

# Environmental Product Declaration

## USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane

Gypsum, OH



### Features and Benefits

- USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane is a liquid-applied waterproofing and crack isolation membrane and vapor retarder for use over approved substrates in wet areas.
- Can be rolled, brushed, troweled, and sprayed
- Fast drying time allows for quick turnaround time
- Low Permeance Rating (0.38 perms at 20 mils dry thickness) per ASTM E96 Procedure E
- Can be used in steam room/shower without additional vapor retarder
- Bonds directly to stainless steel, PVC, and ABS drains
- One coat on vertical surfaces for smooth substrates such as USG Fiberock® Brand Tile Backerboard
- Two coats on rough substrates such as USG Durock® Brand Cement Board, and for all horizontal applications
- Suitable for waterproofing floors, walls, and countertops



1 SQUARE METER OF APPLIED COATING AT THE WATERPROOFING APPLICATION RATE - 1-GALLON PAIL	CRADLE-TO-GRAVE (A1-C4)
<b>Global Warming Potential (kg CO<sub>2</sub> eq.)</b>	<b>6.77E-01</b>
<b>Ozone Depletion Potential (kg CFC 11 eq.)</b>	<b>4.87E-11</b>
<b>Acidification Potential (kg SO<sub>2</sub> eq.)</b>	<b>1.85E-03</b>
<b>Eutrophication Potential (kg N eq.)</b>	<b>1.49E-04</b>
<b>Photochemical Ozone Creation Potential (kg O<sub>3</sub> eq.)</b>	<b>3.02E-02</b>
<b>Abiotic Resource Depletion Potential Fossil Fuels (MJ, LHV)</b>	<b>1.79E+00</b>

For over a century, sustainable practices have naturally been an inherent part of our business at USG and CGC. Today, they help shape the innovative products that become the homes where we live, the buildings where we work and the arenas where we play. From the product formulations we choose, to the processes we employ, USG and CGC are committed to designing, manufacturing, and distributing products that minimize overall environmental impacts and contribute toward a healthier living space. We believe that transparency of product information is essential for our stakeholders and Environmental Product Declarations (EPDs) are the next step toward an even more transparent USG and CGC. For additional information, visit [usg.com](http://usg.com), [cgcinc.com](http://cgcinc.com) and [usg.ecomedes.com](http://usg.ecomedes.com).



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This declaration is an Environmental Product Declaration (EPD) in accordance with ISO 14025 and ISO 21930; 2017. 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:** In order to support comparative assertions, this EPD meets all comparability requirements stated in ISO 14025:2006. However, differences in certain assumptions, data quality, and variability between LCA data sets may still exist. As such, caution should be exercised when evaluating EPDs from different manufacturers or programs, as the EPD results may not be entirely comparable. Any EPD comparison must be carried out at the construction works level per ISO 21930:2017 guidelines. The results of this EPD reflect an average performance by the product and its actual impacts may vary on a case-to-case basis.

DECLARATION NUMBER	EPD 417	
PROGRAM OPERATOR	ASTM International – 100 Barr Harbor Drive, West Conshohocken, PA USA www.astm.org	
DECLARATION HOLDER	USG Corporation - 550 W. Adams St., Chicago, IL USA	
DECLARED PRODUCT	USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane	
REFERENCE PCR	NSF: PCR for Resinous Floor Coatings; valid through December 17, 2023	
PRODUCT CATEGORY	Resinous floor coating; subcategory thin-mil	
DATE OF ISSUE	2/6/23	
PERIOD OF VALIDITY	5 Years	
CONTENTS OF THE DECLARATION	This EPD is complete and contains the following: <ul style="list-style-type: none"> <li>• Product System Documentation</li> <li>• Life Cycle Calculation Rules</li> <li>• Life Cycle Assessment Results</li> <li>• Further Information</li> <li>• References</li> </ul>	
This declaration was independently verified in accordance with ISO 14025 and ISO 21930:2017 <input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL		Tim Brooke, ASTM International
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:		Thomas P. Gloria, Industrial Ecology Consultants



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## 1. Product System Documentation

### 1.1 Product Description and Product Identification

USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane is an acrylic polymer based product for both commercial and residential tile and stone applications. Suitable substrates include concrete, masonry, cement backerboard, gypsum-fiber panel and gypsum-based cement topping. It can also be used as shower pan liner in accordance with Section 417.5.2.5 of the IPC and Section 408.7 of the UPC. The product changes color when cured.

