# Product Environmental Profile

## PrismaSet M Copper Busbar Floor Standing Switchboards upto 4000A

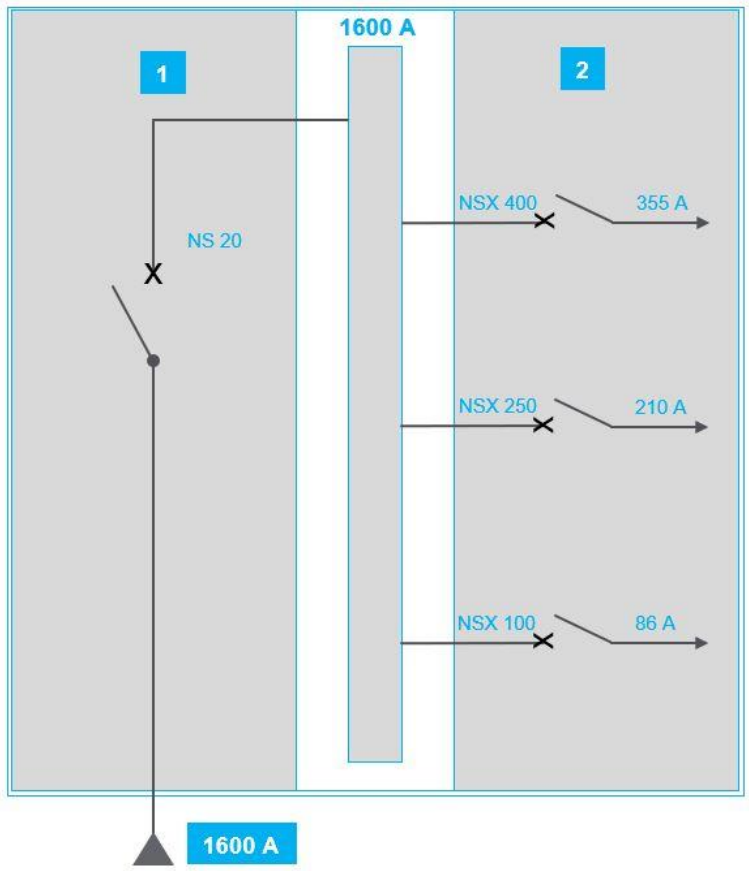
# General information

| | |
|---|---|
| **Representative product** | PrismaSet M Copper Busbar Floor Standing Switchboards upto 4000A |
| **Description of the product** | The product used for the analysis is a PrismaSet M 1600A switchboard with components for the following functional units:<br>• Incoming for: - 1600A fixed circuit breaker (typically Compact NS)<br>• Outgoing for: - 400A horizontal circuit breakers (typically Compact NSX)<br>- 250A horizontal circuit breakers (typically Compact NSX)<br>- 100A vertical circuit breakers (typically 4 pieces Compact NSX)<br>- Modular circuit breakers (typically 4 rows of Acti 9 devices).<br><br>The main function of PrismaSet M Copper Busbar Floor standing switchboards upto 4000A is:<br>• Installing electrical devices (mounting plates and front plates)<br>• Distribution of current (distribution blocks, busbars, etc)<br>• Connection of switchboards on site (connections, terminal blocks, cable tie supports,etc) |
| **Functional unit** | It is an assembled enclosures with busbars for a maximum current value of up to 4000A.<br>It is to protect the people against direct contact with live parts and allow monitoring, control and protection devices in multiples enclosures by ensuring the installation of electrical devices, distribute current and connect switchboards for 20 years.<br>Continuous current pass through the busbars for the devices to be connected.<br><br>It can withstand mechanical impacts (IK10 - IEC62262) and the penetration of solid objects and liquids (up to IP54 - IEC 60529). Use of the components ensures the creation of switchboards complying with standards IEC 61439-1 and 2, as well as local versions with the following electrical characteristics:<br>• Rated insulation level of main busbars: 1000 V<br>• Rated peak withstand current Ipk: 220 kÂ<br>• Rated short-time withstand current Icw: 100 kA rms / 1 second<br>• Frequency: 50/60 Hz. |

