

## > Product Environmental Profile Switch Valena - 2 way - 10 AX - 250 V with frameplate

This document is based on the ISO 14020 standard relating to the general principles of the environmental declarations and on the ISO TR/14025 technical report relating to type III environmental declarations.



### Legrand's environmental commitments

#### > To incorporate management of the environment into our industrial units.

At present, 73% of units worldwide are certified ISO 14001, and 90% of our European units.



#### > To take into account the environment in the design of products.

Providing our customers with all relevant information (composition, consumption, end of life, etc.).  
Reducing the impact of the product on the environment for the whole of its life cycle.

#### > To offer our customers solutions which are environmentally friendly.

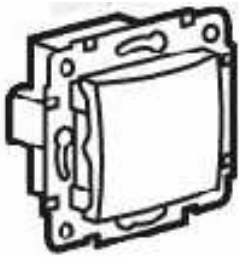
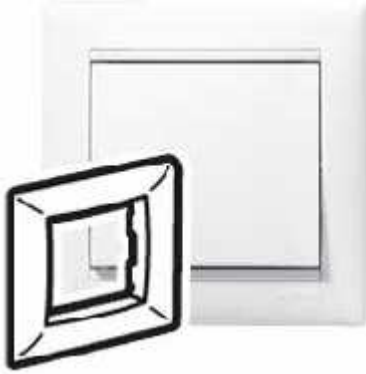
Developing innovative solutions to help our customers to design installations that consume less energy, are better managed and more environmentally friendly.



### Description of the products

#### > Reference products for this environmental profile

The given values are based on the following items.

| Function           | Switch Valena - 2 way - 10 AX - 250 V~ - white<br>Frame Valena - 1 gang - white  |   |
|--------------------|--|---|
| Reference products | <br><br><b>774406</b><br><br><b>Switch Valena - 2 way</b> | <br><br><b>774451</b><br><br><b>Frame Valena - 1 gang</b> |

#### > Products covered by this product environmental profile

Environmental impacts of the reference products are representative of the products covered by this PEP, which therefore constitute a homogeneous environmental family.

|          |  |   |
|----------|--|---|
| Cat. Nos | 774301/774306/774307<br>774401/774406/774407 | 774351/2/3/4/5/6/7/8/9 - 774451/2/3/4/5/6/7/8/9<br>774461/2/3/4/5/6/7/8/9 - 774481/2/3/4/5/6/7/8/9<br>774261/2/3/4/5/6/7/8/9<br>770001/2/3/4/5/6/7/8/9 - 770011/2/3/4/5/6/7/8/9<br>770021/2/3/4/5/6/7/8/9 - 770031/2/3/4/5/6/7/8/9<br>770041/2/3/4/5/6/7/8/9 - 770051/2/3/4/5/6/7/8/9 |
|----------|--|---|



## Constituent materials

These products contain no substances that are forbidden by the regulations applicable at the time of their market launch, outside of the maintenance operations carried out during the use phase.

Reference product total mass : 95 g (unit packaging included)

| Plastics as % of weight          |               | Metals as % of weight          |               | Others as % of weight             |               |
|----------------------------------|---------------|--------------------------------|---------------|-----------------------------------|---------------|
| Polycarbonates (PC)              | 39.20 %       | Steel                          | 27.30 %       | Glass Fiber                       | 3.40 %        |
| Polybutylene Terephthalate (PBT) | 7.00 %        | Copper (Cu)                    | 3.90 %        | Titanium Dioxide (TiO2)           | 1.05 %        |
|                                  |               | Steel (stainless, with chrome) | 0.80 %        | Antimony Trioxide (Sb2O3)         | 0.60 %        |
|                                  |               | Zinc (Zn)                      | 0.80 %        | Carbon Black                      | 0.10 %        |
|                                  |               | Silver (Ag)                    | 0.15 %        |                                   |               |
|                                  |               |                                |               | <b>Packaging as % of weight</b>   |               |
|                                  |               |                                |               | Cardboard                         | 13.60 %       |
|                                  |               |                                |               | Paper (50% recycled)              | 1.15 %        |
|                                  |               |                                |               | Polypropylene (PP)                | 0.75 %        |
|                                  |               |                                |               | Polyethylene (LDPE)               | 0.12 %        |
|                                  |               |                                |               | Ink and Glue                      | 0.04 %        |
|                                  |               | Metals miscellaneous           | 0.04 %        |                                   |               |
| <b>Total plastics</b>            | <b>46.20%</b> | <b>Total metals</b>            | <b>32.99%</b> | <b>Total others and packaging</b> | <b>20.81%</b> |

Estimate of the use of recycled materials : 25 % by mass



## Manufacture

These products are manufactured by a Legrand Group production unit which has been awarded ISO 14001 environmental certification for product design and manufacturing.



