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ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN 15804+A2

LLC NOVOTHERM
NT Roof 160, NT R 60, NT Roof 180, NT Roof 190, NT R 70, NT Floor 150, Thermo R Dach High

Owner of the declaration
LLC NOVOTHERM
44 Karachivs'ke Highway
61000 Novobavarskyi District
Ukraine

Product
NT Roof 160, NT R 60, NT Roof 180, NT Roof 190, NT R 70, NT Floor 150, Thermo R Dach High

Declared product / Declared unit
1 m^2 with a thermal resistance (R) of 1 m^2K/W

This declaration is based on Product Category Rules
EN 15804:2012 + A2:2019,
NPCR Part A:2021 ,
NPCR 012 Part B for Thermal Insulation Products

Program operator:
EPD Global
Majorstuen P.O. Box 5250
N-0303 Oslo
Norway

Declaration number
NEPD-12064-12064-2

Registration number
NEPD-12064-12064-2

Issue date
17.08.2026

Valid to
16.08.2031

EPD Software
Emidat Platform v1.0.0

General Information

Product
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N-0303 Oslo
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EN 15804:2012 + A2:2019,
NPCR Part A:2021 ,
NPCR 012 Part B for Thermal Insulation Products

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

Declared unit
1 m^2 with a thermal resistance (R) of 1 m^2K/W

General information on verification of EPD from EPD tools
Independent verification of data, other environmental information and the declaration according to ISO 14025:2011-10, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD Global's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD Global, and iii) the process is reviewed annually by an independent third-party verifier. See Appendix G of EPD Global's General Programme Instructions for further information on EPD tools.

Verification
Independent third-party verification based on the verification of the EPD tool, background data and test-EPD in accordance with EPD Global's procedures and guidelines for verification and approval of EPD tools.
Third-party verifier: Charlotte Merlin, FORCE Technology

Owner of the declaration
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61000 Novobavarskyi District, Ukraine

Place of production
Novobavarskyi District, Ukraine

Management system
-

Issue date
17.08.2026

Valid to
16.08.2031

Year of study
2024

Comparability
EPDs of construction products may not be comparable if they do not comply with EN 15804 and are not seen in a building context. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database (including primary and secondary data).

Development and verification of EPD
The declaration was created using the Emidat EPD tool v1.0, developed by Emidat GmbH which is third-party verified and approved as a Reference Flow Tool with internal review under administration and surveillance by EPD Global under provisions stated in general information on verification of EPD from EPD tools.

Developer of EPD: Edoardo Pizzato
Reviewer of company-specific input data and EPD: Valter Pizzato

Approved
Håkon Hauan, The Norwegian EPD Foundation

Product

Product description

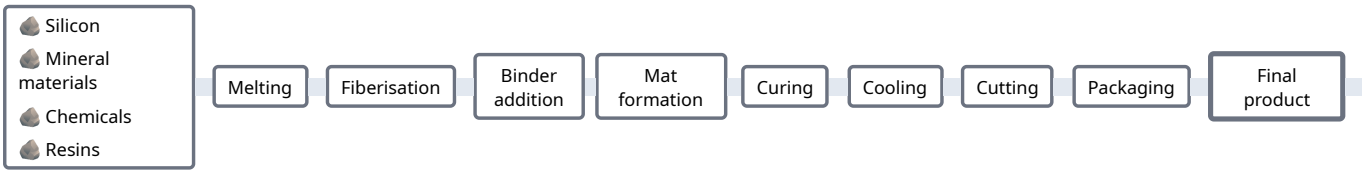
Super high-density panel with mineral fibers oriented to ensure maximum mechanical strength. The composition incorporates an increasing percentage of recycled material from industrial process waste, while maintaining unchanged technical performance. The uniform single-layer profile is achieved through controlled compaction technology, which guarantees dimensional and performance consistency.

No packaging was included for the modeled product.

Application description

Thermal insulation for flat and pitched roofs with high mechanical resistance requirements under static and dynamic loads. Specifically designed for walkable flat roofs, intensive green roofs, industrial roofing, and all applications where superior mechanical performance is required. Its tensile strength and excellent dimensional stability make it suitable for roofing systems exposed to severe thermal and mechanical stress, including use in seismic areas.

Production process



Product specification

Name of ingredient	Share of total weight	Country of origin
Chemicals	0 - 2 %	Various
Mineral materials	90 - 100 %	Ukraine
Resins	2 - 10 %	Poland
Silicon	0 - 2 %	Poland

Technical data

The technical data refers to the reference product of 1 m^2 .

