01	0,00E+00	1,32E+02	1,68E+02	0,00E+00	0,00E+00	0,00E+00	-1,68E+02	0,00E+00
PERT	MJ	2,02E+02	7,92E+00	2,40E+02	4,50E+02	3,63E-01	4,41E+00	1,06E+01	2,32E-01	-9,94E+00
PENRE	MJ	6,62E+02	3,81E+01	0,00E+00	7,00E+02	2,24E+00	2,12E+01	3,48E+01	3,84E+02	-1,90E+01
PENRM	MJ	3,36E+02	0,00E+00	4,67E+01	3,82E+02	0,00E+00	0,00E+00	0,00E+00	-3,82E+02	0,00E+00
PENRT	MJ	9,97E+02	3,81E+01	4,67E+01	1,08E+03	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	7,60E-01	6,03E-02	1,21E-01	9,42E-01	4,04E-03	3,35E-02	-1,02E+00	9,45E-03	-3,23E-01
Acronyms	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; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
HWD	kg	4,20E-02	1,23E-02	2,26E-02	7,69E-02	5,40E-04	6,81E-03	4,34E-02	3,84E-04	-2,40E-02
NHWD	kg	1,14E+01	2,30E+01	1,83E+00	3,62E+01	3,89E-02	1,29E+01	3,85E+02	5,05E+01	-9,12E-01
RWD	kg	8,82E-04	1,43E-04	1,94E-04	1,22E-03	6,03E-06	7,93E-05	2,50E-04	3,20E-06	-7,21E-05
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,50E+02	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	8,73E-01	8,73E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal									
Disclaimer	[1] ADPF, ADPE, Water Use: the results of these environmental impact indicators must be used carefully as the uncertainties of these results are high or as there is limited experience with such indicators									

Biogenic carbon	Unit	Value
in the final product	kg C	6,93E-01
in the final product packaging	kg C	1,72E+00

CALCESAN Medesano
Results by Declared Unit: 1000 kg

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO2 eq	1,81E+02	4,32E+01	6,00E+00	2,30E+02	4,43E+00	1,90E+01	1,79E+01	1,13E+00	-4,95E+00
GWP-biogenic	kg CO2 eq	-1,06E+01	2,80E-02	1,06E+01	1,00E-03	8,98E-04	1,30E-02	6,01E-02	1,30E-03	-1,43E-01
GWP-luluc	kg CO2 eq	7,65E+00	1,40E-02	4,60E-02	7,71E+00	4,53E-04	6,30E-03	6,82E-03	2,38E-03	-2,21E-03
GWP-total	kg CO2 eq	1,78E+02	4,33E+01	1,67E+01	2,38E+02	4,43E+00	1,90E+01	1,80E+01	1,14E+00	-5,08E+00
ODP	kg CFC 11 eq	3,34E-05	9,37E-07	2,44E-07	3,46E-05	6,60E-08	4,15E-07	3,73E-07	2,12E-08	-7,13E-08
AP	mol H+ eq	6,16E-01	1,75E-01	3,03E-02	8,21E-01	3,96E-02	6,11E-02	1,46E-01	6,90E-03	-3,33E-02