**Lists of functions included in the configuration:**

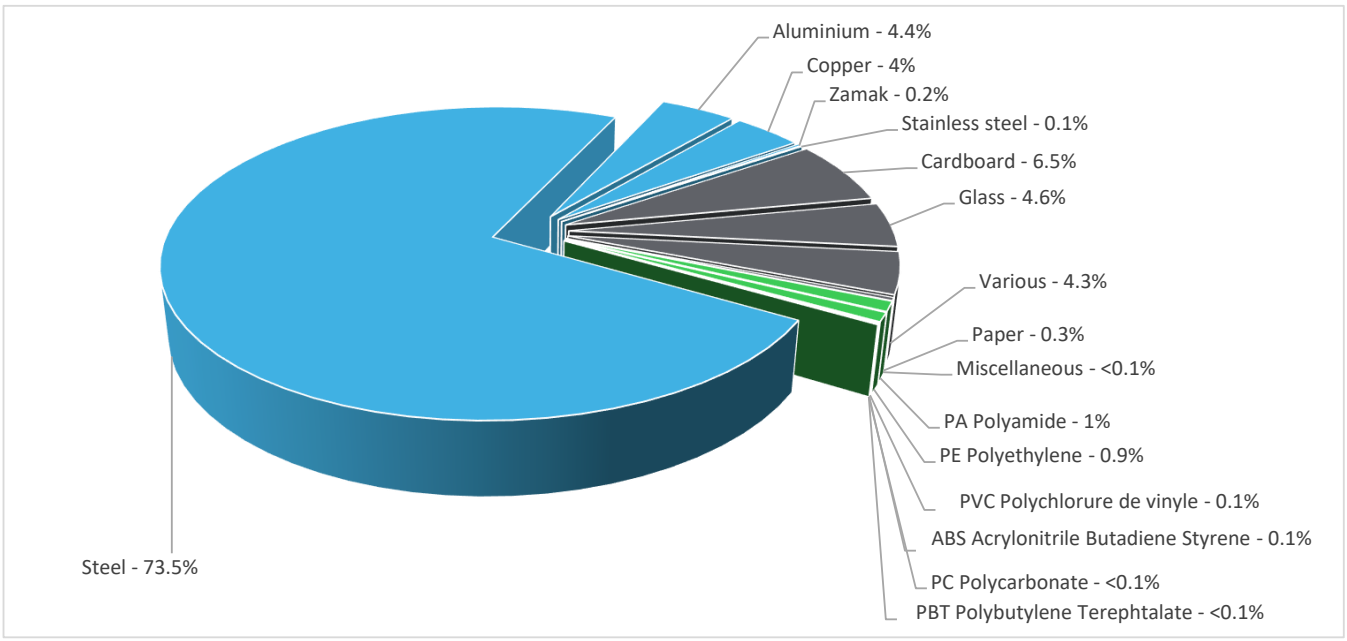
The product used for the analysis is the typical PrismaSet M Copper Busbar Floor standing switchboards 1600A product, which is comprised of the following commercial references:
LSM53433A, LSM53436A, LSM53438A, LSM53444A, LSM57471A, LSM58089A, LSM58092A, LSM58494A, LSM58498A, LSM58853A, LSX58054A, LVS04239, LVS04243, LVS04255, LVS04506, LVS04751, LVS04753, LVS04767, LVS04772, PFCD3H2W2DX1P, PFCEP5MNX63XH, PFCEXHXNS16FA, PFCFXHX62D40A, PFCM3HXIN16FV, PFCMPHXNX25XH, PFCMPHXNX25XV, PFCMPHXNX63XH, PFCSVHXW2DX2A, PFXD6H2W3DX1P, PFXD6H2W6DX1T, PFXEXXXXXXXXS, PFXFXHXW3D40A, PFXFXHXW6D40A, PFXGXHX62D40A, PFXGXHXW3D40A, PFXGXHXW6D40A, PFXMX4MXXXXXD, PFXP5H2W6DX1R, PFXP5H2W8DX1R, PFXP6H2WXD41A, PFXPXH2W3DX1R, PFXSV6MWXD4XA, PXCE44MNX25XH, PXCEX4MXXXXXT, PXXEP5MNX25TV, PXXEX1MW5XXXP, PXXEX2MW5XXXP, PXXEX3MMDXXXA, PXXEX3MW5XXXP, PXXEX4MW5XXXP, PXXEX5MMDXXXA

**Note: This product was analyzed without circuit breakers.**




## Constituent materials

| Reference product mass | 379872 g | including the product, its packaging and additional elements and accessories |
|---|---|---|




| | | |
|---|---|---|
| | Plastics | 2.1% |
| | Metals | 82.2% |
| | Others | 15.7% |