	Unit	Value
Mass	kg	16
Thermal conductivity	W / mK	0.036
Fire class	-	A1
Thermal resistance (R-value)	m^2K / W	2.78
Thickness	mm	100
Density	kg / m^3	160

LCA results are calculated for the reference product and then converted to the declared unit of 1 m^2 with a thermal resistance (R) of 1 m^2K/W .

Declared-unit conversion factor	0.36

The product is produced according to the harmonized standard EN 13162.

Market
Ukraine

Recipients
B2B

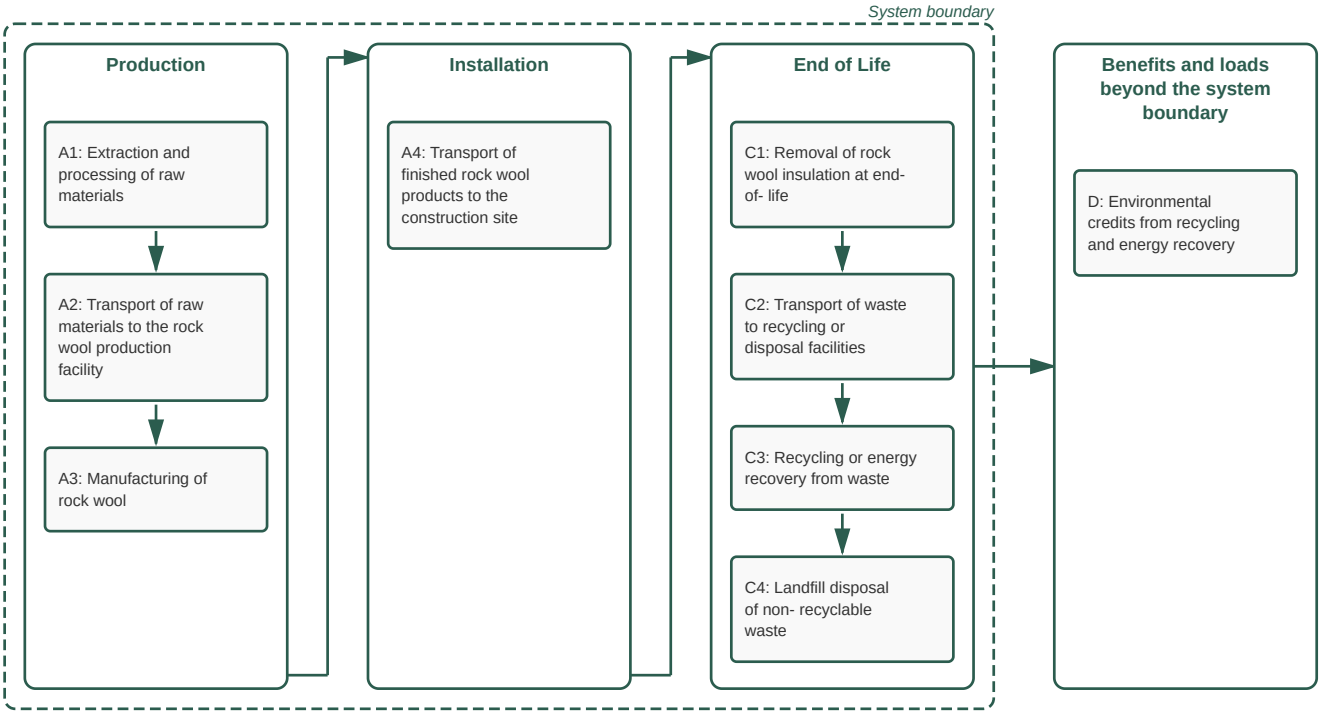
LCA: Calculation rules

Declared unit
1 m^2 with a thermal resistance (R) of 1 m^2K/W

Product lifetime
50 years
This value represents a conventional product lifespan, not a guaranteed performance duration, and assumes normal exposure conditions, adequate design, and routine maintenance.

Reference service life
Not declared

System boundary



Data quality
The foreground data are based on extensive and detailed data collection at the production site of the manufacturer, covering key processes such as raw material sourcing, formulation, and manufacturing. These foreground data are fully linked with corresponding datasets from the background database (ecoinvent 3.10) or with EN15804+A2-compliant EPDs, ensuring consistency, reliability, and maintaining alignment with the latest industry standards.