EP-freshwater	kg P eq	3,75E-02	2,82E-03	3,69E-03	4,40E-02	1,43E-04	1,30E-03	8,10E-03	1,01E-04	-1,26E-03
EP-marine	kg N eq	2,62E-01	5,84E-02	1,09E-02	3,31E-01	1,84E-02	2,06E-02	5,54E-02	2,79E-03	-8,84E-03
EP-terrestrial	mol N eq	1,75E+00	6,37E-01	9,87E-02	2,48E+00	2,02E-01	2,24E-01	6,01E-01	3,03E-02	-1,14E-01
POCP	kg NMVOC eq	5,10E-01	2,43E-01	3,72E-02	7,90E-01	6,04E-02	9,26E-02	1,92E-01	1,02E-02	-3,17E-02
ADP-minerals&metals [1]	kg Sb eq	3,56E-04	1,38E-04	2,69E-05	5,21E-04	1,58E-06	6,41E-05	3,99E-05	2,47E-06	-5,14E-05
ADP-fossil [1]	MJ	5,69E+02	4,60E+01	3,03E+01	6,45E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
WDP [1]	m^3 world eq deprived	4,67E+01	2,28E+00	4,51E+00	5,35E+01	1,23E-01	1,05E+00	-4,78E+01	3,83E-01	-1,42E+01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
PERE	MJ	2,56E+02	9,56E+00	1,09E+02	3,74E+02	3,63E-01	4,41E+00	1,06E+01	1,80E+02	-9,94E+00
PERM	MJ	4,78E+01	0,00E+00	1,32E+02	1,79E+02	0,00E+00	0,00E+00	0,00E+00	-1,79E+02	0,00E+00
PERT	MJ	3,04E+02	9,56E+00	2,40E+02	5,54E+02	3,63E-01	4,41E+00	1,06E+01	2,32E-01	-9,94E+00
PENRE	MJ	4,34E+02	4,60E+01	0,00E+00	4,80E+02	2,24E+00	2,12E+01	3,48E+01	2,78E+02	-1,90E+01
PENRM	MJ	2,29E+02	0,00E+00	4,67E+01	2,76E+02	0,00E+00	0,00E+00	0,00E+00	-2,76E+02	0,00E+00
PENRT	MJ	6,63E+02	4,60E+01	4,67E+01	7,56E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	1,16E+00	7,29E-02	1,21E-01	1,35E+00	4,04E-03	3,35E-02	-1,02E+00	9,45E-03	-3,23E-01
Acronyms	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; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
HWD	kg	4,99E-02	1,48E-02	2,26E-02	8,73E-02	5,40E-04	6,81E-03	4,34E-02	3,84E-04	-2,40E-02
NHWD	kg	1,60E+01	2,76E+01	1,83E+00	4,54E+01	3,89E-02	1,29E+01	3,85E+02	5,05E+01	-9,12E-01
RWD	kg	1,02E-03	1,72E-04	1,94E-04	1,39E-03	6,03E-06	7,93E-05	2,50E-04	3,20E-06	-7,21E-05
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,50E+02	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	8,73E-01	8,73E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal									
Disclaimer	[1] ADPF, ADPE, Water Use: the results of these environmental impact indicators must be used carefully as the uncertainties of these results are high or as there is limited experience with such indicators									

