

NATIONAL GUARD PRODUCTS

GASKETING



NATIONAL GUARD
PRODUCTS



Gasketing



NATIONAL GUARD

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
Gasketing

According to ISO 14025

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.



PROGRAM OPERATOR	UL Environment	
DECLARATION HOLDER	National Guard Products	
DECLARATION NUMBER	4786853254.101.1	
DECLARED PRODUCT	Gasketing	
REFERENCE PCR	Product Category Rule (PCR) for preparing an Environmental Product Declaration (EPD) for Product Group, Builders Hardware UL9004. Version: April 3 rd , 2014	
DATE OF ISSUE	August 26, 2015	
PERIOD OF VALIDITY	5 Years	
CONTENTS OF THE DECLARATION	Product definition and information about building physics Information about basic material and the material's origin Description of the product's manufacture Indication of product processing Information about the in-use conditions Life cycle assessment results Testing results and verifications	
The PCR review was conducted by:	Panel Review	
	Panel Chair: Dr. Lindita Bushi	
	epd@ulenvironment.com	
This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories <input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL	 Wade Stout, UL Environment	
	 Thomas Gloria, Industrial Ecology Consultants	
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:		

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Product Description

Company

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.

Product

The typical application of a gasketing product is along the full perimeter of a door. For a standard 3'x7' door, this would be equivalent to a length of 20' of gasketing, which includes the door bottom. This is typical for all exterior and indoor acoustical doors. Smoke doors on the interior may not use a door bottom seal, and thus would only have 17' of gasketing. However, for the purposes of this EPD, all products were modeled as covering the entire perimeter (20') of the door. Also included in this product group are door edges and astragals.

Product Characterization

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.

Technical Information

Declared unit: Declared unit is 20' of gasketing.

Application

General Standards:

1. ANSI/BHMA A156.22-2012 Door Gasketing and Edge Seal Systems

Other relevant standards include:

1. ANSI/UL10C - Positive Pressure Fire Test of Door Assemblies
2. ANSI/UL10B - Fire Test of Door Assemblies
3. CAN/ULC/S104 - Standard Method for Fire Test of Door Assemblies, Canadian Standard
4. ANSI/UL1784 - Air Leakage Test of Door Assemblies and Other Opening Protectives.

Note: not all products have been certified to the standards listed above. Please see catalog for details.

Delivery Status

The dimension and quantities of the product is 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 a set of gasketing existing of one 3' , two 7' pieces for the perimeter and a 3' door bottom seal.



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Base Materials

Specific material composition is dependent on customer-defined orders. NGP offers their products in a variety of base materials to meet the needs of their customers. Material options include:

Gasketing Finishes

				<u>NGP Suffix:</u>
Aluminum:	Mill Finish	ANSI/BHMA 719	US27	None
	Clear Anodized	ANSI/BHMA 628	US28	A
	Dark Bronze			DKB
	Gold			B
	Polished	ANSI/BHMA 717		POL
	Powder Coated Colors – See Page L2 for details			
Architectural Bronze:	Satin Finish	ANSI/BHMA 728	US4	BR
	Dark Bronze Oil Rubbed	ANSI/BHMA 722	US10B	BR-DKB
	Polished	ANSI/BHMA 721	US3	BR-POL
Stainless Steel:	Brushed (#4)	ANSI/BHMA 630	US32D	None
Gasket Materials:	Neoprene is Black			N
	NGP-TPV is Black			N
	Polyurethane is Black			U
	Vinyl is Gray, except where noted as Black			V
	Silicone colors: Black, Brown, Clear, Gray, Tan, White			S
	Nylon Brush colors: Black, Gray			
	TPE colors: Brown, Charcoal, Clear, White			
	Polypropylene Pile is Gray			
EPDM is Gray				

The specific percentage composition of the above will vary based on the requirements of the customer. Materials can range from 0-100%.

Powder Coat finish is available on most metal gasketing retainers upon request.

Manufacturing

All manufacturing occurs at NGP's Memphis location. Gasketing materials contain metal and non-metal parts. Suppliers extrude metal and non-metals, such as neoprene, silicone, polyurethane, vinyl and nylon. The fastening of metal and non-metal parts occurs at NGP's location. Production is typically a manual process that includes the loading of pre-extruded materials onto equipment that cuts, bends, and hole punches to product specification. For products that are a combination of several parts, employees screw the parts together. Due to the size of the parts, this is often done with a manual screwdriver, although some parts may be combined with a basic power screwdriver. 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.

