ENVIRONMENTAL PRODUCT DECLARATION
according to ISO 14025 and EN 15804

Declaration holder: DORMA GmbH + Co. KG
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Valid to: 25.07.2018

Modular automatic drive system for sliding doors in the ES 200 product family
DORMA GmbH + Co. KG

www.bau-umwelt.com
1 General information

DORMA GmbH + Co. KG

Programme holder
IBU - Institut Bauen und Umwelt e.V.
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10178 Berlin
GERMANY

Declaration number
EPD-DOR-2013511-EN

This Declaration is based on the Product Category Rules:
PCR Part A: Calculation rules for the Life Cycle Assessment and requirements on the Background Report, 2012-09
PCR Part B: Drive systems for automatic doors and gates, 04-2013
(PCR tested and approved by the independent Expert Committee (SVA))

Issue date
26.07.2013

Valid until
25.07.2018

Verification
The CEN EN 15804 standard serves as the core PCR.
Verification of the EPD by an independent third party as per ISO 14025
Prof. Dr.-Ing. Horst J. Bossemayer
(President of Institut Bauen und Umwelt e.V.)

Prof. Dr.-Ing. Hans-Wolf Reinhardt
(Chairman of the Expert Committee (SVA))

Dr.-Ing. Wolfram Trinius
(Independent auditor appointed by the SVA)

2 Product

2.1 Product description
The product family comprising the modular automatic ES 200 drive system also represents the ES 200 Standard, ES 200-2D and ES 200 Easy drive systems. Average values (material and energy flows) are achieved using the volumes of ES 200 variant sold during the reference period.

2.2 Application
The automatic ES 200 drive system is used as follows as an automatic drive for automating sliding door systems as well as automating escape and rescue routes:

<table>
<thead>
<tr>
<th>Door parameters</th>
<th>ES 200 Standard</th>
<th>ES 200 2D</th>
<th>ES 200 Easy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use in escape and rescue routes</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Single-panel sliding door:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Opening width (clear width) [mm]</td>
<td>700 – 3,000</td>
<td>900 – 3,000</td>
<td>700 – 3,000</td>
</tr>
<tr>
<td>- Door panel weight (max.) [kg]</td>
<td>1 x 200</td>
<td>1 x 150</td>
<td>1 x 120</td>
</tr>
<tr>
<td>Double-panel sliding door:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Opening width (clear width)</td>
<td>800 – 3,000</td>
<td>900 – 3,000</td>
<td>800 – 3,000</td>
</tr>
<tr>
<td>- Door panel weight (max.)</td>
<td>2 x 160</td>
<td>2 x 130</td>
<td>2 x 100</td>
</tr>
</tbody>
</table>

2.3 Technical data
The following technical data is of relevance for the LCA:

<table>
<thead>
<tr>
<th>Technical data</th>
<th>ES 200 Standard</th>
<th>ES 200 2D</th>
<th>ES 200 Easy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height [mm]</td>
<td>100/150</td>
<td>100/150</td>
<td>100/150</td>
</tr>
<tr>
<td>Overall depth [mm]</td>
<td>180</td>
<td>180</td>
<td>180</td>
</tr>
<tr>
<td>Opening and closing force [N]</td>
<td>max. 150</td>
<td>max. 150</td>
<td>max. 150</td>
</tr>
<tr>
<td>Opening speed (incremental adjustment) [cm/s]</td>
<td>10 - 75</td>
<td>10 - 50</td>
<td></td>
</tr>
<tr>
<td>Closing speed (incremental adjustment) [cm/s]</td>
<td>10 - 50</td>
<td>10 - 40</td>
<td></td>
</tr>
<tr>
<td>Hold-open time [sec.]</td>
<td>0 - 180</td>
<td>0.5 - 30</td>
<td></td>
</tr>
<tr>
<td>Supply voltage / Frequency</td>
<td>230 V / 50-60 Hz</td>
<td>230 V / 50-60 Hz</td>
<td>230 V / 50-60 Hz</td>
</tr>
<tr>
<td>Wattage</td>
<td>250 W</td>
<td>250 W</td>
<td>180 W</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP 20</td>
<td>IP 20</td>
<td>IP 20</td>
</tr>
<tr>
<td>Tested to low-voltage guidelines</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>
2.4 Placing on the market / Application rules