EN15804+A2-compliant EPDs were used as datasets in this EPD for the following materials:

Category	Year
Mineral materials	2024

The overall data representativeness is rated as good with an overall score of 4.00/5, in accordance with EN 15804+A2 Annex E guidance on data quality assessment, considering geographical, technical, and temporal representativeness.

The following table discloses all processes or activities assessed with very poor or poor data representativeness according to EN 15804+A2, as well as those assessed as fair that contribute more than 30 % to any core impact indicator in A1–A3:

Element	Minimal Representativeness	Source	Year
Recycling	Very poor	ecoinvent 3.10	2023
Chemicals	Poor	ecoinvent 3.10	2023
Incineration	Poor	ecoinvent 3.10	2023
Landfill	Poor	ecoinvent 3.10	2023
Manufacturing fuels	Poor	ecoinvent 3.10	2023
Mineral materials	Poor	ecoinvent 3.10	2023
Packaging	Poor	ecoinvent 3.10	2023
Wastewater	Poor	ecoinvent 3.10	2023
Water	Poor	ecoinvent 3.10	2023
Resins	Fair	ecoinvent 3.10	2023

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

	Production			Installation		Use stage							End-of-Life				Next product system
	Raw material supply	Transport	Manufacturing	Transport	Installation Process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Demolition	Transport	Waste Processing	Disposal	Benefits and loads beyond the system boundary
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x
Geography			UA	UA	MND	MND	MND	MND	MND	MND	MND	MND	UA	UA	UA	UA	UA

For the geographies modeled in A1 and A2, refer to *Product specification*.

Type of EPD: Cradle to gate with options, modules A4, C1-C4 + D

Stage of Material Production and Construction

Module A1: Extraction and processing of raw materials
Module A2: Transport of raw materials to the rock wool production facility
Module A3: Manufacturing of rock wool
Module A4: Transport of finished rock wool products to the construction site
Module A5: Installation of rock wool insulation at the construction site

Disposal Stage

Module C1: Removal of rock wool insulation at end-of-life
Module C2: Transport of waste to recycling or disposal facilities
Module C3: Recycling or energy recovery from waste
Module C4: Landfill disposal of non-recyclable waste

Credits and burdens outside the system boundaries

Module D: Environmental credits from recycling and energy recovery

Cut-off criteria

No cut-offs were applied.

Allocation

Foreground inventory data (energy and fuels, ancillary materials, emissions and waste) was collected at the production process level. Mass-based allocation was applied to allocate the total output of the production process in 2024 to the reference product.

Key assumptions and estimates

Production process flows are allocated to the reference product, as described under allocation. The mass-based allocation assumes a uniform distribution of production impacts across co-products. Foreground inventory data is checked for consistency of production process, to ensure the validity of the allocated results.

LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD. Mass and energy flows are reported per 1 m^2 of product. The values refer to the LCA of the reference product before applying the declared-unit conversion factor.

Transport to the building site (A4)	Value	Unit
Location of the production site	Ukraine	
Location of the installation site	Ukraine	
Transported mass	16.00	kg
Transport modality: Truck	transport, freight, lorry >32 metric ton, EURO6	-
Distance	300.00	km
Energy demand	1.58	MJ / t*km
Energy demand (km)	0.03	MJ / km
Capacity utilization	53.30	%

Transport of the product and its packaging from the production site to the installation site. Transport distances are based on external sources such as reported market averages, standards or PCRs. Vehicle type, fuel consumption and capacity utilization assumptions stem from the underlying background transport datasets and are stated below.

End-of-life scenario (C1-C4)	Value	Unit
Collection process specified by type		
Collected individually	0	kg
Collected with mixed construction and demolition waste	16.00	kg
Recovery system specified by type		
Destined for reuse	0	kg
Destined for recycling	0	kg
Destined for energy recovery	0	kg
Disposal specified by type		
Product or material destined for final disposal	16.00	kg
Transport		
Distance to landfill	50.00	km
Transport modality: Truck	transport, freight, lorry >32 metric ton, EURO6	-
Energy demand	1.58	MJ / t*km
Energy demand (km)	0.03	MJ / km
Capacity utilization	53.30	%

For the manual deconstruction of the product, no environmental impact is modeled. Module C2 includes the impact of transportation of material after deconstruction, during the End-of-Life stage.

