Legrand North and Central America
Pass & Seymour
50 Boyd Ave
Syracuse, NY 13209
1.877.BY.LEGRAND (295.3472)
www.legrand.us

Product Environmental Profile

Pass & Seymour: Straight Blade Extra-Hard Use Connectors

COMPANY OVERVIEW

• Sustainability built in to support our associates, customers, and the environment
At Legrand North and Central America, we're committed to leading by example within our own operations, to developing high quality solutions for our customers' High Performance Buildings, and to transforming how people live and work – more safely, more comfortably, more efficiently.

• Better Performance
A core principle of designing for sustainability drives us to innovate products and systems that enable buildings to reach exceptional levels of performance, bringing about industry-leading ideas, inventions and initiatives.

• Better Operations
A commitment to a leadership role in operational excellence through environmental management, optimizing the way we manage energy, water and waste.

• Better Lives
A dedication to enhancing employee and community welfare through programs that help people enjoy healthier, more productive and more rewarding lives.

For more information on Legrand's PEPs and other sustainability initiatives, visit legrand.us/sustainability.

LEGRAND'S ENVIRONMENTAL COMMITMENTS

• Incorporate environmental management into our industrial sites
Of all Legrand sites worldwide, over 85% are ISO 14001 certified (sites belonging to Legrand for more than five years).

• Offer our customers environmentally friendly solutions
Develop innovative solutions to help our customers design more energy efficient, better managed and more environmentally friendly installations.

• Involve the environment in product design
Reduce the environmental impact of products over their whole life cycle.
Provide our customers with all relevant information (composition, consumption, end of life, etc.).

REFERENCE PRODUCT

Function	To connect/disconnect the plug of a load consuming a maximum of 15A under a voltage of 125V to an electric power supply while protecting the user from direct contact with live parts for 20 years.
Reference Product	
	Part Number: PS5269X
	Extra-Hard Use Spec-Grade Connector; 3 wire, 15A/125V, (NEMA: 5-15R); Black & White

The company reserves the right to change specifications and designs without notice. All illustrations, descriptions, dimensions and weights in the document are for guidance and cannot be held binding on the company.

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PEP ecopassport®

PRODUCTS CONCERNED

The environmental data is representative of the following products:

15A Spec-Grade Connectors: PS5269X^*, PS5669X^*
20A Spec-Grade Connectors: PS5369X^*, PS5469X^*
15A Hospital Grade Connectors: PS5269XHG*, PS5669XHG*
20A Hospital Grade Connectors: PS5369XHG*, PS5469XHG*

Where ^ represents a possible color code and * a possible packaging code.

Color codes can include: BK (black) and GRY (black and gray); no color code indicates black and white. (All hospital grade connectors are black and clear)
Packaging codes can include: CC... (retail cut case with various specifications); no packaging code indicates generic electrical distributer packaging.

CONSTITUENT MATERIALS

This Reference Product contains no substances prohibited by the regulations applicable at the time of its introduction to the market.
It respects the restrictions on use of hazardous substances as defined in the RoHS directive 2011/65/EC.

Total weight of Reference Product with unit packaging	**82.94 g (2.93oz)**

Plastics as % of weight		**Metals as % of weight**		**Others as % of weight**	
Product					
PA6 (polyamide 6 - nylon)	**38.8%**	Steel	**19.6%**		
PC (polycarbonate)	**6.2%**	Copper Alloy	**10.9%**		
Other plastics	**1.0%**				
Packaging					
PE-LD (polyethylene - low density)	**<0.1%**			paper/cardboard	**20.0%**
				wood (pallet)	**3.5%**
Total plastics	**46.0%**	**Total metals**	**30.5%**	**Total others**	**23.5%**

Estimated recycled material content: 27% of weight.

All spec grade connectors have the same material breakdown. The hospital grade connectors have a cover of PC instead of PA6 increasing the PC percentage to 21.0% and decreasing the PA6 percentage to 24.4% - all other percentages remain approximately equal to those listed above. The estimated recycled content is equal for all connectors.

MANUFACTURING

The Reference Product comes from a site that have received ISO 14001 certification.

DISTRIBUTION

Products are distributed from logistics centers located to optimize transport efficiency using EPA SmartWay® certified carriers to reduce greenhouse gases emissions. Due to highly variable distribution, an average of 1200 km by heavy truck was used. This represents transportation of the Reference Product from our warehouse to the local point of distribution in the North American market.

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INSTALLATION

For the installation of the product, only standard tools are needed and no electricity is required.

USE

Servicing and maintenance:
Under normal conditions of use, this type of product requires no servicing or maintenance.

Consumable:
No consumables are necessary to use this type of product.

