NPS® SYSTEM by Tecnostrutture

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

NPS® Basic Beam

Tecnostrutture srl

EPD HUB, HUB-5864
Published on 10.04.2026, last updated on 10.04.2026, valid until 09.04.2031

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.

Created with One Click LCA

NPS® SYSTEM by Tecnostrutture

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Tecnostrutture srl
Address	Via Antonio Meucci, 26 - 30020 Noventa di Piave (VE) Italy
Contact details	info@tecnostrutture.eu
Website	www.tecnostrutture.eu

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025 EN 16757 Product Category Rules for concrete and concrete elements
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Danilo Cottone - Tecnostrutture Srl
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Vera Durão, as an authorised verifier acting for EPD Hub Limited

PRODUCT

Product name	NPS® Basic Beam
Additional labels	-
Product reference	NPS® Basic Beam
Place(s) of raw material origin	Italy
Place of production	Noventa di Piave - Italy
Place(s) of installation and use	EU
Period for data	Calendar year 2024
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	-
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	6,18

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of NPS® Basic Beam
Declared unit mass	1 kg
Mass of packaging	0 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	1,29
GWP-total, A1-A3 ($kgCO_2e$)	1,27
Secondary material, inputs (%)	91,5
Secondary material, outputs (%)	85
Total energy use, A1-A3 (kWh)	5,33
Net freshwater use, A1-A3 (m^3)	0,02

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Tecnostrutture s.r.l. was founded in 1983 as a business operating in the public and private construction industry. Specialised in the reinforced concrete prefab industry, the company began to produce metal trusses, developing its own technologies, calculation processes and production. In 2013 Tecnostrutture launched its own modular offsite system: New performance System (NPS®), composed by beams, columns, and slabs.

PRODUCT DESCRIPTION

The NPS® Basic Beam is a self-supporting composite slim-floor beam consisting of a steel truss structure (CSTC – Composite Steel Truss and Concrete), completed with cast-in-situ concrete after installation.
It features a compact slim-floor section, with or without side plate, and can include downstand if required. This welded steel lattice element can be combined with various slab systems — including hollow-core slabs, steel decking, timber, or lightweight slabs — and becomes integrated into the floor structure during concreting on site.
The NPS® Basic Beam provides integrated fire resistance, without the need for additional fire protection treatments. It can be connected to any type of column or wall system, and when combined with NPS® Columns, it enhances construction efficiency, optimising both execution time and usable space.
The product is made of steel materials with a recycling content of over 90%.
The EPD calculations refer to the beam in its delivered state and exclude the concrete cast on site. The product is suitable for long-span applications, residential and industrial buildings, and infrastructure works.
By combining steel and concrete, the NPS® Basic Beam achieves high structural efficiency, enabling reduced material use, lighter sections, and accelerated on-site assembly compared to conventional reinforced concrete beams.

Through its industrialised off-site production, Tecnostrutture provides cost-effective, sustainable, and high-performance slim-floor solutions that contribute to a better-built world.
This EPD covers an average NPS® Basic Beam with a representative material composition.

Further information can be found at:
www.tecnostrutture.eu

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	EU
Minerals		
Fossil materials		
Bio-based materials		

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	Not Applicable
Biogenic carbon content in packaging, kg C	0,00052

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1
Mass per declared unit	1 kg
Functional unit	-
Reference service life	2024

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	x	x	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Not declared = ND.

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

A market-based approach is used in modelling the electricity mix utilized in the factory.
The steel materials are processed to make the final product. The final product is assembled by welding the different steel components. The welding process consumes welding fillers as well as gases used as shielding. The products are painted and then packaged for shipping. The considered transportation impacts (A2) include exhaust emissions resulting from the transport of all raw materials from suppliers to Noventa di Piave (VE) - Italy, Tecnostrutture S.r.l. production plant as well as the environmental impacts of production of the used fuels. The manufacturing process requires electricity for the different equipment. The steel waste produced at the plant is directed to recycling. The loss of material is considered.
The use of renewable energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

The transportation distance is defined according to the PCR. Average distance of transportation from production plant to building site is assumed as 755 km and the transportation method is assumed to be lorry. Vehicle capacity utilization volume factor is assumed to be 100% which means full load. In reality, it may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible.
Transportation does not cause losses as product are packaged properly.

