Legrand North and Central America
Data, Power, Control Division
125 Eugene O'Neill Drive
New London, CT 06320
1.877.BY.LEGRAND (295.3472)
www.legrand.us

Product Environmental Profile

Modular Unshielded Patch Cords

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/about-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	Connects equipment using two RJ45 connectors and transmits between them a communication signal on 1 m of cable according to TIA 568C.2-2009 cabling standard for Category 6a during a 10 year typical lifetime.
Reference Product	
	Part Number: MC6A03-09
	Clarity 6A UTP Patch Cord, white

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PEP ecopassport®

PRODUCTS CONCERNED

The environmental data is representative of the following products:

Single Patch Cords:

Clarity® Modular Patch Cords
MC6AXX-YY
MC6XX-YY
MC5EXX-YY
XX = length YY = color

Reduced Diameter Patch Cord
RDC610XX-YY
RDC6XX-YY
XX = length YY = color

Bulk Patch Cords:

EZ Patch™ Patch Cords
EZC6AXXQZZ-YY
EZC6XXQZZ-YY
EZC5EXXQZZ-YY
EZRD6AXXQZZ-YY
EZRD6XXQZZ-YY
XX = length YY = color
ZZ = quantity

EZ Patch Flat Pack
EZFPM6AXXQZZ-YY
EZFPM6XXQZZ-YY
EZFPR6AXXQZZ-YY
EZFPR6XXQZZ-YY
XX = length YY = color
ZZ = quantity

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/E.

Total weight of Reference Product	**60 g**

Plastics as % of weight		**Metals as % of weight**		**Others as % of weight**	
Product					
PVC	**41.2%**	Copper alloys	**24.3%**		
PE	**9.2%**				
PC	**3.4%**				
PP	**3.0%**				
PET	**0.1%**				
Packaging					
PE	**18.8%**			Paper	**<0.1%**
Total plastics	**75.7%**	**Total metals**	**24.3%**	**Total others**	**<0.1%**

Estimated recycled material content: 6% of weight.

The proportions for 1 meter of the following patch cords vary from the Reference Product due to different ratios of Copper Alloy conductors, PVC cable jacketing, packaging relative to the total mass. Percentages for these materials are shown in the table below for reference only. All other material proportions are comparable to those shown in the table above.

Part numbers	**PVC**	**PC**	**PE (packaging)**	**Copper alloys**	**Aluminum**
RDC610XX-YY	21%	10%	24%	30%	3%
RDC6XX-YY	25%	13%	30%	20%	n/a

MANUFACTURING

The Reference Product comes from a site that observes the applicable legislation for industrial sites.

DISTRIBUTION

Products are distributed from logistics centers located to optimize transport efficiency using EPA SmartWay® certified carriers to reduce greenhouse gases emissions. Information on the distance of distribution is not available so the PCR hypothesis for "Intracontinental transport", 2175 miles (3500 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

No electricity is 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

• **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 without packaging is estimated as 96%. 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 excluding packaging)
- plastic materials:	66%
- metal materials:	30%

Recycling rate of packaging (all types of materials): 0%

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. The default scenario modelled maximizes the environmental impact using the PCR hypothesis for "Intracontinental transport": 2175 miles (3500 km) by heavy truck.
Installation	The end of life of the packaging (11 g) is taken into account at this phase. Transport of packaging to end of life treatment. Per PSR0003, installation processes are excluded from the system boundaries, other than the requirements listed in the PCR, and the impact concerning the product installation processes should be completed by the PEP user.
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. • Use scenario: 10 year working life operating 100% of the time, according to the data center application defined in Annex 1 of PSR0001. The energy dissipation through the connectors is calculated according to PSR0005 for RJ45 Balanced Connectors. This modelling duration does not constitute a minimum durability requirement. • Energy model: Electricity(US) - 2009
End of life	PSR0001 was used as a guideline for the end of life scope based on communication and data cable. The Reference Product is transported locally 621.37 miles (1000km) by truck. Metal and plastic materials undergo separation and grinding. 100% of the metals are transported locally 621.37 miles (1000km) by truck to a manufacturing site for reuse after grinding and all other materials, not including packaging, are disposed of at a landfill.
Software used	EIME V5 and its database "CODDE-2018-11" and the indicators defined in the PCR ed 3 in alignment with the EN15804 standard.

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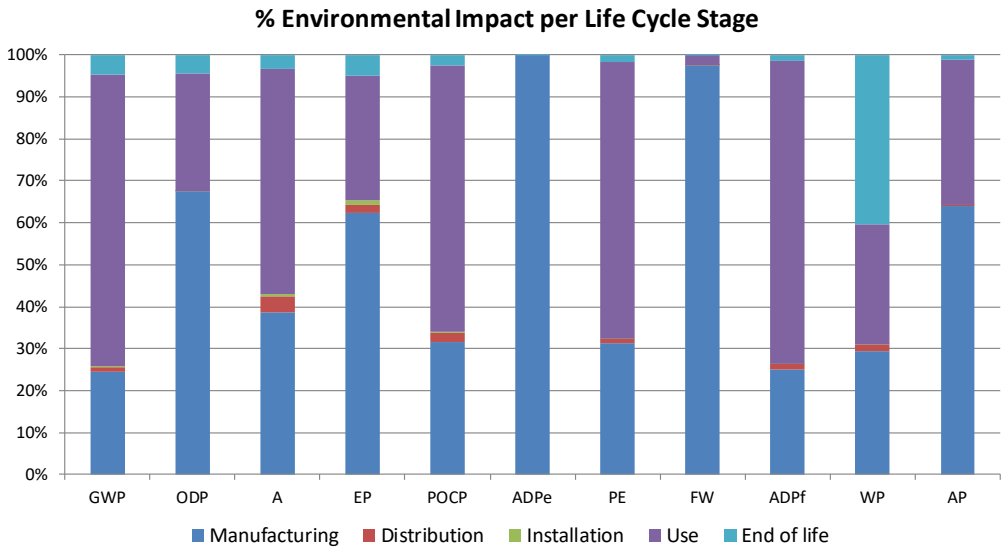
ENVIRONMENTAL IMPACTS (continued)

