





# **Environmental Product Declaration**

According to ISO 14025:2006 ed EN 15804:2012+A2:2019/AC:2021 for:

# **SOLAR CABLE H1Z2Z2-K**





### of SPECIALCAVI BALDASSARI S.R.L.

EPD of multiple products, based on the product with greatest impacts.

Programme:	The International EPD System, <u>www.environdec.com</u>
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Validity up to:	17/04/2030
	An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com





## **General Information**

**Programme information** 

i rogramme imormation	
Programme:	The International EPD® System
	EPD International AB
Address	Box 210 60
Address:	SE-100 31 Stockholm
	Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): Construction Products, 2019:14, version 1.3.4 and c-PCR-019 Electrical cables and wires
PCR (2019:14) review was conducted by: Technical Committee of the International EPD® System. The review panel may be contacted via info@environdec.com
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
☑ EPD verification by accredited certification body
Third-party verification: IMQ S.p.A
The certification body is accredited by: Accredia (N.010H)
Procedure for follow-up of data during EPD validity involves third party verifier:
□ Yes⊠ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.





# The company

Specialcavi Baldassari, founded in 1990 in Capannori by a young entrepreneur, is now a benchmark in the field of electrical cable manufacturing, with more than 30 years of experience and a range of more than 12,000 standard items, which add up to custom products made to measure for customers. The company stands out for the innovation and high quality of its products, using selected raw materials and advanced technologies. Specialcavi Baldassari has consolidated its position both nationally and internationally, exporting to more than 30 countries.

Environmental sustainability has always been a core value, with an ongoing commitment to ensure safe products with low environmental impact.

### The plant

The company is located in the municipality of Capannori (LU) at 76 Via G. Pieraccini (Italy).



# The product

Product name: SOLAR CABLE H1Z2Z2-K

CPC code: 4634 - Other electric conductors, for a voltage not exceeding 1000 V

<u>Product description:</u> Halogen-free single-core cable suitable for connecting various components of photovoltaic and solar systems





<u>Purpose and application:</u> the H1Z2Z2-K cable has excellent resistance to UV rays and atmospheric conditions. Underground installation, both direct and indirect, as well as outdoor installation, is permitted. Water presence: condition AD8 (EN 50525-2-21 p.q.a.).

#### Standards:

- CEI 20-29 IEC 60228 (Conductor Standard)
- EN 50618 (Product standard)
- EN 50399 (CPR standard flame retardant)
- EN 50575:2016 (Reference standard for reaction to fire CPR)
- IEC 60332-1-2 (Flame retardant standard)
- EN IEC 61034-2 (Low smoke standard)
- EN IEC 60754-1 EN 60754-2 (Halogen Free standard)
- EN 60811-504+505+506 (Low temperature resistant standard)
- EN 50618 EN 50289-4-17 metodo A (UV resistant standard)
- EN IEC 60811-403 (Hozone resistant standard)

#### **Technical Characteristics**

#### Manufacturing characteristics:

- Conductor: flexible bare copper, class 5
- Insulation: LSZH special cosslinked compound
- Outer sheath: LSZH special cosslinked compound, UV Resistant

#### **Temperature:**

- Minimum operating temperature: -40°C
- Maximum operating temperature: +90°C
- Maximum short-circuit temperature: +250°C

For other technical data, please refer to the data sheets available on the company website: www.specialcavibaldassari.it.

### **Packaging**

The packaging of the product consists of 3 types of packaging:

- Reels: wooden, plywood or iron (for indoor use);
- Coils;
- Pallets: used for shipping either reels or both to the customer.

The above three types are wrapped with stretch film and/or shrink-wrapping film and then, in one case some labels are affixed manually (re-coiling machines), in others automatically (spooling machine).









### **Included products**

The present EPD covers 3 products of the family of solar cable H1Z2Z2-K.

