Environmental Product Declaration Type III ITB No. 845/2025

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Subsea Cable Armouring Wire

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

Basic information

This declaration is the Type III Environmental Product Declaration (EPD) based on EN 15804+A2 and verified according to ISO 14025 by an external auditor. It contains information on the impacts of the declared construction materials on the environment and their aspects verified by the independent body according to ISO 14025. Comparison or evaluation of EPD data is possible only if all the compared data were created according to EN 15804+A2.

Life cycle analysis (LCA): A1-A4, C1-C4 and D modules in accordance with EN 15804+A2
(Cradle to Gate with options)
Product standards: EN 10257-2:2011 (coating EN 10244-2:2009)
Service Life: 50 years
PCR: ITB-PCR A (PCR v 1.6. based on EN 15804+A2)
Declared unit: 1 ton
Reasons for performing LCA: B2B
Representativeness: manufactured in Slovakia and Czech Republic

PRODUCT DESCRIPTION

Bekaert is a global technological and market leader in advanced solutions based on metal transformation and the world's largest independent manufacturer of drawn/galvanized steel wire products. The company has two production plants in Slovakia: one is in Sladkovicovo and the second is in Hlohovec. In Czech Repunlic there are also two production plants in Bohumin and in Petrovice.

This EPD covers a round and flat subsea cable armouring wire steel products manufactured in plant Hlohovec and Bohumin. Heavy galvanized steel armouring wire provides exceptional strength and flexibility for subsea power cables, protecting them from damage during and after installation in challenging environments. The characteristics of our armouring wire comply with the EN 10257-2:2011 standard and customer specifications. All wires are zinc coated in accordance with EN 10244-2:2009 norm. Nominal diameter for round products is 2.5-9mm and 6,0x2,00 – 14,00x3,5 mm. Tensile strength for round products is G34-G165 and G34 – G125 for flat. The wire is usually winded on orbits or spools but customized packing dimensions are available upon request. More specific product technical data is available at manufacture's website.

LIFE CYCLE ASSESSMENT (LCA) – general rules applied

Unit

The declared unit is a 1 ton of steel product manufactured in Hlohovec and Bohumin. The results are divided into two groups of the products: (1) Flat (2) Round. The division is dictated by the production process.

System boundary

This EPD is based on a cradle-to-gate with options LCA and covers all the life cycle modules A1-A3, A4, C1-C4, and D, in which 100% weight of the production has been accounted following EN 15804+A2 and ITB PCR (v1.6, 2023). Energy and water consumption, emissions as well as information on generated wastes were inventoried and were included in the calculation. It can be assumed that the total sum of omitted processes does not exceed 2% of all impact categories. Following EN 15804+A2, machines and facilities (capital goods) required for the production as well as transportation of employees were not included in LCA.

Allocation

The allocation rules used for this EPD are based on general ITB PCR A. Production of products is a line process in a manufacturing plant located at Hlohovec, Slovakia and Bohumin, Czech Republic. Allocation of impacts is done on a product mass basis. All impacts from raw materials production (wire rod, Zn, grease, wax, wood packaging, paper, strap, buckles, foil, and pallets) are allocated in the A1 module of the LCA. 99% of the impacts from a line production were allocated to product covered by this declaration. Module A2 includes transport of raw materials such as steel from suppliers to manufacturing plant. Municipal wastes of the factory were allocated to module A3. Energy supply and electricity were inventoried and 100% was allocated to the product assessed.

System limits

A minimum of 99% materials and 100% energy consumption (grid electricity, gas, LPG) were inventoried in the factory and were included in the calculation. In the assessment, all significant parameters from gathered production data are considered, i.e. all material used per formulation (main input is steel Wire Rod), utilized thermal energy, electric power consumption, direct production waste, and available emission measurements. Tire consumption for transport was not taken into account. Pre-components like labels, tapes, and minor chemicals with a percentage share of less than 0.1%

were not included in the calculations. It is assumed that the total sum of omitted processes does not exceed 1% of all impact categories. In accordance with EN 15804+A2 machines and facilities (capital goods) required for and during production are excluded, as is the transportation of employees.