Biogenic carbon	Unit	Value
in the final product	kg C	7,13E-01
in the final product packaging	kg C	1,72E+00

INIEZIONE NHL Medesano
Results by Declared Unit: 1000 kg

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO2 eq	2,92E+02	4,67E+01	6,00E+00	3,45E+02	4,43E+00	1,90E+01	1,79E+01	1,13E+00	-4,95E+00
GWP-biogenic	kg CO2 eq	3,39E+00	2,77E-02	-3,42E+00	1,00E-03	8,98E-04	1,30E-02	6,01E-02	1,30E-03	-1,43E-01
GWP-luluc	kg CO2 eq	4,90E-02	1,58E-02	4,60E-02	1,11E-01	4,53E-04	6,30E-03	6,82E-03	2,38E-03	-2,21E-03
GWP-total	kg CO2 eq	2,96E+02	4,67E+01	2,63E+00	3,45E+02	4,43E+00	1,90E+01	1,80E+01	1,14E+00	-5,08E+00
ODP	kg CFC 11 eq	1,42E-06	9,87E-07	2,44E-07	2,65E-06	6,60E-08	4,15E-07	3,73E-07	2,12E-08	-7,13E-08
AP	mol H+ eq	6,53E-01	2,70E-01	3,03E-02	9,54E-01	3,96E-02	6,11E-02	1,46E-01	6,90E-03	-3,33E-02
EP-freshwater	kg P eq	3,09E-02	2,95E-03	3,69E-03	3,75E-02	1,43E-04	1,30E-03	8,10E-03	1,01E-04	-1,26E-03
EP-marine	kg N eq	1,92E-01	8,22E-02	1,09E-02	2,86E-01	1,84E-02	2,06E-02	5,54E-02	2,79E-03	-8,84E-03
EP-terrestrial	mol N eq	2,19E+00	9,02E-01	9,87E-02	3,19E+00	2,02E-01	2,24E-01	6,01E-01	3,03E-02	-1,14E-01
POCP	kg NMVOC eq	6,14E-01	3,15E-01	3,72E-02	9,67E-01	6,04E-02	9,26E-02	1,92E-01	1,02E-02	-3,17E-02
ADP-minerals&metals [1]	kg Sb eq	2,50E-04	1,42E-04	2,69E-05	4,19E-04	1,58E-06	6,41E-05	3,99E-05	2,47E-06	-5,14E-05
ADP-fossil [1]	MJ	5,67E+02	4,80E+01	3,03E+01	6,45E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
WDP [1]	m^3 world eq deprived	2,30E+01	2,38E+00	4,51E+00	2,99E+01	1,23E-01	1,05E+00	-4,78E+01	3,83E-01	-1,42E+01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
PERE	MJ	6,98E+01	9,91E+00	1,09E+02	1,89E+02	3,63E-01	4,41E+00	1,06E+01	1,41E+02	-9,94E+00
PERM	MJ	9,37E+00	0,00E+00	1,32E+02	1,41E+02	0,00E+00	0,00E+00	0,00E+00	-1,41E+02	0,00E+00
PERT	MJ	7,92E+01	9,91E+00	2,40E+02	3,30E+02	3,63E-01	4,41E+00	1,06E+01	2,32E-01	-9,94E+00
PENRE	MJ	5,35E+02	4,80E+01	0,00E+00	5,83E+02	2,24E+00	2,12E+01	3,48E+01	7,97E+01	-1,90E+01
PENRM	MJ	3,13E+01	0,00E+00	4,67E+01	7,81E+01	0,00E+00	0,00E+00	0,00E+00	-7,81E+01	0,00E+00
PENRT	MJ	5,66E+02	4,80E+01	4,67E+01	6,61E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	6,49E-01	7,61E-02	1,21E-01	8,46E-01	4,04E-03	3,35E-02	-1,02E+00	9,45E-03	-3,23E-01
Acronyms	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; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
HWD	kg	2,98E-02	1,53E-02	2,26E-02	6,77E-02	5,40E-04	6,81E-03	4,34E-02	3,84E-04	-2,40E-02
NHWD	kg	2,24E+01	2,77E+01	1,83E+00	5,20E+01	3,89E-02	1,29E+01	3,85E+02	5,05E+01	-9,12E-01
RWD	kg	2,52E-03	1,77E-04	1,94E-04	2,90E-03	6,03E-06	7,93E-05	2,50E-04	3,20E-06	-7,21E-05
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,50E+02	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	8,73E-01	8,73E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal									
Disclaimer	[1] ADPF, ADPE, Water Use: the results of these environmental impact indicators must be used carefully as the uncertainties of these results are high or as there is limited experience with such indicators									

