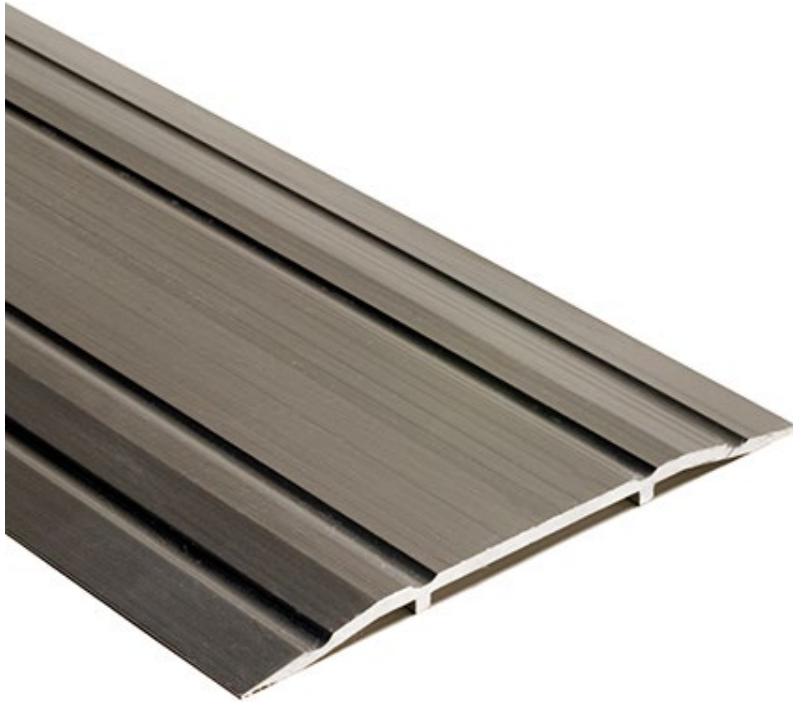


## ENVIRONMENTAL PRODUCT DECLARATION

# NATIONAL GUARD PRODUCTS

THRESHOLD MODELS 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V, 896N, 896V, 898N, 898V, 951, 953, AND 955



This EPD was created using a UL-verified EPD generator for NGP's full product portfolio. For additional product-specific EPDs, please contact NGP at [technical@ngp.com](mailto:technical@ngp.com).



At NGP, we are committed to providing products and services that are environmentally sound throughout the entire production process and the product life cycle.

Our environmental policy states:

#1 - We meet or exceed legal requirements and act with integrity, honesty, and transparency in everything we do.

#2 - We develop strategies to reduce consumption of resources, prevent pollution by understanding how our decisions and actions affect the continued long-term success of the company.

#3 - We continuously seek ways to improve the environment and to reduce risks that can cause accidents and pollution and expect the same of our suppliers.

#4 - We engage in open communication of sustainability programs with our stakeholders and adapt to the needs of our customers, associates, suppliers and vendors.





# ENVIRONMENTAL PRODUCT DECLARATION



National Guard Products  
 Threshold Models 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V,  
 896N, 896V, 898N, 898V, 951, 953, and 955

According to ISO 14025,  
 EN 15804, and ISO21930:2017

|  |   |
|--|---|
| PROGRAM OPERATOR   | UL Environment <a href="http://www.ul.com">www.ul.com</a> - <a href="http://spot.ul.com">spot.ul.com</a>    |
| GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER  | General Program Instructions v.2.5 March 2020   |
| MANUFACTURER NAME AND ADDRESS  | National Guard Products, Inc.<br>4985 East Raines Rd, Memphis, TN 38118                                     |
| DECLARATION NUMBER   | 4789517196.112.1  |
| DECLARED PRODUCT & FUNCTIONAL UNIT   | Threshold (For detailed model, pls refer to Section 1.)<br>One unit of product of 3' installed for 75 years |
| REFERENCE PCR AND VERSION NUMBER   | UL PCR Part A UL 10010 Version 3.2, 2018<br>UL PCR Part B UL 10010-13 Version 1.0, 2019                     |
| DESCRIPTION OF PRODUCT'S INTENDED APPLICATION AND USE  | Installed to insulate the gap between floor surfaces  |
| PRODUCT RSL DESCRIPTION  | 25 Years  |
| MARKETS OF APPLIABILITY  | the United States   |
| DATE OF ISSUE  | July 1, 2022  |
| PERIOD OF VALIDITY   | 5 Year  |
| EPD TYPE   | Product-specific  |
| EPD SCOPE  | Cradle to grave   |
| YEAR OF REPORTED MANUFACTURER PRIMARY DATA   | 2019  |
| LCA SOFTWARE & VERSION NUMBER  | GaBi ts Version 9.2.0.58  |
| LCI DATABASE & VERSION NUMBER  | GaBi Database Service Pack 40   |
| LCIA METHODOLOGY & VERSION NUMBER  | CML 2001-Jan 2016 and TRACI 2.1   |
| The sub-category PCR review was conducted by:  | UL Environment  |
|  | PCR Review Panel  |
|  | <a href="mailto:epd@ul.com">epd@ul.com</a>  |
| This declaration was independently verified in accordance with ISO 14025:2006. The UL Environment "Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report," v3.2 (Dec 2018), based on ISO 21930:2017, serves as the core PR, with additional considerations from CEN Norm EN 15804 (2013) and the USGBC/UL Environment Part A Enhancement (2017)<br><input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL   |                        |
|  | Cooper McCollum, UL Environment   |
| This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:  | WAP Sustainability Consulting   |
| This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:   |                        |
|  | Thomas P. Gloria, Industrial Ecology Consultants  |
| <b>LIMITATIONS</b><br>Environmental declarations from different programs (ISO 14025) may not be comparable.<br><br>Comparison of the environmental performance of products using EPD information shall be based on the product's use and impacts at the building level, and therefore EPDs may not be used for comparability purposes when not considering the building energy use phase as instructed under this PCR.<br><br>Full conformance with this PCR allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible". Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared. |   |

