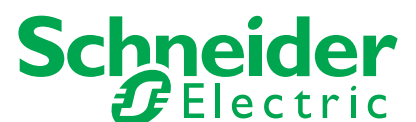
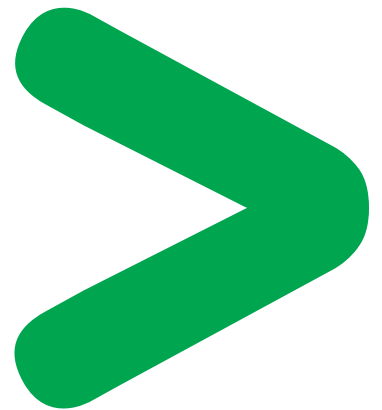


Product Environmental Profile

ODACE Socket outlet German 2P + side
Earth Shuttered 16 A



Product Environmental Profile - PEP

Product Overview

The main function of the ODACE Socket outlet German 2P + side Earth Shuttered 16 A product range is to give a solution for the infrastructures that give access to Electricity till the plug.

This range consists of: Socket outlets in 2P + side Earth and 2P + pin Earth, in screw and screw-less terminals with or without claws.

The representative product used for the analysis is ODACE Socket outlet German 2P + side Earth Shuttered 16 A in screw terminals Ref: S520037 and ODACE 1 gang Outer Plate Styl Ref: S520702.

The environmental impacts of this referenced product are representative of the impacts of the other products of the range which are developed with the similar technology.

The extrapolation rules are described in the following chapters.

The environmental analysis was performed in conformity with ISO 14040.

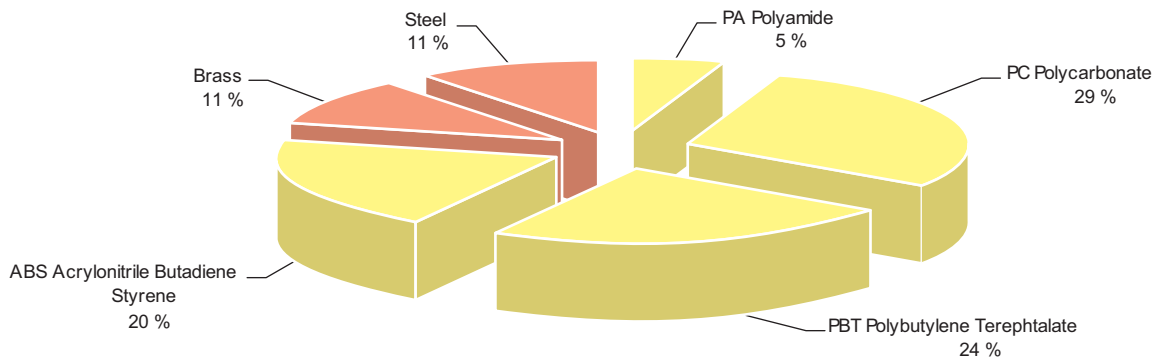
This analysis takes the stages of the life cycle of the product into account.

Constituent materials

The mass of the product range is from 60 g and 64 g no including packaging.

It is 61.87 g for the ODACE Socket outlet German 2P + side Earth Shuttered 16 A in screw terminals Ref: S520037 and ODACE 1 gang Outer Plate Styl Ref: S520702.

The constituent materials are distributed as follows:



Substance assessment

Products of this range are designed in conformity with the requirements of the RoHS directive (European Directive 2002/95/EC of 27 January 2003) and do not contain, or in the authorised proportions, lead, mercury, cadmium, chromium hexavalent, flame retardant (polybromobiphenyles PBB, polybromodiphenylthers PBDE) as mentioned in the Directive.

Manufacturing

The ODACE Socket outlet German 2P + side Earth Shuttered 16 A in screw terminals product range is manufactured at a Schneider Electric production site on which an ISO14001 certified environmental management system has been established.

Distribution

The weight and volume of the packaging have been reduced, in compliance with the European Union's packaging directive. The ODACE Socket outlet German 2P + side Earth Shuttered 16 A in screw terminals packaging weight is 12.06 g.

Product Environmental Profile - PEP

It consists of :

MATERIAL	WEIGHT
Paper (Recycled, With Deinking)	0.464
Cardboard (kraft)	9.804
PET (Polyethylene Terephthalate)	1.8
Total	12.068

The weight gain of the packaging is 30 % weight in PET (Polyethylene Terephthalate) gained (reduction) within the context of the project to reduce the packaging waste on the job.

The product distribution flows have been optimised by setting up local distribution centres close to the market areas.

Utilization

The products of the ODACE Socket outlet German 2P + side Earth Shuttered 16 A in screw terminals range do not generate environmental pollution requiring special precautionary measures (noise, emissions, and so on) in using phase.

End of life

The design has been achieved so as components are able to enter the usual end of life treatment. The product doesn't need any specific depollution process.

At end of life, the products in the ODACE Socket outlet German 2P + side Earth Shuttered 16 A in screw terminals have been optimized to decrease the amount of waste and valorise the components and materials of the product in the usual end of life treatment process.

The potential of recyclability of the products has been evaluated using the Codde "recyclability and recoverability calculation method" (version V1, 20 Sep. 2008) and published by ADEME (French Agency for Environment and Energy Management).