Wood components used for transportation of products to client is accounted for in A5. It is assumed that the wooden parts are reused once.
Packaging materials were treated in line with EU Eurostat data.
Energy for installation (A5) is not included because usually is not in charge of Tecnostrutture but of the client who used proper cranes and equipments in the construction site.

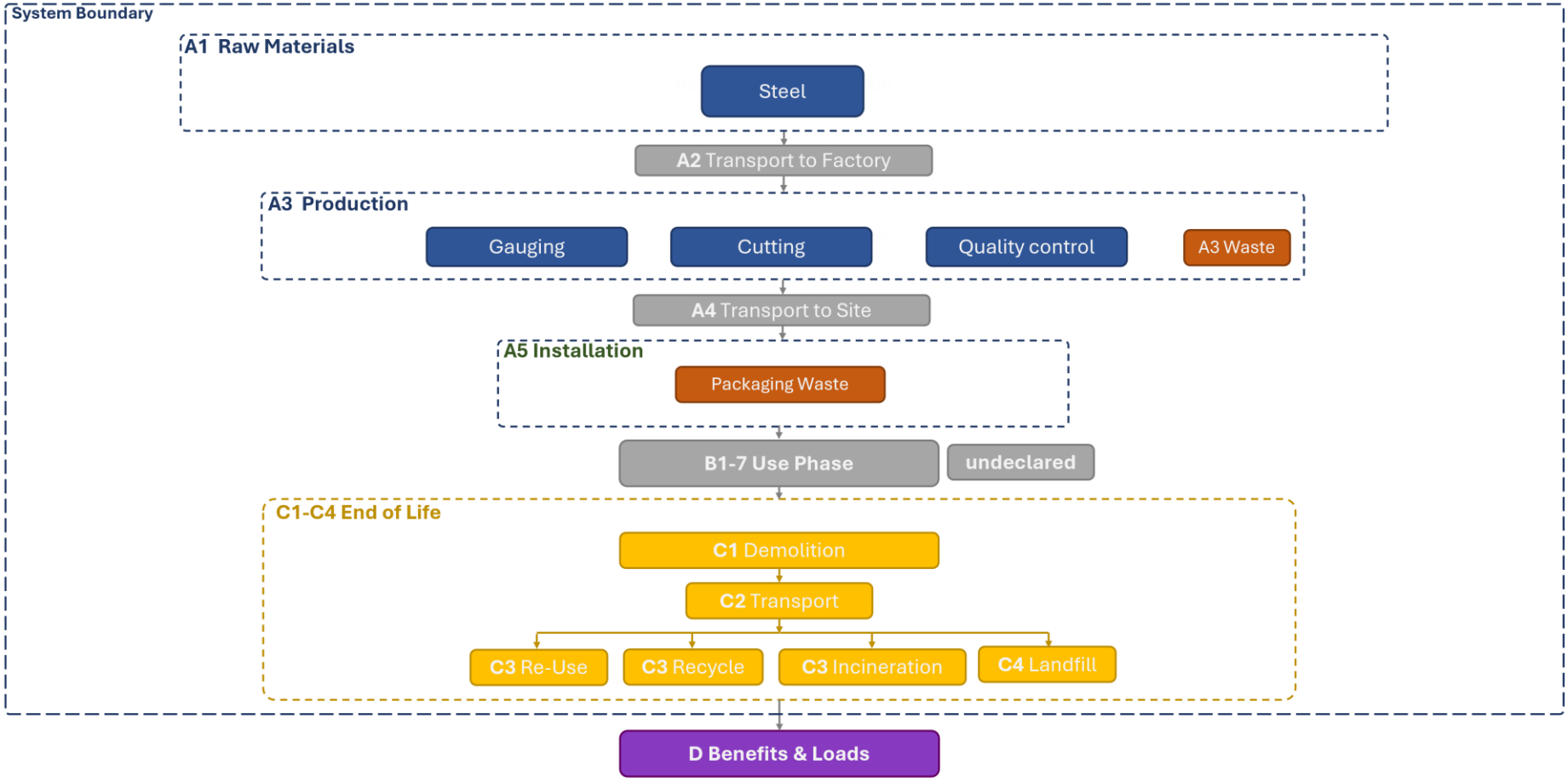
PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