# ENVIRONMENTAL PRODUCT DECLARATION



National Guard Products  
Threshold Models 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V,  
896N, 896V, 898N, 898V, 951, 953, and 955



According to ISO 14025,  
EN 15804 and ISO 21930:2017

## 1. Product Definition and Information

### 1.1. Description of Company/Organization

National Guard Products is known as a leading manufacturer of weather-stripping, thresholds, lite kits, louvers and glass for commercial wood and steel doors. Founded in 1935 NGP has become an ever advancing industry innovator, manufacturing a complete line of door seals, door thresholds, gasketing, intumescent fire seals, smoke seals, sound seals, door sweeps, door shoes, automatic door bottoms, lite kits, louvers, metal edges, astragals and finger guard products.

### 1.2. Product Description

Thresholds are installed below doorways to insulate the gap between the door surface and floor surface. They are also used to create a seamless transition between two floor surfaces. For a standard 3'x7' door, this would be equivalent to a length of 3' of threshold, which is the length of the door bottom.

Threshold are typically comprised of one material with or without a supplemental gasketing. National Guard Products offers thresholds manufactured of aluminum, architectural bronze and stainless steel. Thresholds can be offered with a variety of finish options including mill finished, bronze finished, polished, powder coated and slip resistant.

The threshold products covered in this EPD include 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V, 896N, 896V, 898N, 898V, 951, 953, and 955. All values in this EPD are for the representative product 513 chosen due to it having the highest sales of all the included products. The impacts of each product mentioned are within  $\pm 10\%$  of the representative product's impact.

### 1.3. Application

The threshold product are designed to be installed into a door body to prevent undesired elements from the opening between door and door frames.

### 1.4. Declaration of Methodological Framework

This LCA is a cradle-to-grave study, as represented by the flow diagram below. A summary of the life cycle stages can be found in Table 4. Their reference service life (RSL) is outlined in Table 7. The cut-off criteria are described in Cut-off Rules, and the allocation procedures are described in the Allocation section. No known flows are deliberately excluded from this EPD. Third party verified ISO 14040/44 secondary LCI datasets contributes more than 67% of the total impacts in the all impact categories required by the PCR.