A1 and A2 Modules: Raw materials supply and transport

The steel input materials are declared to be produced in EAF. Data on the transport of the different input products to the manufacturing plants were inventoried in detail and modeled. For calculation purposes, European fuel averages are applied in module A2.

A3: Production

All process operations such as wire drawing, galvanization, stranding, extrusion, and packaging are carried out in the manufacturing plant. The production process options are presented in figure 1.

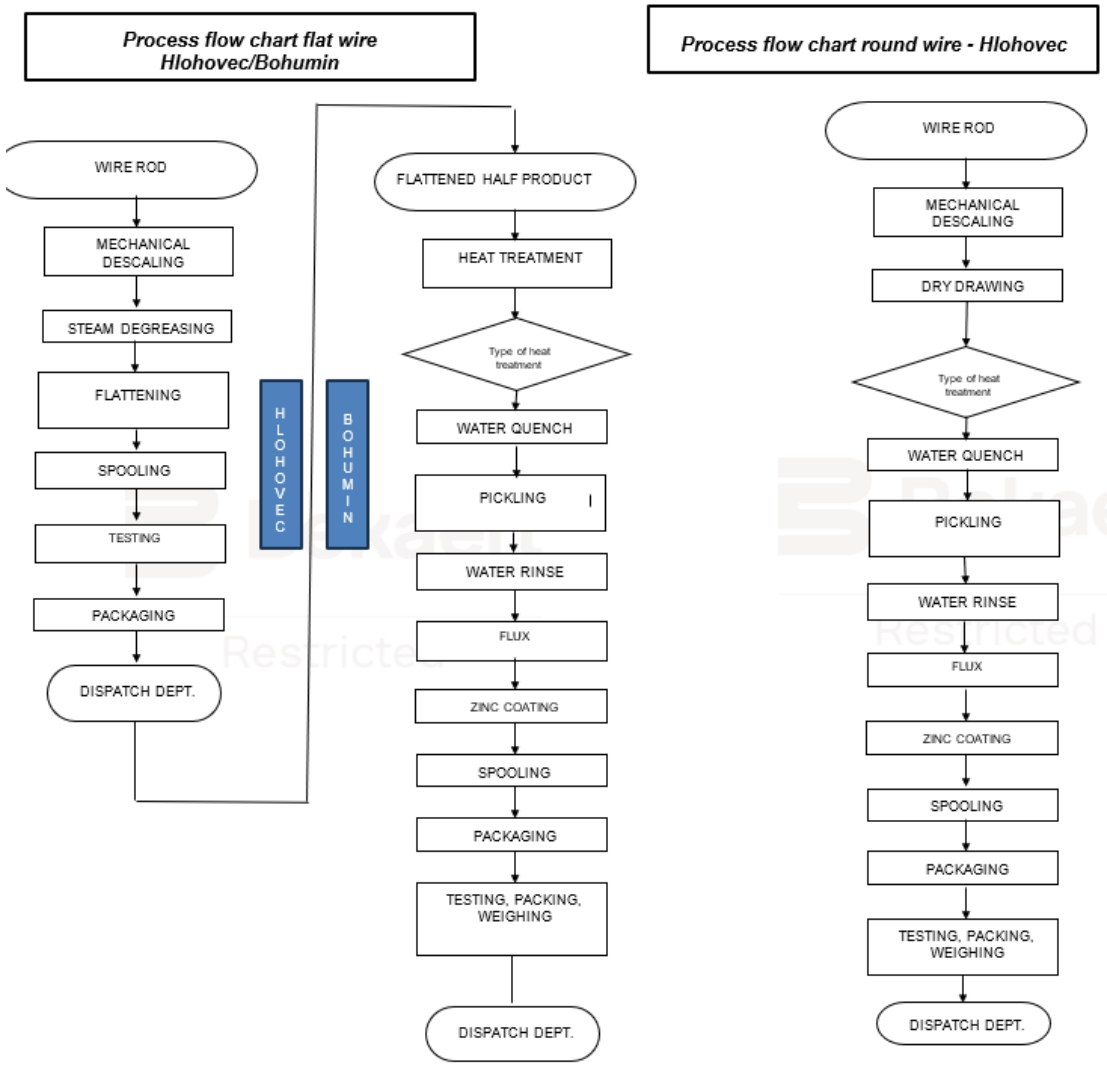

Fig. 1. Production process for flat and round products

A4: Transport to construction site

The following transport scenario to the place of use was assumed based on the manufacturer's declaration: large vehicle, 100% capacity over an average distance of 500 km. For calculation purposes, European fuel averages are applied in module A4.

