

Product Environmental Profile

Starline Track Busway – T3 Joint Kits



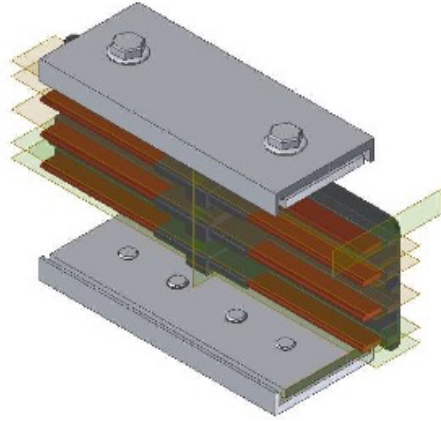
LEGRAND'S ENVIRONMENTAL COMMITMENTS

- Incorporate environmental management into our industrial sites
Of all Legrand sites worldwide, over 85% are ISO 14001-certified (sites belonging to the Group 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 and provide information in compliance with ISO 14025
Reduce the environmental impact of products over their whole life cycle.
Provide our customers with all relevant information (composition, consumption, end of life, etc.).

For more information on Legrand's PEPs and other sustainability initiatives, visit www.legrand.us/about-us/csr/circular-economy



REFERENCE PRODUCT

Function	Busway joint kit for connecting electrical busways that distribute power within data centers and other critical infrastructure for one unit of product over 10 years.
Reference Product	 <p>Part Number: SJK225T3 T3 Joint Kits</p>

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.



PRODUCTS CONCERNED

The environmental data is representative of all T3 Joint Kit catalog codes beginning with S or M followed by -JK; followed by -100, -160 or -225; ending with T3 or T3G and a paint code.

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■ 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/EU amended by delegated directive (EU) 2015/863, and its amendment 2017/2102/EU.

Total weight of Reference Product		1.17 kg			
Plastics as % of weight		Metals as % of weight		Others as % of weight	
Product only: 0.91 kg					
Polyphenylene Ether (PPE)	7.66%	Copper	36.50%		
		Aluminum	27.80%		
Packaging only: 0.26 kg					
Low Density Polyethylene (LDPE)	1.51%			Cardboard	26.50%
Total plastics	15.17%	Total metals	64.30%	Total others	26.50%

80% of the Cardboard used comes from recycled content.



■ MANUFACTURING

This stage includes an aggregation of raw material extraction and supplier processing, delivery of the materials of the manufacturing site, and impacts from manufacturing. This Reference Product comes from a site that has 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. 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.



■ INSTALLATION

During installation, no product waste is assumed, and no electricity is used. Packaging disposal has been modeled per US EPA's Advancing Sustainable Materials Management 2018 Facts and Figures Report. The transportation distance is assumed to be 32 km as described by the US EPA WARM Tool.



■ USE

The Starline Track Busway System contains three product groups (Straight Sections, Joint Kits, and End Feeds) that are used dependently to form a power distribution system. An electrical impedance test was conducted on a system level for each amperage, combining 2 end feeds, 1 joint kit, and 21ft of straight section for each range, therefore there is no impedance data for a single product group. The impedance of the system is mainly dependent on the length of conductor in the straight section. Therefore, the power dissipation value for any amperage system can be found within the corresponding straight section documentation. Actual power dissipation values for specific order is dependent on the unique number and configuration of the system.

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END OF LIFE

The recycling rate of each waste material is adopted from the US EPA's Advancing Sustainable Materials Management 2018 Facts and Figures Report including metals and plastics. The remaining portion of the waste is not recycled and is conservatively assumed landfilled. The transportation distance is assumed to be 32 km as described by the US EPA WARM Tool.



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 globally.