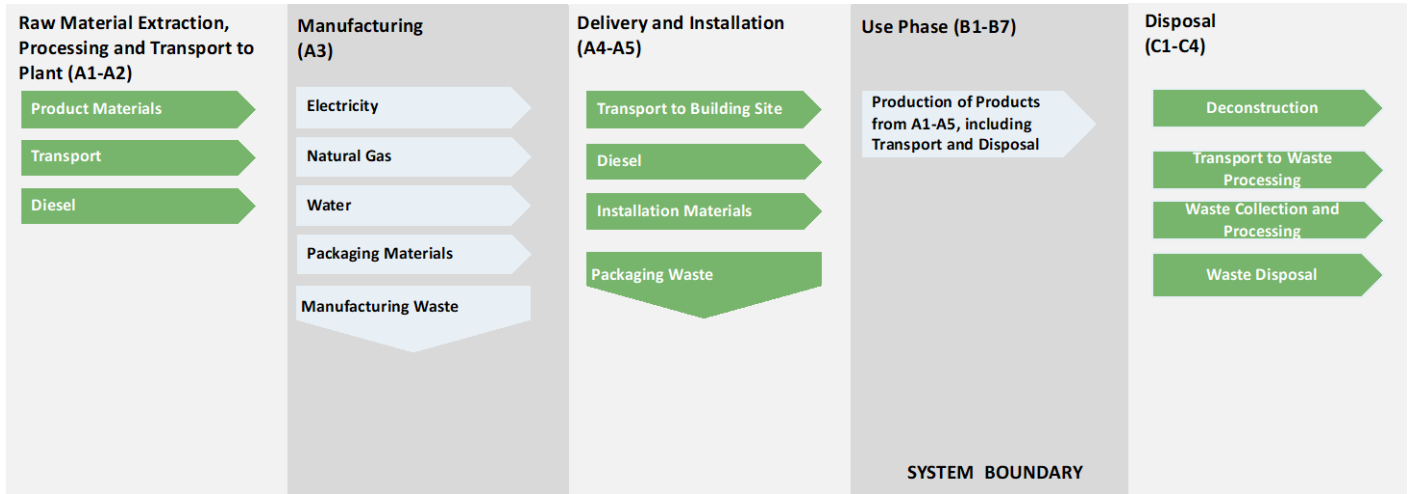


# ENVIRONMENTAL PRODUCT DECLARATION



National Guard Products  
 Threshold Models 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V,  
 896N, 896V, 898N, 898V, 951, 953, and 955

According to ISO 14025,  
 EN 15804 and ISO 21930:2017



## 1.5. Material Composition

The materials that make up 513 are indicated in Table 1.

**Table 1: Material Composition**

| MATERIAL | 513  |
|----------|------|
| Aluminum | 100% |

## 1.6. Properties of Declared Product as Delivered

The product is provided to the customer through a fax, phone or email ordering system. The product is shipped directly to customers in packaging material that includes cardboard box, shipping labels and plastic materials. The amount of packaging materials is dependent on the size of the customer’s order. Installation instructional sheets are provided. Accessory materials, such as installation screws are provided with the product.

The dimension and quantities of the product are dependent on the requirements of the customer. NGP products are manufactured to customer specifications. For the purposes of this EPD it is assumed that the customer orders are equivalent to the sizes in the Product Description section above.

## 1.7. Manufacturing

All manufacturing occurs at NGP’s Memphis location. Production is typically a manual process that includes the loading of pre-extruded aluminum and/or roll-formed steel onto equipment that cuts, bends, and hole punches to product specification. For products that are a combination of several parts, employees weld the parts together. If customers order specific finish options, employees load parts onto equipment that applies the finishing. Once completed all products are manually packaged by employees. Pallets of packaged products are mechanically wrapped and are staged for shipping by forklifts.



# ENVIRONMENTAL PRODUCT DECLARATION



National Guard Products  
Threshold Models 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V,  
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Electricity is the primary energy source utilized during manufacturing, although some natural gas is utilized. Water is utilized in small quantities.

## 1.8. Packaging

Packaging utilized in the shipment of the product is described in Table 2.

Table 2: Packaging

| MATERIAL      | 513      | UNIT | DISPOSAL PATHWAY                                    |
|---------------|----------|------|---|
| Cardboard     | 3.36E-02 | kg   | Landfilled (20%), Incinerated (5%), Recycled (75%)  |
| Plastic Foam  | 1.36E-03 | kg   | Landfilled (68%), Incinerated (17%), Recycled (15%) |
| Plastic Film  | 1.81E-03 | kg   | Landfilled (68%), Incinerated (17%), Recycled (15%) |
| Paper         | 4.54E-02 | kg   | Landfilled (20%), Incinerated (5%), Recycled (75%)  |
| Plastic Strap | 3.18E-03 | kg   | Landfilled (68%), Incinerated (17%), Recycled (15%) |

## 1.9. Transportation

It is assumed that all raw materials are distributed by truck. An average distance using this information was calculated and used in the model.

The default shipping distance (1000 km) from the manufacturing location to the customer was utilized. The transportation distance for all waste flows is assumed to be 200 km. Both distances are provided in the sub-category PCR in Section 3.12.



# ENVIRONMENTAL PRODUCT DECLARATION



National Guard Products  
Threshold Models 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V,  
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## 1.10. Product Installation

Detailed installation instructions can be found online. While installation equipment is required to install the product, it is not included in the study as these are multi-use tools and the impacts per declared unit is considered negligible. All waste generated during installation, including packaging waste, is disposed of according to the tables found in Section 2.8.5 of *Part A: Life Cycle Assessment Calculation Rules and Report Requirements* from UL Environment.

## 1.11. Reuse, Recycling, and Energy Recovery

NGP threshold may be recycled or resued at the end of life. The LCA that this EPD is created from takes the end-of-life pathway prescribed by the PCR Part A.

## 1.12. Disposal

Disposal pathways in the EPD are modeled in accordance with disposal routes and waste classification referenced in Sections 2.8.5 and 2.8.6 of *Part A: Life Cycle Assessment Calculation Rules and Report Requirements* from UL Environment. This indicates an end-of-life split amongst landfill, recycling, and incineration pathways.

## 2. Life Cycle Assessment Background Information

### 2.1. Functional Unit

The functional unit is one unit of product installed on a door in a North American standard building with an Estimated Service Life of 75 years, as indicated in Table 3.

