Environmental product declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Optima Ducts

from Tecnosystemi Group S.p.A Benefit Company

This EPD of multiple products is based on the representative product
"**Optima T Standard duct T75-OPT**"

Programme	International EPD® System, www.environdec.com
Programme operator	EPD International AB
EPD registration number	EPD-IES-0007406
Publication date	2025-04-30
Valid until	2030-04-29

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	International EPD® System
Address	EPD International AB Box 210 60 SE-100 31 Stockholm, Sweden
Website	www.environdec.com
E-mail	info@environdec.com

Accountabilities for PCR, LCA 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): PCR 2019:14 Construction products and construction services (v 1.3.4)
- PCR review was conducted by:
  The Technical Committee of the International EPD® System. Chair: Claudia A. Peña.

Life Cycle Assessment (LCA)

LCA accountability:
Soin Company srls
Via Orgnani 1
33034 Fagagna (UD)
www.soincompany.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. con Socio Unico, Via Quintiliano 43 I Italia - 20138 Milano
- The certification body is accredited by: ACCREDIA

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.

It is not recommended to use the results of modules A1-A3 without considering the results of module C.

COMPANY INFORMATION

Owner of the EPD

TECNOSYSTEMI SPA SOCIETÀ BENEFIT

Contact

Michele Arbo
Quality Management
michele.arbo@tecnosystemi.com

Description of the organisation

Tecnosystemi is a **Benefit Company**; the headquarter is in via dell'Industria 2/4 - 31029 - Vittorio Veneto (TV).
It was officially established in 1992 and began its history by selling a small range of air conditioning accessories.
In 1996 it also became a production company, thus beginning a virtuous path that is still evolving today.
The turning point came in 2013, with the definitive move of the headquarters to Vittorio Veneto and the transfer of ownership to the Anna Munari and Giorgio Rigoni family. The passion for their work and the vision of a company of the future led the owners to invest in technological means, transforming a small Veneto company into a large enterprise.
With the construction of the third warehouse in 2019, Tecnosystemi expanded to cover an area of 33,000 m² and a covered area of 22,000 m².
The Company designs and manufactures a diversified range of accessories for air conditioning, ventilation and air exchange, always aiming at a strategy of diversification to meet the needs of different customers in Italy and abroad.
Thanks to research and the recognised value of internal production know-how, Tecnosystemi continuously invests in new production technologies.

Product-related or management system-related certifications

Name and location of production site

Via dell'Industria 2/4, Vittorio Veneto (Treviso)

PRODUCT INFORMATION

Product name

OPTIMA DUCTS

Product identification and description

The products included in the EPD are part of the SMART CLIMA line, which includes a wide range of accessories for climate control (air conditioning, ventilation, and sanitation) and, specifically, the OPTIMA line, manufactured at the Vittorio Veneto plant (Italy).

The **Optima** line of ducts includes three different types of items, all designed to optimize interior spaces to facilitate and speed up the installation of refrigerant lines, electrical cables, and condensate drains:

- **Standard**, made entirely of PVC (Polyvinyl chloride);
- **Standard with bubble**, made entirely of PVC and includes a four-directional sliding bubble;
- **Full cover**, made entirely of PVC fully enveloping and with flush wall closure;
- **Full cover with protective film**, also made of 100% PVC, featuring a polyethylene protective film.
  The fully enveloping cover, which sits flush with the wall, is equipped with a convenient protective film that can be removed once installation is complete. This removable film protects the duct during installation and is removed afterward, ensuring the duct remains clean.

The product chosen as a reference is Optima T Standard Duct T75-OPT, as it is the best-selling during the reference year of the study. All environmental performance indicators have been calculated, taking it as a reference.

Product	Code	A [mm]	B [mm]	Lenght [m]	Weight [g]
Optima T Standard Duct T75-OPT	11130075	74	56	2	1,018
Features	• Stiff, shockproof, anti-UVA PVC, white, recyclable • Sharp-edged bottom • Pre-punched slots for wall mounting • Central closure with patented accidental anti-release • Rounded cover • Paintable				