# 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, Diisobutyl phthalate - DIBP) as mentioned in the Directive.

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

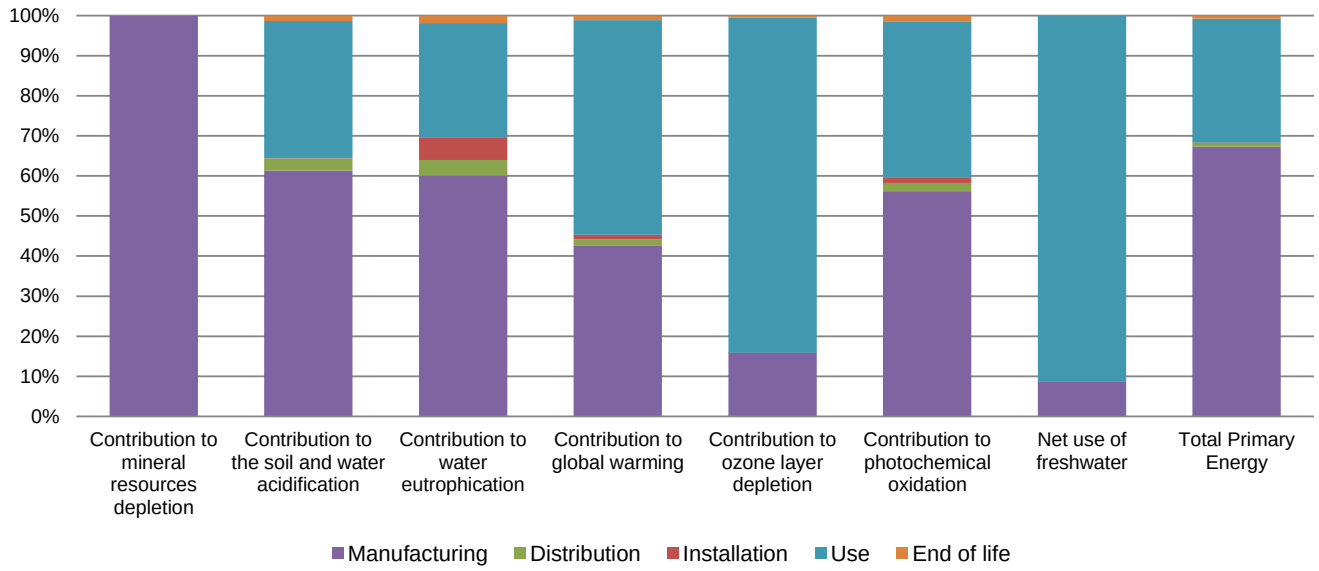
# Additional environmental information

| The PrismaSet M Copper Busbar Floor Standing Switchboards upto 4000A presents the following relevent environmental aspects | |
|---|---|
| **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<br>Packaging weight is 28320.8 g, consisting of Cardboard (87.46%), PE film (8.95%), Paper (3.59%)<br>Product distribution optimised by setting up local distribution centres |
| **Installation** | The product does not require special components included during installation operations. |
| **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<br>No special end-of-life treatment required. According to countries' practices this product can enter the usual end-of-life treatment process.<br>Recyclability potential: **85%** 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** | Other equipments - Passive product - continuous operation | | | |
| **Installation elements** | No special components needed | | | |
| **Use scenario** | load rate / rated current (In): 30 % of In<br>percentage of utilization time: 100%<br>Assumed service lifetime is 20 years and use scenario is : product dissipation is 15.8 W at 30% loading rate . | | | |
| **Geographical representativeness** | Europe, Singapore, Thailand, Vietnam, Indonesia, Australia, Egypt, Kenya | | | |
| **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. | | | |
| **Energy model used** | **Manufacturing** | **Installation** | **Use** | **End of life** |
| | Energy model plant: China | Electricity mix; AC; consumption mix, at consumer; 127-230V; ID | Electricity mix; AC; consumption mix, at consumer; 127-230V; ID | Electricity mix; AC; consumption mix, at consumer; 127-230V; ID |
| | | Electricity mix; AC; consumption mix, at consumer; 220V; EG | Electricity mix; AC; consumption mix, at consumer; 220V; EG | Electricity mix; AC; consumption mix, at consumer; 220V; EG |
| | | Electricity mix; AC; consumption mix, at consumer; 240V; AU | Electricity mix; AC; consumption mix, at consumer; 240V; AU | Electricity mix; AC; consumption mix, at consumer; 240V; AU |
| | | Electricity grid mix 1kV-60kV; AC; consumption mix, at consumer; 1kV - 60kV; EU-27 | Electricity grid mix 1kV-60kV; AC; consumption mix, at consumer; 1kV - 60kV; EU-27 | Electricity grid mix 1kV-60kV; AC; consumption mix, at consumer; 1kV - 60kV; EU-27 |