Biogenic carbon	Unit	Value
in the final product	kg C	1,24E-01
in the final product packaging	kg C	1,72E+00

RINFORZA FRCM Medesano
Results by Declared Unit: 1000 kg

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO2 eq	2,06E+02	3,98E+01	6,00E+00	2,52E+02	4,43E+00	1,90E+01	1,79E+01	1,13E+00	-4,95E+00
GWP-biogenic	kg CO2 eq	-4,05E+00	2,42E-02	4,03E+00	1,00E-03	8,98E-04	1,30E-02	6,01E-02	1,30E-03	-1,43E-01
GWP-luluc	kg CO2 eq	3,71E+00	1,32E-02	4,60E-02	3,77E+00	4,53E-04	6,30E-03	6,82E-03	2,38E-03	-2,21E-03
GWP-total	kg CO2 eq	2,06E+02	3,98E+01	1,01E+01	2,56E+02	4,43E+00	1,90E+01	1,80E+01	1,14E+00	-5,08E+00
ODP	kg CFC 11 eq	2,50E-05	8,48E-07	2,44E-07	2,61E-05	6,60E-08	4,15E-07	3,73E-07	2,12E-08	-7,13E-08
AP	mol H+ eq	5,36E-01	2,07E-01	3,03E-02	7,74E-01	3,96E-02	6,11E-02	1,46E-01	6,90E-03	-3,33E-02
EP-freshwater	kg P eq	3,25E-02	2,53E-03	3,69E-03	3,87E-02	1,43E-04	1,30E-03	8,10E-03	1,01E-04	-1,26E-03
EP-marine	kg N eq	2,26E-01	6,50E-02	1,09E-02	3,02E-01	1,84E-02	2,06E-02	5,54E-02	2,79E-03	-8,84E-03
EP-terrestrial	mol N eq	1,80E+00	7,12E-01	9,87E-02	2,61E+00	2,02E-01	2,24E-01	6,01E-01	3,03E-02	-1,14E-01
POCP	kg NMVOC eq	4,77E-01	2,55E-01	3,72E-02	7,69E-01	6,04E-02	9,26E-02	1,92E-01	1,02E-02	-3,17E-02
ADP-minerals&metals [1]	kg Sb eq	1,95E-04	1,22E-04	2,69E-05	3,44E-04	1,58E-06	6,41E-05	3,99E-05	2,47E-06	-5,14E-05
ADP-fossil [1]	MJ	4,70E+02	4,12E+01	3,03E+01	5,42E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
WDP [1]	m^3 world eq deprived	1,99E+01	2,04E+00	4,51E+00	2,65E+01	1,23E-01	1,05E+00	-4,78E+01	3,83E-01	-1,42E+01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
PERE	MJ	1,39E+02	8,52E+00	1,09E+02	2,56E+02	3,63E-01	4,41E+00	1,06E+01	1,64E+02	-9,94E+00
PERM	MJ	3,25E+01	0,00E+00	1,32E+02	1,64E+02	0,00E+00	0,00E+00	0,00E+00	-1,64E+02	0,00E+00
PERT	MJ	1,71E+02	8,52E+00	2,40E+02	4,20E+02	3,63E-01	4,41E+00	1,06E+01	2,32E-01	-9,94E+00
PENRE	MJ	4,35E+02	4,12E+01	0,00E+00	4,77E+02	2,24E+00	2,12E+01	3,48E+01	8,39E+01	-1,90E+01
PENRM	MJ	3,55E+01	0,00E+00	4,67E+01	8,23E+01	0,00E+00	0,00E+00	0,00E+00	-8,23E+01	0,00E+00
PENRT	MJ	4,71E+02	4,12E+01	4,67E+01	5,59E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	5,60E-01	6,53E-02	1,21E-01	7,46E-01	4,04E-03	3,35E-02	-1,02E+00	9,45E-03	-3,23E-01
Acronyms	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; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
HWD	kg	2,90E-02	1,32E-02	2,26E-02	6,48E-02	5,40E-04	6,81E-03	4,34E-02	3,84E-04	-2,40E-02
NHWD	kg	1,57E+01	2,41E+01	1,83E+00	4,17E+01	3,89E-02	1,29E+01	3,85E+02	5,05E+01	-9,12E-01
RWD	kg	1,17E-03	1,53E-04	1,94E-04	1,51E-03	6,03E-06	7,93E-05	2,50E-04	3,20E-06	-7,21E-05
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,50E+02	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	8,73E-01	8,73E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal									
Disclaimer	[1] ADPF, ADPE, Water Use: the results of these environmental impact indicators must be used carefully as the uncertainties of these results are high or as there is limited experience with such indicators									

Biogenic carbon	Unit	Value
in the final product	kg C	4,06E-01
in the final product packaging	kg C	1,72E+00