UN CPC Code

3699 Articles of plastics n.e.c.

Geographical scope

Italy

LCA INFORMATION

Functional unit / declared unit

1 kg of finished product, plus its packaging

Time representativeness

The primary data cover a period of 12 months, reference year 2023

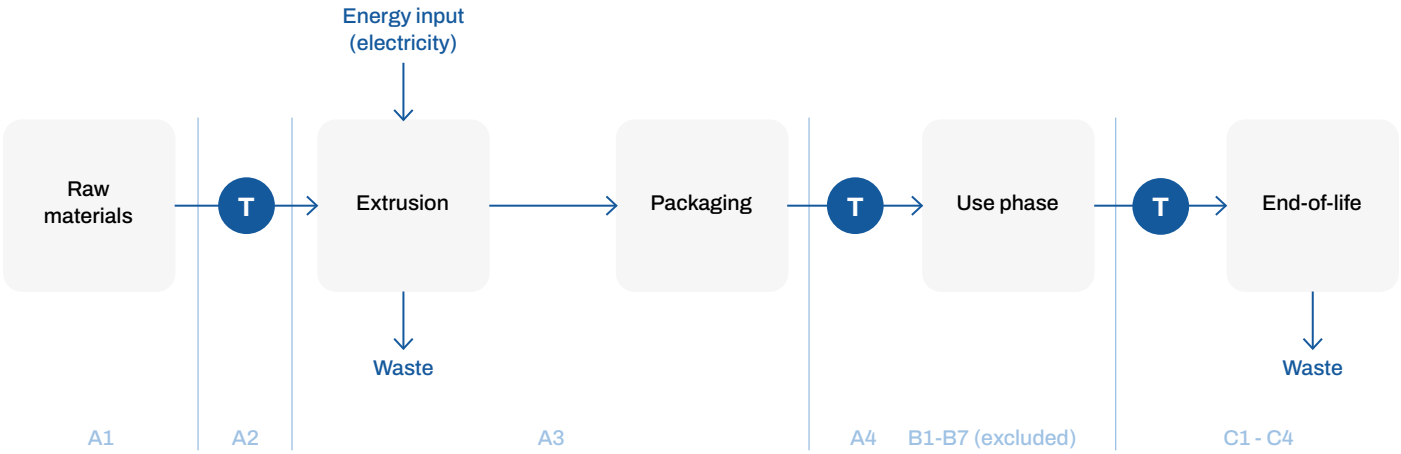
Database(s) and LCA software used

Ecoinvent 3.10.1 database, SimaPro Software version 9.6.0.1.

Description of system boundaries

The system boundaries are set according to the Cradle to gate with options, modules C1-C4, module D and with optional modules (A1-A3 +C + D) and additional modules. As additional module it was chosen A5, considered for balancing out the biogenic content of the product packaging. Moreover, construction, maintenance and decommissioning of infrastructures and machinery is not considered since it's believed their contribution is negligible and therefore not included in the study.

System diagram



Data quality

The primary data on PVC raw materials, energy consumption, waste production, and product packaging used for the distribution from the Vittorio Veneto factory pertain to the year 2023 and are site-specific. The company also collected information on raw materials (supplier locations and packaging used for transport) and product distribution (packaging used for transport).

Proxy data

In the absence of selected primary or generic data, proxy data were used, whose contribution does not exceed 10% of the potential impacts calculated for modules A1-A3.

Allocation procedures

Allocation procedures were used for energy consumption (electricity and natural gas) and waste produced, based on the total 2023 production of extrusion and injection manufacts. Additional mass-based allocation procedures were applied for the packaging used to transport PVC to the facility (big bags and pallets) and for distribution packaging.

Cut off

Cut-offs were applied to include at least 95% of the total input flows (mass and energy) per module. For the" Optima duct with level" and "Optima standard duct with protective film" series, since the mass of the built-in level and protective film contributes respectively less than 0.12% and 2% of the total mass, a cut-off was applied. Additionally, for secondary packaging, the production and transport of the plastic film used to wrap cardboard boxes on the pallet were not considered.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results)

	Product stage			Construction process stage	
	Raw material supply	Transport	Manufacturing	Transport	Construction / Installation
Module	**A1**	**A2**	**A3**	**A4**	**A5**
Modules declared	●	●	●	ND	●
Geography	EU	EU	IT	-	GLO
Specific data used	> 90%			-	-
Variation – products	< 10%			-	-
Variation – sites	Not applicable			-	-

	Use stage						
	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use
Module	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**
Modules declared	ND	ND	ND	ND	ND	ND	ND
Geography	-	-	-	-	-	-	-
Specific data used	-	-	-	-	-	-	-
Variation – products	-	-	-	-	-	-	-
Variation – sites	-	-	-	-	-	-	-