The USG Durock™ Liquid Waterproofing and Crack Isolation Membrane has the lowest permeance rating (0.38 perms at 20 mils dry thickness) of any liquid waterproofing membrane when tested to ASTM E96 Procedure E. It is ideal not only for showers and other wet areas, but for continuous-use residential and commercial steam showers without additional vapor retarder.

The USG Durock™ Liquid Waterproofing and Crack Isolation Membrane meets the permeance rating requirement of 0.5 perms or less and can be used in steam showers/rooms in accordance with Tile Council of North America (TCNA) 2016 Handbook for Ceramic, Glass, and Stone Tile Installation (SR 613-16 and SR614-16).

The USG Durock™ Liquid Waterproofing and Crack Isolation Membrane achieves "high performance" in system crack resistance test at 30 mils dry thickness when tested in accordance with ANSI A118.12. It can be used for anti-fracture protection up to 1/8 in. (3 mm) over shrinkage and other non-structural cracks. appeal.

Note that coatings typically assessed using the PCR for resinous floor coatings include additional coating layers (i.e. basecoat and topcoat) beyond those manufactured by USG.

### 1.2 Designated Application

USG Durock™ Liquid Waterproofing and Crack Isolation Membrane may also be used as a sealer for USG Durock™ Multi-Use Self-Leveling Underlayments to enhance the bond between the underlayment and the floor-covering adhesive.

### 1.3 Product Technical Data

**Table 1: Summary of the technical data**

PROPERTY	ANSI/ASTM TEST	USG DUROCK™ BRAND LIQUID
Drying time (70°F/50%RH)	N/A	0.5-1.5 h
Fungus and Microorganism resistance	ANSI A118.10	No mold growth
Seam strength	ANSI A118.10/ASTM D751	>8 lb./in.
Breaking strength	ANSI A118.10/ASTM D751	>170 psi
Dimensional stability	ANSI A118.10/ASTM D1204	<0.7%
Waterproofness	ANSI A118.10/ASTM D4068	Pass
Shear strength to ceramic tile and cement mortar	ANSI A118.10/ANSI A118.12/ASTM C482	>50 psi
Water vapor permeance (20 mils dry film thickness)	ASTM E96 (Procedure E)	0.38
Floor installation service rating	ASTM C627	Extra heavy
System crack resistance	ANSI A118.112	High performance at 30 mils dry
Point Load	ANSI A118.12	>1000 lbs.



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For waterproofing applications and for smooth surfaces, this product is applied undiluted at either a coverage of 80-100 ft<sup>2</sup>/gallon for one coat or 40-50 ft<sup>2</sup>/gallon with two coats with each coat at 15-20 mils wet film thickness. Coverage will be lower for porous or rough substrates.

For crack isolation applications and for smooth surfaces, this product is applied undiluted at a coverage of 25-30 ft<sup>2</sup>/gallon with two coats, each coat at 25-30 mils wet thickness. Coverage will be lower for porous or rough substrates

### 1.4 Placing on the Market/Application Rules

USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane must be installed in accordance with all applicable USG installation guidelines. Further detail may be found on the USG.com website.

### 1.5 Delivery Status

USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane is available in 1-gallon and 3.5-gallon plastic pails.