RINFORZA NHL M10 Colleferro
Results by Declared Unit: 1000 kg

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO2 eq	1,77E+02	1,46E+01	7,79E+00	2,00E+02	4,43E+00	1,90E+01	1,79E+01	1,13E+00	-4,95E+00
GWP-biogenic	kg CO2 eq	-1,70E+00	9,97E-03	1,69E+00	1,00E-03	8,98E-04	1,30E-02	6,01E-02	1,30E-03	-1,43E-01
GWP-luluc	kg CO2 eq	2,80E+00	4,80E-03	4,60E-02	2,85E+00	4,53E-04	6,30E-03	6,82E-03	2,38E-03	-2,21E-03
GWP-total	kg CO2 eq	1,78E+02	1,47E+01	9,52E+00	2,03E+02	4,43E+00	1,90E+01	1,80E+01	1,14E+00	-5,08E+00
ODP	kg CFC 11 eq	1,26E-06	3,20E-07	2,13E-07	1,79E-06	6,60E-08	4,15E-07	3,73E-07	2,12E-08	-7,13E-08
AP	mol H+ eq	4,39E-01	4,81E-02	3,05E-02	5,18E-01	3,96E-02	6,11E-02	1,46E-01	6,90E-03	-3,33E-02
EP-freshwater	kg P eq	2,11E-02	9,90E-04	3,68E-03	2,58E-02	1,43E-04	1,30E-03	8,10E-03	1,01E-04	-1,26E-03
EP-marine	kg N eq	1,41E-01	1,64E-02	1,07E-02	1,68E-01	1,84E-02	2,06E-02	5,54E-02	2,79E-03	-8,84E-03
EP-terrestrial	mol N eq	1,47E+00	1,78E-01	1,00E-01	1,75E+00	2,02E-01	2,24E-01	6,01E-01	3,03E-02	-1,14E-01
POCP	kg NMVOC eq	4,12E-01	7,29E-02	3,75E-02	5,23E-01	6,04E-02	9,26E-02	1,92E-01	1,02E-02	-3,17E-02
ADP-minerals&metals [1]	kg Sb eq	1,76E-04	4,88E-05	2,67E-05	2,51E-04	1,58E-06	6,41E-05	3,99E-05	2,47E-06	-5,14E-05
ADP-fossil [1]	MJ	3,74E+02	1,62E+01	3,02E+01	4,20E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
WDP [1]	m^3 world eq deprived	1,84E+01	7,98E-01	4,54E+00	2,38E+01	1,23E-01	1,05E+00	-4,78E+01	3,83E-01	-1,42E+01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
PERE	MJ	1,10E+02	3,36E+00	1,09E+02	2,22E+02	3,63E-01	4,41E+00	1,06E+01	1,52E+02	-9,94E+00
PERM	MJ	2,06E+01	0,00E+00	1,32E+02	1,52E+02	0,00E+00	0,00E+00	0,00E+00	-1,52E+02	0,00E+00
PERT	MJ	1,30E+02	3,36E+00	2,40E+02	3,74E+02	3,63E-01	4,41E+00	1,06E+01	2,32E-01	-9,94E+00
PENRE	MJ	3,57E+02	1,62E+01	0,00E+00	3,73E+02	2,24E+00	2,12E+01	3,48E+01	6,58E+01	-1,90E+01
PENRM	MJ	1,74E+01	0,00E+00	4,67E+01	6,41E+01	0,00E+00	0,00E+00	0,00E+00	-6,41E+01	0,00E+00
PENRT	MJ	3,74E+02	1,62E+01	4,67E+01	4,37E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	5,02E-01	2,55E-02	1,22E-01	6,49E-01	4,04E-03	3,35E-02	-1,02E+00	9,45E-03	-3,23E-01
Acronyms	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; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
HWD	kg	2,36E-02	5,20E-03	1,72E-02	4,61E-02	5,40E-04	6,81E-03	4,34E-02	3,84E-04	-2,40E-02
NHWD	kg	1,33E+01	9,84E+00	1,57E+00	2,47E+01	3,89E-02	1,29E+01	3,85E+02	5,05E+01	-9,12E-01
RWD	kg	1,15E-03	6,05E-05	1,94E-04	1,40E-03	6,03E-06	7,93E-05	2,50E-04	3,20E-06	-7,21E-05
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	2,60E+00	2,60E+00	0,00E+00	0,00E+00	9,50E+02	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	1,35E-01	1,35E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal									
Disclaimer	[1] ADPF, ADPE, Water Use: the results of these environmental impact indicators must be used carefully as the uncertainties of these results are high or as there is limited experience with such indicators									

Biogenic carbon	Unit	Value
in the final product	kg C	3,53E-01
in the final product packaging	kg C	1,72E+00