	End of life stage				Resource recovery stage
	De-construction / demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	●	●	●	●	●
Geography	-	EU	EU	GLO	GLO
Specific data used	-	-	-	-	-
Variation – products	-	-	-	-	-
Variation – sites	-	-	-	-	-

CONTENT INFORMATION

Product components	Weight. kg	Post-consumer material. weight-%	Biogenic material. weight-% and kg C/kg
Polyvinyl chloride (PVC)	1.00	0.0 %	0.000
TOTAL	**1.00**	**0.0 %**	**0.000**
Product components	**Weight. kg**	**Post-consumer material. weight-%**	**Biogenic material. weight-% and kg C/kg**
Corrugated cardboard	0.091	9.12%	0.039
Pallet	0.001	0.10%	0.0004
TOTAL	**0.092**	**9.22%**	**0.039**

The product and relative packaging materials do not include any substance present in the “Candidate list of substances of very high concern for authorization” in percentage greater than 0.1%.

INFORMATION RELATED TO EPD OF MULTIPLE PRODUCTS

The table below summarizes the products included in this EPD.

Product	Code	Colour
OPTIMA TB 62 Standard duct with bubble	B-11130062	White
OPTIMA TB 75 Standard duct with bubble	B-11130075	White
OPTIMA TB 100 Standard duct with bubble	B-11130100	White
OPTIMA T 35 Standard duct	SCD100136	White
OPTIMA T 62 Standard duct	11130062	White
OPTIMA T 75 Standard duct	11130075	White
OPTIMA T 100 Standard duct	11130100	White
OPTIMA T 135 Standard duct	SCD100123	White
OPTIMA TP 62 FULL COVER Standard duct with protective film	SCD100105	White
OPTIMA TP 75 FULL COVERStandard duct with protective film	SCD100106	White
OPTIMA TP 102 FULL COVER Standard duct with protective film	SCD100107	White
OPTIMA TP 135 FULL COVER Standard duct with protective film	SCD100125	White
OPTIMA T 62 FULL COVER Standard duct	SCD100102	White
OPTIMA T 75 FULL COVER Standard duct	SCD100103	White
OPTIMA T 102 FULL COVER Standard duct	SCD100104	White
OPTIMA T 135 FULL COVER Standard duct	SCD100124	White

RESULTS OF THE ENVIRONMENTAL PERFORMANCE INDICATORS

Mandatory impact category indicators according to EN 15804

Results per 1 kg of product							
Indicator	**Unit**	**A1-A3**	**A5**	**C1**	**C2**	**C3**	**C4**
GWP total	kg CO_2 eq.	2.98E+00	3.12E-02	1.92E-02	4.62E-01	3.26E-01	-1.56E+00
GWP fossil	kg CO_2 eq.	3.01E+00	1.42E-03	1.92E-02	4.21E-01	3.25E-01	-1.53E+00
GWP biogenic	kg CO_2 eq.	-2.95E-02	2.98E-02	1.33E-05	4.03E-02	4.68E-04	-2.13E-02
GWP luluc	kg CO_2 eq.	2.79E-03	4.01E-07	6.33E-06	4.89E-04	3.27E-05	-1.18E-03
ODP	kg CFC 11 eq.	8.63E-07	2.84E-11	3.85E-10	5.74E-09	1.51E-09	-5.43E-07
AP	mol H+ eq.	1.10E-02	7.76E-06	7.66E-05	1.43E-03	2.43E-04	-5.35E-03
EP freshwater	kg P eq.	9.33E-04	9.98E-08	1.29E-06	1.42E-04	1.47E-05	-4.88E-04
EP marine	kg N eq.	2.30E-03	1.71E-05	2.88E-05	4.32E-04	1.27E-04	-1.07E-03
EP terrestrial	mol N eq.	2.21E-02	2.83E-05	3.14E-04	3.37E-03	6.83E-04	-1.02E-02
POCP	kg NMVOC eq.	1.16E-02	1.54E-05	1.16E-04	1.28E-03	2.23E-04	-6.08E-03
ADP minerals and metals*	kg Sb eq.	3.38E-05	4.16E-09	6.19E-08	2.90E-06	2.36E-07	-1.97E-05
ADP fossil*	MJ	6.55E+01	1.97E-02	2.72E-01	5.50E+00	5.48E-01	-3.67E+01
WDP*	m3	3.18E+00	2.95E-05	1.11E-03	7.78E-02	2.31E-01	-1.93E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential. Accumulated Exceedance; EP-freshwater = Eutrophication potential. fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential. fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential. Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential. deprivation-weighted water consumption						