### 1.6 Product Composition

Table 2: Product formula

Ingredient	USG DUROCK™ BRAND LIQUID WATERPROOFING AND CRACK ISOLATION MEMBRANE
Ethylene glycol	< 2%
Titanium dioxide	< 1%
5-Chloro-2-methyl-2H-isothiazoo 1-3-one	< 0.05%

### 1.7 Product Manufacture

USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane is produced and packaged on commercial coating line. The preparation of this product consists of blending the various liquid ingredients using a large volume high shear mixer. Packaging is conducted on a dedicated packaging line adjacent to each blending operation. Rigorous inspections insure that the finished product meets quality requirements. Any waste generated during product manufacturing is shipped to an appropriate landfill using a distance of 32 km (20 miles) by truck. All raw materials utilized a shipping distance of 1207 km (750 miles).

### 1.8 Environment and Health During Manufacturing

USG and CGC have led the building sector's effort in developing and supplying sustainable construction materials. Today, sustainability is integrated into the design and manufacture of USG's wall, ceiling, and flooring products. As both a producer and a buyer of raw materials, we have a responsibility to extensively review and select each material we use. Each decision we make is based on careful consideration of environmental and safety effects over time. Raw materials used in our products are carefully selected and go through a screening procedure. Incoming raw materials are tested for contaminants by an internal lab and third-party labs for consideration of use and worker, environmental, and end-user exposure. This due diligence helps to ensure our products are safe to handle in our manufacturing plants and on job sites while having minimal impact on occupant health and indoor and outdoor environments.



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### 1.9 Packaging

USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane is available in 1-gallon and 3.5-gallon plastic pails from USG's Gypsum, OH facility.

Table 3: A5 Product Packaging Waste per 1 Square Meter of Applied Coating

<u>Module</u>	<u>Packaging</u>	<u>Scenario</u>	<u>Mass of Packaging Waste</u>	<u>GWP Biogenic Content</u>
A5 Installation of the product	1-Gal. Pail	Waterproofing application rate	2.10E-02 kg	0.0 kg
	1-Gal. Pail	Crack isolation application rate	3.44E-02 kg	0.0 kg
	3.5-Gal. Pail	Waterproofing application rate	4.14E-02 kg	0.0 kg
	3.5-Gal. Pail	Crack isolation application rate	6.78E-02 kg	0.0 kg

### 1.10 Conditions of Use

USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane must be installed in accordance with all applicable USG installation guidelines. Approved installation procedures are provided in the various submittal sheets specific to each product and must be followed. Installation of these products is accomplished by manual labor using mostly hand tools. No material or energy inputs are required on the jobsite.

### 1.11 Distribution

As noted in the PCR, the default distances for the transport of finished products from manufacturing to the distribution center is taken to be 402 km (250 miles) and from the distribution center to the point of sale is taken to be 804 km (500 miles) for a total of 1206 km (749) miles) by truck. Final transportation distance from the point of sale to the application site is taken to be 8 km (5 miles) by auto.

### 1.12 Product Installation

USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane must be installed in accordance with all applicable USG installation guidelines. Approved installation procedures are provided in the various submittal sheets specific to each product. Installation of these products is accomplished by manual labor using mostly hand tools. No material or energy inputs are required on the jobsite. A 2% installation waste factor was utilized in this study as dictated in the PCR. The 1-gallon and 3.5-gallon pails are assumed to go to landfill in this study.

### 1.13 Use Stage

USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane is not the final wearable surface and is always intended to be covered by a tile or stone application. As such, this product becomes a permanent part of the floor structure and is not intended to be replaced during the life of the building. Accordingly, there are no use (B1), maintenance(B2), repair(B3), replacement (B4), refurbishment (B5), operation energy (B6), or water (B7) inputs during the life of this product.



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**1.14 Environment and Health During Use Stage**

This product is not expected to produce any unusual hazards during normal use. Proper personal protective gear should be worn by installer for protection.

**1.16 Re-Use Phase**

USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane cannot be reused at the end of a building's life.

**1.17 End-of-Life Disposal**

All waste generated at end-of-life is assumed to be disposed of in an appropriate landfill. The transport distance at end of life is assumed to be 32 km (20 miles).

