

Product Environmental Profile

DX3 MCB



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 informations 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.).



REFERENCE PRODUCT

| | |
|--------------------------|---|
| Function | <p>Protect during 20 years the installation against overloads and short-circuits in circuit with assigned voltage U and rated current In. This protection is ensured in accordance with the following parameters:</p> <ul style="list-style-type: none"> - Number of poles: 1Pole - Rated breaking capacity : 10 kA - Tripping curve : C curve |
| Reference Product | <div data-bbox="874 1016 1050 1344"> </div> <p>Cat.No 408592</p> <p>DX3 MCB-C16 Single pole MCB, 10kA</p> |



PRODUCTS CONCERNED

The environmental data is representative of the following products:

| Catalogue Numbers |
|--|
| <p>408580 408581 408583 408584 408585 408587 408590 408592 408593 408594 408595 408596 408597 408598 408602 408603 408605 408606 408607 408609 408612 408614 408615 408616 408617 408618 408619 408620 408621 408622 408624 408625 408626 408628 408631 408633 408634 408635 408636 408637 408638 408639 408643 408644 408646 408647 408648 408650 408653 408655 408656 408657 408658 408659 408660 408661 408665 408666 408668 408669 408670 408672 408675 408677 408678 408679 408680 408681 408682 408683 408684 408685 408687 408688 408689 408691 408694 408696 408697 408698 408699 408700 408701 408702 408706 408707 408709 408710 408711 408712 408714 408716 408717 408718 408719 408720 408721 408722 408626 408627 408629 408630 408631 408732 408731 408735 408736 408737 408738 408740 408742 408743 408744 408745 408746 408747 408748 408752 408753 408755 408756 408757 408758 408760 408762 408763 408764 408765 408766 408767 408768 408772 408773 408775 408776 408777 408778 408779 408781 408782 408783 408784 408786 408788 408789 408790 408791 408792 408793 408794 408798 408799 408801 408802 408803 408804 408806 408808 408809 408810 408811 408812 408813 408814 408815 408816 408818 408819 408820 408821 408823 408825 408826 408827 408828 408829 408830 408831 408832 408833 408834 408835 408836 408837 408838 408839 408840 408842 408843 408844 408845 408846 408847 408848 408580R 408581R 408582R 408583R 408584R 408585R 408587R 408588R 408590R 408592R 408593R 408594R 408595R 408596R 408597R 408598R</p> |

Product Environmental Profile

DX3 MCB



■ 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.

| Total weight of Reference Product | | 145 g (with unit packaging) | | | |
|-----------------------------------|--------------|-----------------------------|--------------|----------------------------------|--------------|
| Plastics as % of weight | | Metals as % of weight | | Other as % of weight | |
| Other plastic | 39.2% | Steel | 31.1% | | |
| PA | 5.0% | Copper alloys | 5.7% | | |
| PC | 0.6% | Other metal | 1.3% | | |
| PBT | 0.2% | Zamak | 1.0% | | |
| | | Alu | 0.9% | | |
| | | Silver alloys | <0.1% | Packaging as % of weight | |
| | | | | Paper | 15.0% |
| | | | | | |
| | | | | | |
| | | | | | |
| Total plastics | 45.0% | Total metals | 40.0% | Total other and packaging | 15.0% |

Estimated recycled material content: 26% by mass.



■ MANUFACTURE

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



■ DISTRIBUTION

Products are distributed from logistics centres located with a view to optimize transport efficiency. The Reference Product is therefore transported over an average distance of 3290 km by road from our warehouse to the local point of distribution into the market in India.

Packaging is compliant with applicable regulation. At their end of life, its recyclability rate is 100 % (in % of the mass of the packaging).



■ INSTALLATION

For the installation of the product, only standard tools are needed.



■ USE

Under normal conditions of use, this product requires no servicing, no maintenance or additional products.

Product Environmental Profile

DX3 MCB



END OF LIFE

The product end-of-life factors are taken into account during the design phase. Dismantling and sorting of components or materials is made as easy as possible with a view to recycling or failing that, another form of reuse.

• Recyclability rate:

Calculated using the method described in technical report IEC/TR 62635, the recyclability rate of the product is estimated at 60%. This value is based on data collected from a technological channel using industrial procedures. It does not prevalidate the effective use of this channel for end-of-life electrical and electronic products.