** 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.*

Additional mandatory and voluntary impact category indicators

Results per 1 kg of product								
Indicator	**Unit**	**A1-A3**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG	kg CO_2 eq.	3.02E+00	1.83E-02	0.00E+00	1.92E-02	4.39E-01	3.26E-01	-1.54E+00

Resource use indicators

Results per 1 kg of product								
Indicator	**Unit**	**A1-A3**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	5.41E+00	7.92E-04	0.00E+00	4.45E-03	8.25E-01	4.47E-02	-2.19E+00
PERM	MJ	1.57E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	6.98E+00	7.92E-04	0.00E+00	4.45E-03	8.25E-01	4.47E-02	-2.19E+00
PENRE	MJ	7.05E+01	2.09E-02	0.00E+00	2.89E-01	5.81E+00	5.85E-01	-3.95E+01
PENRM	MJ	3.81E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	7.05E+01	2.09E-02	0.00E+00	2.89E-01	5.81E+00	5.85E-01	-3.95E+01
SM	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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	2.33E-02	-4.39E-05	0.00E+00	3.72E-05	3.50E-03	8.55E-03	-1.17E-02
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water							

Waste indicators

Results per 1 kg of product								
Indicator	**Unit**	**A1-A3**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	Kg	1.40E-03	1.47E-07	0.00E+00	1.83E-06	3.71E-05	1.06E-05	-8.52E-04
Non-hazardous waste disposed	Kg	2.39E-01	1.25E-02	0.00E+00	1.29E-02	1.47E-01	1.87E-01	-1.03E-01
Radioactive waste disposed	Kg	8.51E-05	1.23E-08	0.00E+00	8.66E-08	2.03E-05	5.22E-07	-5.10E-05

Output flow indicators

Results per 1 kg of product								
Indicator	**Unit**	**A1-A3**	**A5**	**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	0.00E+00
Material for recycling	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	Kg	0.00E+00	0.00E+00	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	0.00E+00	0.00E+00
Exported energy. thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ADDITIONAL ENVIRONMENTAL AND SOCIAL INFORMATION

In 2017, a 500 kWp photovoltaic system was installed on the rooftop of the factory where Optima ducts are produced. In 2023, the system covered the 49% about of the electricity needs of the factory.

Always attentive to sustainability issues in their most complete vision (social, environmental and economic), in 2021 Tecnosystemi marks a new beginning by becoming a **Benefit Company**, thus rewriting its corporate purpose and officially declaring its serious intention to generate a positive impact on the environment and the community, continuing a path that had already begun years earlier.

In 2023, Tecnosystemi carried out a major redevelopment of the areas outside the factories, designing a **real urban forest** signed by an internationally renowned landscape architect, João Ferreira Nunes, who interpreted the Company's vision and turned it into reality: circularity, sustainability, compensation, are the key elements of this project, designed for the entire community and all the people who work in the Company.

References

- Product Category Rule “Construction Products (2019:14 VERSION 1.3.4)”
- EN 15804:2012+A2:2019. Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products.
- General Programme Instructions for the International EPD System, v. 4.0
- UNI EN ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations
- UNI EN ISO 14040:2021, Environmental management - Life cycle assessment - Principles and framework
- UNI EN ISO 14044:2021, Environmental management. Life cycle assessment - Requirements and guidelines
- ISPRA (2024). Rapporto Rifiuti Speciali Edizione 2024 – RAPPORTI 402/2024 ISPRA. From https://www.isprambiente.gov.it/it/pubblicazioni/rapporti/rapporto-rifiuti-speciali-edizione-2024
- ISPRA (2023) Rapporto Rifiuti Urbani - Edizione 2023. Tratto da https://www.isprambiente.gov.it/it/pubblicazioni/rapporti/rapporto-rifiuti-urbani-edizione-2023
- Report_LCA_Linea_OPTIMA_Canalina_rev01.pdf, Rev. 01 of 2025/02/19