“Significant data limitations currently exist within the LCI data used to generate waste metrics for Life Cycle Assessments and Environmental Product Declarations. The waste metrics were calculated in a way conformant with the requirements of ISO 21930:2017, but these values represent rough estimates and are for informational purposes only. As such, no decisions regarding actual cradle-grave waste performance between products should be derived from these reported values.”

**2. LCA Calculation Rules**

**2.1 Functional Unit**

For this study, both the declared unit and functional unit are defined to be the quantity of coating required to cover 1 square meter of floor as presented in the submittal sheet for each product.

**Table 3: Functional unit (1 square meter of applied coating)**

<b>Product</b>	<b><u>Recommended Coverage (sf/gal of product)</u></b>	<b><u>Product Weight (lbs./gal)</u></b>	<b><u>Application Rate (lbs. of undiluted product/sf)</u></b>	<b><u>Application Rate (lbs. of undiluted product/m2)</u></b>
<b>USG Durock Liquid Waterproofing and Crack Isolation Membrane (waterproofing application rate)</b>	<b>90</b>	<b>11.0</b>	<b>0.122</b>	<b>1.32</b>
<b>USG Durock Liquid Waterproofing and Crack Isolation Membrane (crack isolation application rate)</b>	<b>55</b>	<b>11.0</b>	<b>0.200</b>	<b>2.15</b>

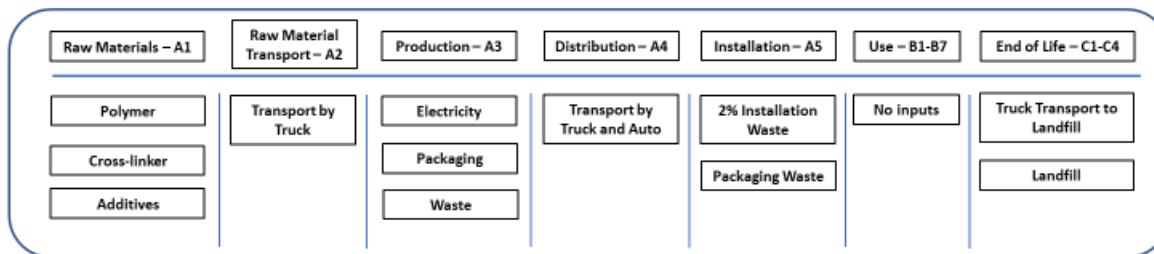


**2.2 Reference Service Life**

USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane is intended to enhance the adhesion of the subfloor to USG Durock™ Brand Multi-Use Self-Leveling Underlayments. USG Durock™ Liquid Waterproofing and Crack Isolation Membrane is not the final wear surface and is always intended to be covered by a self-leveling underlayment and then a finish floor covering. As such it becomes a permanent part of the floor structure and is not intended to be replaced during the life of the building. A default RSL of 60 years is assumed for the product. An assumed Estimated Service Life (ESL) of 60 years shall be used for building life.

**2.3 System Boundary**

This EPD represents a “cradle-to-grave” LCA analysis for USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane. It covers all the production steps from raw material extraction (i.e., the cradle) to end of life disposal (grave).



**Figure 1: Specific processes covered by this EPD by life cycle stage**

**2.4 Estimates and Assumptions**

The results are limited by the choice of proxy processes rather than actual supplier generated primary data. This would include the following processes. A GaBi supplied dataset for a specific polymer was used as a proxy for a vendor-supplied polymer. In addition, the data is limited in that the primary data was collected during 2021 and changes in operations may increase/decrease impacts in the future. Other data limitations include the use of secondary data sets instead of primary data for upstream and downstream processes, local impacts vs. global impacts, possible impacts vs. actual impacts, inherent uncertainty in the data sets, accuracy, and precision of impact assessment methodology, etc. Both human activity and capital equipment were excluded from the system boundary.

**2.5 Cut-off Criteria**

The applicable cut-off rules are described in ISO 21930:2017 clause 7.1.8. The cut-off criteria shall be 1% of renewable primary resource (energy), 1% nonrenewable primary resource (energy) usage, 1% of the total mass input of that unit process and 1% of environmental impacts. The total of neglected input flows per module shall be a maximum of 5% of energy usage, mass, and environmental impacts. For materials characterized as hazardous by the Globally Harmonized System (GHS), cut-off rules do not apply and such substances shall be included in the inventory.