The following standards are of relevance for placing on the market / application:

- DIN 18650-1/2: 2010 Powered pedestrian doors
  - Part 1: Product requirements and test methods
  - Part 2: Safety at powered pedestrian doors
- AutSchR 1997 (also applies for the ES 200-2D)

2.5 Delivery status

One automatic ES 200 drive system (averaged by sales volume) has the following delivery status:

<table>
<thead>
<tr>
<th>Components</th>
<th>Absolute</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average ES 200</td>
<td>31.2 kg</td>
<td>85.7%</td>
</tr>
<tr>
<td>Average packaging</td>
<td>5.2 kg</td>
<td>14.3%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>36.4 kg</td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

2.6 Base materials / Auxiliaries

The ES 200 product family comprises the following components:

<table>
<thead>
<tr>
<th>Components</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium elements</td>
<td>49%</td>
</tr>
<tr>
<td>Steel elements</td>
<td>23%</td>
</tr>
<tr>
<td>Electronic elements</td>
<td>23%</td>
</tr>
<tr>
<td>Plastic elements</td>
<td>5%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

2.7 Production

The drive units in the ES 200 product family are manufactured in the Ennepetal plant and the requisite circuit boards are manufactured in the DORMA plant in Bonn. The certified Quality Management system in accordance with DIN EN ISO 9001:2008 safeguards the high quality standard of DORMA products and guarantees continuous improvement of the overall quality of processes and products at the DORMA locations.

2.8 Environment and health during production

The Environment Management system in the DORMA production facilities is certified according to DIN EN ISO 14001:2004, and industrial safety is certified to OHSAS 18001:2007.

2.9 Product processing / Installation

DORMA deploys specially-trained assembly teams to install the product systems.

2.10 Packaging

The declared unit includes the following packaging materials and their percentages by mass:

<table>
<thead>
<tr>
<th>Components</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper and cardboard</td>
<td>90%</td>
</tr>
<tr>
<td>Wood</td>
<td>10%</td>
</tr>
<tr>
<td>LDPE foil</td>
<td>&lt; 1%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

More information on the possible re-use of packaging is provided in section 2.16.

2.11 Condition of use

No auxiliaries or consumables are incurred during maintenance and use of the automatic drive system product family. Repairs or refurbishments are considered in accordance with the online list of wear parts recommended by DORMA (status: 10.2009). The exchange of wear parts is indicated for a period of one year.

Energy expenditure was considered on the basis of 100,000 closing cycles per year (DORMA empirical value). This lies within the endurance test comprising 1,000,000 closing cycles carried out by TÜV Nord from which an overall operating life of at least 10 years can be derived.

2.12 Environment and health during use

There are no interactions between products, the environment and health.

2.13 Reference service life

The reference service life amounts to 10 years. This complies with 1,000,000 closing cycles.

2.14 Extraordinary effects

**Water**

No hazardous substances are emitted into the environment on contact with water.

**Mechanical destruction**

No environmental hazards are anticipated on mechanical destruction.

2.15 Re-use phase

With reference to the material composition of the product system in accordance with section 2.6, the following possibilities are available:

**Material recycling**

The materials suitable for material recycling primarily comprise the metallurgical materials processes in the product.

**Energy recovery**

The materials suitable for energy recovery primarily comprise the plastics contained in the product.

**Landfilling**

The entire system can be landfilled in the absence of waste recycling technologies.