RINFORZA NHL M10 – BULK Colleferro
Results by Declared Unit: 1000 kg

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO2 eq	1,75E+02	1,46E+01	2,14E+00	1,92E+02	4,43E+00	1,90E+01	1,79E+01	1,13E+00	-4,95E+00
GWP-biogenic	kg CO2 eq	-1,70E+00	9,97E-03	1,69E+00	1,00E-03	8,98E-04	1,30E-02	6,01E-02	1,30E-03	-1,43E-01
GWP-luluc	kg CO2 eq	2,80E+00	4,80E-03	3,45E-06	2,81E+00	4,53E-04	6,30E-03	6,82E-03	2,38E-03	-2,21E-03
GWP-total	kg CO2 eq	1,76E+02	1,47E+01	3,83E+00	1,94E+02	4,43E+00	1,90E+01	1,80E+01	1,14E+00	-5,08E+00
ODP	kg CFC 11 eq	1,20E-06	3,20E-07	2,47E-10	1,52E-06	6,60E-08	4,15E-07	3,73E-07	2,12E-08	-7,13E-08
AP	mol H+ eq	4,31E-01	4,81E-02	5,76E-04	4,80E-01	3,96E-02	6,11E-02	1,46E-01	6,90E-03	-3,33E-02
EP-freshwater	kg P eq	2,04E-02	9,90E-04	3,03E-06	2,14E-02	1,43E-04	1,30E-03	8,10E-03	1,01E-04	-1,26E-03
EP-marine	kg N eq	1,39E-01	1,64E-02	3,23E-04	1,56E-01	1,84E-02	2,06E-02	5,54E-02	2,79E-03	-8,84E-03
EP-terrestrial	mol N eq	1,45E+00	1,78E-01	3,16E-03	1,63E+00	2,02E-01	2,24E-01	6,01E-01	3,03E-02	-1,14E-01
POCP	kg NMVOC eq	4,05E-01	7,29E-02	9,22E-04	4,79E-01	6,04E-02	9,26E-02	1,92E-01	1,02E-02	-3,17E-02
ADP-minerals&metals [1]	kg Sb eq	1,72E-04	4,88E-05	3,31E-08	2,20E-04	1,58E-06	6,41E-05	3,99E-05	2,47E-06	-5,14E-05
ADP-fossil [1]	MJ	3,62E+02	1,62E+01	1,72E-02	3,78E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
WDP [1]	m3 world eq deprived	1,81E+01	7,98E-01	1,31E-03	1,89E+01	1,23E-01	1,05E+00	-4,78E+01	3,83E-01	-1,42E+01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
PERE	MJ	1,08E+02	3,36E+00	4,46E-03	1,12E+02	3,63E-01	4,41E+00	1,06E+01	2,08E+01	-9,94E+00
PERM	MJ	2,06E+01	0,00E+00	0,00E+00	2,06E+01	0,00E+00	0,00E+00	0,00E+00	-2,06E+01	0,00E+00
PERT	MJ	1,29E+02	3,36E+00	4,46E-03	1,32E+02	3,63E-01	4,41E+00	1,06E+01	2,32E-01	-9,94E+00
PENRE	MJ	3,50E+02	1,62E+01	1,72E-02	3,66E+02	2,24E+00	2,12E+01	3,48E+01	1,32E+01	-1,90E+01
PENRM	MJ	1,16E+01	0,00E+00	0,00E+00	1,16E+01	0,00E+00	0,00E+00	0,00E+00	-1,16E+01	0,00E+00
PENRT	MJ	3,62E+02	1,62E+01	1,72E-02	3,78E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	4,93E-01	2,55E-02	4,00E-05	5,19E-01	4,04E-03	3,35E-02	-1,02E+00	9,45E-03	-3,23E-01
Acronyms	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; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
HWD	kg	2,28E-02	5,20E-03	2,21E-04	2,82E-02	5,40E-04	6,81E-03	4,34E-02	3,84E-04	-2,40E-02
NHWD	kg	1,32E+01	9,84E+00	1,11E-02	2,31E+01	3,89E-02	1,29E+01	3,85E+02	5,05E+01	-9,12E-01
RWD	kg	1,11E-03	6,05E-05	1,07E-07	1,17E-03	6,03E-06	7,93E-05	2,50E-04	3,20E-06	-7,21E-05
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	7,54E-02	7,54E-02	0,00E+00	0,00E+00	9,50E+02	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	1,04E-02	1,04E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal									
Disclaimer	[1] ADPF, ADPE, Water Use: the results of these environmental impact indicators must be used carefully as the uncertainties of these results are high or as there is limited experience with such indicators									

Biogenic carbon	Unit	Value
in the final product	kg C	3,53E-01
in the final product packaging	kg C	0,00E+00

