Product Environmental Profile

Spacial S3D Steel Enclosure

Schneider Electric

Product Environmental Profile – PEP

The range Spacial S3D universal enclosure plain door with and without chassis has for main function to integrate and enable the fastening an electrical device (supply, transformers, connections…), while assuring the tightness of this device (IP 66). This range is composed of enclosures dimension from 300x200x150 to 1400x1000x300.

The representative product used to make the study is enclosure 1 door (plain) with galvanised chassis 400x400x200 (Ref.: NSYS3D4420P).

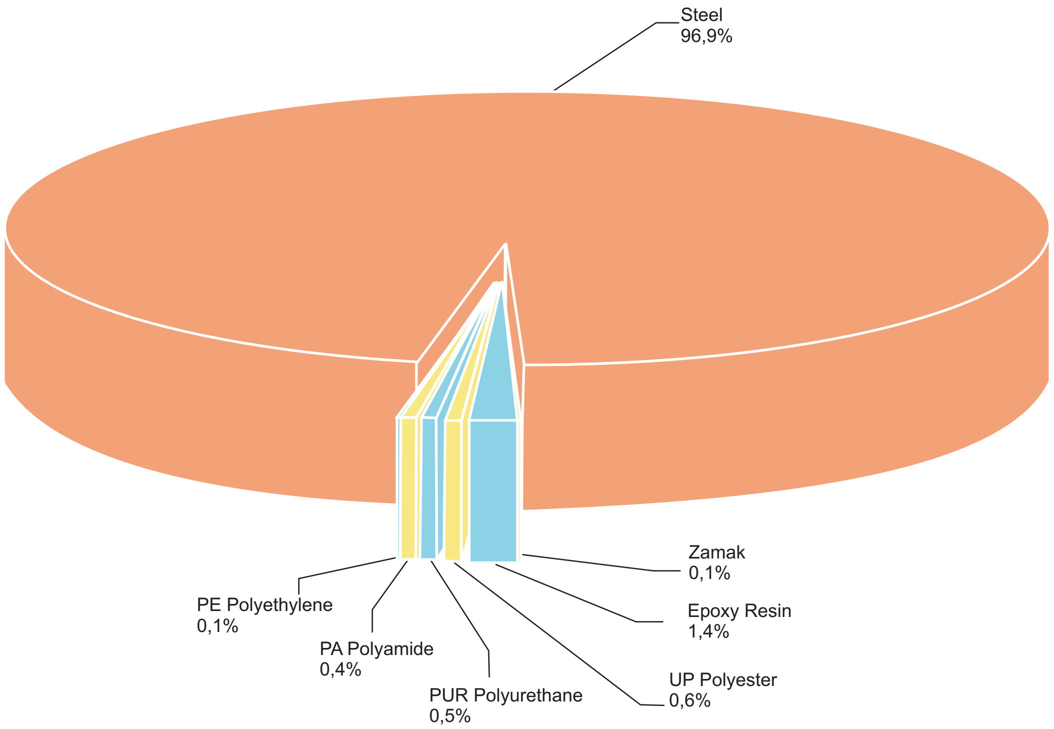
Environmental impacts of this product took in reference, are representative of the impacts of the other products of the range, produced with the same technology. The environmental analysis has been realized in conformity with ISO14040 standard “Environmental management: life cycle analysis, principle and frame”. This analysis takes into account the stages of the life cycle of the product.

Constitutive materials

The weight of each product of the range is spread from 3200 g to 72000g without packaging. It is 9005 g for the enclosure 1 door (plain) with galvanised chassis 400x400x200 analyzed.

The constituent materials are distributed like this:

Class	Matters	Weight (g)	%
Metals	Steel	8717,9	96,8%
	Zamak	7,4	0,1%
Plastic	Epoxy Resin	125,5	1,4%
	UP Polyester	54,6	0,6%
	PUR Polyurethane	48,2	0,5%
	PA Polyamide	38,6	0,4%
	PE Polyethylene	4,5	0,1%
	Total	**9005,4**	**99,9%**



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All necessary measures are taken by our services, suppliers and subcontractors to ensure that materials used in composition of the range universal enclosure contain no substance banned by the rule when it is placed on the market.

The products are designed in accordance with the requirements of the ROHS directive, (Directive 2002/95/EC of January 27, 2003) and do not contain, over thresholds allowed, lead, mercury, cadmium, hexavalent chromium, or flame retardants (polybrominated diphenyl PBD, polybrominated diphenyl ether PBDE) as mentioned in the directive.

Manufacturing

The range is manufactured in a Schneider Electric production site which has setting up an environmental management system certified ISO14001.