C and D modules: End-of-life scenarios

The manufacturer declares the technology and the scenario in which the wires and strands can be recovered form object in the demolition process. 98% of recovered steel can be used for new steel

production (EAF process). It is assumed that at the end of life, the transport distance from the product deconstruction place to waste processing (C2) is 50 km on > 16 t loaded lorry with 100% capacity utilization and fuel consumption of 35 l per 100 km. The reuse, recovery and recycling potential for a new product system is considered beyond the system boundaries (module D) based on World Steel recommendations and national practice (see references).

Table 1. End-of-life scenarios for steel products

Progress products	Material recovery	Reuse	Recycling	Landfilling
Steel products	98%	0%	100% (EAF)	0%

Data collection period

The data for the manufacture of the declared products refer to the period between 01.01.2023-31.12.2023 (1 year). The life cycle assessments were done for Slovakia and Czech as a reference area.

Data quality - production

The values determined to calculate A3 originate from verified Progress LCI inventory data. A1 values were prepared considering European-made steel products based on Ecoinvent. Allocation for steel production impacts is done in accordance with the Report compiled by Brayan Hughes and William Hare (World Steel Association).

Assumptions and estimates

The impacts of the representative products were aggregated using a weighted average. Data regarding production per 1 ton of the product was averaged for the analyzed production of the product group.

Calculation rules

LCA was done in accordance with the ITB PCR A document (2023).

Databases

The background data for the processes come from the following databases: Ecoinvent v.11 (wax, ancillary items, packaging), steel- specific EPD, specific production data (Bekaert), energy data (Ecoinvent, ZSE, Slovenské elektrárne, Messer, Slovak and Czech electricity mix and combustion factors for fuels). The carbon emission factor for Slovak electricity used for LCA is 0.199 kg eq CO_2/kWh. Czech electricity mix emission factor used is 0.427kg eq CO_2/kWh. As a general rule, no particular environmental or health protection measures other than those specified by law are necessary. No product covered by this EPD use substances listed in the "Candidate List of Substances of Very High Concern (SVHC) for authorization" in a percentage greater than 0.1% by weight of the product. Recycled materials for wire production come from scrap and derivatives used in the manufacturing process, with a content higher than 70% (based on declared resource data). Specific (LCI) data quality analysis was a part of the audit. The time-related quality of the data used is valid (5 years).

LIFE CYCLE ASSESSMENT (LCA) – Results

Declared unit

The declaration refers to the unit DU– 1 ton of: (1) Flat subsea (2) Round subsea products for selected life cycle modules (Table 2).

Table 2. System boundaries (life stage modules included) in a product environmental assessment

Environmental assessment information (MA – Module assessed, MNA – Module not assessed, INA – Indicator Not Assessed)																
Product stage			Construction process		Use stage							End of life				Benefits and loads beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport to the construction site	Construction-installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse-recovery-recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
MA	MA	MA	MA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MA	MA	MA	MA	MA

Table 3. Life cycle assessment (LCA) results for Flat products– environmental impacts (DU: 1 ton)