Table 3: Functional Unit Details

| NAME                                       | 513                              | UNIT  |
|--|----------------------------------|-------|
| Functional Unit                            | One unit of product for 75 years |       |
| Mass per Declare Unit, excluding fasteners | 2.78                             | kg    |
| Fasteners                                  | 7.51E-02                         | kg    |
| Reference Service Life (RSL)               | 25                               | years |



# ENVIRONMENTAL PRODUCT DECLARATION



National Guard Products  
 Threshold Models 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V,  
 896N, 896V, 898N, 898V, 951, 953, and 955



According to ISO 14025,  
 EN 15804 and ISO 21930:2017

## 2.2. System Boundary

The type of EPD is cradle-to-grave. All LCA modules are included and are summarized in Table 4.

**Table 4: Summary of Included Life Cycle Stages**

| MODULE NAME | DESCRIPTION                              | ANALYSIS PERIOD | SUMMARY OF INCLUDED ELEMENTS   |
|-------------|--|-----------------|--|
| A1          | Product Stage: Raw Material Supply       | 2019            | Raw Material sourcing and processing as defined by secondary data.   |
| A2          | Product Stage: Transport                 | 2019            | Shipping from supplier to manufacturing site. Fuel use requirements estimated based on product weights and estimated distance.   |
| A3          | Product Stage: Manufacturing             | 2019            | Energy, water and material inputs required for manufacturing products from raw materials. Packaging materials and manufacturing waste are included as well.                    |
| A4          | Construction Process Stage: Transport    | 2019            | Shipping from manufacturing site to project site. Fuel use requirements estimated based on product weights and mapped distances.   |
| A5          | Construction Process Stage: Installation | 2019            | Installation materials, installation waste and packaging material waste.   |
| B1          | Use Stage: Use                           | 2019            | The electricity consumed during the use of the products  |
| B2          | Use Stage: Maintenance                   | 2019            | The maintenance of the products does not involve any consumption of energy or resources.   |
| B3          | Use Stage: Repair                        | 2019            | The product does not require repairing once installed.   |
| B4          | Use Stage: Replacement                   | 2019            | Total materials and energy required to manufacture the replacements needed to meet the functional unit.  |
| B5          | Use Stage: Refurbishment                 | 2019            | The product does not require refurbishment once installed.   |
| B6          | Operational Energy Use                   | 2019            | The use of the products does not impact the operational energy use of the building.  |
| B7          | Operational Water Use                    | 2019            | The use of the products does not impact the operational water use of the building.   |
| C1          | EOL: Deconstruction                      | 2019            | No inputs required for deconstruction.   |
| C2          | EOL: Transport                           | 2019            | Shipping from project site to landfill. Distance assumed to be 200 km from installation site to landfill.  |
| C3          | EOL: Waste Processing                    | 2019            | Waste processing not required. All waste can be processed as is.   |
| C4          | EOL: Disposal                            | 2019            | The disposal process of the product varies with the material type as per Part A Section 2.8.5. The impacts from landfilling and recycling are modeled based on secondary data. |
| D           | Benefits beyond system                   | N/A             | Module not declared  |

## 2.3. Estimates and Assumptions

All estimates and assumptions are within the requirements of ISO 14040/44. The majority of the estimations are within the primary data. The primary data was collected as annual totals including all utility usage and production information. For the LCA, the usage information was divided by the production in pieces to create an energy and water use per declared unit, i.e., one unit of product. Other assumptions are listed below:

- Waste value was estimated after an onsite visit to the manufacturing facility that an average 1% of the input material end up as manufacturing waste and is assumed to be landfilled.
- The installation tools are used enough times that the per unit of product impacts are negligible.





# ENVIRONMENTAL PRODUCT DECLARATION



## National Guard Products

Threshold Models 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V, 896N, 896V, 898N, 898V, 951, 953, and 955



According to ISO 14025, EN 15804 and ISO 21930:2017

- Default transport distance from NGP to customers based on the PCR is used.
- For the US, 85% of metals are recycled and 15% is landfilled. For all other materials, the EOL is assumed to be 100% landfilled. An assumed average distance of 200 km was assumed to be the shipping distance between project site and the end-of-life facility.

## 2.4. Cut-off Criteria

All inputs in which data was available were included. Material inputs greater than 1% (based on total mass of the final product) were included within the scope of analysis. Material inputs less than 1% were included if sufficient data was available to warrant inclusion and/or the material input was thought to have significant environmental impact. Cumulative excluded material inputs and environmental impacts are less than 5% based on total weight of the functional unit.

There is no excluded material or energy input or output, except as noted below:

- As the tools used during the installation of the product are multi-use tools and can be reused after each installation, the per-functional unit impacts are considered negligible and therefore are not included. However, the electricity used to drill holes for installation has been included.
- Some material inputs may have been excluded within the secondary GaBi datasets used for this project. All GaBi datasets have been critically reviewed and conform to the exclusion requirements of the PCR.

