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

Product Environmental Profile

Pass & Seymour - Ground Fault Circuit Interrupter Duplex Receptacle

LEGRAND COMPANY OVERVIEW

• Designed to Be Better – Our Commitment to Sustainability
At Legrand®, our sustainability commitment translates into greater benefits and tangible value for our customers, business partners, employees, and the broader community.

• Better Performance
We provide building solutions to meet many building performance goals from sustainability and energy efficiency to productivity and occupant well being. The right choice in network and electrical infrastructure can play a key role in many facets of building performance. Our products help ensure electrical safety, offer choice and flexibility in space design, and are designed to reduce installation time and material waste on site. Because we know buildings consume a great deal of energy, we offer a range of products and solutions that reduce energy consumption from lighting to plug load to data centers.

• Better Solutions
We offer a wide range of innovative solutions for the building, while constantly evolving our design and development processes to improve the environmental profile of our products. Through active monitoring and research, we serve as an expert resource for market trends and building and product performance standards to keep our customers at the top of their game.

• Better Operations
We focus on operational excellence, because we believe optimizing the way we manage energy, water, and waste is not only good for the environment, it's good for business. As part of the Department of Energy's Better Building, Better Plants Challenge (BBBP), Legrand has reduced its energy intensity by over 30% across 14 sites in the United States in just three years. Integrating sustainability into the way we run our operations makes us more competitive – and a better business partner.

For information on Legrand PEP's and other sustainability initiatives, scan this QR code.

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	Provides ability to connect/disconnect, during 20 years, the plug of a load consuming 15A under a voltage of 125 AC, while protecting the user from direct contact with live parts, and providing ground fault interuption capability.	
Reference Product		
	Part Number: 1597TR (operating at 15A)	
	Ground Fault Circuit Interrupter Duplex Receptacle	

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Reference Flow	- All raw material inputs inclusive of primary packaging and including material that will end up as waste/ recycled during manufacturing - Installation components, none - All associated processes , transport, and disposal

PRODUCTS CONCERNED

The environmental data is representative of the following products series operating at 15A or 20A:
Series: 1597, 1597TR, 2097, 2097TR, 2087, 5800, 5801, 7647 and 3233Z, including all various with additonal suffixes

Suffixes include:
- Color: ((-BK) black, (-BR) bronze, (-GRY) grey, (-I) ivory, (-LA) light almond, (-NI) nickel, (-O) orange, (-RED) red, (-W) white)
- Hospital Grade: (HG)
- NAFTA compliant: (NA)
- Cut case retail packaging: (CC)
- Weather-resistant: (WR)
- RoHS compliant: (R)

CONSTITUENT MATERIALS

This Reference Product contains no substances prohibited by the regulations applicable at the time of its introduction to the U.S. market. Only products specifically designated as RoHS compliant in the product description meet the restrictions on use of hazardous substances as defined in the RoHS directive 2011/65/CE.
http://www.legrand.us/passandseymour/gfci/self-test/residential/15a/rohs-compliant/1597trrw.aspx

Total weight of Reference Product (with unit packaging)	158 g (packaging, instructions and lables 37 g)

Plastics as % of weight		Metals as % of weight		Other as % of weight	
Nylon	30.1%	Steel	22.5%	Printed circuit boards	5.3%
Polyethylene terephthalate (PET)	3.7%	Brass	11.8%	Glass fibers	0.5%
Polycarbonate	0.1%	Copper	3.2%		
Polyvinyl chloride (PVC)	<0.1%				
				Packaging, Instructions and labels as % weight	
				Paper	12.7%
				Paper board	10.1%
Total plastics	33.9%	Total metals	37.5%	Total other and packaging	38.6%

Estimated recycled material content: 21% of weight.

MANUFACTURING

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

The default distances for local transport were used for transport of materials to the production site, 620 miles (1,000 km) by heavy truck. For transport after manufacturing, the default distances for international transport were used based on production in China, and shipment of product to the U.S. distribution centers. 11,800 miles (19,000 km) by ocean freight and 620 miles (1,000 km) by heavy truck were used for this transport.

DISTRIBUTION

Products are distributed from logistics centers located to optimize transport efficiency. Information on the distance of distribution is not available, so the PCR default for “Intracontinental transport” – 2,175 miles (3,500 km) by heavy truck – was used. This represents transportation of the Reference Product from our facility to the local point of distribution in the North American market.