Indicator	Unit	A1	A2	A3	A1-A3	A4	C1	C2	C3	C4	D
Global Warming Potential	eq. kg CO_2	1.13E+03	4.81E+01	1.70E+02	1.35E+03	8.34E+01	6.98E+00	1.10E+01	6.39E+01	1.06E-01	-6.15E+02
Greenhouse potential - fossil	eq. kg CO_2	1.13E+03	4.79E+01	1.70E+02	1.35E+03	8.31E+01	6.85E+00	1.10E+01	6.38E+01	1.05E-01	-6.18E+02
Greenhouse potential - biogenic	eq. kg CO_2	3.10E-01	1.64E-01	4.52E-01	9.26E-01	2.84E-01	2.00E-01	3.76E-02	1.33E-02	2.68E-04	2.51E+00
Global warming potential - land use and land use change	eq. kg CO_2	1.94E+00	1.88E-02	4.91E-03	1.96E+00	3.26E-02	2.40E-03	4.32E-03	1.01E-02	9.94E-05	-3.00E-02
Stratospheric ozone depletion potential	eq. kg CFC 11	6.21E-05	1.11E-05	8.54E-06	8.17E-05	1.92E-05	1.40E-07	2.55E-06	7.80E+02	4.26E-08	-2.15E-05
Soil and water acidification potential	eq. mol H+	1.12E+01	1.94E-01	6.45E-01	1.21E+01	3.37E-01	7.60E-02	4.47E-02	5.32E-01	9.90E-04	-2.45E+00
Eutrophication potential - freshwater	eq. kg P	3.39E-01	3.22E-03	2.24E-01	5.66E-01	5.59E-03	1.30E-02	7.40E-04	4.32E-04	9.81E-06	-2.62E-01
Eutrophication potential - seawater	eq. kg N	1.20E+00	5.87E-02	1.54E-01	1.41E+00	1.02E-01	1.10E-02	1.35E-02	1.81E+00	3.45E-04	-5.37E-01
Eutrophication potential - terrestrial	eq. mol N	3.85E+01	6.40E-01	1.13E+00	4.03E+01	1.11E+00	9.30E-02	1.47E-01	3.42E+00	3.77E-03	-5.86E+00
Potential for photochemical ozone synthesis	eq. kg NMVOC	3.04E+00	1.96E-01	3.59E-01	3.60E+00	3.40E-01	2.60E-02	4.50E-02	7.46E-01	1.10E-03	-3.11E+00
Potential for depletion of abiotic resources - non-fossil resources	eq. kg Sb	2.35E-02	1.70E-04	1.10E-04	2.38E-02	2.95E-04	3.34E-05	3.90E-05	1.45E-05	2.42E-07	-1.20E-02
Abiotic depletion potential - fossil fuels	MJ	1.99E+04	7.11E+02	3.49E+03	2.41E+04	1.23E+03	1.16E+02	1.63E+02	6.05E+01	2.89E+00	-5.02E+03
Water deprivation potential	eq. m^3	3.50E+02	3.29E+00	4.01E+01	3.94E+02	5.70E+00	2.40E+00	7.55E-01	1.42E+00	9.16E-03	-7.67E+01

Table 4. Life cycle assessment (LCA) results for Flat products - all other steel products – additional impact indicators (DU: 1 ton)

Indicator	Unit	A1-A4	C1-C4	D
Particulate matter	disease incidence	INA	INA	INA
Potential human exposure efficiency relative to U235	eg. kBq U235	INA	INA	INA
Potential comparative toxic unit for ecosystems	CTUe	INA	INA	INA
Potential comparative toxic unit for humans (non-cancer effects)	CTUh	INA	INA	INA
Potential soil quality index	dimensionless	INA	INA	INA

Table 5 Life cycle assessment (LCA) results for Flat products- all other steel products - the resource use (DU: 1 ton)

Indicator	Unit	A1	A2	A3	A1-A3	A4	C1	C2	C3	C4	D
Consumption of renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	1.22E+03	1.02E+01	7.04E+01	1.30E+03	1.77E+01	8.60E+00	2.34E+00	1.11E+00	2.51E-02	-4.24E+02
Consumption of renewable primary energy resources used as raw materials	MJ	3.26E+02	0.00E+00	0.00E+00	3.26E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total consumption of renewable primary energy resources	MJ	1.66E+03	1.02E+01	7.29E+01	1.74E+03	1.77E+01	8.60E+00	2.34E+00	1.11E+00	2.51E-02	-4.24E+02
Consumption of non-renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	1.72E+04	7.11E+02	2.49E+03	2.04E+04	1.23E+03	1.16E+02	1.63E+02	-2.95E+03	2.89E+00	-4.81E+03
Consumption of non-renewable primary energy resources used as raw materials	MJ	5.08E+01	0.00E+00	0.00E+00	5.08E+01	0.00E+00	0.00E+00	0.00E+00	3.01E+03	0.00E+00	0.00E+00
Total consumption of non-renewable primary energy resources	MJ	2.01E+04	7.11E+02	3.68E+03	2.45E+04	1.23E+03	1.16E+02	1.63E+02	6.06E+01	2.89E+00	-4.81E+03
Consumption of secondary materials	kg	7.74E+02	2.38E-01	1.91E-01	7.74E+02	4.14E-01	1.06E-02	5.48E-02	2.74E-02	6.07E-04	9.90E+02
Consumption of renew. secondary fuels	MJ	6.75E+00	2.63E-03	5.18E-04	6.76E+00	4.56E-03	5.91E-05	6.03E-04	3.72E-04	1.59E-05	-1.12E-01
Consumption of non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.39E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net consumption of freshwater	m^3	1.10E+01	8.95E-02	4.41E-01	1.15E+01	1.55E-01	3.15E-02	2.05E-02	5.36E-02	3.16E-03	-4.47E+00