Environmental product declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Optima Accessories

from Tecnosystemi Group S.p.A Benefit Company

This EPD of multiple products is based on the representative product
"**Optima TM75 wall-mounted terminal**"

Programme	International EPD® System, www.environdec.com
Programme operator	EPD International AB
EPD registration number	EPD-IES-0007426
Publication date	2025-04-30
Valid until	2030-04-29

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	International EPD® System
Address	EPD International AB Box 210 60 SE-100 31 Stockholm, Sweden
Website	www.environdec.com
E-mail	info@environdec.com

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- Product Category Rules (PCR): PCR 2019:14 Construction products and construction services (v 1.3.4)
- PCR review was conducted by:
  The Technical Committee of the International EPD® System. Chair: Claudia A. Peña.

Life Cycle Assessment (LCA)

LCA accountability:
Soin Company srls
Via Orgnani 1
33034 Fagagna (UD)
www.soincompany.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. con Socio Unico, Via Quintiliano 43 I Italia - 20138 Milano
- The certification body is accredited by: ACCREDIA

Procedure for follow-up of data during EPD validity involves third party verifier:

Yes ○ No ●

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It is not recommended to use the results of modules A1-A3 without considering the results of module C.

COMPANY INFORMATION

Owner of the EPD

TECNOSYSTEMI SPA SOCIETÀ BENEFIT

Contact

Michele Arbo
Quality Management
michele.arbo@tecnosystemi.com

Description of the organisation

Tecnosystemi is a **Benefit Company**; the headquarter is in via dell'Industria 2/4 - 31029 - Vittorio Veneto (TV).
It was officially established in 1992 and began its history by selling a small range of air conditioning accessories.
In 1996 it also became a production company, thus beginning a virtuous path that is still evolving today.
The turning point came in 2013, with the definitive move of the headquarters to Vittorio Veneto and the transfer of ownership to the Anna Munari and Giorgio Rigoni family. The passion for their work and the vision of a company of the future led the owners to invest in technological means, transforming a small Veneto company into a large enterprise.
With the construction of the third warehouse in 2019, Tecnosystemi expanded to cover an area of 33,000 m² and a covered area of 22,000 m².
The Company designs and manufactures a diversified range of accessories for air conditioning, ventilation and air exchange, always aiming at a strategy of diversification to meet the needs of different customers in Italy and abroad.
Thanks to research and the recognised value of internal production know-how, Tecnosystemi continuously invests in new production technologies.

Product-related or management system-related certifications

Name and location of production site

Via dell'Industria 2/4, Vittorio Veneto (Treviso)

PRODUCT INFORMATION

Product name

OPTIMA ACCESSORIES

Product identification and description

The products included in the EPD are part of the SMART CLIMA line, which includes a wide range of accessories for climate control (air conditioning, ventilation, and sanitation) and, specifically, the OPTIMA line, manufactured at the Vittorio Veneto plant (Italy).

The **Optima** line of accessories includes 6 different types of items:

- Curves (flat, flat articulated, internal corner, external corner)
- T-shunt
- Sleeves (joining, split connector, right rotation, left rotation, coupling)
- Closing caps
- Reductions
- Terminals (wall-mounted, corner, pipe output)

The product chosen as a reference is Optima TM75 wall-mounted terminal, as it is the best-selling during the reference year of the study. All environmental performance indicators have been calculated, taking it as a reference.

Product	Code	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	Mass [g]
OPTIMA TM75 Wall mounted terminal	11106002	78	58	170	110	74	111
Features	• Shockproof, anti-UVA rigid PVC, white, grey or black, can be recycled • Innovative design • Ultra-fast interlocking fastening system • Large outer flange hole cover • Extremely high outer finish • Paintable • Operating temperature -20°C / + 60°C						