RINFORZA NHL M15 Medesano
Results by Declared Unit: 1000 kg

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO2 eq	1,97E+02	3,95E+01	6,00E+00	2,43E+02	4,43E+00	1,90E+01	1,79E+01	1,13E+00	-4,95E+00
GWP-biogenic	kg CO2 eq	-2,49E+00	2,41E-02	2,47E+00	1,00E-03	8,98E-04	1,30E-02	6,01E-02	1,30E-03	-1,43E-01
GWP-luluc	kg CO2 eq	1,89E+00	1,32E-02	4,60E-02	1,95E+00	4,53E-04	6,30E-03	6,82E-03	2,38E-03	-2,21E-03
GWP-total	kg CO2 eq	1,97E+02	3,96E+01	8,51E+00	2,45E+02	4,43E+00	1,90E+01	1,80E+01	1,14E+00	-5,08E+00
ODP	kg CFC 11 eq	2,50E-05	8,43E-07	2,44E-07	2,61E-05	6,60E-08	4,15E-07	3,73E-07	2,12E-08	-7,13E-08
AP	mol H+ eq	5,16E-01	2,07E-01	3,03E-02	7,53E-01	3,96E-02	6,11E-02	1,46E-01	6,90E-03	-3,33E-02
EP-freshwater	kg P eq	3,14E-02	2,51E-03	3,69E-03	3,76E-02	1,43E-04	1,30E-03	8,10E-03	1,01E-04	-1,26E-03
EP-marine	kg N eq	2,10E-01	6,48E-02	1,09E-02	2,86E-01	1,84E-02	2,06E-02	5,54E-02	2,79E-03	-8,84E-03
EP-terrestrial	mol N eq	1,72E+00	7,09E-01	9,87E-02	2,53E+00	2,02E-01	2,24E-01	6,01E-01	3,03E-02	-1,14E-01
POCP	kg NMVOC eq	4,57E-01	2,54E-01	3,72E-02	7,48E-01	6,04E-02	9,26E-02	1,92E-01	1,02E-02	-3,17E-02
ADP-minerals&metals [1]	kg Sb eq	1,86E-04	1,22E-04	2,69E-05	3,34E-04	1,58E-06	6,41E-05	3,99E-05	2,47E-06	-5,14E-05
ADP-fossil [1]	MJ	4,62E+02	4,10E+01	3,03E+01	5,33E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
WDP [1]	m^3 world eq deprived	1,86E+01	2,03E+00	4,51E+00	2,52E+01	1,23E-01	1,05E+00	-4,78E+01	3,83E-01	-1,42E+01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
PERE	MJ	9,35E+01	8,47E+00	1,09E+02	2,11E+02	3,63E-01	4,41E+00	1,06E+01	1,67E+02	-9,94E+00
PERM	MJ	3,50E+01	0,00E+00	1,32E+02	1,67E+02	0,00E+00	0,00E+00	0,00E+00	-1,67E+02	0,00E+00
PERT	MJ	1,29E+02	8,47E+00	2,40E+02	3,77E+02	3,63E-01	4,41E+00	1,06E+01	2,32E-01	-9,94E+00
PENRE	MJ	4,27E+02	4,10E+01	0,00E+00	4,68E+02	2,24E+00	2,12E+01	3,48E+01	8,39E+01	-1,90E+01
PENRM	MJ	3,55E+01	0,00E+00	4,67E+01	8,23E+01	0,00E+00	0,00E+00	0,00E+00	-8,23E+01	0,00E+00
PENRT	MJ	4,63E+02	4,10E+01	4,67E+01	5,50E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	5,00E-01	6,50E-02	1,21E-01	6,86E-01	4,04E-03	3,35E-02	-1,02E+00	9,45E-03	-3,23E-01
Acronyms	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; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
HWD	kg	2,61E-02	1,31E-02	2,26E-02	6,18E-02	5,40E-04	6,81E-03	4,34E-02	3,84E-04	-2,40E-02
NHWD	kg	1,48E+01	2,40E+01	1,83E+00	4,06E+01	3,89E-02	1,29E+01	3,85E+02	5,05E+01	-9,12E-01
RWD	kg	1,12E-03	1,52E-04	1,94E-04	1,47E-03	6,03E-06	7,93E-05	2,50E-04	3,20E-06	-7,21E-05
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,50E+02	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	8,73E-01	8,73E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal									
Disclaimer	[1] ADPF, ADPE, Water Use: the results of these environmental impact indicators must be used carefully as the uncertainties of these results are high or as there is limited experience with such indicators									

Biogenic carbon	Unit	Value
in the final product	kg C	4,75E-01
in the final product packaging	kg C	1,72E+00