## Distribution

### Typical transport conditions

- On average this product covers 2004 km by road transport from our manufacturing site to the distributor closest to our customer.

### Packaging

- The packaging (15 g) is made of 94.1 % paper / cardboard, 4.8 % of polypropylene (PP), 0.8 % of polyethylene (LDPE) and the rest is constituted by the printing ink and by the glue.
- Potential for recycling: 100 % by weight of packaging
- Potential for energy recovery: 100 % by weight of packaging

### The packaging has been designed in accordance with the currently applicable regulations:

- Directive 94/62/EC relating to packaging and packaging waste
- French application decree: 98-638.

### Legrand undertakes:

- To reduce as much as possible its packaging at source in terms of weight and volume, in accordance with the needs of its customers.
- To place onto the market packaging with a content of heavy metals which is <100 ppm and without deliberately introducing substances that are hazardous for the environment and classified "N".
- To design/use packaging that is convertible and where possible reusable.



## Use

### Use scenario

The switch dissipates a power of 0,1 mW, 2 hours a day, 365 days / year, for a lifespan of 20 years (i.e. energy of 2 W).

### Consumable

No consumables are necessary for the use of the product.

### Servicing and maintenance

Neither servicing nor maintenance in the normal conditions of use for this type of product.



## End of life

### Method of treatment of the product

#### > Hazardous waste contained in the product:

This product contains no hazardous waste.

#### >Non hazardous waste contained in the product:

Plastic / metals / the others: 80 g.

#### > Potential for recycling:

The potential for recycling of a product corresponds to the percentage of material capable of being recycled using existing current techniques. It takes no account of the existence or not of recycling chains, which are highly dependent on the local situation.

This product contains 94 % by weight of material potentially capable of being recycled (other than packaging):

- Plastic materials: : 55 %
- Metal materials: : 39 %

#### > Potential for energy recovery:

Energy recovery consists in using the calories contained in waste, by burning it and recovering the energy thus produced, to heat buildings, for example, or to produce electricity. It means using the stored energy contained in the waste.

This product contains 55 % by weight of product capable of being converted for the recovery of energy (excluding packaging).



## Environmental impacts

### Methodology

The environmental impacts of the reference product are representative of the products covered by the PEP, which therefore constitute a homogeneous environmental family.

Assessment of the environmental impacts of the reference product concerns the following stages of the life cycle: raw materials, manufacture, distribution, and use.

The modelling assumptions for the use phase are:

- Period of use (\*): 20 years
- The switch dissipates a power of 0,1 mW, 2 hours a day, 365 days / year, for a lifespan of 20 years (i.e. energy of 2 W).
- Neither servicing nor maintenance in the normal conditions of use for this type of product.

| Indicators (see glossary)                           | Overall<br>M+D+U | Unit                            | Manufact.<br>M | Distribution<br>D | Use<br>U |
|---|------------------|---------------------------------|----------------|-------------------|----------|
| Depletion of natural resources                      | 1,526E-14        | Years <sup>-1</sup>             | 100%           | <0,5%             | <0,5%    |
| Total energy consumed                               | 9,815            | MJ                              | 88,7%          | 11,3%             | <0,5%    |
| Consumption of water                                | 3,296            | dm <sup>3</sup>                 | 78,7%          | 21,3%             | <0,5%    |
| Contribution to the greenhouse effect               | 571,720          | g~CO <sub>2</sub>               | 92,1%          | 7,9%              | <0,5%    |
| Contribution to the depletion of the ozone layer    | 6,809E-05        | g~CFC-11                        | 61,6%          | 38,4%             | <0,5%    |
| Contribution to the creation of photochemical ozone | 0,288            | g~C <sub>2</sub> H <sub>4</sub> | 81,0%          | 19,0%             | <0,5%    |
| Potential for acidification of the air              | 9,880E-02        | g~H <sup>+</sup>                | 87,3%          | 12,7%             | <0,5%    |
| Production of hazardous waste                       | 4,073E-03        | kg                              | 98,8%          | 1,2%              | <0,5%    |

Modelling performed with EIME software, version 2.3 and its database in version 7.7, from the original 7.0 database.  
Modelling of electricity for the "Use" phase : module "Electricity Europe: 2000"

(\*) Period of use concerned for the assessment of the environmental impact.