For each stage, the following modelling elements were taken into account at each life cycle stage (and module):

System Boundary	Manufacturing (A1-A3)	Materials and components of the product, all transport for the manufacturing, the packaging and the waste generated by the manufacturing. Facility energy data was used.
	Distribution (A4)	Transport between the last distribution center and an average delivery point in the sales area.
	Installation (A5)	The end of life of the packaging.
	Use (B1-B7)	Electricity use not accounted for in this PEP. Reference Lifetime (RLT) is not indicative of product warranty or expected lifetime of the product.
	End of life (C1-C4)	The transportation distance for waste disposal is assumed to be 32 km as described by the EPA WARM tool.
Benefits & Loads (Module D)		Module D was not assessed in this study.
Software and data-base used		EIME V6.1.1 and its CODDE-2023-02 database

For each stage, the energy mix modelled is based on default information integrated in the data modules used from the aforementioned database unless otherwise indicated.

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ENVIRONMENTAL IMPACTS

Environmental Impact Indicators		Total Life Cycle Impacts		Manufacturing	Distribution	Installation	Use	End of Life
				A1-A3	A4	A5	B1-B7	C1-C4
Climate change - total	GWP	8.44E+00	kg CO ₂ eq	7.24E+00	2.65E-01	1.66E-01	0.00E+00	7.66E-01
Climate change - fossil fuels	GWPf	7.97E+00	kg CO ₂ eq	7.01E+00	7.59E-02	1.59E-01	0.00E+00	7.29E-01
Climate change - biogenics	GWPb	2.73E-01	kg CO ₂ eq	2.30E-01	0.00E+00	6.34E-03	0.00E+00	3.68E-02
Climate change - land use and land use transformation	GWPlu	2.14E-06	kg CO ₂ eq	2.27E-07	0.00E+00	-8.55E-10	0.00E+00	1.92E-06
Ozone depletion	ODP	1.22E-06	kg CFC-11 eq	1.12E-06	6.71E-08	2.31E-09	0.00E+00	3.25E-08
Acidification	AP	1.25E-01	mole of H ⁺ eq	1.16E-01	3.42E-04	3.80E-04	0.00E+00	8.02E-03
Eutrophication, freshwater	Epf	2.14E-03	kg P eq	2.48E-04	8.91E-09	2.06E-06	0.00E+00	1.89E-03
Eutrophication, marine aquatic	Epm	6.80E-03	kg of N eq	5.68E-03	1.58E-04	1.97E-04	0.00E+00	7.60E-04
Eutrophication, terrestrial	Ept	7.68E-02	mole of N eq	6.37E-02	1.71E-03	1.12E-03	0.00E+00	1.03E-02
Photochemical ozone formation	POCP	2.81E-02	kg NMVOC eq	2.48E-02	5.56E-04	2.64E-04	0.00E+00	2.49E-03
Abiotic resource depletion – elements	ADPe	6.55E-04	kg Sb eq	5.93E-04	6.54E-12	3.45E-09	0.00E+00	6.13E-05
Abiotic resource depletion – fossil fuels	ADPf	1.24E+02	MJ	1.22E+02	9.47E-01	1.30E+00	0.00E+00	-8.31E-02
Water use	WU	6.66E+00	m ³ world eq	5.65E+00	3.86E-03	1.21E-02	0.00E+00	9.93E-01

The values of the indicators defined in the PCR-ed4-EN-2021 09 06 are available in the digital database of pep-ecopassport.org website.

The environmental impact of the Reference Product is most significant during the Manufacturing stage.