Table 6 Life cycle assessment (LCA) results for Flat products - all other steel products – waste categories (DU: 1 ton)

Indicator	Unit	A1	A2	A3	A1-A3	A4	C1	C2	C3	C4	D
Hazardous waste	kg	6.78E+00	7.98E-01	6.44E+00	1.40E+01	1.38E+00	1.20E-03	1.83E-01	4.35E-06	3.07E-03	-6.28E-02
Non-hazardous waste	kg	6.83E+02	1.42E+01	1.07E+03	1.77E+03	2.46E+01	6.24E-02	3.25E+00	1.14E+01	4.32E-02	-1.02E+02
Radioactive waste	kg	3.11E-02	5.31E-05	3.60E-03	3.48E-02	9.21E-05	8.70E-05	1.22E-05	3.23E-04	1.92E-05	-1.13E-02
Components for re-use	kg	7.00E+00	0.00E+00	0.00E+00	7.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	8.00E+01	2.20E-03	2.96E+01	1.10E+02	3.82E-03	1.20E-04	5.06E-04	4.04E-04	5.78E-06	0.00E+00
Materials for energy recovery	kg	9.97E-05	1.78E-05	8.17E-02	8.18E-02	3.09E-05	1.05E-06	4.09E-06	5.04E-06	6.85E-08	0.00E+00
Exported Energy	MJ	1.28E+00	0.00E+00	7.72E-01	2.05E+00	0.00E+00	3.46E-01	0.00E+00	6.17E+01	0.00E+00	0.00E+00

Table 7. Life cycle assessment (LCA) results for Round products– environmental impacts (DU: 1 ton)

Indicator	Unit	A1	A2	A3	A1-A3	A4	C1	C2	C3	C4	D
Global Warming Potential	eq. kg CO_2	7.67E+02	1.09E+02	2.59E+02	1.13E+03	8.34E+01	2.64E+00	8.34E+00	6.39E+01	1.06E-01	-8.86E+02
Greenhouse potential - fossil	eq. kg CO_2	7.71E+02	1.09E+02	2.53E+02	1.13E+03	8.31E+01	2.64E+00	8.31E+00	6.38E+01	1.05E-01	-8.89E+02
Greenhouse potential - biogenic	eq. kg CO_2	-4.80E+00	3.71E-01	4.74E+00	3.10E-01	2.84E-01	1.00E-01	2.84E-02	1.33E-02	2.68E-04	3.11E+00
Global warming potential - land use and land use change	eq. kg CO_2	4.97E-01	4.26E-02	1.40E+00	1.94E+00	3.26E-02	1.20E-03	3.26E-03	1.01E-02	9.94E-05	-6.50E-02
Stratospheric ozone depletion potential	eq. kg CFC 11	1.67E-05	2.51E-05	2.02E-05	6.21E-05	1.92E-05	7.00E-08	1.92E-06	7.80E+02	4.26E-08	-3.16E-05
Soil and water acidification potential	eq. mol H+	3.11E+00	4.41E-01	7.69E+00	1.12E+01	3.37E-01	3.80E-02	3.37E-02	5.32E-01	9.90E-04	-3.53E+00
Eutrophication potential - freshwater	eq. kg P	1.85E-01	7.30E-03	1.46E-01	3.39E-01	5.59E-03	6.50E-03	5.59E-04	4.32E-04	9.81E-06	-3.81E-01
Eutrophication potential - seawater	eq. kg N	6.52E-01	1.33E-01	4.13E-01	1.20E+00	1.02E-01	5.50E-03	1.02E-02	1.81E+00	3.45E-04	-7.73E-01
Eutrophication potential - terrestrial	eq. mol N	6.89E+00	1.45E+00	3.02E+01	3.85E+01	1.11E+00	4.65E-02	1.11E-01	3.42E+00	3.77E-03	-8.42E+00
Potential for photochemical ozone synthesis	eq. kg NMVOC	1.91E+00	4.45E-01	6.92E-01	3.04E+00	3.40E-01	1.30E-02	3.40E-02	7.46E-01	1.10E-03	-4.45E+00
Potential for depletion of abiotic resources - non-fossil resources	eq. kg Sb	2.60E-03	3.85E-04	2.05E-02	2.35E-02	2.95E-04	1.67E-05	2.95E-05	1.45E-05	2.42E-07	-1.67E-02
Abiotic depletion potential - fossil fuels	MJ	1.03E+04	1.61E+03	7.96E+03	1.99E+04	1.23E+03	5.80E+01	1.23E+02	6.05E+01	2.89E+00	-7.35E+03
Water deprivation potential	eq. m^3	2.24E+02	7.45E+00	1.19E+02	3.50E+02	5.70E+00	1.20E+00	5.70E-01	1.42E+00	9.16E-03	-1.26E+02