In accordance with the General Programme Instruction (GPI) v. 4.0 and PCR 2019:14, the results are presented for each impact category, for the product with the greatest impact. The cable identified as the worst-performing product in all impact categories for all modules, except for module B6, is the cable with the larger cross-section: H1Z2Z2-K 1X10,00. For module B6, the cable with the worst performance is H1Z2Z2-K 1X4,00, characterized by a higher linear resistivity value of the conductor.

The included products are listed in the following table:

Formation	External diameter (mm)	Weight (kg/m)
1 X 4.00	5,56	0,053
1 X 6.00	6,08	0,080
1 X 10.00	7,16	0,112

### Content information (referring to 1 m of cable, average content)

Product components	Weight, kg	Post-consumer recycled material, weight- %	Biogenic weight-% C/		Range di variazione dei prodotti inclusi (%)
Tinned copper	0,056	0	0 res	sp. 0	-44,2/+44,2
LSZH crosslinked	0,025	0	0 res	sp. 0	-18,0/+18,0
Other materials	0,002	0	0 res	sp. 0	-18,6/+18,6
TOTAL	0,083	0	0 res	sp. 0	-35,8/+35,8
Packaging materials	Weight, kg	Weight % (vers product)		Weight b	iogenic carbon, kg C/kg
Wood	0,0136	16,5			0 resp. 0
Plastic film	0,0004	0,48			0 resp. 0
TOTAL	0,0140	16,94			0 resp. 0





Note: The share of biobased material is unknown so, in accordance with PCR 2019:14 v.1.3.4, this part of the content declaration is declared as 0% (a conservative estimate).

The cables studied in the context of this EPD and their packaging do not contain any hazardous substances (SHVCs), as defined by ECHA and in ECHA's candidate list of substances.

### **LCA** information

<u>Methodology:</u> The quantification of the environmental performance was carried out in accordance with the Life Cycle Assessment (LCA - Life Cycle Assessment) methodology regulated by the ISO 14040, ISO 14044 and ISO 14025 standards and following the specific product requirements PCR 2019: 14 Construction Products Version 1.3.4 and PCR-019 Electrical cables and wires. The LCA methodology allows you to determine the environmental impacts of a product or service in terms of resource consumption and emissions into the environment, as well as waste production, from a life cycle perspective.

Functional unit: 1 m of cable installed

<u>Time representativeness:</u> The LCA study is conducted in 2024 with data relating to 2023.

Reference Service Life: 30 years.

<u>Database and LCA software:</u> The Ecoinvent database v.3.9.1 (www.ecoinvent.org) provides the life cycle inventory data for the raw and process materials obtained from the background system. LCA software used is SimaPro 9.5.0.2

<u>Cut-off rules:</u> 1% cut-off is applied. According to PCR 2019:14 v.1.3.4, data for elementary flows to and from the product system contributing to a minimum of 99% of the declared environmental impacts have been included. The infrastructure/tools are excluded for all modules.

<u>Quality data:</u> Specific data are used for the quantity of raw materials, electricity, waste data, average distances, and transportation methods. Data from the Ecoinvent v.3.9.1 database is used for the following stages: production of raw materials, fuels, and electricity.

<u>Environmental impact method:</u> EN 15804 + A2 based on EF 3.1 characterization factors (<u>JRC Website</u>). To determine the use of renewable and non-renewable resources, the CED (Cumulative Energy Demand LHV) v.1.11 method is used.

Geographical representativeness: A1-A2 European, A3 Italian, A4-A5, B6, C European.

Description of the system boundaries: Cradle to grave (A1-A3, A4, A5, B, C, D).