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INSTALLATION

No appreciable amount of electricity or materials areis required for installing the Reference Product.

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

Development teams integrate product end-of-life factors in the design phase.

• Hazardous waste* contained in the product: Lead
(*) 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 product without packaging is estimated as 12.7%. 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:	(% of product without packaging)
- PCB materials (excluding packaging):	1.2%
- plastic materials (excluding packaging):	1.2%
- metal materials (excluding packaging):	43.9%
Recyclability of packaging (separately):	67%

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 the United States.

The following modelling elements were taken into account:

Manufacturing	Transport of all raw materials, components, and packaging to the manufacturing location for the Reference Product has been taken into account. Production of raw materials and packing, as well as the product manufacturing, is accounted for. The waste generated during manufacturing phase has been included. Transport from the manufacturing locations to a distribution location in the U.S. was also included.
Distribution	Transport between the last distribution center and an average delivery to the sales area.
Installation	The end-of-life of the packaging is taken into account at this phase.
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: Sockets - Passive product. Note, product also has an active component for fault sensing and interruption. • Use scenario: Active sensing mode (1.57W) in continuous operation (100% of the time) for 20 years. Passive losses at 50% load (0.683W) 50% of the time contribute to a total average wattage of 1.902W over 20 years. • Energy model: Electricity (US).
End of life	Product mass is transported 621 miles (1000 km) by truck to WEEE pretreatment. Portions then sent an additional 621 miles (100 km) to final recycling, incineration, or landfilling based on recyclability assessment.
Software used	EIME V5 and its database "CODDE-2015-04" and the indicators defined in the PCR ed 3 in alignment with the EN15804 standard.

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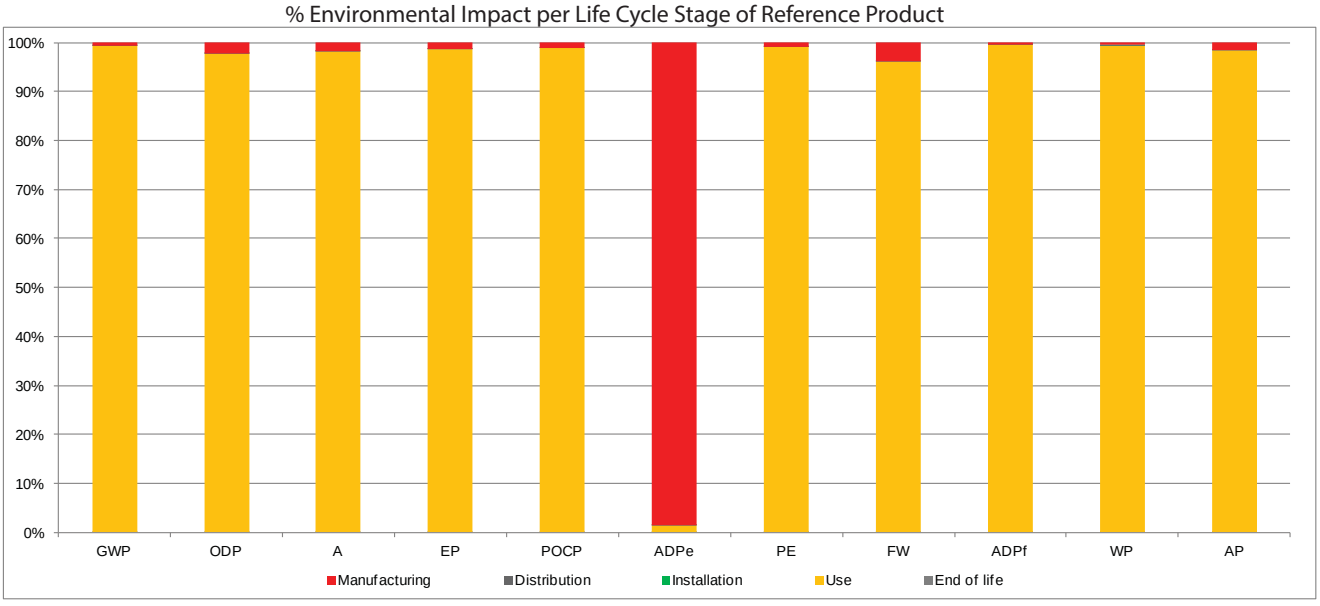
ENVIRONMENTAL IMPACTS (continued)