Electricity is the primary energy source utilized during manufacturing, although some natural gas is utilized. Water is utilized in small quantities.



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Environment and Health During Manufacturing

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

Packaging

Packaging is dependent on the size of the customer's order. Packaging typically includes cardboard, paper packing list and plastic protective sleeves. Wooden pallet skids are utilized when customer order is large enough to warrant its use. All materials are recyclable at the site of installation.

Product Installation

The vast majority of gasketing is installed with #6 x $\frac{3}{4}$ " stainless steel screws. On average, 1.25 screws are required for every foot of installed product.

Environment and Health During Use

There are no environment and health considerations during use.

Re-use Stage

National Guard Products offers an end-of-use recycling program. Contact us regarding our end-of-use product recycling program.

Disposal

Although NGP recommends that products are recycled at the end of their useful life, gasketing can be disposed of in common municipal landfills without additional requirements.



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Life Cycle Assessment

Declared Unit

	Value (low weight product)	Value (Average weight product)	Value (High weight product)	Unit
Gasketing	6.096	6.096	6.096	Meters
Weight per Declared	.496	3.32	38.81	Kg
Fasteners (pieces x	0 (self adhesive)	1.48	1.48	Kg
Declared Unit	.496	4.80	40.29	Kg

System Boundary

According to table 3 of the PCR, a LCA for products in which a functional life is not declared can be one of three options. These options include a Cradle to Shipping Gate LCA, a Cradle to Building LCA or a Cradle to Building-with EOL stage LCA.

This particular LCA is a Cradle to Building-with EOL stage LCA.

A summary of the life cycle stages included in this LCA is presented in the following table.

Module Name	Description	Summary of Included Elements
A1	Product Stage: Raw Material Supply	Raw Material sourcing and processing as defined by secondary data.
A2	Product Stage: Transport	Shipping from supplier to manufacturing site. Fuel use requirements estimated based on product weights and mapped distance.
A3	Product Stage: Manufacturing	Energy, water and material inputs required for manufacturing gasketing and thresholds from raw materials. Packaging Materials included as well.
A4	Construction Process Stage: Transport	Shipping from manufacturing site to project site. Fuel use requirements estimated based on product weights and mapped distance.
A5	Construction Process Stage: Installation	Installation and packaging material waste.
B1	Use Stage: Use	Module Not Declared
B2	Use Stage: Maintenance	Module Not Declared
B3	Use Stage: Repair	Module Not Declared
B4	Use Stage: Replacement	Module Not Declared
B5	Use Stage: Refurbishment	Module Not Declared
C1	EOL: Deconstruction	No inputs required for deconstruction.
C2	EOL: Transport	Shipping from project site to landfill. Fuel use requirements estimated based on product weight and mapped distance.
C3	EOL: Waste Processing	Waste processing not required. All waste can be processed as is.
C4	EOL: Disposal	Assumes all products are sent to landfill. Landfill impacts modeled based on secondary data.
D	Benefits beyond system	Module not declared.



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Estimates and Assumptions

Finish options – Customers have the choice of purchasing National Guard Products' goods with a variety of finishes. These include powder coating, mill finished, bronze finished, etc. It was determined that a generic finish dataset could be used to represent all finish options. This was determined appropriate based on the relatively low impact of finishing compared to the sourcing of the product's main materials.

Landfilling at End of Life – All products were considered to be landfilled at end of life. While recycling is an option, the choice of landfilling represents a conservative estimation of the end of life pathway in lieu of having actual verifiable data related to end of life recycling.

The inclusion of overhead energy, water and waste data was determined appropriate since process specific data was not available.

Cut-off Criteria

All inputs in which data were 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.

List of excluded materials and energy inputs include:

- There were no excluded material and energy inputs in primary data. This was achieved due to the relative simplicity of the products supplied by National Guard Products.
- Some material and energy inputs may have been excluded within the GaBi datasets used for this project. All Gabi datasets have been critically reviewed and conform to the exclusion requirement of the Builder Hardware PCR.