## 2.5. Data Sources

Primary data were collected by facility personnel and from utility bills and was used for all manufacturing processes. Whenever available, supplier data was used for raw materials used in the production process. When primary data did not exist, secondary data for raw material production was utilized from GaBi Database Version 9.2.0.58, Service pack 40.

## 2.6. Data Quality

### Geographical Coverage

The geographical scope of the manufacturing portion of the life cycle is Memphis, Tennessee. This LCA uses country specific energy datasets that take into account US eGrid specific energy and transportation mixes. Overall, the geographic coverage of primary data is considered good.

### Time Coverage

Primary data were provided by NGP associates and represent calendar year 2019. Using 2019 data meets the PCR requirement that manufacturer specific data be within the last 5 years. Time coverage of this data is considered good. Data necessary to model cradle-to-gate unit processes was sourced from thinkstep LCI datasets. Time coverage of the GaBi datasets varies from approximately 2015 to present. All datasets rely on at least one 1-year average data. Overall time coverage of the datasets is considered good and meets the requirement of the PCR that all data be updated within a 5-year period. The specific time coverage of secondary datasets can be referenced in the dataset references table in each supplemental LCA report.

### Technological Coverage





# ENVIRONMENTAL PRODUCT DECLARATION



## National Guard Products

Threshold Models 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V, 896N, 896V, 898N, 898V, 951, 953, and 955

According to ISO 14025, EN 15804 and ISO 21930:2017

Primary data provided by NGP are specific to the technology that the company uses in manufacturing their product. It is site specific and considered of good quality. It is worth noting that the energy and water used in manufacturing the product includes overhead energy such as lighting, heating and sanitary use of water. Sub-metering was not available to extract process only energy and water use from the total energy use. Sub-metering would improve the technological coverage of data quality. Data necessary to model cradle-to-gate unit processes was sourced from Sphera LCI datasets. Technological coverage of the datasets is considered good relative to the actual supply chain of NGP. While improved life cycle data from suppliers would improve technological coverage, the use of lower quality generic datasets does meet the goal of this EPD.

### Completeness

The data included is consider complete. The LCA model included all known material and energy flows, with the exception of what is listed in Section 2.4. As pointed out in that section, no known flows above 1% were excluded and the sum of all excluded flows totals less than 5%.

### 2.7. Period under Review

The period under review is calendar year 2019.

### 2.8. Allocation

General principles of allocation were based on ISO 14040/44. Where possible, allocation was avoided. When allocation was necessary it was done on a physical mass basis, with the exception of manufacturing process. Discussions with NGP staff divulged this was a more representative way to allocate the manufacturing inputs based on the manufacturing processes used and the types of products created. There are several other products that are assembled and packaged within the same facility. It is assumed that energy used for these purposes are the same across different products. Regarding secondary datasets, as a default, GaBi datasets use a physical mass basis for allocation.

## 3. Life Cycle Assessment Scenarios

Table 5: Transport to the building site (A4)

| NAME                               | 513   | UNIT           |
|------------------------------------|---|----------------|
| Fuel type                          | Diesel  |                |
| Liters of fuel                     | 38.43   | l/100km        |
| Vehicle type                       | Truck – Trailer, basic enclosed/ 50,000 lb. payload |                |
| Transport distance                 | 800   | km             |
| Capacity utilization               | 65  | %              |
| Weight of products transported     | 1.01  | kg             |
| Volume of products transported     | 113.56  | m <sup>3</sup> |
| Capacity utilization volume factor | 1   | -              |



# ENVIRONMENTAL PRODUCT DECLARATION



National Guard Products  
 Threshold Models 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V,  
 896N, 896V, 898N, 898V, 951, 953, and 955

According to ISO 14025,  
 EN 15804 and ISO 21930:2017

**Table 6: Installation into the building (A5)**

| NAME  | 513      | UNIT   |
|---|----------|--------|
| Fasteners   | 2.50E-02 | kg     |
| Net freshwater consumption  | 0        | m3     |
| Other resources   | 0        | kg     |
| Electricity consumption   | 0        | kg     |
| Other energy carriers   | 0        | MJ     |
| Production loss per functional unit   | 0        | kg     |
| Waste material at the construction site before waste processing, generated by production installation | 8.53E-02 | kg     |
| Plastic Recycling (15%)   | 9.53E-04 | kg     |
| Plastic Landfilling (68%)   | 4.32E-03 | kg     |
| Plastic Incineration (17%)  | 1.08E-03 | kg     |
| Total Plastic Packaging Waste   | 6.35E-03 | kg     |
| Pulp Recycling (75%)  | 5.92E-02 | kg     |
| Pulp Landfilling (20%)  | 1.58E-02 | kg     |
| Pulp Incineration (5%)  | 3.95E-03 | kg     |
| Total Pulp Packaging Waste  | 7.89E-02 | kg     |
| Biogenic carbon contained in packaging  | 8.80E-03 | kg CO2 |
| Direct Emission to ambient air, soil, and water   | 0        | kg     |
| VOC emission  | N/A      | µg/m3  |