	Total for life cycle		Raw material and manufacturing		Distribution		Installation		Use		End of life	
Global warming (GWP)	2.32E+02	kg CO2 eq.	1.30E+00	0.56%	2.75E-02	0.01%	3.37E-02	0.01%	2.31E+02	99.40%	3.16E-02	0.01%
Ozone depletion (ODP)	4.28E-06	kg CFC-11 eq.	9.76E-08	2.28%	5.56E-11	0*	1.12E-10	0*	4.18E-06	97.69%	1.23E-09	0.03%
Acidification of soils and water (A)	2.25E-01	kg SO2 eq.	4.03E-03	1.79%	1.23E-04	0.05%	2.19E-05	0.01%	2.21E-01	98.13%	4.05E-05	0.02%
Water eutrophication (EP)	5.96E-02	kg PO43- eq.	7.88E-04	1.32%	2.83E-05	0.05%	2.68E-05	0.05%	5.87E-02	98.56%	1.35E-05	0.02%
Photochemical ozone formation (POCP)	3.58E-02	kg C2H4 eq.	3.61E-04	1.01%	8.77E-06	0.02%	7.63E-06	0.02%	3.54E-02	98.93%	4.04E-06	0.01%
Depletion of abiotic resources - elements (ADPe)	1.61E-04	kg Sb eq.	1.59E-04	98.59%	1.10E-09	0*	2.83E-10	0*	2.27E-06	1.41%	3.81E-10	0*
Total use of primary energy (PE)	3.98E+03	MJ	3.06E+01	0.77%	3.88E-01	0.01%	6.78E-02	0*	3.95E+03	99.21%	2.14E-01	0.01%
Net use of fresh water (FW)	4.24E-01	m3	1.59E-02	3.76%	2.46E-06	0*	1.08E-05	0*	4.08E-01	96.23%	2.20E-05	0.01%
Depletion of abiotic resources – fossil fuels (ADPf)	3.67E+03	MJ	1.63E+01	0.44%	3.86E-01	0.01%	6.26E-02	0*	3.65E+03	99.54%	1.76E-01	0*
Water pollution (WP)	1.14E+04	m3	5.64E+01	0.49%	4.52E+00	0.04%	4.63E-01	0*	1.14E+04	99.45%	1.96E+00	0.02%
Air pollution	1.99E+04	m3	3.13E+02	1.57%	1.13E+00	0.01%	9.38E-01	0*	1.96E+04	98.41%	1.40E+00	0.01%

*Represents less than 0.01% of the total life cycle of the reference flow
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.

% Environmental Impact per Life Cycle Stage of Reference Product



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ENVIRONMENTAL IMPACTS (continued)

For products other than the Reference Product, the environmental impacts can be determined via extrapolating from the reference product impacts, based on the rules listed below. The impacts of the products listed below can reasonably be determined for a given impact category and life cycle phase by multiplying the corresponding impact value above for the FSP-211 product by the conversion factor provided below. Factors are generally consistent within a lifecycle phase for each product.

Each factor is calculated as listed below and then the factors can be applied to the impacts from each of the lifecycle phases as noted in the table below, where each row represents a multiple product series.

Factor	Ratio to calculate factor
A	Wattage of product energy use / Wattage of reference product energy use
B	Mass of product without packaging / Mass of reference product without packaging
C	Mass of product packaging / Mass of reference product packaging
D	Total mass of product with packaging / Total mass of reference product with packaging

	Factor by life cycle phase				
Part Number	Manufacturing	Distribution	Installation	Use	End of Life
15A versions of all products lised under product concerned	B	D	C	A	B
20A versions of all products lised under product concerned	B	D	C	1.14 * A	B

Registration number: LGRP-00299-V01.01-EN	Drafting rules: PCR-ed3-EN-2015 04 02 Supplemented by: PSR-0005-ed2-EN-2016 03 29
Verifier's accreditation number: VH08	Information and reference documents: www.pep-ecopassport.org
Date of issue: 10-2016	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).	
The elements of the present PEP cannot be compared with elements from another program.	
Documents 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"	