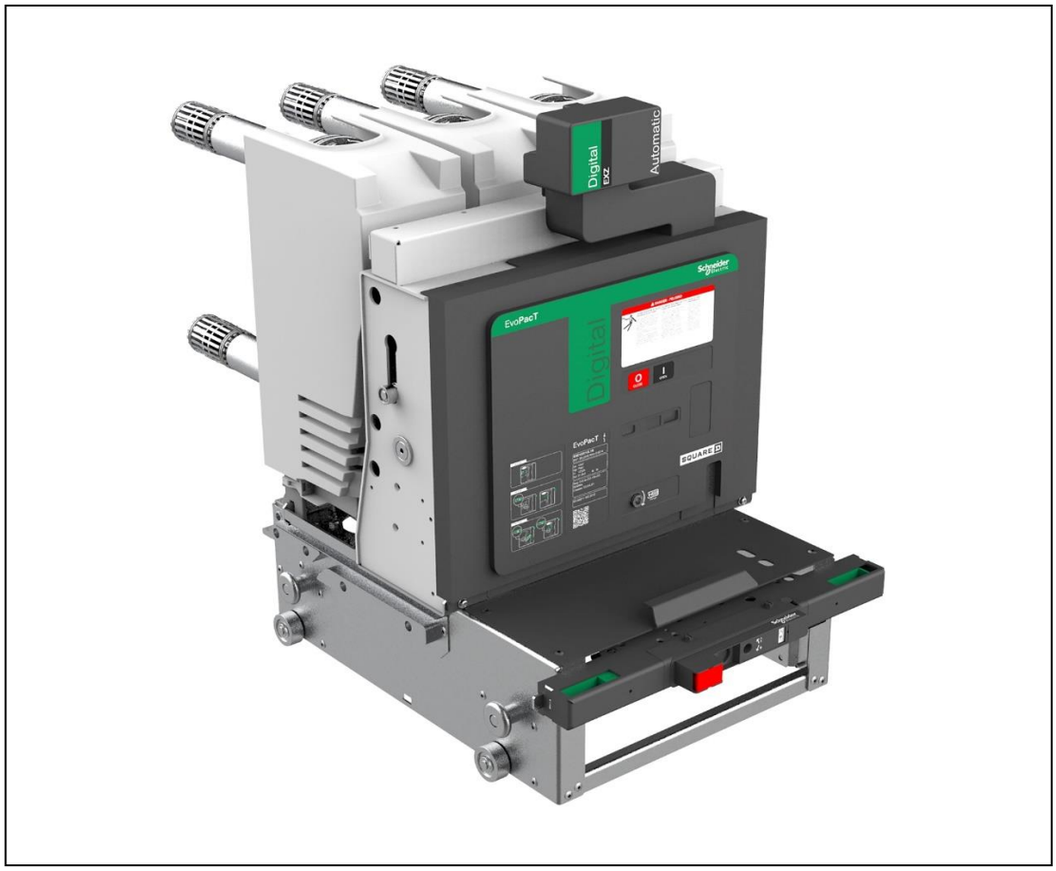
Product Environmental Profile

EvoPacT™ Medium Voltage Vacuum Circuit Breaker (VCB)



