VIMAR FOR THE ENVIRONMENT

One of Vimar's strategic choices is to protect and respect the environment by optimising consumption, reducing waste, using energy production systems from highly efficient alternative sources; using ecological materials and production processes for its products, which allow waste to be recovered and reduced, and promoting the development of a circular economy, to be applied also outside of the company.
In order to implement all the above, Vimar operates in an integrated manner, respecting the Environment in compliance with ISO 14001.

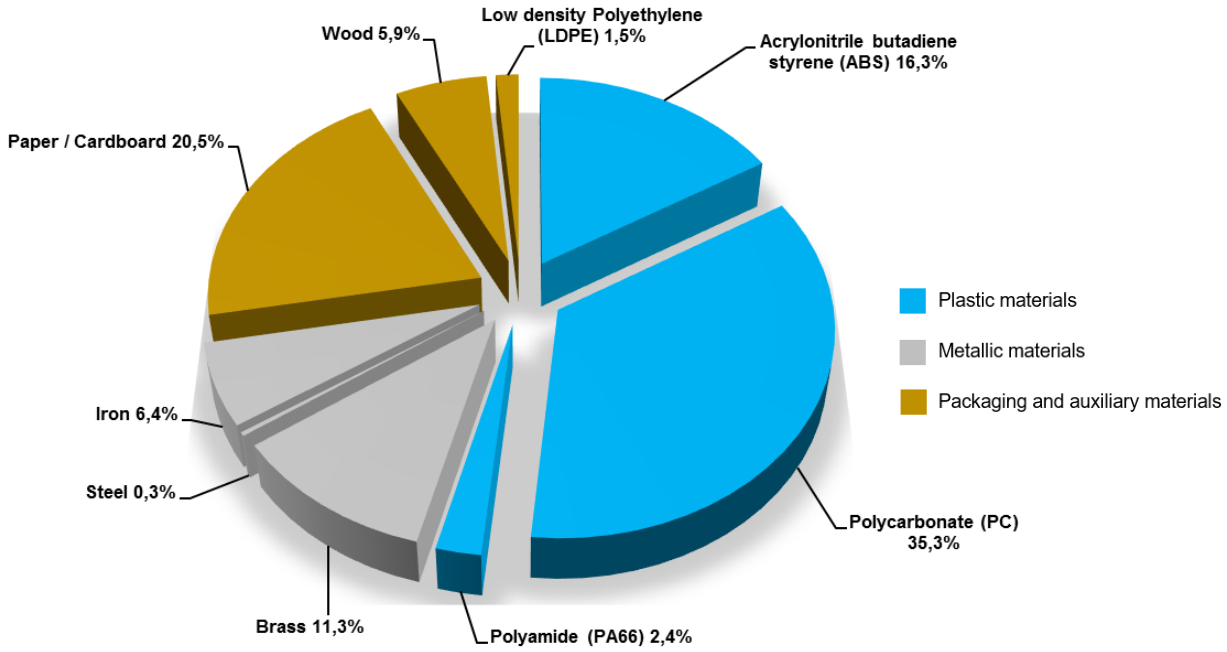
PRODUCT INFORMATION

FUNCTIONAL UNIT
To connect and disconnect for 20 years (Reference life time - RLT) the plug of an electrical load that absorbs current I_{th} = 16A under normal conditions with operating voltage U_e = 250V. The product allows the protection of the user from direct contact with live parts. The use scenario is load current 50% I_{th} and frequency of use of 50% of RLT. The reference product is characterized by an IP20 protection degree.

DESCRIPTION			
			
14613 **Frame 3M +screws** (1x)	**14210** **2P+E 16A universal outlet white** (1x)	**14041** **Blank module white** (1x)	**14653.01** **Plate 3M techn. white** (1x)

MATERIALS COMPOSITION

The products of interest do not contain any of the restricted substances in compliance with REACh Regulation (EU) n.1907/2006 and RoHS Directive 2011/65/EU according to the latest updates. The total mass of the functional unit including its packaging is **111,97 g**.



MANUFACTURING STAGE

The products are designed in view of facilitating re-use, dismantling and recovery of WEEE (Waste of Electric and Electronic Equipment), its components and materials, according to Directive 2012/19/EU. The packaging materials are compliant with Directive 2004/12/CE.
The products of interest are manufactured in the Italian plants of Vimar, certified according to ISO 14001.

DISTRIBUTION STAGE

The phase of distribution has been implemented considering the effective distribution of the products of interest. It has been calculated the weighted average distance, approximately 490 km, with reference to the distance crossed from the means of logistics to distribute the finished product to the customers.

INSTALLATION STAGE

The phase of installation has been implemented considering only the management of waste generated in the place of installation (collection and treatment up to the disposal of final residues) due to the packaging of the product and the production of waste associated with the installation processes. In the installation phase there are no other significant aspects as there is no generation of other waste, there is no need for other products and the installation takes place through screwing and interlocking of the devices.

USE STAGE

In the normal conditions of use, the products do not require assistance, maintenance or additional products. The use phase considers what is stated in document PSR-0005-ed2-EN-2016 03 29 - Product Specific Rules for Electrical switchgear and control gear Solutions and the electrical resistance of the device.

END-OF-LIFE STAGE

In accordance with the WEEE Directive 2012/19/EU, Vimar products are designed to be easily disassembled and recycled into every component at the end of their life, once they have become waste.