	Pro	duct s	tage		nstruct cess st		Use stage							End	of life s	Resource recovery stage	
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery- Recyding-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	В6	B7	C1	C2	C3	C4	D
Modules declared	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Geography	EU	EU	IT	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU
Specific data used		>80%		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-6	98,2/+0	%	-	-	-	-	-	1	1	-	-	-	-	1	-	-
Variation – sites		0%		-	-	-	-	-	-	-	-	-	-	-	-	-	-

X=Declared module, ND= Non declared, EU=European, GLO=Global, IT=Italy

# Life Cycle Stages

A1, raw material supply. This module includes the extraction and processing of all raw materials and energy occurring upstream of the production process. Specifically, the production of the following materials is included: red copper, compound, rod filler and other materials present in small quantities constituting the cable. Module A1 includes electricity purchased from the grid, accounting for 83 percent of the company's total consumption in 2023. The fuel mix declared by the supplier is composed of: 52.28% renewable sources, 9.73% coal, 31, 98% natural gas, 0.85% petroleum products, 1.53% nuclear, and 3.62% other sources. Electricity from renewable sources was modeled based on the Italian Residual Mix 2023 (Source: AIB, "European Residual Mixes - Results of the calculation of Residual Mixes for the calendar year 2023). The GWP-GHG emission factor of the fuel mix is 308 gCO2/kWh.

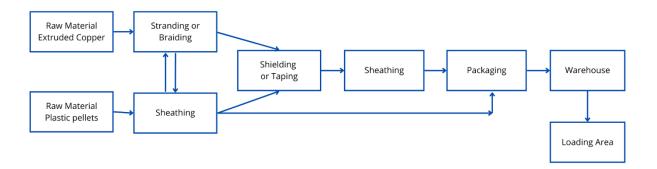
**A2**, **transport to the manufacturer**. This module includes the transportation of raw materials from manufacturers/suppliers to the company. For each material, the specific distance from the supplier's country to the Specialcavi Baldassari plant has been calculated. Transportation is by land by truck (16-32 tons) or by sea for raw materials from non-European countries.

A3, manufacturing. This module includes energy consumption and all inflows and outflows from the company, as well as the production of packaging. The 17% of the electricity used for cable production in 2023 is self-produced by photovoltaic panels. The GWP-GHG emission factor is 5,9•10<sup>-4</sup> gCO2/kWh. This value comes from the emissions generated by the production of the panel.





In addition to electricity consumption, the A3 module includes the production of auxiliary materials, water consumption and discharge, atmospheric emissions, and waste produced. Specifically, in 2023, 99% of the total waste generated was sent for recycling/recovery. For these outflows, only transportation from the Specialcavi Baldassari facility to the treatment plant (50 km) was considered. Additionally, the production of product packaging is included in the A3 module.



A4, transport to the building site. This module includes transportation from the plant in Capannori (LU) to the cable installation site. The product distribution takes place in Italy and Europe, with 65% of the distribution in Italy (average distance of 300 km) and 35% in Europe (average distance of 1500 km). Distribution is carried out by truck (16-32 tons).

A5, installation into the building. This module includes all material and energy inputs and outputs required for the installation of the cable. No energy consumption for the installation has been quantified, as it is assumed that this operation is carried out together with other products and therefore should be assessed at the construction works level. The company estimates a product waste of 3% during installation. Additionally, the A5 module includes the end-of-life of the product packaging, assumed in accordance with the Eurostat scenario (2022 dataset, the latest available). For the installation waste, the end-of-life scenario reported in modules C3 and C4 has been used.

B1, use; B2, maintanance; B3, repair; B4, replacement; B5, renovation; B7, water use in the use phase. Non si evidenziano attività significative per uso, manutenzione, riparazione, sostituzione, ristrutturazione e uso dell'acqua. Per tale motivo si osserva un'assenza di impatti in questi moduli durante la vita utile del cavo.

**B6, consumo energetico in fase d'uso.** This module includes the energy dissipated throughout the entire lifecycle of the cables. The electrical energy dissipated by the cable due to the Joule effect is calculated in accordance with the methodology described in the PEP Ecopassport, Product Specific Rules (PSR) for wires, cables, and accessories, reference PSR-0001-ed4-EN-2022-11-16:

$$P(kWh) = I^2 \cdot R \cdot RSL \cdot L \cdot N$$

#### where:

- I: Current intensity (1 Ampere)
- R: Cunductor resistance (Ohm/m)