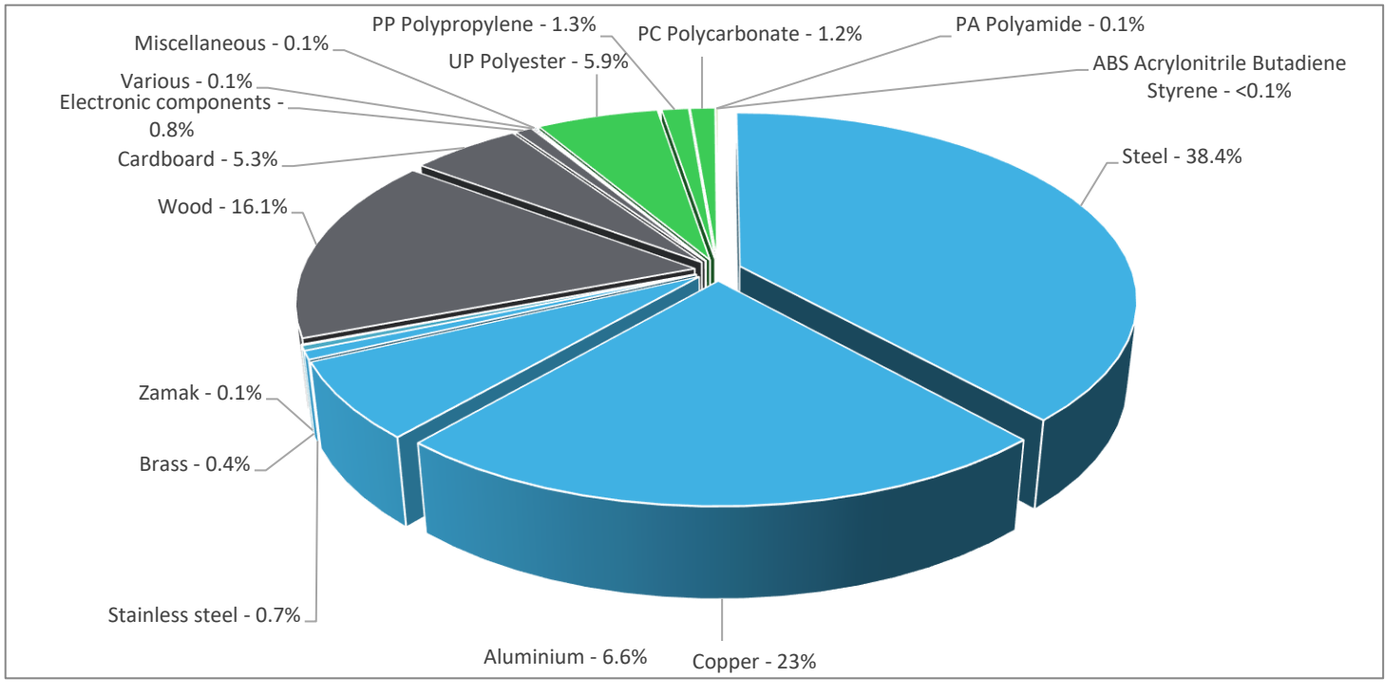
General information

Representative product	EvoPacT™ Medium Voltage Vacuum Circuit Breaker (VCB) - EVOPACTBREAKER
Description of the product	ANSI/IEEE,cULus Listed withdrawable medium voltage vacuum circuit breaker by Square D of Schneider Electric™ for use in SureSeT™ metal-clad switchgear providing medium voltage electrical distribution power.
Functional unit	A 3-cycle, 3-phase circuit breaker providing overload and short circuit protection in metal-clad switchgear equipment, over a service life of 20* years with the next parameters: U= Rated voltage (V)= Up to 15kV In= Rated current in continuous operation (A)=Up to 2000A depending of Breaker selected. NP= Number of poles = 3 Icn= Rated breaking capacity (A)= 40kA Cd= Tripping curve

*The product can last for 40 years. But, As per Product Specific Rules (PSR) requirement we used 20 years of Reference Life Time in PEP.

Constituent materials

Reference product mass 236000 g including the product, its packaging and additional elements and accessories



	Plastics	8.5%
	Metals	69.2%
	Others	22.4%

Substance assessment

Products of this range are designed in conformity with the requirements of the RoHS directive (European Directive 2011/65/EU of 2 January 2013, amended in March 2015, 2015/863/EU and in November 2017, 2017/2102/EU) and do not contain, or only contain in the authorised proportions, lead, mercury, cadmium, hexavalent chromium or flame retardants (polybrominated biphenyls - PBB, polybrominated diphenyl ethers – PBDE), Bis (2-ethylhexyl)phthalate - DEHP, Benzyl butyl phthalate– BBP, Dibutyl phthalate - DBP,