UN CPC Code

3699 Articles of plastics n.e.c.

Geographical scope

Italy

LCA INFORMATION

Functional unit / declared unit

1 kg of finished product, plus its packaging

Time representativeness

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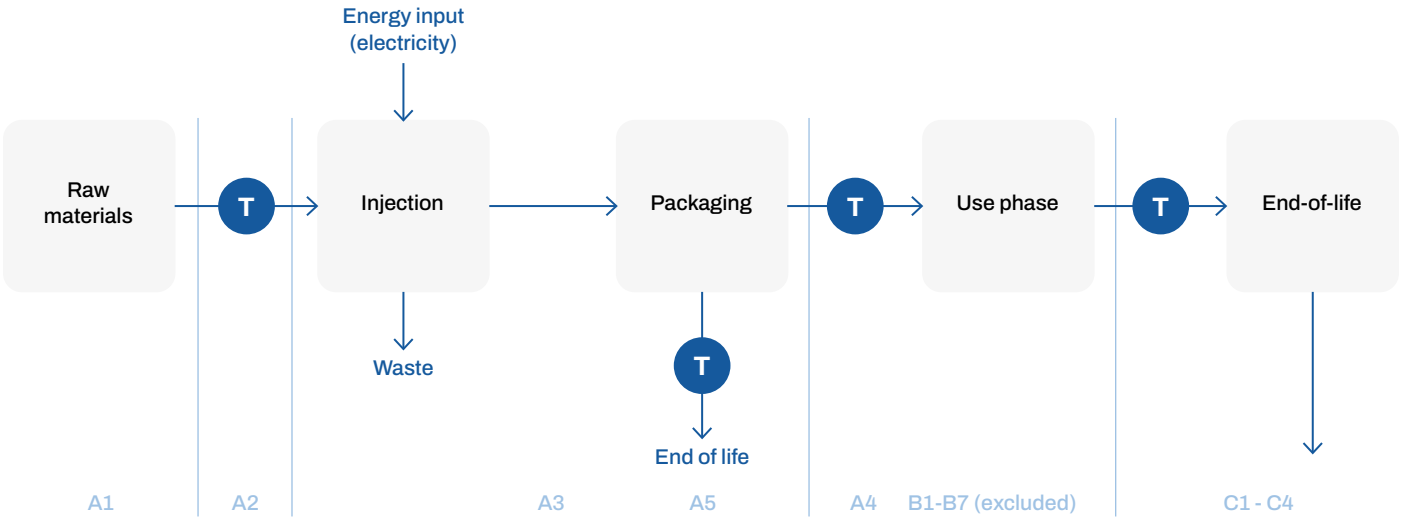
System diagram



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The primary data on PVC raw materials, energy consumption, waste production, and product packaging used for the distribution from the Vittorio Veneto factory pertain to the year 2023 and are site-specific. The company also collected information on raw materials (supplier locations and packaging used for transport) and product distribution (packaging used for transport).

Proxy data

In the absence of selected primary or generic data, proxy data were used, whose contribution does not exceed 10% of the potential impacts calculated for modules A1-A3.

Allocation procedures

Allocation procedures were used for energy consumption (electricity and natural gas) and waste produced, based on the total 2023 production of extrusion and injection manufacts. Additional mass-based allocation procedures were applied for the packaging used to transport PVC to the facility (big bags and pallets) and for distribution packaging.

Cut off

No cut-off was applied.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results)

	Product stage			Construction process stage	
	Raw material supply	Transport	Manufacturing	Transport	Construction / Installation
Module	**A1**	**A2**	**A3**	**A4**	**A5**
Modules declared	●	●	●	ND	●
Geography	EU	EU	IT	-	GLO
Specific data used	> 90%			-	-
Variation – products	-5.2/+149.4%*			-	-
Variation – sites	Not applicable			-	-

* The upper limit of +149.4% is due to only one product that has a particularly unfavourable packaging configuration. Excluding this product, the value would be +9.7%.

	Use stage						
	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use
Module	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**
Modules declared	ND	ND	ND	ND	ND	ND	ND
Geography	-	-	-	-	-	-	-
Specific data used	-	-	-	-	-	-	-
Variation – products	-	-	-	-	-	-	-
Variation – sites	-	-	-	-	-	-	-

	End of life stage				Resource recovery stage
	De-construction / demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	●	●	●	●	●
Geography	-	EU	EU	GLO	GLO
Specific data used	-	-	-	-	-
Variation – products	-	-	-	-	-
Variation – sites	-	-	-	-	-

CONTENT INFORMATION

Product components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Polyvinyl chloride (PVC)	1.00	0.0 %	0.000
TOTAL	**1.00**	**0.0 %**	**0.000**
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Bioplastic	0.0360	3.60%	0.016
Corrugated cardboard	0.1440	14.40%	0.061
Pallet	0.0061	0.61%	0.0024
TOTAL	**0.1861**	**18.61%**	**0.080**

The product and relative packaging materials do not include any substance present in the “Candidate list of substances of very high concern for authorization” in percentage greater than 0.1%.