**Table 7: Reference Service Life**

| NAME                          | 513   |       |
|-------------------------------|---|-------|
| RSL                           | 25  | years |
| Design application parameters | Installation per recommendation by manufacturer | -     |
| An assumed quality of work    | Accepted industry standard                      | -     |
| Indoor environment            | Normal building operating conditions            | -     |
| Use conditions                | Normal use conditions                           | -     |
| Maintenance                   | None required                                   | -     |



# ENVIRONMENTAL PRODUCT DECLARATION



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**Table 8: Replacement (B4)**

| NAME  | 513      | UNIT  |
|---|----------|-------|
| Reference Service Life                          | 25       | Years |
| Replacement cycles ((ESL/RSL)-1)                | 2        | #     |
| Energy input                                    | 0        | kWh   |
| Net freshwater consumption                      | 0        | m3    |
| Fasteners                                       | 5.01E-02 | kg    |
| Replacement of worn parts                       | N/A      | kg    |
| Direct emissions to ambient air, soil and water | 0        | kg    |
| Further assumptions for scenario development    | N/A      | -     |

**Table 9: End of life (C1-C4)**

| NAME  |  | 513      | UNIT   |
|---|--|----------|--------|
| Collection process                                | Collected separately                     | 0        | kg     |
|   | Collected with mixed construction waste  | 9.50E-01 | kg     |
| Recovery  | Reuse                                    | 0        | kg     |
|   | Non-metal Landfilling (100%)             | 0        | kg     |
|   | Metal Waste Recycling (85%)              | 8.08E-01 | kg     |
|   | Metal Waste Landfilling (15%)            | 1.43E-01 | kg     |
|   | Incineration                             | 0        | kg     |
| Disposal  | Product or material for final deposition | 9.50E-01 | kg     |
| Removals of biogenic carbon (excluding packaging) |  | 0        | kg CO2 |



# ENVIRONMENTAL PRODUCT DECLARATION



National Guard Products  
 Threshold Models 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V,  
 896N, 896V, 898N, 898V, 951, 953, and 955

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## 4. Life Cycle Assessment Results

Table 10: Description of the system boundary modules

|                        | PRODUCT STAGE       |           |               | CONSTRUCTION PROCESS STAGE  |                  | USE STAGE |             |        |             |               |  |   | END OF LIFE STAGE |           |                  |          | BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY |     |
|------------------------|---------------------|-----------|---------------|-----------------------------|------------------|-----------|-------------|--------|-------------|---------------|--|---|-------------------|-----------|------------------|----------|---|-----|
|                        | A1                  | A2        | A3            | A4                          | A5               | B1        | B2          | B3     | B4          | B5            | B6   | B7  | C1                | C2        | C3               | C4       | D   |     |
|                        | Raw material supply | Transport | Manufacturing | Transport from gate to site | Assembly/Install | Use       | Maintenance | Repair | Replacement | Refurbishment | Building Operational Energy Use During Product Use | Building Operational Water Use During Product Use | Deconstruction    | Transport | Waste processing | Disposal | Reuse, Recovery, Recycling Potential          |     |
| <b>Cradle to Grave</b> | X                   |           |               | X                           | X                | X         | X           | X      | X           | X             | X  | X   | X                 | X         | X                | X        | X   | MND |



# ENVIRONMENTAL PRODUCT DECLARATION



National Guard Products  
 Threshold Models 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V,  
 896N, 896V, 898N, 898V, 951, 953, and 955