Table 8. Life cycle assessment (LCA) results for Round products – additional impact indicators (DU: 1 ton)

Indicator	Unit	A1-A4	C1-C4	D
Particulate matter	disease incidence	INA	INA	INA
Potential human exposure efficiency relative to U235	eg. kBq U235	INA	INA	INA
Potential comparative toxic unit for ecosystems	CTUe	INA	INA	INA
Potential comparative toxic unit for humans (non-cancer effects)	CTUh	INA	INA	INA
Potential soil quality index	dimensionless	INA	INA	INA

Table 9 Life cycle assessment (LCA) results for Round products - the resource use (DU: 1 ton)

Indicator	Unit	A1	A2	A3	A1-A3	A4	C1	C2	C3	C4	D
Consumption of renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	7.08E+02	2.31E+01	4.84E+02	1.22E+03	1.77E+01	4.30E+00	1.77E+00	1.11E+00	2.51E-02	-6.15E+02
Consumption of renewable primary energy resources used as raw materials	MJ	3.26E+02	0.00E+00	0.00E+00	3.26E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total consumption of renewable primary energy resources	MJ	1.04E+03	2.31E+01	5.93E+02	1.66E+03	1.77E+01	4.30E+00	1.77E+00	1.11E+00	2.51E-02	-6.15E+02
Consumption of non-renewable primary energy - excluding renewable primary energy sources used as raw materials	MJ	9.90E+03	1.61E+03	5.69E+03	1.72E+04	1.23E+03	5.82E+01	1.23E+02	6.06E+01	2.89E+00	-7.06E+03
Consumption of non-renewable primary energy resources used as raw materials	MJ	5.08E+01	0.00E+00	0.00E+00	5.08E+01	0.00E+00	0.00E+00	0.00E+00	3.01E+03	0.00E+00	0.00E+00
Total consumption of non-renewable primary energy resources	MJ	1.03E+04	1.61E+03	8.17E+03	2.01E+04	1.23E+03	5.82E+01	1.23E+02	6.06E+01	2.89E+00	-7.06E+03
Consumption of secondary materials	kg	7.73E+02	5.40E-01	3.37E-01	7.74E+02	4.14E-01	5.30E-03	4.14E-02	2.74E-02	6.07E-04	-8.39E+01
Consumption of renew. secondary fuels	MJ	6.75E+00	5.96E-03	9.13E-04	6.75E+00	4.56E-03	2.95E-05	4.56E-04	3.72E-04	1.59E-05	-1.54E-01
Consumption of non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.70E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net consumption of freshwater	m^3	6.39E+00	2.03E-01	4.37E+00	1.10E+01	1.55E-01	1.58E-02	1.55E-02	5.36E-02	3.16E-03	-6.35E+00