INFORMATION RELATED TO EPD OF MULTIPLE PRODUCTS

The table below summarizes the products included in this EPD.

Terminals	Curves	Sleeves	T-shunts	Closing caps	Reductions per duct
TM 62 -OPT wall-mounted white	CP62 – OPT flat white	MCS62-OPT connection white	DT62 – OPT white	TC 35 – OPT white	RC RC75/62 white
TM 75 - OPT wall-mounted white	CP75 – OPT flat white	MCS75-OPT connection white	DT75 – OPT white	TC TC62 - OPT white	RC RC102/75 white
TM 102 - OPT wall-mounted white	CP102 – OPT flat white	MRD62-OPT right rotation white	DT102 – OPT white	TC TC75 – OPT white	RC 135/102 white
TM 135-OPT wall-mounted white	CP 135-OPT flat white	MRD62-OPT right rotation reduced white	DT135 – OPT white	TC TC102 - OPT white	
TA62 – OPT corner white	CPS CPS62 flat articulated white	MRD75-OPT right rotation white		TC 135-OPT white	
TA75 – OPT corner white	CPS CPS75 flat articulated white	MRS62-OPT left rotation reduced white			
TA102 – OPT corner white	CAI62 - OPT internal corner white	MRS62-OPT left rotation white			
TA 135-OPT corner white	CAI75 – OPT internal corner white	MRD75-OPT coupling white			
TS62 – OPT pipe output white	CAI102 - OPT internal corner white	MG 62 – OPT coupling white			
TS75 - OPT pipe output white	CAI 135-OPT internal corner white	MG 75 – OPT coupling white			
TS102–OPT pipe output white	CAE 62 – OPT external corner white	MG 102 – OPT coupling white			
	CAE 75 – OPT external corner white	MG 135 – OPT coupling white			
	CAE 102 external corner white				
	CAE 135-OPT external corner white				

RESULTS OF THE ENVIRONMENTAL PERFORMANCE INDICATORS

Mandatory impact category indicators according to EN 15804

Results per 1 kg of product								
Indicator	**Unit**	**A1-A3**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP total	kg CO_2 eq.	3.09E+00	6.01E-02	0.00E+00	1.92E-02	4.62E-01	3.26E-01	-1.56E+00
GWP fossil	kg CO_2 eq.	3.31E+00	3.94E-03	0.00E+00	1.92E-02	4.21E-01	3.25E-01	-1.53E+00
GWP biogenic	kg CO_2 eq.	-2.31E-01	5.61E-02	0.00E+00	1.33E-05	4.03E-02	4.68E-04	-2.13E-02
GWP luluc	kg CO_2 eq.	4.90E-03	1.38E-06	0.00E+00	6.33E-06	4.89E-04	3.27E-05	-1.18E-03
ODP	kg CFC 11 eq.	9.08E-07	5.81E-11	0.00E+00	3.85E-10	5.74E-09	1.51E-09	-5.43E-07
AP	mol H+ eq.	1.24E-02	6.38E-05	0.00E+00	7.66E-05	1.43E-03	2.43E-04	-5.35E-03
EP freshwater	kg P eq.	1.05E-03	6.67E-07	0.00E+00	1.29E-06	1.42E-04	1.47E-05	-4.88E-04
EP marine	kg N eq.	2.63E-03	4.49E-05	0.00E+00	2.88E-05	4.32E-04	1.27E-04	-1.07E-03
EP terrestrial	mol N eq.	2.49E-02	2.70E-04	0.00E+00	3.14E-04	3.37E-03	6.83E-04	-1.02E-02
POCP	kg NMVOC eq.	1.29E-02	3.05E-05	0.00E+00	1.16E-04	1.28E-03	2.23E-04	-6.08E-03
ADP minerals and metals*	kg Sb eq.	3.64E-05	9.56E-09	0.00E+00	6.19E-08	2.90E-06	2.36E-07	-1.97E-05
ADP fossil*	MJ	7.17E+01	4.37E-02	0.00E+00	2.72E-01	5.50E+00	5.48E-01	-3.67E+01
WDP*	m3	3.46E+00	-9.92E-04	0.00E+00	1.11E-03	7.78E-02	2.31E-01	-1.93E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential. Accumulated Exceedance; EP-freshwater = Eutrophication potential. fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential. fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential. Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential. deprivation-weighted water consumption							