Reuse, recovery and/or recycling potentials (D)	Value	Unit
Amount of secondary material that the system takes in	1.00	kg
Installation: Material eligible for recycling/reuse credits	0	kg
End-of-life: Material eligible for recycling/reuse credits	0	kg
End-of-life: Exported energy eligible for credits	0	MJ

Calculation of loads and benefits per EN 15804+A2. Exported energy is credited only where it originates from the incineration of primary material; landfilled fractions receive no exported-energy credit and therefore no avoided primary energy consumption. Recycling or reuse benefits are credited when primary material from the product is recovered at end-of-life and replaces virgin material that would otherwise have been produced.

LCA: Results

Core environmental impact indicators

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
GWP-total	kg CO_2-eq.	1.13e+01	1.79e-01	0.00e+00	2.99e-02	0.00e+00	3.60e-02	0.00e+00
GWP-fossil	kg CO_2-eq.	1.13e+01	1.79e-01	0.00e+00	2.99e-02	0.00e+00	3.60e-02	0.00e+00
GWP-biogenic	kg CO_2-eq.	4.06e-03	2.81e-06	0.00e+00	4.68e-07	0.00e+00	0.00e+00	0.00e+00
GWP-luluc	kg CO_2-eq.	2.13e-03	7.50e-05	0.00e+00	1.25e-05	0.00e+00	1.87e-05	0.00e+00
ODP	kg CFC-11-Eq	8.92e-08	2.88e-09	0.00e+00	4.81e-10	0.00e+00	1.04e-09	0.00e+00
AP	mol H+-Eq	7.07e-02	4.57e-04	0.00e+00	7.62e-05	0.00e+00	2.55e-04	0.00e+00
EP-freshwater	kg P-Eq	2.22e-03	1.45e-05	0.00e+00	2.42e-06	0.00e+00	2.99e-06	0.00e+00
EP-marine	kg N-Eq	9.52e-03	1.16e-04	0.00e+00	1.93e-05	0.00e+00	9.72e-05	0.00e+00
EP-terrestrial	mol N-Eq	1.02e-01	1.26e-03	0.00e+00	2.09e-04	0.00e+00	1.06e-03	0.00e+00
POCP	kg NMVOC-Eq	3.46e-02	6.92e-04	0.00e+00	1.15e-04	0.00e+00	3.80e-04	0.00e+00
ADPE	kg Sb-Eq	1.63e-05	5.18e-07	0.00e+00	8.63e-08	0.00e+00	5.71e-08	0.00e+00
ADPF	MJ, net calorific value	1.19e+02	2.70e+00	0.00e+00	4.50e-01	0.00e+00	8.83e-01	0.00e+00
WDP	m^3 world Eq deprived	9.68e-01	1.29e-02	0.00e+00	2.16e-03	0.00e+00	2.47e-03	0.00e+00

GWP-total: Global Warming Potential - total , **GWP-fossil**: Global warming potential - fossil , **GWP-biogenic**: Global Warming Potential - biogenic , **GWP-luluc**: Global Warming Potential - luluc , **ODP**: Depletion potential of the stratospheric ozone layer , **AP**: Acidification potential, Accumulated Exceedance , **EP-freshwater**: Eutrophication potential - freshwater , **EP-marine**: Eutrophication potential - marine , **EP-terrestrial**: Eutrophication potential - terrestrial , **POCP**: Photochemical Ozone Creation Potential , **ADPE**: Abiotic depletion potential - non-fossil resources , **ADPF**: Abiotic depletion potential - fossil resources , **WDP**: Water (user) deprivation potential

Additional indicators

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
PM	disease incidence	ND	1.76e-08	0.00e+00	2.93e-09	0.00e+00	5.80e-09	0.00e+00
IRP	kBq U235-Eq	ND	2.38e-03	0.00e+00	3.97e-04	0.00e+00	5.63e-04	0.00e+00
ETP-fw	CTUe	ND	6.49e-01	0.00e+00	1.08e-01	0.00e+00	1.21e-01	0.00e+00
HTP-c	CTUh	ND	9.23e-10	0.00e+00	1.54e-10	0.00e+00	1.63e-10	0.00e+00
HTP-nc	CTUh	ND	1.77e-09	0.00e+00	2.96e-10	0.00e+00	1.58e-10	0.00e+00
SQP	dimensionless	ND	2.71e+00	0.00e+00	4.52e-01	0.00e+00	1.74e+00	0.00e+00

PM: Potential incidence of disease due to PM emissions , **IRP**: Potential Human exposure efficiency relative to U235 , **ETP-fw**: Potential Comparative Toxic Unit for ecosystems , **HTP-c**: Potential Comparative Toxic Unit for humans - cancer effects , **HTP-nc**: Potential Comparative Toxic Unit for humans - non-cancer effects , **SQP**: Potential Soil quality index . **IRP**: This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator. **ETP-fw, HTP-c, HTP-nc, SQP**: The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with these indicators.