RINFORZA NHL M15 - BULK Medesano
Results by Declared Unit: 1000 kg

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO2 eq	1,96E+02	3,95E+01	4,26E-01	2,35E+02	4,43E+00	1,90E+01	1,79E+01	1,13E+00	-4,95E+00
GWP-biogenic	kg CO2 eq	-2,12E+00	2,41E-02	2,10E+00	1,00E-03	8,98E-04	1,30E-02	6,01E-02	1,30E-03	-1,43E-01
GWP-luluc	kg CO2 eq	1,89E+00	1,32E-02	2,96E-05	1,90E+00	4,53E-04	6,30E-03	6,82E-03	2,38E-03	-2,21E-03
GWP-total	kg CO2 eq	1,95E+02	3,96E+01	2,52E+00	2,37E+02	4,43E+00	1,90E+01	1,80E+01	1,14E+00	-5,08E+00
ODP	kg CFC 11 eq	2,50E-05	8,43E-07	3,15E-08	2,58E-05	6,60E-08	4,15E-07	3,73E-07	2,12E-08	-7,13E-08
AP	mol H+ eq	5,10E-01	2,07E-01	3,49E-04	7,17E-01	3,96E-02	6,11E-02	1,46E-01	6,90E-03	-3,33E-02
EP-freshwater	kg P eq	3,09E-02	2,51E-03	8,41E-06	3,35E-02	1,43E-04	1,30E-03	8,10E-03	1,01E-04	-1,26E-03
EP-marine	kg N eq	2,09E-01	6,48E-02	5,55E-04	2,74E-01	1,84E-02	2,06E-02	5,54E-02	2,79E-03	-8,84E-03
EP-terrestrial	mol N eq	1,71E+00	7,09E-01	1,30E-03	2,42E+00	2,02E-01	2,24E-01	6,01E-01	3,03E-02	-1,14E-01
POCP	kg NMVOC eq	4,52E-01	2,54E-01	6,15E-04	7,06E-01	6,04E-02	9,26E-02	1,92E-01	1,02E-02	-3,17E-02
ADP-minerals&metals [1]	kg Sb eq	1,84E-04	1,22E-04	2,34E-07	3,05E-04	1,58E-06	6,41E-05	3,99E-05	2,47E-06	-5,14E-05
ADP-fossil [1]	MJ	4,54E+02	4,10E+01	1,30E-01	4,95E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
WDP [1]	m^3 world eq deprived	1,85E+01	2,03E+00	-3,17E-02	2,05E+01	1,23E-01	1,05E+00	-4,78E+01	3,83E-01	-1,42E+01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
PERE	MJ	9,09E+01	8,47E+00	2,69E-02	9,94E+01	3,63E-01	4,41E+00	1,06E+01	3,13E+01	-9,94E+00
PERM	MJ	3,10E+01	0,00E+00	0,00E+00	3,10E+01	0,00E+00	0,00E+00	0,00E+00	-3,10E+01	0,00E+00
PERT	MJ	1,22E+02	8,47E+00	2,69E-02	1,30E+02	3,63E-01	4,41E+00	1,06E+01	2,32E-01	-9,94E+00
PENRE	MJ	4,19E+02	4,10E+01	1,30E-01	4,60E+02	2,24E+00	2,12E+01	3,48E+01	3,72E+01	-1,90E+01
PENRM	MJ	3,55E+01	0,00E+00	0,00E+00	3,55E+01	0,00E+00	0,00E+00	0,00E+00	-3,55E+01	0,00E+00
PENRT	MJ	4,54E+02	4,10E+01	1,30E-01	4,95E+02	2,24E+00	2,12E+01	3,48E+01	1,65E+00	-1,90E+01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	4,95E-01	6,50E-02	-5,41E-04	5,60E-01	4,04E-03	3,35E-02	-1,02E+00	9,45E-03	-3,23E-01
Acronyms	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; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
HWD	kg	2,56E-02	1,31E-02	3,99E-03	4,27E-02	5,40E-04	6,81E-03	4,34E-02	3,84E-04	-2,40E-02
NHWD	kg	1,47E+01	2,40E+01	3,42E-01	3,90E+01	3,89E-02	1,29E+01	3,85E+02	5,05E+01	-9,12E-01
RWD	kg	1,10E-03	1,52E-04	4,76E-07	1,25E-03	6,03E-06	7,93E-05	2,50E-04	3,20E-06	-7,21E-05
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,50E+02	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	5,75E-01	5,75E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acronyms	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy, electricity; EET = Exported energy, thermal									
Disclaimer	[1] ADPF, ADPE, Water Use: the results of these environmental impact indicators must be used carefully as the uncertainties of these results are high or as there is limited experience with such indicators									

Biogenic carbon	Unit	Value
in the final product	kg C	4,75E-01
in the final product packaging	kg C	0,00E+00

GUIDELINES

Guidelines	UNI ISO 14040: 2021
	UNI ISO 14044: 2021
	EN ISO 14025:2010
	EN 15804:2012+A2:2019/AC:2021
	PCR per i prodotti da costruzione: ICMQ-001/15 rev 3.2 (compliant to EN 15804+A2
	LCA Report_Analisi del ciclo di vita di premiscelati, cementi e leganti plastici, pitture e tonachini Novembre 2025_rev.05
	Regolamento EPDITALY v. 6.0 Published on: 30/10/2023