Demolition is assumed to consume 0,01 kWh/kg of product. It is assumed that 100% of the waste is collected and transported to the waste treatment center. Transportation distance to treatment is assumed as 50 km and the transportation method is assumed to be lorry (C2). Approximately 95% of steel is assumed to be recycled based on World Steel Association, 2020 (C3). It is assumed that the remaining 5% of steel is taken to landfill for final disposal (C4). Benefits and loads from replacing virgin steel production due to the recycling at end-of-life are assessed in module D. The recycled input from the production state was excluded to avoid double counting of benefits.

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	Allocated by mass or volume
Packaging material	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	-

This EPD is product and factory specific.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.4. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11/3.12 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11/3.12 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2‘.

ENVIRONMENTAL IMPACT DATA

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	1,13E+00	2,88E-02	1,10E-01	1,27E+00	8,18E-02	3,74E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,30E-02	1,92E-02	9,37E-04	-3,53E-01
GWP – fossil	kg CO_2e	1,13E+00	2,88E-02	1,26E-01	1,29E+00	8,18E-02	3,74E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,30E-02	1,92E-02	9,36E-04	-3,53E-01
GWP – biogenic	kg CO_2e	6,90E-06	7,22E-08	-1,59E-02	-1,59E-02	1,72E-05	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,38E-06	-4,08E-05	-2,98E-07	0,00E+00
GWP – LULUC	kg CO_2e	9,82E-04	1,08E-05	6,18E-05	1,05E-03	3,07E-05	5,75E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,90E-05	2,37E-05	5,35E-07	-4,15E-05
Ozone depletion pot.	kg CFC_{-11}e	1,06E-08	5,78E-10	2,19E-09	1,34E-08	1,65E-09	6,02E-12	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,01E-10	2,58E-10	2,71E-11	-1,16E-09
Acidification potential	mol H^+e	4,45E-03	9,29E-05	8,02E-04	5,34E-03	2,64E-04	2,08E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,43E-04	2,29E-04	6,64E-06	-1,39E-03
EP-freshwater[2)]	kg Pe	5,32E-04	1,94E-06	1,87E-05	5,52E-04	5,51E-06	1,05E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,34E-06	1,24E-05	7,70E-08	-1,51E-04
EP-marine	kg Ne	9,75E-04	3,16E-05	3,08E-04	1,31E-03	8,97E-05	2,18E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,64E-05	5,06E-05	2,53E-06	-3,10E-04
EP-terrestrial	mol Ne	1,03E-02	3,44E-04	3,35E-03	1,40E-02	9,75E-04	8,47E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,05E-04	5,72E-04	2,76E-05	-3,40E-03
POCP ("smog")[3)]	kg NMVOCe	3,83E-03	1,51E-04	1,05E-03	5,04E-03	4,30E-04	2,79E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,99E-04	1,69E-04	9,90E-06	-1,16E-03
ADP-minerals & metals[4)]	kg Sbe	5,82E-06	7,95E-08	1,22E-07	6,02E-06	2,26E-07	1,02E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,41E-07	1,36E-06	1,49E-09	-3,42E-06
ADP-fossil resources	MJ	1,41E+01	4,17E-01	1,90E+00	1,64E+01	1,18E+00	5,35E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,03E-01	2,58E-01	2,30E-02	-3,20E+00
Water use[5)]	m^3e depr.	7,22E-01	2,14E-03	5,39E-02	7,79E-01	6,07E-03	1,88E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,80E-03	4,64E-03	6,63E-05	-5,88E-02