The product is characterized by a percentage of recyclability, estimated according to the IEC/TR 62635 with a value of **78%** subdivided into:

- Plastic materials: 40%
- Metallic materials: 17%
- Packaging and auxiliary materials: 21%

LIFE CYCLE IMPACT ASSESSMENT

The life cycle impact assessment considers all the life stages from “cradle to grave”, according to the PEP-PCR-ed3-EN-2015 04 02, and it is representative of the products marketed and used mainly in Italy, and to a small extent in the rest of the world, in compliance with the related local current standards. The life cycle stages considered are in particular:

Manufacturing stage[1]	The manufacturing phase considers: 1. Production (extraction, treatment, transformation, etc.) of the materials and components that make up the reference products and their assembly, including packaging and product labels, and their flows associated with the waste generated and th end of life. 2. Industrial processes used to assemble the reference product and packaging components. 3. Transport of the packaged product from the factory to the manufacturer's last logistics platform.
Distribution stage	The distribution phase considers the transport of the product in its packaging from the last logistics platform of the manufacturer to the distributor and from the distributor to the place of installation.
Installation stage[2]	The installation phase concern only the management of waste generated at the installation site (collection and treatment up to the disposal of final residues) due to product packaging and the production of waste associated with the installation processes.
Use stage[3]	The use phase considers the operation of the products under normal conditions of use and refers to the energy consumption and other flows of the products during their use in the RLT according to the load conditions indicated in the PSR-0005-ed2-EN-2016 03 29. In particular the scenario was modeled considering 20 years of Reference Life Time (RLT) with a loading rate of 50% of the nominal current and 50% as use time rate.
End-of-life stage[3]	The end-of-life phase considers: 1. Transport required to collect the products at end-of-life and transport them from the installation site to the final treatment site. 2. Treatment processes for items covered by the WEEE Directive 2012/19/EU to be sent to special end-of-life product treatment facilities until final treatment.

[1] For the Manufacturing stage have been considered the following energy models:
- Extraction of raw materials: European mix
- Production: Italian mix

[2] For the Installation stage no energy model has been considered, because there are no energy consuming operations.

[3] For the Use and the End-of-life stages the energy models considered are representative of the actual market of the products.
In order of importance Italian mix, European mix and Rest of the World mix.

The following tools were used for LCA modelling:

- **LCA Software:** *SIMAPRO v. 9.0.0.35*
- **Database:** *Ecoinvent v. 3.5*

ENVIRONMENTAL IMPACT - RESULTS

Impact category	Units	Total	Manufacturing stage		Distribution stage		Installation stage		Use stage		End-of-life stage	
Global warming (GWP100a)	kg CO_2 eq	**4,15E+00**	1,63E+00	**39%**	8,99E-04	**<1%**	9,37E-03	**<1%**	2,48E+00	**60%**	3,10E-02	**<1%**
Ozone layer depletion (ODP)	kg CFC-11 eq	**3,38E-07**	4,55E-08	**13%**	1,68E-10	**<1%**	9,86E-10	**<1%**	2,89E-07	**85%**	2,57E-09	**<1%**
Acidification of soils and water	kg SO_2 eq	**3,33E-02**	1,43E-02	**43%**	4,60E-06	**<1%**	2,78E-05	**<1%**	1,89E-02	**57%**	7,25E-05	**<1%**
Water eutrophication	kg PO_4^{3-} eq	**1,17E-02**	6,26E-03	**53%**	1,11E-06	**0***	1,95E-05	**<1%**	5,37E-03	**46%**	6,01E-05	**<1%**
Photochemical ozone formation	kg C_2H_4 eq	**1,11E-03**	5,74E-04	**52%**	1,67E-07	**<1%**	1,93E-06	**<1%**	5,28E-04	**48%**	2,96E-06	**<1%**
Depletion of abiotic resources el.	kg Sb eq	**9,38E-05**	8,89E-05	**95%**	2,71E-09	**0***	1,57E-08	**<1%**	4,83E-06	**5%**	4,09E-08	**<1%**
Total use of primary energy	MJ	**7,46E+01**	2,36E+01	**32%**	1,41E-02	**<1%**	8,35E-02	**<1%**	5,07E+01	**68%**	2,17E-01	**<1%**
Net use of fresh water	m^3	**5,98E-02**	1,23E-02	**21%**	2,54E-06	**0***	1,95E-05	**<1%**	4,74E-02	**79%**	6,44E-05	**<1%**

**represents less than 0,01% of the total life cycle of the reference flow*

Vimar S.p.A. guarantees that the sum of the percentage values, for each impact category, is 100%.
The notation "<1%" was chosen for a reason of data relevance.

The use phase is the life cycle phase which has the greatest impact on most environmental indicators (based on compulsory indicators).

PEP Registration n.	VMAR-14210-V01.01-EN
PEP verifier accreditation n.	VH42
Date of issue	12-2020
Validity period	5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2010	☐ Internal ☒ External
Drafting rules	• PCR-ed3-EN-2015 04 02 supplemented by • PSR-0005-ed2-EN-2016 03 29
PEP data compliant to	• XP C08-100-1 :2016 • EN 15804 : 2012 + A1:2014
The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN). The elements of the present PEP cannot be compared with elements from another program. Document in compliance with ISO 14025:2010 « Environmental labels and declarations. Type III environmental declarations » Information and reference documents: www.pep-ecopassport.org	