By this method, this product range doesn't contain recyclable materials as the lack of processes for recycling these plastics types.

Environmental impacts

The environmental impacts were analysed for the Manufacturing (M) phases, the Distribution (D) and the Utilization (U) phases.

This product range is included in the category Energy passing product (assumed lifetime service is 20 years and using scenario: Loading rate is 100 % and uptime percentage is 100 %).

The EIME (Environmental Impact and Management Explorer) software, version 4.0, and its database, version 10.0 were used for the life cycle assessment (LCA).

The calculation has been done on ODACE Socket outlet German 2P + side Earth Shuttered 16 A in screw terminals Ref: S520037 and ODACE 1 gang Outer Plate Styl Ref: S520702.

The electrical power model used is European model.

Presentation of the product environmental impacts:

Indicator	Unit	For 1 ODACE Socket outlet German 2P +side Earth Shuttered 16A in screw terminals Ref: S520037 and ODACE 1 gang Outer Plate Styl Ref: S520702			
		S=M+D+U	M	D	U
Raw Material Depletion	Y-1	6.24E ⁻¹⁶	5.89E ⁻¹⁶	3.52E ⁻¹⁷	0.00E ⁺⁰⁰
Energy Depletion	MJ	8.952	7.706	1.245	0.00E ⁺⁰⁰
Water Depletion	dm3	2.094	1.627	4.68E ⁻⁰¹	0.00E ⁺⁰⁰
Global Warming	g ~CO2	4.82E ⁺⁰²	4.30E ⁺⁰²	51.756	0.00E ⁺⁰⁰
Ozone Depletion	g ~CFC-11	6.95E ⁻⁰⁵	4.56E ⁻⁰⁵	2.39E ⁻⁰⁵	0.00E ⁺⁰⁰
Air Toxicity	m3	1.78E ⁺⁰⁵	1.67E ⁺⁰⁵	1.06E ⁺⁰⁴	0.00E ⁺⁰⁰
Photochemical Ozone Creation	g ~C2H4	2.89E ⁻⁰¹	2.48E ⁻⁰¹	4.10E ⁻⁰²	0.00E ⁺⁰⁰
Air Acidification	g ~H+	1.49E ⁻⁰¹	1.42E ⁻⁰¹	7.61E ⁻⁰³	0.00E ⁺⁰⁰
Water Toxicity	dm3	2.19E ⁺⁰²	2.05E ⁺⁰²	13.708	0.00E ⁺⁰⁰
Water Eutrophication	g ~PO4	5.61E ⁻⁰²	4.92E ⁻⁰²	6.94E ⁻⁰³	0.00E ⁺⁰⁰
Hazardous Waste Production	kg	7.16E ⁻⁰³	7.06E ⁻⁰³	1.08E ⁻⁰⁴	0.00E ⁺⁰⁰

Analysis shows that the M phase (M, D or U phase) is the life cycle phase which has the greatest impact on the majority of environmental indicators. The environmental parameters of this phase have been optimized at the design stage.

Product Environmental Profile - PEP

System approach

As the product of the range are designed in accordance with the RoHS Directive (European Directive 2002/95/EC of 27 January 2003), they can be incorporated without any restriction within an assembly or an installation submitted to this Directive.

N.B.: please note that the environmental impacts of the product depend on the use and installation conditions of the product.

Impacts values given above are only valid within the context specified and cannot be directly used to draw up the environmental assessment of the installation.

Glossary

Raw Material Depletion (RMD)

This indicator quantifies the consumption of raw materials during the life cycle of the product. It is expressed as the fraction of natural resources that disappear each year, with respect to all the annual reserves of the material.

Energy Depletion (ED)

This indicator gives the quantity of energy consumed, whether it be from fossil, hydroelectric, nuclear or other sources.

This indicator takes into account the energy from the material produced during combustion. It is expressed in MJ.

Water Depletion (WD)

This indicator calculates the volume of water consumed, including drinking water and water from industrial sources. It is expressed in dm³.

Global Warming (GW)

The global warming of the planet is the result of the increase in the greenhouse effect due to the sunlight reflected by the earth's surface being absorbed by certain gases known as "greenhouse-effect" gases. The effect is quantified in gram equivalent of CO₂.

Ozone Depletion (OD)

This indicator defines the contribution to the phenomenon of the disappearance of the stratospheric ozone layer due to the emission of certain specific gases. The effect is expressed in gram equivalent of CFC-11.

Photochemical Ozone Creation (POC)

This indicator quantifies the contribution to the "smog" phenomenon (the photochemical oxidation of certain gases which generates ozone) and is expressed in gram equivalent of ethylene (C₂H₄).

Air Acidification (AA)

The acid substances present in the atmosphere are carried by rain. A high level of acidity in the rain can cause damage to forests.

The contribution of acidification is calculated using the acidification potentials of the substances concerned and is expressed in mode equivalent of H⁺.

Hazardous Waste Production (HWP)

This indicator calculates the quantity of specially treated waste created during all the life cycle phases (manufacturing, distribution and utilization). For example, special industrial waste in the manufacturing phase, waste associated with the production of electrical power, etc. It is expressed in kg.

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