No hazardous and toxic releases, which are mandatory to be monitored and reported to the U.S TRI, are released from the facility.

Background Data

All background data was sourced from GaBi databases. GaBi version 6.4.1.20 was used to complete the assessment.

Data Quality

Geographical Coverage

The geographical scope of the manufacturing portion of the life cycle is Memphis, TN This is National Guard Products' only manufacturing facility. All primary data were collected from this location. The geographic coverage of primary data is considered excellent.

The geographical scope of the raw material acquisition, customer distribution, site installation and use portions of the life cycle is the United States of America. Locations and shipping distance values were determined through the analysis of purchasing and sales data using GIS mapping software. This data is considered very good.

Disposal and end-of-life geographic coverage (i.e. site of disposal location) was assumed based on research relating to the average distance an American lives from a landfill. This data is considered good.

Time Coverage

Primary data were provided by National Guard Products' associates and represent calendar year 2013. Calendar year 2013 was the

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most recently completed 12-month period year at the beginning of the study. Using 2013 data meets the PCR requirements that manufacturer specific data be within the last 5 years. Time coverage of this data is considered very good.

Data necessary to model cradle-to-gate unit processes was sourced from GaBi LCI datasets. Time coverage of the GaBi datasets varies from approximately 2002 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 10-year period.

Technological Coverage

Primary data provided by National Guard Products is specific to the technology that NGP 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 GaBi LCI datasets. Technological coverage of the datasets is considered good relative to the actual supply chain of National Guard Products. While improved life cycle data from suppliers would improve technological coverage, the use of lower quality generic datasets does meet the goal of this LCA.

Allocation Procedures

General principles of allocation were based on ISO14044. Where possible, allocation was avoided. When allocation was necessary it was done on a physical mass basis.

LCA Results

The following tables disclose the life cycle results for NGP's gasketing product line. Impact categories were determined through reference to the BHMA Product Category Rules for Builder Hardware (UL9004).

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TRACI 2.1

TRACI							
		Global Warming Potential	Depletion Potential of Stratospheric Ozone Layer	Acidification Potential	Eutrophication Potential	Photochemical Ozone Creation Potential	Abiotic Depletion Potential of Fossil Resources
		GWP	ODP	AP	EP	POCP	ADPE
		kg CO ² eq.	kg CFC 11 eq.	kg SO ² eq.	kg N eq.	kg O ₃ eq.	MJ Surplus Energy
A1	Max	1.19E+01	2.54E-07	3.68E-02	7.34E-01	1.76E+00	2.91E+01
	Average	1.67E+00	3.88E-09	8.78E-03	3.54E-03	1.81E-01	3.30E+00
	Min	1.77E-02	2.58E-12	4.12E-05	2.50E-06	6.67E-04	2.39E-02
A2	Max	7.21E-01	6.18E-12	3.06E-03	2.91E-04	9.49E-02	1.37E+00
	Average	1.56E-01	1.34E-12	6.63E-04	6.29E-05	2.05E-02	2.97E-01
	Min	9.12E-03	7.81E-14	3.87E-05	3.67E-06	1.20E-03	1.73E-02
A3	Max	1.37E+00	3.86E-10	3.29E-03	2.19E-04	3.36E-02	1.36E+00
	Average	1.37E+00	3.86E-10	3.29E-03	2.19E-04	3.36E-02	1.36E+00
	Min	1.37E+00	3.86E-10	3.29E-03	2.19E-04	3.36E-02	1.36E+00
A4	Max	1.37E+00	3.86E-10	3.29E-03	2.19E-04	3.36E-02	1.36E+00
	Average	1.37E+00	3.86E-10	3.29E-03	2.19E-04	3.36E-02	1.36E+00
	Min	1.37E+00	3.86E-10	3.29E-03	2.19E-04	3.36E-02	1.36E+00
A5	Max	4.81E-03	1.03E-12	7.12E-16	1.47E-20	9.54E-22	1.03E-21
	Average	4.81E-03	1.03E-12	7.12E-16	1.47E-20	9.54E-22	1.03E-21
	Min	4.81E-03	1.03E-12	7.12E-16	1.47E-20	9.54E-22	1.03E-21
B1-7	Max	MND	MND	MND	MND	MND	MND
	Average	MND	MND	MND	MND	MND	MND
	Min	MND	MND	MND	MND	MND	MND
C1	Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Average	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C2	Max	1.09E-01	9.31E-13	4.62E-04	4.38E-05	1.43E-02	2.07E-01
	Average	2.35E-02	2.02E-13	1.00E-04	9.48E-06	3.10E-03	4.48E-02
	Min	1.38E-03	1.18E-14	5.84E-06	5.54E-07	1.81E-04	2.61E-03
C3	Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Average	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C4	Max	7.35E-01	3.62E-13	4.82E-16	2.48E-19	9.05E-22	3.67E-23
	Average	7.09E-02	3.50E-14	4.65E-17	2.39E-20	8.73E-23	3.54E-24
	Min	9.29E-03	4.58E-15	6.09E-18	3.13E-21	1.14E-23	4.63E-25
D	Max	MND	MND	MND	MND	MND	MND
	Average	MND	MND	MND	MND	MND	MND
	Min	MND	MND	MND	MND	MND	MND