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. 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 experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	9,53E-08	2,87E-09	1,83E-08	1,16E-07	8,14E-09	3,70E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,41E-09	3,10E-09	1,51E-10	-2,33E-08
Ionizing radiation[6]	kBq U235e	1,54E-01	5,01E-04	1,24E-02	1,67E-01	1,43E-03	1,37E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,88E-04	2,19E-03	1,44E-05	1,32E-02
Ecotoxicity (freshwater)	CTUe	3,61E+00	4,93E-02	1,34E-01	3,79E+00	1,40E-01	6,28E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,53E-02	1,50E-01	1,93E-03	-8,62E-01
Human toxicity, cancer	CTUh	2,84E-09	4,74E-12	1,63E-11	2,86E-09	1,35E-11	1,79E-13	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,31E-12	1,72E-11	1,73E-13	-5,60E-11
Human tox. non-cancer	CTUh	1,22E-08	2,71E-10	5,02E-10	1,30E-08	7,70E-10	9,72E-12	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,77E-10	1,17E-09	3,97E-12	-2,78E-09
SQP[7]	-	3,69E+00	4,20E-01	1,99E+00	6,11E+00	1,19E+00	4,98E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,60E-01	5,02E-01	4,52E-02	-1,02E+00

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8]	MJ	1,81E+00	6,78E-03	9,53E-01	2,77E+00	1,93E-02	-1,62E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,27E-03	4,81E-02	2,22E-04	-2,21E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	1,81E+00	6,78E-03	9,53E-01	2,77E+00	1,93E-02	-1,62E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,27E-03	4,81E-02	2,22E-04	-2,21E-01
Non-re. PER as energy	MJ	1,41E+01	4,17E-01	1,88E+00	1,64E+01	1,18E+00	5,35E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,03E-01	2,58E-01	2,30E-02	-3,20E+00
Non-re. PER as material	MJ	0,00E+00	0,00E+00	1,84E-02	1,84E-02	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	1,41E+01	4,17E-01	1,90E+00	1,64E+01	1,18E+00	5,35E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,03E-01	2,58E-01	2,30E-02	-3,20E+00
Secondary materials	kg	9,15E-01	1,80E-04	5,65E-04	9,16E-01	5,13E-04	3,52E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,71E-04	3,15E-04	5,78E-06	1,95E-01
Renew. secondary fuels	MJ	1,48E-04	2,28E-06	2,45E-06	1,52E-04	6,47E-06	3,72E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,45E-06	1,46E-05	1,20E-07	-2,91E-05
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	1,89E-02	6,16E-05	1,55E-03	2,05E-02	1,75E-04	-1,40E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,99E-05	1,37E-04	2,39E-05	-7,73E-04