2.16 Disposal

**Scrap incurred during the production phase**

The scrap incurred during the production phase is directed to material recycling. Scrap is collected separately by material type and disposed of. Waste codes in accordance with the European Waste Catalogue (EWC) 2001/118/EC:

- EWC 12 01 01 Ferrous metal filings and turnings

**Packaging**

The packaging components incurred during installation in the building are directed to an energy recovery process.

- EWC 15 01 01 Paper and cardboard packaging
- EWC 15 01 02 Plastic packaging
- EWC 15 01 03 Wooden packaging

**End of Life**

All materials are directed to an energy recovery or metallurgical recycling process.
• EWC 16 02 14 Used devices with the exception of those included in 16 02 09 to 16 02 13
• EWC 16 02 16 Components removed from used devices with the exception of those included in 16 02 15
• EWC 16 06 01 Lead batteries
• EWC 17 02 03 Plastic
• EWC 17 04 02 Aluminium
• EWC 17 04 05 Iron and steel
• EWC 17 04 11 Cables with the exception of those included in 17 04 10

Disposal of the drive unit in Europe is subject to the WEEE Guideline 2002/96/EC.

2.17 Further information
Contact data for more detailed information:
Please refer to the last page of this Declaration.

3 LCA: Calculation rules

3.1 Declared unit
The declared unit is the average for one (1) modular automatic drive system for sliding doors as averages of the ES 200 Standard, ES 200-2D and ES 200 Easy variants, including the respecting packaging materials.

<table>
<thead>
<tr>
<th>Name and supplement</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declared unit</td>
<td>1</td>
<td>pcs.</td>
</tr>
<tr>
<td>Conversion factor to 1 kg</td>
<td>36.4</td>
<td>kg/pcs.</td>
</tr>
</tbody>
</table>

3.2 System boundary
Type of EPD: cradle to grave (with options)
The following modules are considered in accordance with EN 15804:

Modules A1-5
The product stage commences with consideration of the material and energy flows required for manufacturing the product, including all of the associated upstream chains and requisite transport associated with procurement. Transport to the construction site and energy recovery of the packaging materials are also considered.

Module B3
This module covers the activities required for adapting the product installed in a building, structure or component in such a way that its functional, technical and aesthetic qualities are retained over the entire operating life.

Module B6
This module includes the energy consumption for operating an average drive unit (ES 200).

Modules C2-3
These modules include the environmental impact associated with waste treatment at the end of life including the associated transport.

Module D
Evidence of credits incurred by waste treatment as a result of energetic (MVA route) or material recycling (recycling route) of packaging (A5), spare parts (B3) and the product at the End of Life (C3).

3.3 Estimates and assumptions
The service life is based on the empirical value of 100,000 closing cycles per year with the result that the certified 1,000,000 closing cycles lead to a total service life of 10 years.

3.4 Cut-off criteria
All of the relevant modules to EN 15804 were taken into consideration. All of the data from the operational data survey is taken into consideration. Accordingly, material flows have also been analysed with a mass percentage of less than one per cent. The total mass percentages not taken into consideration therefore remains significantly less than 1% of the overall mass utilisation. It can be assumed that the total of all neglected processes does not exceed 5% in the impact categories.

3.5 Background data
“GaBi 5” – the software system for comprehensive analysis – was used for modelling the life cycle for manufacturing and waste disposal. All of the background data records of relevance for manufacturing and disposal were taken from various GaBi data bases as well as the ecoinvent data base (version 2.2). The data records are documented online. German data records were used for Modules A1-3 and European data records were used for distribution transport (A4), use (B Modules) and disposal scenarios (C Modules), wherever available. The background data records from the GaBi data bases used for the analysis pertain to the reference year 2010. Some of the ecoinvent data records used are more than 10 years old but are still regarded as the most suitable data for analysis in accordance with DIN CEN/TR 15941:2010. The ecoinvent data records can be classified as conservative on account of empirical values available.
The secondary and recycling material shares can only be considered using generic data records. An individual adjustment of these secondary shares is not possible with the analysis software used.