** 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.*

Additional mandatory and voluntary impact category indicators

Results per 1 kg of product								
Indicator	**Unit**	**A1-A3**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG	kg CO_2 eq.	3.33E+00	3.13E-02	0.00E+00	1.92E-02	4.39E-01	3.26E-01	-1.54E+00

Resource use indicators

Results per 1 kg of product								
Indicator	**Unit**	**A1-A3**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	6.89E+00	2.49E-03	0.00E+00	4.47E-03	8.25E-01	4.48E-02	-2.19E+00
PERM	MJ	3.49E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.04E+01	2.49E-03	0.00E+00	4.47E-03	8.25E-01	4.48E-02	-2.19E+00
PENRE	MJ	7.72E+01	4.65E-02	0.00E+00	2.89E-01	5.81E+00	5.85E-01	-3.95E+01
PENRM	MJ	3.99E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	7.72E+01	4.65E-02	0.00E+00	2.89E-01	5.81E+00	5.85E-01	-3.95E+01
SM	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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	0.00E+00	-9.11E-05	0.00E+00	3.72E-05	3.50E-03	8.55E-03	-1.17E-02
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water							

Waste indicators

Results per 1 kg of product								
Indicator	**Unit**	**A1-A3**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	Kg	1.48E-03	3.08E-07	0.00E+00	1.83E-06	3.71E-05	1.06E-05	-8.52E-04
Non-hazardous waste disposed	Kg	2.77E-01	3.07E-02	0.00E+00	1.29E-02	1.47E-01	1.87E-01	-1.03E-01
Radioactive waste disposed	Kg	9.40E-05	2.91E-08	0.00E+00	8.66E-08	2.03E-05	5.22E-07	-5.10E-05

Output flow indicators

Results per 1 kg of product								
Indicator	**Unit**	**A1-A3**	**A5**	**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	0.00E+00
Material for recycling	Kg	0.00+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	Kg	0.00E+00	0.00E+00	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	0.00E+00	0.00E+00
Exported energy. thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ADDITIONAL ENVIRONMENTAL AND SOCIAL INFORMATION

In 2017, a 500 kWp photovoltaic system was installed on the rooftop of the factory where Optima accessories are produced. In 2023, the system covered the 49% about of the electricity needs of the factory.

Always attentive to sustainability issues in their most complete vision (social, environmental and economic), in 2021 Tecnosystemi marks a new beginning by becoming a **Benefit Company**, thus rewriting its corporate purpose and officially declaring its serious intention to generate a positive impact on the environment and the community, continuing a path that had already begun years earlier.

In 2023, Tecnosystemi carried out a major redevelopment of the areas outside the factories, designing a **real urban forest** signed by an internationally renowned landscape architect, João Ferreira Nunes, who interpreted the Company's vision and turned it into reality: circularity, sustainability, compensation, are the key elements of this project, designed for the entire community and all the people who work in the Company.

ANNEX I. Variation of results for mandatory indicators

As indicated by PCR, the range of variation in modules A-C more than 10% is given below for each mandatory indicator. These variations are mainly due to the different packaging configurations used for distribution, which can lead to different allocation values on the declared unit and, therefore, different results.

Indicator	Variation of results
Climate change - Fossil	-4.2%/+119.7%
Climate change - Biogenic	-95.1%/+3,440.5%
Climate change - Land use and LU change	-36.5%/+758.7%
Ozone depletion	-0.6%/+14.8%
Acidification	-6.7%/+167.9%
Eutrophication. freshwater	-6.6%/+194.8%
Eutrophication. marine	-10.4%/+308.9%
Eutrophication. terrestrial	-9.6%/+273.1%
Photochemical ozone formation	-6.0%/+173.2%
Resource use. minerals and metals	-2.5%/+56.6%
Resource use. fossils	-4.0%/+98.1%
Water use	-3.1%/67.3%
GWP-GHG	-4.7%/+137.2%
PERE	-19.2%/+353.6%
PERM	-64.8%/+1,906.5%
PERT	-22.9%/834.8%
PENRE	-4.0%/98.2%
PENRT	-4.0%/+98.2%
FW	-8.9%/+210.9%
HWD	-1.0%/+25.3%
NHWD	-7.8%/+247.4%
RWD	-4.5%/+114.6%

References

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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.
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