- RSL: Reference Service Life of 30 years with a usage rate of 30% (according to Appendix 1 of the PSR).
- N: number of conductors
- **C1**, **de-construction**. This phase includes the impacts during the dismantling of the cable. At the end of their useful life, the cables are removed as part of a larger demolition, which may involve either the entire or part of the buildings and structures. It is therefore assumed that the energy use for cable removal, compared to other heavier materials, is negligible. The contribution of this module is zero to all environmental indicators.
- **C2**, waste transport. This module includes the transportation of the end-of-life product to the waste treatment/disposal site. A distance of 100 km by truck is assumed.
- **C3**, waste processing. This module includes the collection of waste fractions from de-construction and the treatment of waste intended for reuse, recycling, and energy recovery. The potential recyclability and/or energy recovery of cable components are high. In this study, it is assumed that the cable components are separated into two main waste streams: metal parts (copper) and plastic materials. Copper is easy to separate and is assumed to be directed to recycling, after the cable removal, with a recycling rate of 100%. For plastic materials, energy recovery is assumed for 100%.
- **C4**, waste disposal. This module includes the waste disposal. In accordance with what is described in module C3, in module C4, it is assumed that no cable component is disposed of in a landfill, and therefore, the environmental values in module C4 are zero.
- **D**, reuse, recycling and energy recovery potentials. Module D includes the avoided environmental impacts of all end-of-life flows. The avoided impacts related to the percentage of material sent for recycling and the benefits from energy recovery of materials in module C3 are included.





# Results of the environmental performance indicators<sup>1</sup>

The following tables report results for the "product" identified as "worst." For all modules, except module B6, results are shown for the cable with the largest cross-sectional area: **H1Z2Z2-K 1X10,00**. For module B6, the cable that shows the worst performance turns out to be **H1Z2Z2-K 1X4,00**, characterized by a higher resistance value.

### Mandatory impact category indicators according to EN 15804<sup>2</sup>

				Results re	ferre	d to 1	m of	cabl	е							
Indicators	Unit	A1-A3	<b>A</b> 4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
GWP-fossil	kg CO₂ eq.	6,22E-01	1,38E-02	2,25E-02	0	0	0	0	0	7,40E-02	0	0	1,71E-03	9,25E-02	0	-4,76E-01
GWP-biogenic	kg CO₂ eq.	-1,15E-02	4,15E-06	2,75E-02	0	0	0	0	0	5,68E-03	0	0	5,17E-07	2,53E-02	0	-8,65E-04
GWP-luluc	kg CO₂ eq.	1,10E-03	2,69E-07	3,31E-05	0	0	0	0	0	6,69E-05	0	0	3,35E-08	3,45E-07	0	-8,65E-04
GWP-total	kg CO <sub>2</sub> eq.	6,12E-01	1,38E-02	5,00E-02	0	0	0	0	0	7,98E-02	0	0	1,71E-03	1,18E-01	0	-4,78E-01
ODP	kg CFC 11 eq.	8,37E-09	2,97E-10	2,69E-10	0	0	0	0	0	2,95E-02	0	0	3,70E-11	9,81E-11	0	-6,42E-09
AP	mol H⁺ eq.	4,64E-02	3,58E-05	1,39E-03	0	0	0	0	0	1,46E-09	0	0	4,46E-06	1,23E-05	0	-3,80E-02
EP-freshwater	kg P eq.	2,03E-04	1,08E-08	6,08E-06	0	0	0	0	0	2,90E-04	0	0	1,35E-09	1,31E-08	0	-1,66E-04
EP-marine	kg N eq.	2,16E-03	1,40E-05	6,63E-05	0	0	0	0	0	3,32E-06	0	0	1,75E-06	4,91E-06	0	-1,73E-03
EP-terrestrial	mol N eq.	3,15E-02	1,48E-04	9,60E-04	0	0	0	0	0	4,26E-05	0	0	1,85E-05	5,42E-05	0	-2,54E-02
POCP	kg NMVOC eq.	9,22E-03	5,78E-05	2,82E-04	0	0	0	0	0	5,06E-04	0	0	7,20E-06	1,37E-05	0	-7,19E-03
ADP-minerals&metals	kg Sb eq.	5,95E-04	4,72E-10	1,78E-05	0	0	0	0	0	2,00E-04	0	0	5,89E-11	5,88E-10	0	-4,90E-04
ADP-fossil*	MJ	9,27E+00	1,83E-01	2,87E-01	0	0	0	0	0	2,31E-09	0	0	2,28E-02	1,06E-02	0	-6,20E+00
WDP*	m³ eq	7,58E-01	1,67E-04	2,28E-02	0	0	0	0	0	1,37E+00	0	0	2,08E-05	8,31E-04	0	-5,34E-01
Acronyms	GWP-fossil = Globa ODP = Depletion p nutrients reaching f potential, Accumula fossil = Abiotic dep	potential of the reshwater end ated Exceedan	stratospheric compartment; ce; POCP = F	ozone layer; EP-marine = I ormation pote	AP = / Eutropl ntial of	Acidifichication tropos	ation   n pote spheric	ootenti ntial, fr ozone	al, Ac action e; ADF	cumulated Exc of nutrients re P-minerals&me	ceedar aching tals =	nce; El ı marin Abiotio	P-freshwater = e end compart c depletion pot	Eutrophicatio ment; EP-terre ential for non-l	n pote estrial =	ntial, fraction of Eutrophication