3.6 Data quality
The data on the products under review was recorded using analyses of internal production and environmental data, LCA-relevant data within the supplier chain and analyses of relevant data for the provision of energy. The data surveyed has been examined for plausibility and consistency. Good data representativity can be assumed.

3.7 Period under review
The life cycle data was recorded for the period 1 January 2011 to 31 December 2011. The average values obtained for the ES 200 drive system series refers to the product volumes of individual variants sold during the period under review.

3.8 Allocation
The material flows were compiled on a production unit basis from the DORMA ERP system. All of the energy flows considered within this context were measured on site.
The credits for the reconverted product were attributed to Module D. Some data items do not indicate separate results for Modules C3 and D. Owing to the credit overhang, the results were attributed to Module D.

3.9 Comparability
As a general rule, a comparison or evaluation of EPD data is only possible when all of the data to be compared has been drawn up in accordance with EN
15804 and the building context or product-specific characteristics are taken into consideration.

## 4 LCA: Scenarios and other technical information

### Transport to site (A4)
- **Means of transport**: Truck 17.3 t useful load, Euro 3
- **Transport distance**: 340 km
- **Capacity utilisation (including empty runs)**: 85%

All of the distribution countries were recorded disproportionately in establishing the transport distance.

### Construction installation process (A5)

#### Waste treatment on site:
- Plastic protective foil: 0.02 kg
- Cardboard and paper: 5.15 kg

#### Disposal transport:
- **Means of transport**: Truck 17.3 t useful load, Euro 3
- **Transport distance**: 50 km
- **Capacity utilisation (including empty runs)**: 85%

### Reference service life
- **Reference service life**: 10 years

### Repairs (B3)
- **Material loss**: 1.49 kg
- Repair cycle as per "Manufacturer guidelines on wear parts" provided by DORMA (status: 10.2009), indicated for a total operating period of 10 years

### Operational energy use (B6)
- **Equipment output**: 180 - 250 W
- **Door weight**: 278 kg
- **Opening angle**:
  - ES 200 Standard and 2D: 10 – 75 cm/sec.
  - ES 200 Easy: 10 – 50 cm/sec.
- **Number of cycles per year**: 100,000
- **Weighted energy consumption**: 10 kWh

Electricity consumption (10 kWh) refers to one year of usage (100,000 closing cycles).

### End of Life (C1-C4)
- **For recycling**: 87%
- **For energy recovery**: 13%

The processes at the End-of-Life stage are modelled using data records which represent the European average.

### Re-use, recovery and recycling potential (D)
The metals are redirected to material recycling while plastic and packaging materials are directed to an energetic recycling route.
5 LCA: Results

### SYSTEM BOUNDARIES (X ≠ INCLUDED IN THE LCA; MND = MODULE NOT DECLARED)

<table>
<thead>
<tr>
<th>Raw material supply</th>
<th>Transport</th>
<th>Production</th>
<th>Transport to site</th>
<th>Construction installation process</th>
<th>Use / Application</th>
<th>Maintenance</th>
<th>Repairs</th>
<th>Replacem ent</th>
<th>Refurbish ment</th>
<th>Operational energy use</th>
<th>Operational water use</th>
<th>De-construction</th>
<th>Transport</th>
<th>Waste treatment</th>
<th>Landfilling</th>
<th>Re-use, recovery or recycling potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>A2</td>
<td>A3</td>
<td>A4</td>
<td>A5</td>
<td>B1</td>
<td>B2</td>
<td>B3</td>
<td>B4</td>
<td>B5</td>
<td>B6</td>
<td>B7</td>
<td>C1</td>
<td>C2</td>
<td>C3</td>
<td>C4</td>
<td>D</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>MND</td>
<td>MND</td>
<td>X</td>
<td>MND</td>
<td>X</td>
<td>MND</td>
<td>X</td>
<td>MND</td>
<td>X</td>
<td>MND</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