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	5,87E-01	6,05E-04	3,21E-03	5,91E-01	1,71E-03	3,46E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,05E-03	1,69E-03	2,54E-05	-1,16E-01
Non-hazardous waste	kg	2,68E+00	1,21E-02	9,87E-02	2,79E+00	3,43E-02	1,48E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,97E-02	6,09E-02	5,80E-04	-9,06E-01
Radioactive waste	kg	3,95E-05	1,24E-07	3,23E-06	4,29E-05	3,53E-07	3,41E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,20E-07	5,60E-07	3,52E-09	3,44E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,52E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	8,50E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,75E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,37E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,01E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	1,13E+00	2,86E-02	1,26E-01	1,28E+00	8,12E-02	6,12E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,27E-02	1,92E-02	9,28E-04	-3,51E-01
Ozone depletion Pot.	kg $CFC_{-11}e$	9,14E-09	4,59E-10	1,77E-09	1,14E-08	1,31E-09	4,86E-12	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,80E-10	2,13E-10	2,15E-11	-1,28E-09
Acidification	kg SO_2e	3,60E-03	7,05E-05	5,94E-04	4,26E-03	2,00E-04	1,54E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,10E-04	1,84E-04	4,91E-06	-1,12E-03
Eutrophication	kg PO_4^3e	6,40E-04	1,78E-05	1,20E-04	7,78E-04	5,06E-05	5,42E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,67E-05	2,66E-05	1,56E-06	-2,07E-04
POCP (“smog”)	kg C_2H_4e	4,04E-04	6,62E-06	4,52E-05	4,56E-04	1,88E-05	1,75E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,83E-06	1,09E-05	4,65E-07	-1,77E-04
ADP-elements	kg Sbe	5,66E-06	7,76E-08	1,18E-07	5,85E-06	2,20E-07	9,74E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,38E-07	1,36E-06	1,46E-09	-3,41E-06
ADP-fossil	MJ	1,14E+01	4,09E-01	1,68E+00	1,35E+01	1,16E+00	5,13E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,95E-01	2,20E-01	2,28E-02	-3,44E+00

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	1,13E+00	2,88E-02	1,26E-01	1,29E+00	8,18E-02	3,74E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,30E-02	1,92E-02	9,37E-04	-3,53E-01

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH4 fossil, CH4 biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO2 is set to zero.

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

1. Electricity production, hydro, run-of-river, Italy, Ecoinvent, 0.0044 kgCO2e/kWh
2. Electricity voltage transformation from high to medium voltage, Italy, Ecoinvent, 0.38 kgCO2e/kWh

Transport scenario documentation - A4 (Transport resources)

1. Transport, freight, lorry >32 metric ton, EURO5, 755.0 km

Transport scenario documentation A4

Scenario parameter	Value
Capacity utilization (including empty return) %	50
Bulk density of transported products	1,00E+00
Volume capacity utilization factor	1

End-of-life scenario documentation - C1-C4 (Data source)

1. Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling, 0.85 kg
2. Treatment of scrap steel, inert material landfill, Ecoinvent, 0.15 kg
3. Market for electricity, medium voltage, Ecoinvent, 0.01 kWh

Scenario information	Value
Scenario assumptions e.g. transportation	250 km recycling, 50 km for landfill

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez
Tool verification validity: 27 March 2025 - 26 March 2028

Vera Durão, as an authorised verifier acting for EPD Hub Limited

10.04.2026

ANNEX 01

In accordance with the requirement set out in §2.5.4 of the CAM (D.M. n. 256 of 23 June 2022), the following table details the average content (certified at source as per §2.2.1 of the CAM) of recovered material, recycled material, or by-products, distinguishing between supplies of steel from the integrated cycle and those from the electric furnace route.

The following tables refers to the whole NPS® Production in the period of analysis:

Steel supplies procured for the production of all the NPS® products in the reference time period	Steel from the BF-BOF route
Average recycled content in metallic components, per production route (BF-BOF route)	12,60%

Steel supplies procured for the production of all the NPS® products in the reference time period	Steel from the EAF route
Average recycled content in metallic components, per production route (EAF route)	88,87%

ANNEX 02

In accordance with the requirement set out in “MR credit Building Product Disclosure and Optimization: Sourcing of Raw Materials” for LEED v4 BD+C, v4.1 BD+C and v5 BD+C sustainability rating systems, the following table details the origin of the recycled content dividing between post-consumer (100% of the total recycled content) and the pre-consumer one (0% of the total recycled content).

Kind of recycled content in metallic components	Postconsumer	Preconsumer
Steel supplies procured for the production of NPS® Basic Beams	75,38% of the total weight	0% of the total weight