\* Disclaimer: the results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

<sup>1</sup> The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks" is missing.

<sup>&</sup>lt;sup>2</sup> It is important to consider the results of modules A1-A3 while also evaluating the results of module C.





#### Additional mandatory and voluntary impact category indicators

	Results referred to 1 m of cable															
Indicators	Unit	A1-A3	A4	A5	B1	B2	В3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG <sup>3</sup>	kg CO₂ eq.	6,25E-01	1,38E-02	2,29E-02	0	0	0	0	0	7,49E-02	0	0	1,71E-03	9,25E-02	0	-4,78E-01

#### **Resource use indicators**

				Results ref	erred	to 1	m of	cable	9							
Indicatori	Unit	A1-A3	A4	A5	B1	B2	В3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE**	MJ	1,85E+00	4,16E-04	5,55E-02	0	0	0	0	0	3,64E-01	0	0	5,18E-05	4,08E-04	0	-1,46E+00
PERM**	MJ	4,95E-01	6,47E-05	1,23E-01	0	0	0	0	0	3,75E-02	0	0	8,06E-06	1,48E-01	0	-1,20E-01
PERT**	MJ	2,34E+00	4,80E-04	1,78E-01	0	0	0	0	0	4,02E-01	0	0	5,99E-05	1,49E-01	0	-1,58E+00
PENRE	MJ	8,52E+00	1,83E-01	2,64E-01	0	0	0	0	0	1,37E+00	0	0	2,28E-02	1,06E-02	0	-6,15E+00
PENRM	MJ	7,49E-01	5,44E-05	2,25E-02	0	0	0	0	0	2,32E-04	0	0	6,78E-06	1,30E-05	0	-4,89E-02
PENRT	MJ	9,27E+00	1,83E-01	2,87E-01	0	0	0	0	0	1,37E+00	0	0	2,28E-02	1,06E-02	0	-6,20E+00
SM	kg	1,13E-02	0	3,38E-05	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m³	1,84E-02	7,64E-06	5,59E-04	0	0	0	0	0	1,31E-03	0	0	9,52E-07	1,14E-04	0	-1,35E-02
	PERF = Use of rene	wahle nriman	eneray evoluc	ling renewable	nrima	rv ene	ray rec	COLUTCA	e lieed	as raw materi	ale: DE	RM =	Hee of renewa	hle primary er	eray r	ecurces used

Acronyms

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = 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; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

<sup>\*\*</sup> The indicators PERE, PERM and PERT were calculated according to method B of the Annex 3 (PCR 2019:14 v.1.3.2).

<sup>&</sup>lt;sup>3</sup> This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO<sub>2</sub> is set to zero.