### LCA RESULTS – ENVIRONMENTAL IMPACT

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>A1-3</th>
<th>A4</th>
<th>A5</th>
<th>B3</th>
<th>B6</th>
<th>C2</th>
<th>C3</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Warming Potential (GWP)</td>
<td>[kg CO₂ equiv.]</td>
<td>2.84E+02</td>
<td>5.83E-01</td>
<td>7.30E+00</td>
<td>1.40E+01</td>
<td>4.92E+00</td>
<td>1.74E-01</td>
<td>1.44E+01</td>
<td>-1.63E+02</td>
</tr>
<tr>
<td>Ozone Depletion Potential (ODP)</td>
<td>[kg CFC11 equiv.]</td>
<td>4.89E-06</td>
<td>2.16E-10</td>
<td>3.30E-09</td>
<td>1.09E-07</td>
<td>3.21E-07</td>
<td>6.47E-11</td>
<td>3.52E-07</td>
<td>-1.51E-05</td>
</tr>
<tr>
<td>Acidification Potential (AP)</td>
<td>[kg SO₂ equiv.]</td>
<td>1.93E+00</td>
<td>3.82E-03</td>
<td>1.73E-03</td>
<td>1.25E-01</td>
<td>2.16E-02</td>
<td>1.12E-03</td>
<td>2.13E-02</td>
<td>-7.48E-01</td>
</tr>
<tr>
<td>Eutrophication Potential (EP)</td>
<td>[kg PO₄ equiv.]</td>
<td>1.26E-01</td>
<td>9.20E-04</td>
<td>2.88E-04</td>
<td>5.14E-03</td>
<td>1.13E-03</td>
<td>2.71E-04</td>
<td>1.77E-03</td>
<td>-3.38E-02</td>
</tr>
<tr>
<td>Photochemical Ozone Creation Potential (POCP)</td>
<td>[kg ethene equiv.]</td>
<td>1.16E-01</td>
<td>-1.56E-03</td>
<td>1.74E-04</td>
<td>6.87E-03</td>
<td>1.27E-03</td>
<td>-4.57E-04</td>
<td>1.52E-03</td>
<td>-4.38E-02</td>
</tr>
<tr>
<td>Abiotic Depletion Potential non-Fossil Resources (ADPE)</td>
<td>[kg Sb equiv.]</td>
<td>1.34E-02</td>
<td>2.30E-08</td>
<td>1.38E-07</td>
<td>1.11E-03</td>
<td>4.03E-07</td>
<td>6.88E-09</td>
<td>4.52E-06</td>
<td>-1.59E-04</td>
</tr>
<tr>
<td>Abiotic Depletion Potential Fossil Fuels (ADPF)</td>
<td>[MJ]</td>
<td>3.03E+03</td>
<td>8.06E+00</td>
<td>4.38E+00</td>
<td>1.75E+02</td>
<td>5.60E+01</td>
<td>2.41E+02</td>
<td>9.48E+01</td>
<td>-1.54E+03</td>
</tr>
</tbody>
</table>

### LCA RESULTS – USE OF RESOURCES

| Renewable primary energy as energy carrier (PERE) | [MJ] | 8.76E+02 | 3.16E-01 | 2.52E-01 | 1.02E+01 | 1.25E+01 | 9.44E-02 | 4.74E+00 | -6.11E+02 |
| Renewable primary energy as material utilisation (PERM) | [MJ] | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Total use of renewable primary energy sources (PERT) | [MJ] | 8.76E+02 | 3.16E-01 | 2.52E-01 | 1.02E+01 | 1.25E+01 | 9.44E-02 | 4.74E+00 | -6.11E+02 |
| Non-renewable primary energy as energy carrier (PNRE) | [MJ] | 3.53E+03 | 8.09E+00 | 4.90E+00 | 1.91E+02 | 8.59E+01 | 2.42E+00 | 1.15E+02 | -2.09E+03 |
| Non-renewable primary energy as material utilisation (PENRM) | [MJ] | 2.42E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Total use of non-renewable primary energy sources (PENRT) | [MJ] | 3.53E+03 | 8.09E+00 | 4.90E+00 | 1.91E+02 | 8.59E+01 | 2.42E+00 | 1.15E+02 | -2.09E+03 |
| Use of secondary materials (SM) | [kg] | 2.11E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Renewable secondary fuels (RSF) | [MJ] | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Non-renewable secondary fuels (NRSF) | [MJ] | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Net use of fresh water (FW) | [m³] | - | - | - | - | - | - | - | - |