END OF LIFE

• **Hazardous waste* contained in the product:** no hazardous waste
(*) Hazardous waste as defined by European Commission decision 2000/532/EC.

• **Recycling rate:**
Calculated using the method described in the IEC/TR 62635 technical report, the recyclability rate of the Reference Product (inculding packaging) is estimated as 97%. This value is based on data collected from a technological channel using industrial procedures. It does not pre-validate the effective use of this channel for end-of-life electrical and electronic products.

Separated into:	% mass of Reference Product (including packaging) that is recyclable:
- plastic materials (excluding packaging):	43%
- metal materials (excluding packaging):	30%
- packaging (all types of materials):	23%

ENVIRONMENTAL IMPACTS

The evaluation of environmental impacts examines the stages of the Reference Product life cycle: manufacturing, distribution, installation, use, and end of life. It is representative of products marketed and used in North America.

The following modelling elements were taken into account:

Manufacturing	Packaging taken into account. As required by the PEP ecopassport program, all transport for the manufacturing of the Reference Product, including materials and components, has been taken into account. The waste generated during manufacturing phase has been taken into account.
Distribution	Transport between the last distribution center and an average delivery to the sales area.
Installation	The end of life of the packaging (19.5 g) is taken into account at this phase. Transport of packaging to end of life treatment.
Use	• Under normal conditions of use, this type of product requires no servicing or maintenance. • No consumables are necessary to use this type of product. • Product category: power socket • Use scenario: for a 20 year working life, the product operates at 50% of the rated load for 50% of the time. Power losees due to the Joule effect acumulate to 9.9 kWh. This modelling duration does not constitute a minimum durability requirement. • Energy model: Electricity(US) - 2009
End of life	The default end of life scenario modelled maximizes the environmental impact using the PCR hypothesis for "Local transport": 621 miles (1000 km) by heavy truck and landfilling.
Software used	EIME V5 and its database "CODDE-2016-11" and the indicators defined in the PCR ed 3 in alignment with the EN15804 standard

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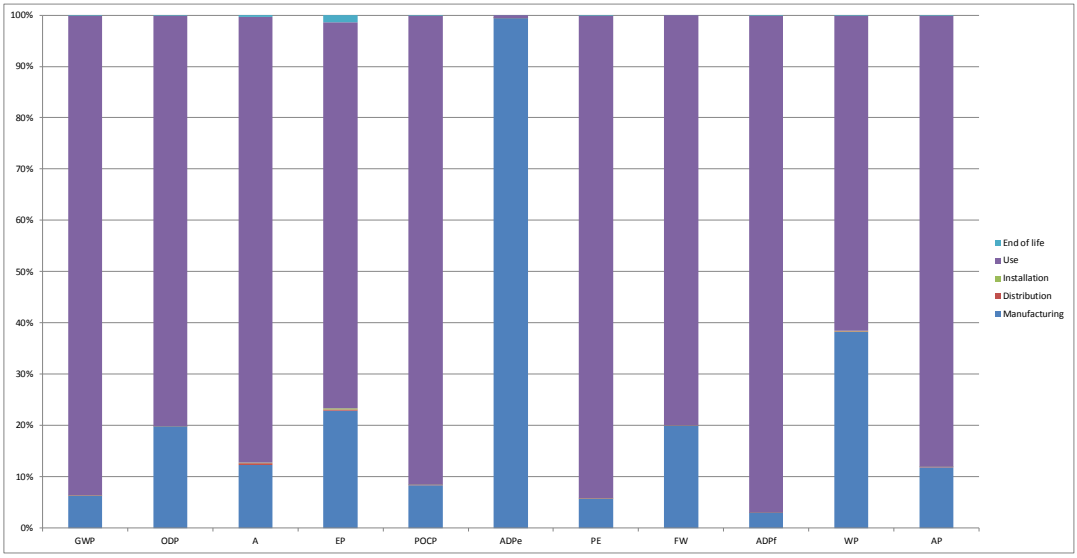
ENVIRONMENTAL IMPACTS (continued)