### **Waste indicators**

	Results referred to 1 m of cable															
Indicators	Unit	A1-A3	A4	A5	B1	B2	В3	B4	B5	В6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1,69E-03	1,31E-06	9,15E-05	0	0	0	0	0	2,48E-05	0	0	1,63E-07	7,11E-04	0	-1,73E-04
Non-hazardous waste disposed	kg	1,83E-01	9,01E-06	1,06E-02	0	0	0	0	0	9,94E-04	0	0	1,12E-06	2,64E-03	0	-1,49E-01
Radioactive waste disposed	kg	2,07E-05	1,57E-08	6,22E-07	0	0	0	0	0	6,09E-06	0	0	1,95E-09	1,03E-08	0	-1,65E-05

### **Output flow indicators**

	Results referred to 1 m of cable															
Indicators	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	5,61E-03	0	5,73E-03	0	0	0	0	0	0	0	0	0	3,12E-02	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	2,04E-02	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0	1,73E-01	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	3,46E-01	0	0





# Variation of environmental indicators among included products

The following table shows the range of variability for each module and for each category of impact.

			%					
Indicators	Unit	A1-A3	A4	A5	B6	C2	C3	D
GWP-total	kg CO₂ eq.	-57,89	-85,68	-23,78	-60,61	-52,65	-35,12	-57,26
GWP-GHG	kg CO₂ eq.	-56,19	-85,68	-51,58	-60,61	-52,65	-30,12	-57,25
ODP	kg CFC 11 eq.	-49,91	-85,68	-50,41	-60,61	-52,65	-29,45	-50,87
AP	mol H⁺ eq.	-61,00	-85,68	-60,94	-60,61	-52,65	-28,82	-61,17
EP-freshwater	kg P eq.	-60,66	-85,68	-60,65	-60,61	-52,65	-28,43	-60,84
EP-marine	kg N eq.	-60,13	-85,68	-59,43	-60,61	-52,65	-28,52	-60,84
EP-terrestrial	mol N eq.	-60,43	-85,68	-59,97	-60,61	-52,65	-28,67	-60,94
POCP	kg NMVOC eq.	-59,47	-85,68	-59,09	-60,61	-52,65	-28,68	-60,76
ADP-minerals&metals	kg Sb eq.	-61,25	-85,68	-61,25	-60,61	-52,65	-29,57	-61,28
ADP-fossil*	MJ	-52,01	-85,68	-52,47	-60,61	-52,65	-28,85	-55,73
WDP*	m³ eq	-56,27	-85,68	-56,22	-60,61	-52,65	-26,56	-60,95

### **Conversion factors**

Conversion coefficients are provided for calculating the environmental impacts related to all cable formations included in this EPD. For each life cycle module, the environmental impacts of the product concerned are calculated by multiplying the impacts of the EPD statement corresponding to the "worst" product by the conversion coefficient. The "Total" column should be calculated by summing the environmental impacts of each life cycle stage (excluding module D). Over the entire product life cycle, an error less than 5% is estimated in all impact categories analyzed.

Formation	A1-A3	A4, A5	B6	C, D
1 X 4,00	0,43	0,47	1,00	0,47
1 X 6,00	0,67	0,71	0,68	0,71
1 X 10,00	0,99	1,00	0,39	1,00





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## **Contact Information**

EPD Owner: Specialcavi Baldassari S.r.l.

Via G. Pieraccini, 76 55012 Capannori (LU). Italy

Tel: +39 0583 935741

Corporate contacts:

Dott.ssa Giorgia Chiariello

e-mail: g.chiariello@specialcavibaldassari.it

Dott.ssa Beatrice Diamanti

e-mail: b.diamanti@specialcavibaldassari.it

SPECIALCAVI BALDASSARI

www.specialcavibaldassari.it

LCA study support: Tetis Institute Srl

Via Gropallo 4/19, 16122 Genova (GE), Italy e-mail: info@tetisinstitute.it



www.tetisinstitute.it