According to ISO 14025,  
 EN 15804 and ISO 21930:2017

## 4.1. 513 Results

| Impact Category                            | A1-A3    | A4        | A5       | B1       | B2       | B3       | B4       | B5       | B6       | B7       | C1       | C2        | C3       | C4       | D   |
|--|----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|-----|
| <b>CML Impacts (Europe, Rest of World)</b> |          |           |          |          |          |          |          |          |          |          |          |           |          |          |     |
| GWP [kg CO2 eq]                            | 1.01E+01 | 7.96E-02  | 1.06E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.50E-02  | 0.00E+00 | 5.84E-03 | MND |
| ODP [kg CFC 11 eq]                         | 2.93E-09 | 1.02E-17  | 6.09E-16 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.93E-18  | 0.00E+00 | 2.00E-17 | MND |
| AP [kg SO2 eq]                             | 5.84E-02 | 1.00E-04  | 1.91E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.16E-05  | 0.00E+00 | 2.47E-05 | MND |
| EP [kg Phosphate eq]                       | 2.62E-03 | 2.71E-05  | 3.08E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.83E-06  | 0.00E+00 | 5.68E-06 | MND |
| POCP [kg Ethene eq]                        | 3.05E-03 | -2.06E-05 | 2.98E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | -5.24E-06 | 0.00E+00 | 3.39E-07 | MND |
| ADP-elements [kg Sb eq]                    | 3.01E-06 | 1.36E-08  | 4.54E-06 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.56E-09  | 0.00E+00 | 1.25E-09 | MND |
| ADP-fossil fuel [MJ]                       | 1.09E+02 | 1.13E+00  | 8.31E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.12E-01  | 0.00E+00 | 9.34E-02 | MND |
| <b>TRACI Impacts (North America)</b>       |          |           |          |          |          |          |          |          |          |          |          |           |          |          |     |
| AP [kg SO2 eq]                             | 5.55E-02 | 1.30E-04  | 2.30E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.84E-05  | 0.00E+00 | 3.32E-05 | MND |
| EP [kg N eq]                               | 1.16E-03 | 2.07E-05  | 2.10E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.15E-06  | 0.00E+00 | 3.97E-06 | MND |
| GWP [kg CO2 eq]                            | 1.01E+01 | 7.96E-02  | 1.06E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.50E-02  | 0.00E+00 | 5.84E-03 | MND |
| ODP [kg CFC 11 eq]                         | 3.31E-09 | 1.02E-17  | 6.09E-16 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.93E-18  | 0.00E+00 | 2.00E-17 | MND |
| Resources [MJ]                             | 9.17E+00 | 1.51E-01  | 3.80E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.84E-02  | 0.00E+00 | 1.21E-02 | MND |
| POCP [kg O3 eq]                            | 4.70E-01 | 2.84E-03  | 3.20E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.27E-04  | 0.00E+00 | 4.78E-04 | MND |
| <b>Carbon Emissions and Uptake</b>         |          |           |          |          |          |          |          |          |          |          |          |           |          |          |     |
| BCRP [kg CO2]                              | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | MND |
| BCEP [kg CO2]                              | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | MND |
| BCRK [kg CO2]                              | 1.30E-01 | 0.00E+00  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | MND |
| BCEK [kg CO2]                              | 0.00E+00 | 0.00E+00  | 8.80E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | MND |
| BCEW [kg CO2]                              | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | MND |
| CCE [kg CO2]                               | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | MND |
| CCR [kg CO2]                               | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | MND |
| CWNR [kg CO2]                              | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | MND |

# ENVIRONMENTAL PRODUCT DECLARATION



National Guard Products  
 Threshold Models 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V,  
 896N, 896V, 898N, 898V, 951, 953, and 955



According to ISO 14025,  
 EN 15804 and ISO 21930:2017

| Impact Category                          | A1-A3    | A4       | A5       | B1       | B2       | B3       | B4       | B5       | B6       | B7       | C1       | C2       | C3       | C4       | D   |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----|
| <b>Resource Use Indicators</b>           |          |          |          |          |          |          |          |          |          |          |          |          |          |          |     |
| <b>RPRE [MJ]</b>                         | 4.74E+01 | 4.79E-02 | 1.33E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 9.00E-03 | 0.00E+00 | 7.72E-03 | MND |
| <b>RPRM [MJ]</b>                         | 1.27E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | MND |
| <b>RPRT [MJ]</b>                         | 4.86E+01 | 4.79E-02 | 1.33E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 9.00E-03 | 0.00E+00 | 7.72E-03 | MND |
| <b>NRPRE [MJ]</b>                        | 1.15E+02 | 1.13E+00 | 8.85E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.13E-01 | 0.00E+00 | 9.54E-02 | MND |
| <b>NRPRM [MJ]</b>                        | 2.07E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | MND |
| <b>NRPRT [MJ]</b>                        | 1.15E+02 | 1.13E+00 | 8.85E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.13E-01 | 0.00E+00 | 9.54E-02 | MND |
| <b>SM [kg]</b>                           | 3.51E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | MND |
| <b>RSF [MJ]</b>                          | 5.01E-11 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | MND |
| <b>NRSF [MJ]</b>                         | 1.68E-10 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | MND |
| <b>RE [MJ]</b>                           | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | MND |
| <b>FW [m3]</b>                           | 2.23E-01 | 2.13E-04 | 1.90E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.01E-05 | 0.00E+00 | 1.35E-05 | MND |
| <b>Output Flows and Waste Categories</b> |          |          |          |          |          |          |          |          |          |          |          |          |          |          |     |
| <b>HWD [kg]</b>                          | 7.59E-04 | 1.94E-08 | 1.50E-09 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.65E-09 | 0.00E+00 | 6.38E-10 | MND |
| <b>NHWD [kg]</b>                         | 2.57E+00 | 8.13E-05 | 1.79E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.53E-05 | 0.00E+00 | 1.43E-01 | MND |
| <b>HLRW [kg]</b>                         | 3.04E-06 | 3.08E-09 | 2.46E-08 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.80E-10 | 0.00E+00 | 9.42E-10 | MND |
| <b>ILLRW [kg]</b>                        | 2.51E-03 | 2.55E-06 | 2.16E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.80E-07 | 0.00E+00 | 8.07E-07 | MND |
| <b>CRU [kg]</b>                          | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | MND |
| <b>MR [kg]</b>                           | 0.00E+00 | 0.00E+00 | 6.01E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.08E-01 | 0.00E+00 | 0.00E+00 | 8.08E-01 | MND |
| <b>MER [kg]</b>                          | 0.00E+00 | 0.00E+00 | 5.03E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | MND |
| <b>EEE [MJ]</b>                          | 0.00E+00 | 0.00E+00 | 1.84E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | MND |
| <b>EET [MJ]</b>                          | 0.00E+00 | 0.00E+00 | 6.36E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | MND |
| <b>EE [MJ]</b>                           | 0.00E+00 | 0.00E+00 | 2.48E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | MND |