**2.6 Background Data**

All background was sourced from critically reviewed GaBi databases.



### 2.7 Data Requirements and Data Sources

The LCA model was created using the GaBi software from Sphera. Specific comments related to data quality requirements cited in ISO 14025 Section 4.2.3.6.2 include the following.

**Temporal:** In the case of production, the LCI data was collected for the 2021 production year.

**Geographical:** Where possible, all processes were chosen as being representative of US manufacturing processes.

**Technical:** The data selected for this study is specific to the technology used in the preparation of the various raw materials.

**Precision:** The raw material usage amounts were derived from plant quality data and on plant product formulas.

**Completeness:** Virtually all the significant raw material flows (> 99.9%) have been modeled.

**Representative:** Where possible all the data sets were selected to be representative of US-based production, are less than 10 years in age and are representative of the technology being employed.

**Consistency:** All the manufacturing processes were modeled in a consistent manner throughout this study in accordance with the goal and scope definitions.

**Reproducibility:** The information contained in this study, including raw material, energy and transportation distance inputs, have been fully documented in the LCA report.

**Sources of Data:** The sources for the processes used in this study have been fully provided in the LCA report and are representative of the material and energy sources used in actual production.

**Uncertainty:** The relative uncertainty associated with this study has been minimized. No significant assumptions have been made.

### 2.8 Period Under Review

All raw material and energy inputs are for the 2021 calendar year.

### 2.9 Allocation

No allocation was required in this study. The LCI data was collected for the 2021 production year.

### 2.10 Comparability

Per ISO 21930:2017, comparability of product systems using this reference PCR shall only be done in the context of construction works and shall meet all requirements listed in Section 5.5.

Additionally, comparative assertions (i.e., superiority claims vs. a competing product) regarding the specific product system shall not be made in the EPD and any comparison must also consider both the limitations of LCA as only potential impacts are being reported by the EPD (damage is not being assessed). All EPDs must contain the statement on the limitations of the study described in Section 13 of this reference PCR.



**3. Life Cycle Assessment Results**

**Life Cycle Assessment Results**

Product stage				Construction process stage				Use stage				End of life stage			
Raw Material Supply	Transport	Manufacturing	Transport	Construction-Installation Process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational water Use	De-construction Demolition	Transport	Waste processing	Disposal
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

**Figure 2: System Boundary**

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The following results cover the application of USG Durock™ Brand Waterproofing and Crack Isolation Membrane at the waterproofing application rate. These results are specifically for a 1-gallon pail container.

Environmental LCA Results for USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane 1 Square Meter of Applied Coating at the Waterproofing Application Rate - 1-Gallon Pail - Gypsum, OH										
Impact Assessment Method: TRACI 2.1	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Environmental Impact Category		Impact	Impact	Impact	Impact	Impact	Impact	Impact	Impact	Impact
Global Warming	kg CO2 eq.	5.07E-01	1.23E-01	1.83E-02	0.00E+00	0.00E+00	1.44E-03	0.00E+00	2.73E-02	6.77E-01
Ozone Depletion Potential (ODP)	kg CFC 11 eq.	4.77E-11	2.32E-16	9.73E-13	0.00E+00	0.00E+00	2.73E-18	0.00E+00	4.28E-16	4.87E-11
Acidification Potential	kg SO2 eq.	1.60E-03	1.25E-04	6.13E-05	0.00E+00	0.00E+00	4.36E-06	0.00E+00	5.98E-05	1.85E-03
Eutrophication Potential (EP)	kg N eq.	1.03E-04	3.00E-05	1.26E-05	0.00E+00	0.00E+00	4.48E-07	0.00E+00	2.86E-06	1.49E-04
Photochemical Ozone Creation Potential (POCP)	kg O3 eq.	2.52E-02	2.99E-03	7.08E-04	0.00E+00	0.00E+00	9.95E-05	0.00E+00	1.16E-03	3.02E-02
Abiotic Depletion Potential (ADP) - fossil fuels	MJ surplus energy	1.52E+00	2.21E-01	3.92E-02	0.00E+00	0.00E+00	2.69E-03	0.00E+00	1.46E-02	1.79E+00