	Total for Life cycle		Raw material and manufacturing		Distribution		Installation		Use		End of life	
Global warming (GW)	**7.29E+00**	**kg CO_2 eq.**	4.57E-01	**6%**	4.95E-03	**< 1%**	1.18E-03	**< 1%**	6.82E+00	**94%**	6.20E-03	**< 1%**
Ozone depletion (OD)	**1.55E-07**	**kg CFC-11 eq.**	3.06E-08	**20%**	1.00E-11	**< 1%**	7.56E-12	**< 1%**	1.24E-07	**80%**	1.27E-10	**< 1%**
Acidification of soil and water (A)	**7.51E-03**	**kg SO_2 eq.**	9.29E-04	**12%**	2.23E-05	**< 1%**	5.73E-06	**< 1%**	6.53E-03	**87%**	2.43E-05	**< 1%**
Water eutrophication (WE)	**2.29E-03**	**kg PO_4^{3-} eq.**	5.23E-04	**23%**	5.11E-06	**< 1%**	5.63E-06	**< 1%**	1.72E-03	**75%**	3.14E-05	**1%**
Photochemical ozone creation (POCP)	**1.15E-03**	**kg C_2H_4 eq.**	9.56E-05	**8%**	1.58E-06	**< 1%**	4.05E-07	**< 1%**	1.05E-03	**91%**	1.88E-06	**< 1%**
Depletion of abiotic resources - elements (ADPe)	**1.22E-05**	**kg Sb eq.**	1.21E-05	**99%**	1.98E-10	**< 1%**	5.11E-11	**< 1%**	6.71E-08	**< 1%**	3.63E-10	**< 1%**
Total use of primary energy (PE)	**9.76E+01**	**MJ**	5.54E+00	**6%**	7.00E-02	**< 1%**	1.63E-02	**< 1%**	9.19E+01	**94%**	7.02E-02	**< 1%**
Net use of fresh water (FW)	**1.51E-02**	**m^3**	3.01E-03	**20%**	4.43E-07	**< 1%**	3.43E-07	**< 1%**	1.21E-02	**80%**	4.44E-06	**< 1%**
Depletion of abiotic resources – fossil fuels (ADPf)	**1.11E+02**	**MJ**	3.31E+00	**3%**	6.96E-02	**< 1%**	1.65E-02	**< 1%**	1.08E+02	**97%**	8.66E-02	**< 1%**
Water pollution (WP)	**5.48E+02**	**m^3**	2.09E+02	**38%**	8.15E-01	**< 1%**	1.84E-01	**< 1%**	3.36E+02	**61%**	7.48E-01	**< 1%**
Air pollution (AP)	**6.59E+02**	**m^3**	7.83E+01	**12%**	2.03E-01	**< 1%**	1.37E-01	**< 1%**	5.79E+02	**88%**	6.34E-01	**< 1%**

The values of the 27 impacts defined in the PCR-ed3-EN-2015 04 02 are available in the digital database of pep-ecopassport.org website. The environmental impacts of the Reference Product are representative of the products covered by the PEP, which therefore constitute a homogeneous environmental family.



The environmental impact of the Reference Product occurs predominantly during the use phase.

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ENVIRONMENTAL IMPACTS (continued)

Products in this family come in different grades and amperage ratings as listed in the "Products Concerned" section. For products other than the Reference Product, the environmental impacts are as follows:

All **15A spec-grade products** have equivalent impacts to the reference product across all phases of the product lifecycle.

All **20A products (both grades)** have higher impacts than the Reference Product in the use phase due to more energy lost due to internal resistance. Power loss is proportional to the square of the current so to obtain the use impacts of a 20A product, multiply the use phase impacts of the Reference Product (a 15A product) by 1.78 ($20^2/15^2$). All other phases of the 20A products have equivalent impacts to the Reference Product.

All **Hospital grade products (both amperages)** have different impacts in the manufacturing phase than the Reference Product for the environmental indicators listed in the following table. To obtain these impacts, multiply the given conversion factors by the corresponding Reference Product value. All other indicators in the manufacturing phase as well as all other phases of the Hospital grade products have equivalent impacts to the Reference Product.

Impact Category	Value of Impact Relative to Reference Product (Manufacturing Phase Only)
Depletion of abiotic resources - fossil fuels (ADPf)	1.34
Water eutrophication (WE)	2.14
Global warming (GW)	0.95
Water pollution (WP)	0.82
Total use of primary energy (PE)	1.22

Note: To obtain the impacts of Hospital grade 20A products, both conversions listed above must be applied.

Registration number: LGRP-00808-V01.01-EN	Drafting rules: "PCR-ed3-EN-2015 04" Supplemented by "PSR-005-ed2-2016 03 29"
Verifier's accreditation number: VH02	Information and reference documents: **www.pep-ecopassport.org**
Date of issue: 11-2018	Validity period: 5 years
Independent verification of the declaration and data, in compliance with ISO 14025:2010 Internal ☒ External ☐	
The PCR Review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN).	
PEP are compliant with XP C08-100-1: 2014 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"	
In compliance with ISO 14040:2006: "Environmental management – LCA – Principles and framework" In compliance with ISO 14044:2006: "Environmental management – LCA – Requirements and guidelines" In alignment with EN 15804:2012+A1:2013: "Sustainability of construction works - EPD's - Core rules for the product category of construction products"	