# ENVIRONMENTAL PRODUCT DECLARATION



**National Guard Products**  
Threshold Models 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V, 896N, 896V, 898N, 898V, 951, 953, and 955



According to ISO 14025,  
EN 15804 and ISO 21930:2017

## 5. LCA Interpretation

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Overall, the vast majority of the impacts of the products are found in A1-A3 and for the whole life cycle of a building, the majority of the impacts is derived from the replacement of the products. Given this, the biggest thing NGP can do to decrease their environmental footprint is to light-weight the product, utilize additional recycled content, and improve the durability of the products.

## 6. Additional Environmental Information

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### 6.1. Environment and Health During Manufacturing

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NGP meets all federal and state standards related to the Environment and Health during manufacturing. Additionally, NGP employs a strict waste minimization and recycling program that reduces and recycles waste produced in the manufacturing process.

Beyond what is regulated, there are no additional environment and health considerations during the production of goods.

### 6.2. Environment and Health During Use

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There are no environmental or health considerations during the use of the product.





# ENVIRONMENTAL PRODUCT DECLARATION



National Guard Products  
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 896N, 896V, 898N, 898V, 951, 953, and 955

According to ISO 14025,  
 EN 15804 and ISO 21930:2017

## 7. Supporting Documentation

The full text of the acronyms found in Section 4 are found in Table 11.

**Table 11: Acronym Key**

| ACRONYM        | TEXT  | ACRONYM   | TEXT  |
|----------------|---|-----------|---|
| LCA Indicators |   |           |   |
| ADP-elements   | Abiotic depletion potential for non-fossil resources  | GWP       | Global warming potential  |
| ADP-fossil     | Abiotic depletion potential for fossil resources  | OPD       | Depletion of stratospheric ozone layer  |
| AP             | Acidification potential of soil and water   | POCP      | Photochemical ozone creation potential  |
| EP             | Eutrophication potential  | Resources | Depletion of non-renewable fossil fuels   |
| LCI Indicators |   |           |   |
| PERE           | Use of renewable primary energy excluding renewable primary energy resources used as raw materials                  | PENRT     | Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) |
| PERM           | Use of renewable primary energy resources used as raw materials   | SM        | Use of secondary materials  |
| PERT           | Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) | RSF       | Use of renewable secondary fuels  |
| PENRE          | Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials          | NRSF      | Use of non-renewable secondary fuels  |
| PENRM          | Use of non-renewable primary energy resources used as raw materials   | FW        | Net use of fresh water  |
| HWD            | Disposed-of-hazardous waste   | MFR       | Materials for recycling   |
| NHWD           | Disposed-of non-hazardous waste   | MET       | Materials for energy recovery   |
| RWD            | Disposed-of Radioactive waste   | EEE       | Exported electrical energy  |
| CRU            | Components for reuse  | EET       | Exported thermal energy   |
|                |   | EE        | Exported energy   |



# ENVIRONMENTAL PRODUCT DECLARATION



National Guard Products

Threshold Models 327, 404, 412, 424FC, 513, 8134, 8143, 8163, 8513, 891N, 891P, 891V, 896N, 896V, 898N, 898V, 951, 953, and 955



According to ISO 14025,  
EN 15804 and ISO 21930:2017

## 8. References

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1. Life Cycle Assessment, NGP, LCA Report for Thresholds, Gasketing, Continuous Hinges, Lite Kits/Louvers. WAP Sustainability Consulting. Sept 2020.
2. Product Category Rules for Building-Related Products and Services Part A: Life Cycle Assessment Calculation Rules and Report Requirements UL – 10010 Version 3.2. UL Environment.
3. Product Category Rule Guidance for Building-Related Products and Services Part B: Builders Hardware EPD Requirements UL 10010-13 Version 1.0. UL Environment.
4. ISO 14044: 2006 Environmental Management – Life cycle assessment – Requirements and Guidelines.
5. ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations – Principles and Procedures.
6. ISO 14044: 2006/ Amd 1:2017 Environmental Management – Life cycle assessment – Requirements and Guidelines – Amendment 1.
7. ISO 21930:2017 Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services.