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CML 2001-April 2013

CML								
		Global Warming Potential	Depletion Potential of Stratospheric Ozone Layer	Acidification Potential	Eutrophication Potential	Photochemical Ozone Creation Potential	Abiotic Depletion Potential of Non-Fossil Resources	Abiotic Depletion Potential of Fossil Resources
		GWP	ODP	AP	EP	POCP	ADPE	ADPE
		kg CO ² eq.	kg CFC 11 eq.	kg SO ² eq.	kg (PO ⁴) ³⁻ eq.	kg ethane eq.	kg Sb Eq.	MJ Surplus Energy
A1	Max	1.19E+01	2.33E-07	3.66E-02	3.96E-03	3.05E-03	1.54E-03	1.59E+02
	Average	1.67E+00	3.58E-09	9.21E-03	5.48E-04	5.50E-04	5.11E-05	1.82E+01
	Min	1.77E-02	2.43E-12	3.97E-05	4.35E-06	7.70E-06	1.02E-08	2.49E-01
A2	Max	1.19E+01	2.33E-07	3.66E-02	3.96E-03	3.05E-03	1.54E-03	1.59E+02
	Average	1.67E+00	3.58E-09	9.21E-03	5.48E-04	5.50E-04	5.11E-05	1.82E+01
	Min	1.77E-02	2.43E-12	3.97E-05	4.35E-06	7.70E-06	1.02E-08	2.49E-01
A3	Max	1.38E+00	3.63E-10	3.44E-03	2.55E-04	2.38E-04	2.67E-07	1.73E+01
	Average	1.38E+00	3.63E-10	3.44E-03	2.55E-04	2.38E-04	2.67E-07	1.73E+01
	Min	1.38E+00	3.63E-10	3.44E-03	2.55E-04	2.38E-04	2.67E-07	1.73E+01
A4	Max	7.93E-01	6.28E-12	6.67E-04	6.47E-04	3.10E-04	1.03E-07	1.09E+01
	Average	1.72E-01	1.36E-12	1.44E-04	1.40E-04	6.71E-05	2.22E-08	2.37E+00
	Min	1.00E-02	7.93E-14	8.43E-06	8.18E-06	3.92E-06	1.30E-09	1.38E-01
A5	Max	9.87E-23	2.02E-32	1.50E-35	5.62E-40	2.56E-44	5.46E-49	5.87E-49
	Average	9.87E-23	2.02E-32	1.50E-35	5.62E-40	2.56E-44	5.46E-49	5.87E-49
	Min	9.87E-23	2.02E-32	1.50E-35	5.62E-40	2.56E-44	5.46E-49	5.87E-49
B1-7	Max	MND	MND	MND	MND	MND	MND	MND
	Average	MND	MND	MND	MND	MND	MND	MND
	Min	MND	MND	MND	MND	MND	MND	MND
C1	Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Average	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C2	Max	1.11E-01	8.76E-13	9.31E-05	9.02E-05	4.33E-05	1.43E-08	1.53E+00
	Average	2.39E-02	1.90E-13	2.01E-05	1.95E-05	9.36E-06	3.10E-09	3.30E-01
	Min	1.40E-03	1.11E-14	1.18E-06	1.14E-06	5.47E-07	1.81E-10	1.93E-02
C3	Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Average	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C4	Max	6.23E-24	2.89E-36	1.39E-39	7.92E-43	1.10E-46	8.75E-55	2.75E-55
	Average	6.01E-25	2.78E-37	1.34E-40	7.64E-44	1.06E-47	8.44E-56	2.65E-56
	Min	7.87E-26	3.65E-38	1.76E-41	1.00E-44	1.39E-48	1.11E-56	3.48E-57
D	Max	MND	MND	MND	MND	MND	MND	MND
	Average	MND	MND	MND	MND	MND	MND	MND
	Min	MND	MND	MND	MND	MND	MND	MND