Details of ROHS and REACH substances information are available on the Schneider-Electric Green Premium website

http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page

Additional environmental information

The EvoPacT™ Medium Voltage Vacuum Circuit Breaker (VCB) presents the following relevent environmental aspects	
Design	Reduced footprint area by 26% in comparsion to Masterclad product (Less material used), Durability increased from 20 years, now 40 years. Upgreadability on Breaker digital ready.
Manufacturing	Manufactured at a Schneider Electric production site ISO14001 certified
Distribution	Weight and volume of the packaging optimized, based on the European Union's packaging directive Packaging weight is 63238.4 g, consisting of Wood (62.3%), cardboard (20.4%) and Steel (17.3%)
Installation	The product does not require special installation procedure and requires no energy to install.
Use	The product does not require special maintenance operations.
End of life	End of life optimized to decrease the amount of waste and allow recovery of the product components and materials No special end-of-life treatment required. According to countries' practices this product can enter the usual end-of-life treatment process. Recyclability potential: **80%** Based on "ECO'DEEE recyclability and recoverability calculation method" (version V1, 20 Sep. 2008 presented to the French Agency for Environment and Energy Management: ADEME).

Environmental impacts

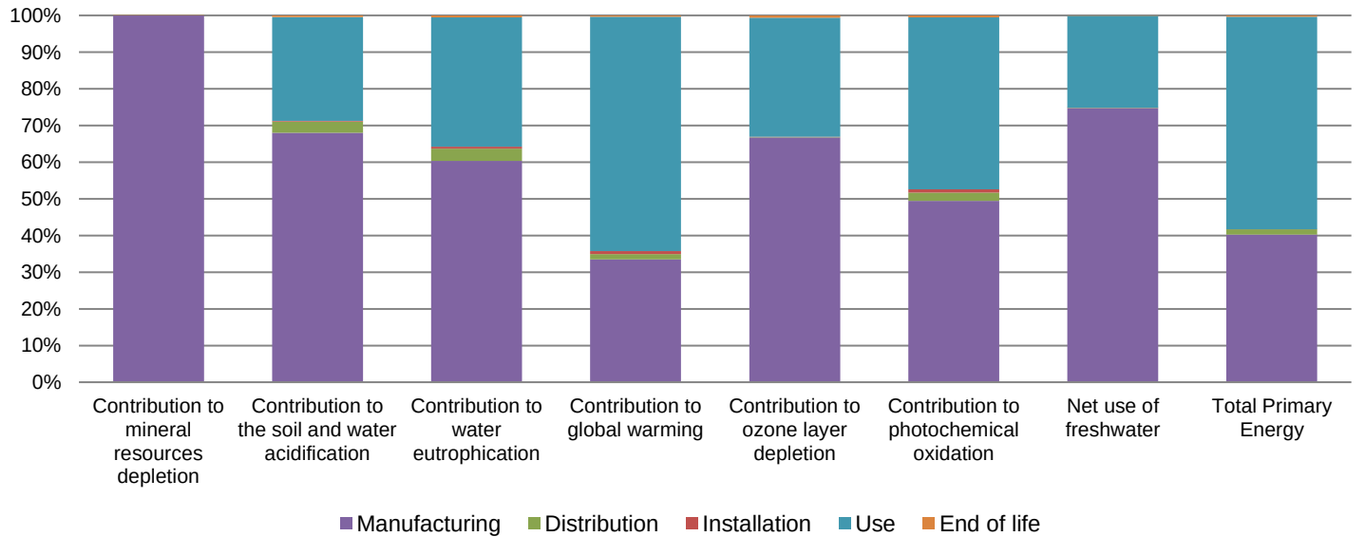
Reference life time	20 * years
Product category	Circuit-breakers
Installation elements	No special installation components needed during installation phase
Use scenario	The product is in active mode 30% of the time with a power use of 48W at 50% load rate/rated current (In) for *20 years.
Geographical representativeness	United States of America
Technological representativeness	The Modules of Technologies such as material production, manufacturing process and transport technology used in this PEP analysis (LCA-EIME in this case) are similar and representative of the actual type of technologies used to make the product in production.

Energy model used	**Manufacturing**	**Installation**	**Use**	**End of life**
	Energy model used: Mexico	Electricity mix; AC; consumption mix, at consumer; 120V; US	Electricity mix; AC; consumption mix, at consumer; 120V; US	Electricity mix; AC; consumption mix, at consumer; 120V; US

*The product can last for 40 years. But, As per Product Specific Rules (PSR) requirement we used 20 years of Reference Life Time in PEP.