Table 10 Life cycle assessment (LCA) results for Round products - all other steel products – waste categories (DU: 1 ton)

Indicator	Unit	A1	A2	A3	A1-A3	A4	C1	C2	C3	C4	D
Hazardous waste	kg	5.95E-01	1.81E+00	4.37E+00	6.78E+00	1.38E+00	6.00E-04	1.38E-01	4.35E-06	3.07E-03	-8.92E-02
Non-hazardous waste	kg	1.77E+02	3.21E+01	4.74E+02	6.83E+02	2.46E+01	3.12E-02	2.46E+00	1.14E+01	4.32E-02	1.29E+02
Radioactive waste	kg	1.36E-02	1.20E-04	1.74E-02	3.11E-02	9.21E-05	4.35E-05	9.21E-06	3.23E-04	1.92E-05	1.43E-02
Components for re-use	kg	0.00E+00	0.00E+00	7.00E+00	7.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	4.66E-03	4.99E-03	8.00E+01	8.00E+01	3.82E-03	6.00E-05	3.82E-04	4.04E-04	5.78E-06	0.00E+00
Materials for energy recovery	kg	2.00E-05	4.04E-05	3.93E-05	9.97E-05	3.09E-05	5.25E-07	3.09E-06	5.04E-06	6.85E-08	0.00E+00
Exported Energy	MJ	3.85E-01	0.00E+00	8.94E-01	1.28E+00	0.00E+00	1.73E-01	0.00E+00	6.17E+01	0.00E+00	0.00E+00

VERIFICATION

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

The basis for LCA analysis was EN 15804+A2 and ITB PCR A (2023)
Independent verification corresponding to ISO 14025 (subclause 8.1.3.) [X] external [ ] internal
External verification of EPD: Halina Prejzner, PhD. Eng. LCA, LCI audit and input data verification: Michał Piasecki, PhD., D.Sc., Eng.

Note 1: The declaration owner has the sole ownership, liability, and responsibility for the information provided and contained in EPD. Declarations of construction products may not be comparable if they do not comply with EN 15804+A2. For further information about comparability, see EN 15804+A2 and ISO 14025.

Note 2: ITB is a public Research Organization and Notified Body (EC Reg. no 1488) to the European Commission and to other Member States of the European Union designated for the tasks concerning the assessment of building products' performance. ITB acts as an independent, third-party verification organization (ISO 17025/17065/17029). ITB-EPD program is a recognized and registered member of The European Platform - Association of EPD program operators and ITB-EPD declarations are registered and stored in the international Eco portal.

Normative references

- ITB PCR A General Product Category Rules for Construction Products (v1.6,2023)
- ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures
- ISO 21930:2017 Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services
- ISO 14044:2006 Environmental management – Life cycle assessment – Requirements and guidelines
- ISO 15686-1:2011 Buildings and constructed assets – Service life planning – Part 1: General principles and framework
- ISO 15686-8:2008 Buildings and constructed assets – Service life planning – Part 8: Reference service life and service-life estimation
- EN 15804:2012+A2:2019 Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products
- ISO 14067:2018 Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification
- PN-EN 15942:2012 Sustainability of construction works – Environmental product declarations – Communication format business-to-business
- https://ecoinvent.org/

LCA,LCI, input data verification
Michał Piasecki, PhD. D.Sc.

Qualified electronic signature

Head of Thermal Physic, Acoustic and Environment Department
Agnieszka Winkler-Skalna, PhD.

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CERTIFICATE № 845/2025
of TYPE III ENVIRONMENTAL DECLARATION

Products:

Sub-sea Cable Armouring Wire

Manufacturer:

N.V.Bekaert S.A.

Bekaertstraat 2, 8550 Zwevegem, Belgium

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

EN 15804+A2

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

This certificate, issued on 5th September 2025 is valid for 5 years
or until amendment of mentioned Environmental Declaration

Head of the Thermal Physic, Acoustics and Environment Department
Agnieszka Winkler-Skalna, PhD

INSTYTUT TECHNIKI BUDOWLANEJ

Deputy Director for Research and Innovation
Krzysztof Kuczyński, PhD

Warsaw, September 2025