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ENVIRONMENTAL IMPACTS

Inventory Flow Indicators		Total Life Cycle Impacts		Manufacturing	Distribution	Installation	Use	End of Life
				A1-A3	A4	A5	B1-B7	C1-C4
Use of renewable primary energy, excluding renewable primary energy resources used as raw materials	ERP	6.88E+00	MJ	5.89E+00	6.19E-06	1.74E-01	0.00E+00	8.21E-01
Use of renewable primary energy resources used as raw materials	ERM	4.56E-01	MJ	4.56E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources	ER	7.34E+00	MJ	6.35E+00	6.19E-06	1.74E-01	0.00E+00	8.21E-01
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	ENRP	1.19E+02	MJ	1.17E+02	9.47E-01	1.30E+00	0.00E+00	-8.31E-02
Use of non-renewable primary energy resources used as raw materials	ENRM	4.29E+00	MJ	4.29E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources	ENR	1.24E+02	MJ	1.22E+02	9.47E-01	1.30E+00	0.00E+00	-8.31E-02
Use of secondary materials	USM	1.01E-01	kg	1.01E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	URSF	0.00E+00	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	UNRSF	0.00E+00	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	NUFW	1.55E-01	m ³	1.32E-01	8.99E-05	2.83E-04	0.00E+00	2.31E-02
Hazardous waste disposed	HWD	5.33E+01	kg	5.34E+01	6.30E-05	3.34E-03	0.00E+00	-6.33E-02
Non-hazardous waste disposed	NHWD	9.84E+00	kg	9.48E+00	7.74E-05	6.48E-02	0.00E+00	2.94E-01
Radioactive waste disposed	RWD	6.70E-03	kg	6.63E-03	1.51E-05	7.17E-06	0.00E+00	5.02E-05
Components for re-use	CRU	0.00E+00	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	MRE	3.64E-01	kg	6.13E-02	0.00E+00	9.81E-04	0.00E+00	3.02E-01
Materials for energy recovery	MER	0.00E+00	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	EE	0.00E+00	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the product	BCpdt	0.00E+00	kg C	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the associated packaging	BCpkg	5.45E-02	kg C	5.45E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00

In accordance with the PCR, the “Benefits & Loads” are beyond the system boundary and are thus not included in the results of “Total Life Cycle Impacts”.

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ENVIRONMENTAL IMPACTS

For products other than the Reference Product, the environmental impacts can be calculated using the coefficients below:

Product	Phase	GWP-Total	GWP-Fossil	GWP-Bio-genic	GWP-Land Use	ODP	AP	EP-Freshwater	EP-Marine	EP-Terrestrial	POCP	ADPe	ADPf	WU
MJK160T3	1.Manufacturing	1.1	1.1	1.0	1.0	1.1	1.0	1.0	1.1	1.1	1.1	1.0	1.1	1.1
	2.Distribution	1.1	1.1	-	-	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	3.Installation	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	5.End of life	1.1	1.1	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0	-0.3	1.0
MJK160T3G	1.Manufacturing	1.2	1.2	1.1	1.2	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3
	2.Distribution	1.2	1.2	-	-	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	3.Installation	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	5.End of life	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	-0.9	1.2
SJK100T3	1.Manufacturing	1.1	1.1	1.0	1.0	1.1	1.0	1.0	1.1	1.1	1.1	1.0	1.1	1.1
	2.Distribution	1.1	1.1	-	-	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	3.Installation	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	5.End of life	1.1	1.1	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0	-0.3	1.0
SJK100T3G	1.Manufacturing	1.2	1.2	1.1	1.2	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3
	2.Distribution	1.2	1.2	-	-	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	3.Installation	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	5.End of life	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	-0.9	1.2

Registration number: LGRP-01876-V01.01-EN	Drafting rules: "PEP-PCR-ed4-EN-2021 09 06"
Verifier accreditation number: VH43	Information and reference documents: www.pep-ecopassport.org
Date of Issue : 12-2023	Validity Period : 5 years
Independent verification of the declaration and data in compliance with ISO 14025:2006 Internal <input checked="" type="checkbox"/> External <input type="checkbox"/>	
The PCR review was conducted by a panel of experts chaired by Julie ORGELET (DDemain)	
PEP compliant with XP C08-100-1:2016 or EN 50693:2019 The content of this PEP cannot be compared with content from any other program.	
PEP compliant with ISO 14025:2006: "Environmental labels and declarations - Type III environmental declarations"	



LCA compliant with ISO 14040:2006: "Environmental management – LCA – Principles and framework"
LCA compliant with ISO 14044:2006: "Environmental management – LCA – Requirements and guidelines"
Environmental data in alignment with EN 15804:2012 + A2:2019: "Sustainability of construction works - EPD's - Core rules for the product category of construction products"