This period of use is different from the life expectancy of the product and does not constitute a minimum durability requirement. It is the quantified expression of a unit of service rendered.

The environmental impacts of products other than the reference product are globally proportional to product weight.



## Glossary

|  |  |
|--|--|
| <b>LCA</b>   | Compilation and assessment of inputs and outputs, as well as the potential environmental impacts of a product, or a system, during its life cycle, "from the cradle to the grave". This approach is described by standard ISO14040 and its related standards.  |
| <b>Life cycle approach</b>                                 | Method of taking into account all the life stages of a product (manufacture, installation, use and end of life) in order to determine the consequences for the environment.  |
| <b>Consumption of water</b>                                | Indicates the total water consumption for the whole life cycle of the product.   |
| <b>Non-hazardous waste</b>                                 | This is made up of non-toxic waste and is of a similar nature to household waste. Its definition is codified by the European community (Annex of Decision 2000/532/EC amended by Decisions 2001/118/EC and 2001/119/EC)  |
| <b>Hazardous waste</b>                                     | This is specific waste having a certain level of toxicity and requiring special treatment. Its definition is codified by the European community (Annex of Decision 2000/532/EC amended by Decisions 2001/118/EC and 2001/119/EC)   |
| <b>Waste WEEE</b>  | For products in the application area of the European Directive on Waste Electronic and Electrical Equipment (2002/96/EC), part of the product having to be treated selectively in compliance with Annex II of the Directive.   |
| <b>Eco-solution</b>  | Products or services enabling the reduction of the environmental impacts of a building.  |
| <b>EIME</b>  | Environmental Information and Management Explorer - Product environmental impact modelling software based on the life cycle assessment methodology.  |
| <b>Total energy consumed</b>                               | Indicates the total energy consumption in megajoules for the whole life cycle of the product.  |
| <b>Depletion of natural resources</b>                      | Indicates the depletion of natural resources, by considering the quantity of world reserves (minerals, fossils, etc.) for these resources and the current level of consumption. Expressed as a fraction of the reserves that disappear each year.  |
| <b>Reusable</b>  | Said of a product or packaging capable of being used for the same function provided the product's proper functionality is verified by the person carrying out the operation.   |
| <b>Convertible</b>   | Said of a product or packaging capable of being reused, recycled or from which it is possible to recover energy by incineration.   |
| <b>Contribution to the depletion of the ozone layer</b>    | Indicates what all the life cycle phases of the product release as CFC-11 gram-equivalents.  |
| <b>Contribution to the greenhouse effect</b>               | Indicates what all the life cycle phases of the product release as CO <sub>2</sub> gram-equivalents. Example of the equivalence principle: 1 g of CO <sub>2</sub> = 1 g~CO <sub>2</sub> ; 1 g of CH <sub>4</sub> (methane) is equivalent to the effect of 64 g of CO <sub>2</sub> , etc.                               |
| <b>Contribution to the creation of photochemical ozone</b> | Indicates as g~C <sub>2</sub> H <sub>4</sub> the gas emissions having an effect on the creation of photochemical ozone in the lower atmosphere (smog) under the effect of solar radiation.   |
| <b>Potential for acidification of the air</b>              | Indicates the potential for acidification of the air caused by the release of certain gases into the atmosphere. Expressed as H <sup>+</sup> ion gram-equivalent.  |
| <b>Reference product(s)</b>                                | Product (or product grouping) modelled in the presented LCA.   |
| <b>Production of hazardous waste</b>                       | Indicates the weight of ultimate hazardous waste produced for the whole life cycle of the product.   |
| <b>Potential for recycling</b>                             | % by weight of the product or packaging capable of being re-injected into a manufacturing circuit of the same product or another product.  |
| <b>Potential for energy recovery</b>                       | % by weight of the product or packaging from which energy can be recovered. Energy recovery consists in using the calories contained in waste, by burning it and recovering the energy thus produced, to heat buildings, for example, or to produce electricity. It is using the stored energy contained in the waste. |