Use of resources

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
PERE	MJ	2.97e+00	3.54e-02	0.00e+00	5.90e-03	0.00e+00	8.18e-03	0.00e+00
PERM	MJ	2.21e-03	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00

Use of resources

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
PERT	MJ	2.97e+00	3.54e-02	0.00e+00	5.90e-03	0.00e+00	8.18e-03	0.00e+00
PENRE	MJ	1.13e+02	2.70e+00	0.00e+00	4.50e-01	0.00e+00	8.83e-01	0.00e+00
PENRM	MJ	6.58e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00
PENRT	MJ	1.19e+02	2.70e+00	0.00e+00	4.50e-01	0.00e+00	8.83e-01	0.00e+00
SM	kg	3.59e-01	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
NRSF	MJ	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00
FW	m^3	2.94e-02	3.97e-04	0.00e+00	6.62e-05	0.00e+00	9.15e-04	0.00e+00

PERE: Primary energy resources - renewable: use as energy carrier , **PERM**: Primary energy resources - renewable: used as raw materials , **PERT**: Primary energy resources - renewable: total , **PENRE**: Primary energy resources - non-renewable: use as energy carrier , **PENRM**: Primary energy resources - non-renewable: used as raw materials , **PENRT**: Primary energy resources - non-renewable: total , **SM**: Use of secondary material , **RSF**: Renewable secondary fuels , **NRSF**: Non-renewable secondary fuels , **FW**: Net use of fresh water

Waste flows

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
HWD	kg	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00
NHWD	kg	6.99e-07	0.00e+00	0.00e+00	0.00e+00	0.00e+00	5.76e+00	0.00e+00
RWD	kg	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00

HWD: Hazardous waste disposed , **NHWD**: Non hazardous waste disposed , **RWD**: Radioactive waste disposed

Output flows

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
CRU	kg	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00
MFR	kg	4.66e-07	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00
MER	kg	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00
EEE	MJ	6.81e-07	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00
EET	MJ	1.40e-06	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00

CRU: Components for re-use , **MFR**: Materials for recycling , **MER**: Materials for energy recovery , **EEE**: Exported electrical energy , **EET**: Exported thermal energy

Name	Value	Unit
Biogenic carbon content in product	0.00e+00	kg C
Biogenic carbon content in accompanying packaging	0.00e+00	kg C

Additional requirements

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

None.

Dangerous substances

The product contains no hazardous substances given by the REACH Candidate List or the Norwegian Priority List.

Additional environmental information

Secondary content

The product contains 4.32 % secondary material. Secondary material includes recycled, recovered and by-product content.

Additional environmental impact indicators required in NPCR Part A for construction products

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
GWP-IOBC	kg CO_2-eq.	1.13e+01	1.80e-01	0.00e+00	2.99e-02	0.00e+00	3.60e-02	0.00e+00

GWP-IOBC: Global Warming Potential - Instantaneous oxidation of biogenic carbon

Bibliography

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EN 15804:2012+A2:2019	Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
EN 15942:2022-04	Sustainability of construction works - Environmental product declarations - Communication format business-to-business
ISO 14025:2011-10	Environmental labels and declarations - Type III environmental declarations - Principles and procedures
ISO 14040:2021-02	Environmental management - Life cycle assessment - Principles and framework
ISO 14044:2021-02	Environmental management - Life cycle assessment - Requirements and guidelines
EF 3.1	Environmental Footprint (EF) Life Cycle Impact Assessment method - Characterisation Factors version 3.1, European Commission, Joint Research Centre (JRC)
ecoinvent 3.10	ecoinvent, Zurich, Switzerland, database version 3.10
NPCR Part A:2021	Construction products and services, Version 2.0. Issue date: 24.03.2021; validity extended to 31.12.2026.
NPCR 012:2022	Product category rules, Part B: Thermal insulation products, Version 2.0. Issue date: 31.03.2022; validity extended to 30.06.2026.

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