Compulsory indicators (For 20 years) — **EvoPacT™ Medium Voltage Vacuum Circuit Breaker (VCB) - EVOPACTBREAKER**

Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to mineral resources depletion	kg Sb eq	8.38E-02	8.38E-02	0*	0*	1.72E-05	0*
Contribution to the soil and water acidification	kg SO_2 eq	5.91E+00	4.02E+00	1.80E-01	1.36E-02	1.67E+00	2.68E-02
Contribution to water eutrophication	kg PO_4^{3-} eq	1.25E+00	7.54E-01	4.15E-02	7.29E-03	4.41E-01	6.68E-03
Contribution to global warming	kg CO_2 eq	2.73E+03	9.15E+02	3.99E+01	2.16E+01	1.75E+03	1.06E+01
Contribution to ozone layer depletion	kg CFC11 eq	9.75E-05	6.51E-05	8.08E-08	4.61E-08	3.17E-05	5.94E-07
Contribution to photochemical oxidation	kg C_2H_4 eq	5.71E-01	2.82E-01	1.28E-02	5.04E-03	2.68E-01	2.88E-03
Resources use	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m3	1.23E+01	9.23E+00	3.57E-03	5.70E-03	3.09E+00	1.15E-02
Total Primary Energy	MJ	4.06E+04	1.63E+04	5.64E+02	3.11E+01	2.35E+04	1.35E+02



Optional indicators		EvoPacT™ Medium Voltage Vacuum Circuit Breaker (VCB) - EVOPACTBREAKER					
Impact indicators	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to fossil resources depletion	MJ	3.29E+04	1.09E+04	5.60E+02	2.90E+01	2.13E+04	1.08E+02
Contribution to air pollution	m³	3.94E+05	2.43E+05	1.66E+03	5.24E+02	1.48E+05	9.56E+02
Contribution to water pollution	m³	1.85E+05	9.05E+04	6.56E+03	3.23E+02	8.61E+04	1.85E+03
Resources use	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Use of secondary material	kg	1.60E+01	1.60E+01	0*	0*	0*	0*
Total use of renewable primary energy resources	MJ	2.35E+03	9.35E+02	7.52E-01	4.92E-01	1.41E+03	0*
Total use of non-renewable primary energy resources	MJ	3.82E+04	1.54E+04	5.63E+02	3.06E+01	2.21E+04	1.35E+02
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	1.93E+03	5.21E+02	7.52E-01	4.92E-01	1.41E+03	0*
Use of renewable primary energy resources used as raw material	MJ	4.14E+02	4.14E+02	0*	0*	0*	0*
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	3.79E+04	1.51E+04	5.63E+02	3.06E+01	2.21E+04	1.35E+02
Use of non renewable primary energy resources used as raw material	MJ	3.42E+02	3.42E+02	0*	0*	0*	0*
Use of non renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*
Use of renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*
Waste categories	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Hazardous waste disposed	kg	7.08E+03	6.92E+03	0*	0*	4.67E+01	1.10E+02
Non hazardous waste disposed	kg	7.16E+02	4.27E+02	1.42E+00	1.94E+01	2.67E+02	4.15E-01
Radioactive waste disposed	kg	2.94E-01	2.64E-01	1.01E-03	5.76E-04	2.75E-02	6.47E-04
Other environmental information	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Materials for recycling	kg	9.73E+01	1.02E+01	0*	1.40E+01	0*	7.32E+01
Components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*
Materials for energy recovery	kg	4.59E-01	0*	0*	0*	0*	4.59E-01
Exported Energy	MJ	1.36E+01	1.27E+00	0*	1.23E+01	0*	0*

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

Life cycle assessment performed with EIME version EIME v5.9.4, database version 2020-12 in compliance with ISO14044.

The Manufacturing phase is impacting on Indicator of Abiotic depletion (elements, ultimate ultimate reserves) (ADPe for EN15804),Acidification potential of soil and water (total average for Europe) (A for PEP) & Net use of freshwater. The Manufactuing phase & Use phase is impacting equally on rest of environmental indicators.

Please note that the values given above are only valid within the context specified and cannot be used directly to draw up the environmental assessment of an installation.

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Verifier accreditation N°	VH48		
Date of issue	12/2022	*Information and reference documents*	www.pep-ecopassport.org
		Validity period	5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2010			
Internal	External X		
The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN)			
PEP are compliant with XP C08-100-1 :2016			
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 »			

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