### LCA RESULTS – OUTPUT FLOWS AND WASTE CATEGORIES

| Hazardous waste for disposal (HWD) | [kg] | - | - | - | - | - | - | - | - |
| Disposed of, non-hazardous waste (NHWD) | [kg] | - | - | - | - | - | - | - | - |
| Disposed of, radioactive waste (RWD) | [kg] | - | - | - | - | - | - | - | - |
| Components for re-use (CRU) | [kg] | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Materials for recycling (MFR) | [kg] | 4.20E+03 | 0.00E+00 | 0.00E+00 | 8.36E-01 | 0.00E+00 | 0.00E+00 | 2.71E+04 | 0.00E+00 |
| Materials for energy recovery (MER) | [kg] | 0.00E+00 | 0.00E+00 | 5.17E+03 | 6.57E+01 | 0.00E+00 | 0.00E+00 | 4.07E+03 | 0.00E+00 |
| Exported energy [electricity] | [MJ] | 0.00E+00 | 0.00E+00 | 9.09E+00 | 2.07E+00 | 0.00E+00 | 0.00E+00 | 1.15E+01 | 0.00E+00 |
| Exported energy [thermal energy] | [MJ] | 0.00E+00 | 0.00E+00 | 2.58E+01 | 6.07E+00 | 0.00E+00 | 0.00E+00 | 3.16E+01 | 0.00E+00 |
6 LCA: Interpretation

ENVIRONMENTAL IMPACT
An evaluation of the LCA results enables the following interpretation of the CML results:

The phase of extraction of raw materials and production (Cradle to Gate, A1-3) has a dominant influence on all environmental impacts. This is particularly attributable to the use of aluminium as a material as well as magnetic components. The replacement of wear parts (B2) also performs in a similar manner where the replacement of magnets and accumulators in particular ensures a noticeable result overall while operational energy during production (A3) is only of subordinate significance as it is provided in full by hydro-power.

The results of the ozone depletion potential (ODP) are conspicuous as higher credits than loads can be detected. This is primarily attributable to the discrepancy in ODP values between the aluminium data record used for production (A1-3) and the aluminium data record used for credits (D). Other impact indicators (GWP, AP, EP etc.) are not affected by this and have significantly lower environmental loads than the aluminium data record used on the input side (A1-3). The data record used for the credits can therefore be classified as suitable despite its higher ODP load.

During the use phase, the application of electrical energy over a period of one year or 100,000 closing cycles is apparent but does not exert any significant influence on the result. A European power mix was used for these calculations (EU-27).

Waste management also has an affect on practically every impact category. But the environmental impacts, especially of thermal recycling of plastics contained in the product, are not decisive for any of the categories analysed.

Procurement and distribution transport (A2 and A4) hardly have any effect on the CML indicators. Credits primarily arise through material recycling of aluminium and steel components. Electricity and natural gas are also offset against the system for energy recovery of plastic components.

COMMENTS
The Expert Committee (SVA) at IBU clearly defined the calculation rules for declaring waste at its meeting on 4 October 2012. The data on which the background data used is based must be revised accordingly. This Environmental Product Declaration therefore pursues the transition solution approved by the SVA and is created without a waste declaration.

Nor do the background data records account for the indicator for net use of fresh water resources. The Declaration does not therefore include any values for fresh water.

7 Requisite evidence
The endurance test for compliance with the number of 1,000,000 closing cycles is confirmed by the certificate from TÜV Nord (reg. no. 10 799 385798).

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