Distribution

Packages have been designed to reduce their weight and volume, according to the packaging directive of the European Union.

The weight of the packaging of the enclosure 1 door (plain) with galvanised chassis 400x400x200 is 953 g. It is composed of cardboard (496 g), wood (392 g), polyethylene (60 g) and polypropylene (5 g).

The flows of product distribution are optimized by the establishment of local distribution centres near the local market areas.

Use

Universal enclosure products do not present nuisances involving special precautions (noise, emissions...).

End of life

At the end of life, products of the range must be dismantled in order to better promote the different materials constituent.

The potential for recycling is more than 98%. This percentage includes metallic materials conform to the ROHS directive and plastics marked.

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Environmental impacts

The Life Cycle Analysis (LCA) has been realized with the software EIME (Environmental Impact and Management Explorer) version 4.0 and its database version 10.0.

The hypothesis of life of the product is 20 years.

The perimeter analyzed is composed of an enclosure 1 door (plain) with galvanised chassis 400x400x200.

Environmental impacts have been analyzed for the phases Manufacturing (M), including the development of raw materials, Distribution (D) and Utilization (U).

Presentation of environmental impacts of the product:

Environmental indicators	Unit	Spacial S3D enclosure NSYS3D4420P			
		S=M+D+U	M	D	U
Raw Material Depletion	Y-1	5.1665E-15	5.1367E-15	2.9721E-17	0.00E+00
Energy Depletion	MJ	3.4291E2	3.0474E2	38.162	0.00E+00
Water Depletion	dm3	2.5202E2	2.2777E2	24.247	0.00E+00
Global Warming	g ~CO2	2.6742E4	2.584E4	9.0189E2	0.00E+00
Ozone Depletion	g ~CFC-11	6.5203E-4	2.3004E-4	4.2198E-4	0.00E+00
Air Toxicity	m3	3.3056E6	3.0362E6	2.6948E5	0.00E+00
Photochemical Ozone Creation	g ~C2H4	2.409	1.671	7.3797E-1	0.00E+00
Air Acidification	g ~H+	2.209	2.005	2.04E-1	0.00E+00
Water Toxicity	dm3	5.0807E3	4.6968E3	3.8396E2	0.00E+00
Water Eutrophication	g ~PO4	9.3124E-1	7.7117E-1	1.6007E-1	0.00E+00
Hazardous Waste Production	kg	3.1697E-2	2.9322E-2	2.3751E-3	0.00E+00

The life cycle analysis has allowed to notice that the Manufacturing phase (M phase) is the most influence phase of life on the majority environmental indicators and environmental parameters of this phase have been optimized for conception.

For other products than the reference product, environmental impacts are proportional to the weight of product, but not for the indicator Raw material depletion, who after have been multiplied in relation to the mass of product, must be to divide by two for the Manufacturing phase, when the enclosure is without galvanized chassis.

System approach

The products designed in compliance with the ROHS directive (2002/95/EC of January 27, 2003), they can be integrated without restriction to equipment or installation that would be submitted directly to this regulation.

NB: environmental impacts of the product depend on the conditions of installation and use of the product.

The values of environmental impacts listed in the table above are valid only within the frame specified and can not be directly used to determine the environmental balance of the facility.

This document is based on the ISO14020 standard on the general principles of environmental statements and on the ISO14025 standard environmental statements type III.

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Glossary

Raw Material Depletion (RMD)

The RMD indicator calculates the depletion of natural resources, taking into account the size of the reserve for that resource in the ground and the consumption rate of today's economy. It is expressed in the fraction of the reserve disappearing per year (because the consumption rate is expressed as a quantity per year).

Global Warming Potential (GWP)

The GWP indicator calculates the contribution to the global warming of the atmosphere by the release of specific gases. It is expressed in grams of CO_2, as if all gases were CO_2, using equivalency in their warming potential.

Ozone Depletion (OD)

The OD indicator calculates the contribution to the depletion of stratospheric ozone layer by release of specific gases. It is expressed in grams of CFC-11, as if all gases were CFC-11, using equivalency in their depletion potential.

Photochemical Ozone Creation (POC)

The POC indicator calculates the potential creation of troposheric ozone ("smog") by the release of specific gases which will become oxidants in the low atmosphere under the action of the solar radiation. It is expressed in grams of ethylene (C_2H_4), as if all substances were C_2H_4, using their equivalent potential.

Air Acidification (AA)

The AA indicator presents the air acidification by gases released to the atmosphere. It is expressed in grams of H+, as if all gases were H+, using equivalency in their acidification potential.

Water Depletion (WD)

WD indicator calculates the consumption of water.

We will engage ourselves for our planet "To combine innovation and continuous improvement to take up the new environmental challenges".

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