Separated into:

- plastic materials (excluding packaging) : 5 %
- metal materials (excluding packaging) : 40 %
- other materials (excluding packaging) : 0 %
- packaging (all types of materials) : 15 %



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 from products marketed and used in India, in compliance with the local current standards

For each phase, the following modelling elements were taken into account:

| | |
|-----------------------------------|--|
| Manufacture | Materials and components of the product, all transport for the manufacturing, the packaging and the waste generated by the manufacturing. |
| Distribution | Transport between the last Group distribution centre and an average delivery point in the sales area. |
| Installation | The end of life of the packaging. |
| Use | <ul style="list-style-type: none"> • Product category: passive product« • Use scenario: PSR 0005-ed2-EN-2016 03 29 § 3.1.1 « Circuit-breakers » • Energy model: Electricity Mix; India, year 2009 |
| End of life | The default end of life scenario maximizing the environmental impacts. |
| Software and database used | EIME V5 and its database «CODDE-2015-04» |

Product Environmental Profile

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SELECTION OF ENVIRONMENTAL IMPACTS

| | Total for Life cycle | | Raw material and manufacture | | Distribution | | Installation | | Use | | End of life | |
|---|----------------------|--------------------------------------|------------------------------|------|--------------|------|--------------|------|----------|------|-------------|------|
| Global warming | 3.47E+01 | kg-CO ₂ eq. | 5.53E-01 | 2% | 2.36E-02 | < 1% | 1.35E-03 | < 1% | 3.41E+01 | 98% | 1.16E-02 | < 1% |
| Ozone depletion | 1.04E-06 | kg-CFC-11 eq. | 8.80E-08 | 8% | 4.78E-11 | < 1% | 9.24E-12 | < 1% | 9.48E-07 | 91% | 2.24E-10 | < 1% |
| Acidification of soils and water | 3.72E-02 | kgSO ₂ eq. | 1.40E-03 | 4% | 1.06E-04 | < 1% | 6.64E-06 | < 1% | 3.56E-02 | 96% | 4.56E-05 | < 1% |
| Water eutrophication | 9.83E-03 | kg-PO ₄ ³⁻ eq. | 3.29E-04 | 3% | 2.43E-05 | < 1% | 7.16E-06 | < 1% | 9.41E-03 | 96% | 6.04E-05 | < 1% |
| Photochemical ozone formation | 4.69E-03 | kg-C ₂ H ₄ eq. | 1.31E-04 | 3% | 7.53E-06 | < 1% | 4.68E-07 | < 1% | 4.55E-03 | 97% | 3.51E-06 | < 1% |
| Depletion of abiotic resources - elements | 7.00E-05 | kgSb eq. | 6.98E-05 | 100% | 9.44E-10 | < 1% | 5.88E-11 | < 1% | 1.78E-07 | < 1% | 6.61E-10 | < 1% |
| Total use of primary energy | 5.47E+02 | MJ | 2.38E+01 | 4% | 3.16E-01 | < 1% | 1.78E-02 | < 1% | 5.23E+02 | 96% | 1.28E-01 | < 1% |
| Net use of fresh water | 4.47E-02 | m ³ | 7.47E-03 | 17% | 2.11E-06 | < 1% | 4.23E-07 | < 1% | 3.73E-02 | 83% | 7.85E-06 | < 1% |
| Depletion of abiotic resources - fossil fuels | 5.48E+02 | MJ | 1.35E+01 | 2% | 3.31E-01 | < 1% | 1.88E-02 | < 1% | 5.34E+02 | 97% | 1.61E-01 | < 1% |
| Water pollution | 1.74E+03 | m ³ | 3.01E+01 | 2% | 3.88E+00 | < 1% | 2.09E-01 | < 1% | 1.70E+03 | 98% | 1.42E+00 | < 1% |
| Air pollution | 3.50E+03 | m ³ | 1.34E+02 | 4% | 9.67E-01 | < 1% | 1.71E-01 | < 1% | 3.37E+03 | 96% | 1.14E+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.

For products covered by the PEP other than the Reference product, the environmental impacts of each phase of the lifecycle are calculated with

The environmental impacts of the manufacture phase are proportional to the number of poles, the variations of the environmental impacts of distribution, installation and end of life phases are insignificant; the environmental impacts of the use phase are proportional to the number of poles and to the dissipated powers.

| | |
|---|--|
| Registration N°: LGRP-00430-V01.01-EN | Drafting rules: «PEP-PCR-ed3-EN-2015 04 02» Supplemented by «PSR-0005-ed2-FR-2016 03 29» |
| Verifier accreditation N°: VH02 | Information and reference documents : www.pep-ecopassport.org |
| Date of issue: 10-2017 | Validity period: 5 years |
| Independent verification of the declaration and data, in compliance with ISO 14025:2010 Internal <input checked="" type="checkbox"/> External <input type="checkbox"/> | |
| The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINEN) | |
| 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» | |
| Environmental data in alignment with EN 15804 : 2012 + A1 : 2013 | |