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Resource Use

Resource Use											
		RENEWABLE primary energy excluding the RENEWABLE primary energy used as raw materials	Use of RENEWABLE primary energy resources used as raw materials	Total use of RENEWABLE primary energy	Use of NON-RENEWABLE primary energy excluding the NON-RENEWABLE primary energy resources used as raw materials	Use of NON-RENEWABLE primary energy resources use as raw materials	Total use of NON-RENEWABLE primary energy (primary energy and NON-RENEWABLE primary energy resources used as raw materials)	Use of SECONDARY MATERIALS	Use of RENEWABLE SECONDARY FUELS	Use of NON-RENEWABLE SECONDARY FUELS	Use of FRESH WATER resources
		PERE	PERM	PERT	PENRE	PENRM	PENRT	SM	RSF	NRSF	FW
		MJ	MJ	MJ	MJ	MJ	MJ	KG	MJ	MJ	M ³
A1	Max	5.63E+01	0.00E+00	5.63E+01	1.84E+02	0.00E+00	1.84E+02	0.00E+00	0.00E+00	0.00E+00	4.75E+01
	Average	5.51E+00	0.00E+00	5.51E+00	2.20E+01	0.00E+00	2.20E+01	0.00E+00	0.00E+00	0.00E+00	1.02E+01
	Min	2.58E-03	0.00E+00	2.58E-03	3.11E-01	0.00E+00	3.11E-01	0.00E+00	0.00E+00	0.00E+00	5.58E-03
A2	Max	5.63E+01	0.00E+00	5.63E+01	1.84E+02	0.00E+00	1.84E+02	0.00E+00	0.00E+00	0.00E+00	4.75E+01
	Average	5.51E+00	0.00E+00	5.51E+00	2.20E+01	0.00E+00	2.20E+01	0.00E+00	0.00E+00	0.00E+00	1.02E+01
	Min	2.58E-03	0.00E+00	2.58E-03	3.11E-01	0.00E+00	3.11E-01	0.00E+00	0.00E+00	0.00E+00	5.58E-03
A3	Max	6.32E-01	0.00E+00	6.32E-01	2.05E+01	0.00E+00	2.05E+01	0.00E+00	0.00E+00	0.00E+00	4.89E-01
	Average	6.32E-01	0.00E+00	6.32E-01	2.05E+01	0.00E+00	2.05E+01	0.00E+00	0.00E+00	0.00E+00	4.89E-01
	Min	6.32E-01	0.00E+00	6.32E-01	2.05E+01	0.00E+00	2.05E+01	0.00E+00	0.00E+00	0.00E+00	4.89E-01
A4	Max	1.73E-01	0.00E+00	1.73E-01	1.10E+01	0.00E+00	1.10E+01	0.00E+00	0.00E+00	0.00E+00	3.58E-02
	Average	3.74E-02	0.00E+00	3.74E-02	2.38E+00	0.00E+00	2.38E+00	0.00E+00	0.00E+00	0.00E+00	7.74E-03
	Min	2.19E-03	0.00E+00	2.19E-03	1.39E-01	0.00E+00	1.39E-01	0.00E+00	0.00E+00	0.00E+00	4.52E-04
A5	Max	8.22E-50	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
	Average	8.22E-50	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
	Min	8.22E-50	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
B1-7	Max	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
	Average	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
	Min	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
C1	Max	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
	Average	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
	Min	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
C2	Max	2.41E-02	0.00E+00	2.41E-02	1.54E+00	0.00E+00	1.54E+00	0.00E+00	0.00E+00	0.00E+00	4.99E-03
	Average	5.22E-03	0.00E+00	5.22E-03	3.32E-01	0.00E+00	3.32E-01	0.00E+00	0.00E+00	0.00E+00	1.08E-03
	Min	3.05E-04	0.00E+00	3.05E-04	1.94E-02	0.00E+00	1.94E-02	0.00E+00	0.00E+00	0.00E+00	6.31E-05
C3	Max	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
	Average	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
	Min	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
C4	Max	4.84E-57	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
	Average	4.67E-58	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
	Min	6.12E-59	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
D	Max	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
	Average	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND
	Min	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND



ENVIRONMENTAL PRODUCT DECLARATION



National Guard Product
Gasketing

According to ISO 14025

Outputs and Waste

Outputs and Waste									
		Disposed-of-hazardous WASTE	Disposed-of-non-hazardous WASTE	Disposed-of Radioactive WASTE	Component s for reuse	Materials for recycling	Materials for energy recovery	Exported electrical energy	Exported thermal energy
		HWD	NHWD	RWD	CRU	MFR	MET	EEE	EET
		KG	KG	KG	KG	KG	KG	MJ	MJ
A1	Max	0.00E+00	4.66E+01	1.31E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Average	0.00E+00	3.30E+00	1.96E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Min	0.00E+00	1.66E-02	9.02E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A2	Max	0.00E+00	9.45E-02	2.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Average	0.00E+00	2.05E-02	4.59E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Min	0.00E+00	1.19E-03	2.68E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A3	Max	0.00E+00	1.84E+00	1.26E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Average	0.00E+00	1.84E+00	1.26E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Min	0.00E+00	1.84E+00	1.26E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A4	Max	0.00E+00	1.02E-01	2.29E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Average	0.00E+00	2.21E-02	4.96E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Min	0.00E+00	1.29E-03	2.90E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
A5	Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Average	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B1-7	Max	MND	MND	MND	MND	MND	MND	MND	MND
	Average	MND	MND	MND	MND	MND	MND	MND	MND
	Min	MND	MND	MND	MND	MND	MND	MND	MND
C1	Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Average	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C2	Max	0.00E+00	1.43E-02	3.20E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Average	0.00E+00	3.09E-03	6.92E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Min	0.00E+00	1.80E-04	4.04E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C3	Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Average	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C4	Max	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Average	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Min	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D	Max	MND	MND	MND	MND	MND	MND	MND	MND
	Average	MND	MND	MND	MND	MND	MND	MND	MND
	Min	MND	MND	MND	MND	MND	MND	MND	MND



ENVIRONMENTAL PRODUCT DECLARATION



National Guard Product
Gasketing

According to ISO 14025

Comparability of EPDs

Results presented in this EPD are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins, or risks.

Results are not intended to be used to determine superiority of one product over another.

Environmental declarations from different programs may not be comparable.

The comparison of the environmental performance of Builders Hardware using the EPD information shall be based on the product's use in and its impacts on or within the building, and shall consider the complete life cycle with all information modules.

Full conformance with the PCR for North American Builders Hardware products allows EPD comparability only when all stages of a Builders Hardware product's life cycle have been considered. However, variations and deviations are possible.

Life Cycle Assessment Interpretation

A dominance analysis evaluates each life cycle stage and compares the impacts from that stage to the sum of the impacts calculated for all declared modules. A Dominance Analysis was completed for the TRACI results for both the thresholds and the gasketing products.

For gasketing products the A1 life cycle stage (extraction, processing and sourcing of raw material) is responsible for the vast majority of impacts (50-90%) across all impact categories. The A3 stage (manufacturing) is the second most impactful life cycle stage.

References

1. *Life Cycle Assessment, National Guard Products, Product Categories Gasketing and Thresholds. WAP Sustainability Consulting. June. 2015.*
2. Product Category Rule (PCR) for preparing an Environmental Product Declaration (EPD) for Product Group, Builders Hardware UL9004. Version: April 3rd, 2014.
3. ISO 14044: 2006 Environmental Management – Life cycle assessment – Requirements and Guidelines.
4. ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations – Principles and Procedures.