	Total for Life cycle		Raw material and manufacturing		Distribution		Installation		Use		End of life	
Global warming (GWP)	**9.76E-01**	**kg CO_2 eq.**	2.40E-01	**25%**	1.04E-02	**1%**	1.34E-03	**< 1%**	6.79E-01	**70%**	4.51E-02	**5%**
Ozone depletion (ODP)	**4.41E-08**	**kg CFC-11 eq.**	2.97E-08	**67%**	2.11E-11	**< 1%**	3.42E-11	**< 1%**	1.23E-08	**28%**	1.95E-09	**4%**
Acidification of soil and water (A)	**1.21E-03**	**kg SO_2 eq.**	4.67E-04	**39%**	4.67E-05	**4%**	5.09E-06	**< 1%**	6.50E-04	**54%**	3.93E-05	**3%**
Water eutrophication (EP)	**5.77E-04**	**kg PO_4^{3-} eq.**	3.60E-04	**62%**	1.07E-05	**2%**	5.80E-06	**1%**	1.71E-04	**30%**	2.86E-05	**5%**
Photochemical ozone creation (POCP)	**1.64E-04**	**kg C_2H_4 eq.**	5.21E-05	**32%**	3.32E-06	**2%**	3.97E-07	**< 1%**	1.04E-04	**63%**	4.37E-06	**3%**
Depletion of abiotic resources - elements (ADPe)	**7.75E-04**	**kg Sb eq.**	7.75E-04	**100%**	4.16E-10	**< 1%**	8.61E-11	**< 1%**	6.68E-09	**< 1%**	1.09E-09	**< 1%**
Total use of primary energy (PE)	**1.39E+01**	**MJ**	4.34E+00	**31%**	1.47E-01	**1%**	1.46E-02	**< 1%**	9.15E+00	**66%**	2.54E-01	**2%**
Net use of fresh water (FW)	**5.19E-02**	**m^3**	5.07E-02	**98%**	9.30E-07	**< 1%**	1.18E-06	**< 1%**	1.20E-03	**2%**	4.55E-05	**< 1%**
Depletion of abiotic resources – fossil fuels (ADPf)	**1.15E+01**	**MJ**	2.88E+00	**25%**	1.46E-01	**1%**	1.30E-02	**< 1%**	8.27E+00	**72%**	1.52E-01	**1%**
Water pollution (WP)	**1.17E+02**	**m^3**	3.44E+01	**29%**	1.71E+00	**1%**	1.51E-01	**< 1%**	3.35E+01	**29%**	4.70E+01	**40%**
Air pollution (AP)	**1.67E+02**	**m^3**	1.07E+02	**64%**	4.26E-01	**< 1%**	1.59E-01	**< 1%**	5.77E+01	**35%**	1.80E+00	**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.



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ENVIRONMENTAL IMPACTS (continued)

For single patch cords other than the Reference Product, the environmental impacts for Manufacturing can be estimated by weighting the environmental impacts of the Reference Product by the values shown in **Table 1** below. The values are based on the default length of a 1 m patch cord. To extrapolate different lengths of patch cord, multiply the values by a scale factor corresponding to the desired length relative to 1 meter. For example, impacts for a 20 foot cable would be calculated by multiplying by 6.1.

To calculate Manufacturing impacts for EZ Patch Patch Cords, multiply the environmental impacts of the Reference Product by the applicable patch cord values shown in **Table 1**, the quantity of patch cords, and the desired length relative to 1 meter. For example, all impacts but ODP for EZC615Q25-09 would be multiplied by 1.0 x 4.8 x 25 = 120. The impact of ODP would be multiplied by 1.6 due to the presence of the cardboard box.

To calculate Manufacturing impacts for EZ Patch Flat Pack, multiply the environmental impacts of the Reference Product by the applicable patch cord values shown in **Table 1,** the quantity of patch cords, and the desired length relative to 1 meter. For example, all impacts but EP for EZFPR609Q12-09 would be multiplied by 0.6 x 2.7 x 12 = 19.4. Impacts for EP would be multiplied by 0.9 x 2.7 x 12 = 29.2.

Impacts for Distribution are proportional to the mass of the product with packaging and impacts for Installation and End of Life are the same as the Reference Product.

Impacts for Use are proportional to the cable category, see **Table 2** for the appropriate factors relative to the Reference Product Impacts.

Table 1

Part Number	Manufacturing
MC6AXX-YY MC6XX-YY MC5EXX-YY	1.0
RDC610XX-YY	A and EP: 1.0 all else: 0.8
RDC6XX-YY	EP: 0.9 all else: 0.6

Table 2

Category Cable	Use
CAT 6A	1.0
CAT 6	0.5
CAT 5E	0.3

Registration number: LGRP-01524-V01.01-EN	Drafting rules: "PCR-ed3-EN-2015 04"
Verifier's accreditation number: VH02	Information and reference documents: **www.pep-ecopassport.org**
Date of issue: 03-2022	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.	
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"	