| Compulsory indicators | | PrismaSet M Copper Busbar Floor Standing Switchboards upto 4000A | | | | | |
|---|---|---|---|---|---|---|---|
| **Impact indicators** | **Unit** | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Contribution to mineral resources depletion | kg Sb eq | 3.34E-02 | 3.34E-02 | 0* | 0* | 4.01E-05 | 0* |
| Contribution to the soil and water acidification | kg $SO_2$ eq | 7.52E+00 | 4.61E+00 | 2.24E-01 | 7.93E-03 | 2.58E+00 | 1.02E-01 |
| Contribution to water eutrophication | kg $PO_4^{3-}$ eq | 1.33E+00 | 7.98E-01 | 5.15E-02 | 7.30E-02 | 3.81E-01 | 2.48E-02 |
| Contribution to global warming | kg $CO_2$ eq | 3.24E+03 | 1.38E+03 | 4.90E+01 | 3.80E+01 | 1.73E+03 | 3.70E+01 |
| Contribution to ozone layer depletion | kg CFC11 eq | 4.10E-04 | 6.49E-05 | 9.93E-08 | 9.90E-08 | 3.43E-04 | 2.16E-06 |
| Contribution to photochemical oxidation | kg $C_2H_4$ eq | 7.59E-01 | 4.26E-01 | 1.60E-02 | 9.20E-03 | 2.97E-01 | 1.10E-02 |
| **Resources use** | **Unit** | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Net use of freshwater | m3 | 1.43E+03 | 1.25E+02 | 0* | 0* | 1.31E+03 | 0* |
| Total Primary Energy | MJ | 6.60E+04 | 4.44E+04 | 6.93E+02 | 2.64E+01 | 2.04E+04 | 5.11E+02 |




| Optional indicators | | PrismaSet M Copper Busbar Floor Standing Switchboards upto 4000A | | | | | |
|---|---|---|---|---|---|---|---|
| **Impact indicators** | **Unit** | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Contribution to fossil resources depletion | MJ | 2.90E+04 | 1.21E+04 | 6.89E+02 | 2.41E+01 | 1.58E+04 | 4.10E+02 |
| Contribution to air pollution | m³ | 3.77E+05 | 2.61E+05 | 2.08E+03 | 2.01E+02 | 1.10E+05 | 3.62E+03 |
| Contribution to water pollution | m³ | 2.00E+05 | 8.59E+04 | 8.06E+03 | 2.18E+03 | 1.00E+05 | 3.96E+03 |
| **Resources use** | **Unit** | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Use of secondary material | kg | 1.20E+02 | 1.20E+02 | 0* | 0* | 0* | 0* |
| Total use of renewable primary energy resources | MJ | 2.57E+03 | 5.98E+02 | 9.24E-01 | 0* | 1.97E+03 | 5.72E-01 |
| Total use of non-renewable primary energy resources | MJ | 6.34E+04 | 4.38E+04 | 6.92E+02 | 2.63E+01 | 1.84E+04 | 5.10E+02 |
| Use of renewable primary energy excluding renewable primary energy used as raw material | MJ | 2.06E+03 | 8.95E+01 | 9.24E-01 | 0* | 1.97E+03 | 5.72E-01 |
| Use of renewable primary energy resources used as raw material | MJ | 5.09E+02 | 5.09E+02 | 0* | 0* | 0* | 0* |
| Use of non renewable primary energy excluding non renewable primary energy used as raw material | MJ | 6.25E+04 | 4.29E+04 | 6.92E+02 | 2.63E+01 | 1.84E+04 | 5.10E+02 |
| Use of non renewable primary energy resources used as raw material | MJ | 8.76E+02 | 8.76E+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 | 3.17E+03 | 2.74E+03 | 0* | 0* | 1.65E+01 | 4.07E+02 |
| Non hazardous waste disposed | kg | 4.39E+03 | 2.94E+03 | 1.74E+00 | 2.86E+01 | 1.42E+03 | 1.57E+00 |
| Radioactive waste disposed | kg | 1.44E+00 | 4.47E-01 | 1.24E-03 | 1.49E-04 | 9.88E-01 | 2.43E-03 |
| **Other environmental information** | **Unit** | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Materials for recycling | kg | 3.31E+02 | 3.36E+01 | 0* | 0* | 0* | 2.97E+02 |
| Components for reuse | kg | 0.00E+00 | 0* | 0* | 0* | 0* | 0* |
| Materials for energy recovery | kg | 1.39E+00 | 0* | 0* | 0* | 0* | 1.39E+00 |
| Exported Energy | MJ | 8.15E-02 | 7.66E-03 | 0* | 7.39E-02 | 0* | 0* |

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

*Life cycle assessment performed with EIME version EIME v5.9.3, database version 2020-12 in compliance with ISO14044.*

The manufacturing phase and some of the indicators on use phase is the life cycle phase which has the greatest impact on the majority of environmental indicators (based on compulsory 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.*

| | | | |
|---|---|---|---|
| *Registration number :* | SCHN-00811-V01.01-EN | *Drafting rules* | PCR-ed3-EN-2015 04 02 |
| *Verifier accreditation N°* | VH39 | *Supplemented by* | PSR-0005-ed2-EN-2016 03 29 |
| *Date of issue* | 06/2022 | *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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