Resource and Waste Flows for USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane 1 Square Meter of Applied Coating at the Waterproofing Application Rate - 1-Gallon Pail - Gypsum, OH										
Use of Primary Resources	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	4.83E-01	1.02E-01	1.44E-02	0.00E+00	0.00E+00	7.91E-04	0.00E+00	1.69E-02	6.17E-01
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	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
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.20E+01	1.67E+00	3.08E-01	0.00E+00	0.00E+00	2.03E-02	0.00E+00	1.17E-01	1.41E+01
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	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

Secondary material, secondary fuel and recovered energy	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Secondary Material (SM)	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	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	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
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	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
Renewable Energy (RE)	MJ, NCV	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
Consumption of Fresh Water	m3	2.64E-03	5.17E-04	6.62E-05	0.00E+00	0.00E+00	2.84E-06	0.00E+00	2.88E-05	3.25E-03

Additional inventory parameters for transparency	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO2-eq.	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
Emission from calcination and uptake from carbonation	kg CO2-eq.	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO2-eq.	0.00E+00	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO2-eq.	2.80E-04	6.70E-05	7.99E-06	0.00E+00	0.00E+00	1.01E-06	0.00E+00	1.22E-05	3.68E-04
Emissions from combustion of waste from renewable sources used in production processes	kg CO2-eq.	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
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO2-eq.	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

Indicators describing waste	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Hazardous waste disposed	kg	1.09E-06	1.07E-11	2.23E-08	0.00E+00	0.00E+00	8.45E-14	0.00E+00	6.26E-12	1.11E-06
Non-hazardous waste disposed	kg	3.32E-02	3.94E-04	3.28E-02	0.00E+00	0.00E+00	1.75E-06	0.00E+00	5.92E-01	6.58E-01
High-level radioactive waste	kg	2.29E-04	5.18E-06	5.11E-06	0.00E+00	0.00E+00	5.64E-08	0.00E+00	1.33E-06	2.41E-04
Intermediate and low-level waste	kg	NA	NA	NA	NA	NA	NA	NA	NA	NA

Assignments of output flows at the end-of-life	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
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	0.00E+00
Materials for recycling (MR)	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	0.00E+00
Materials for energy recovery (MER)	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	0.00E+00
Recovered energy exported (EE)	MJ, NCV	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



# Environmental Product Declaration

## USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane

Gypsum, OH



The following results cover the application of USG Durock™ Brand Waterproofing and Crack Isolation Membrane at the crack isolation application rate. These results are specifically for a 1-gallon pail container.

Environmental LCA Results for USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane 1 Square Meter of Applied Coating at the Crack Isolation Application Rate - 1-Gallon Pail - Gypsum, OH										
Impact Assessment Method: TRACI 2.1	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Environmental Impact Category		Impact	Impact	Impact	Impact	Impact	Impact	Impact	Impact	Impact
Global Warming	kg CO2 eq.	8.30E-01	2.01E-01	2.99E-02	0.00E+00	0.00E+00	2.36E-03	0.00E+00	4.46E-02	1.11E+00
Ozone Depletion Potential (ODP)	kg CFC 11 eq.	7.81E-11	3.80E-16	1.59E-12	0.00E+00	0.00E+00	4.47E-18	0.00E+00	7.01E-16	7.97E-11
Acidification Potential	kg SO2 eq.	2.62E-03	2.05E-04	1.00E-04	0.00E+00	0.00E+00	7.14E-06	0.00E+00	9.78E-05	3.03E-03
Eutrophication Potential (EP)	kg N eq.	1.68E-04	4.91E-05	2.06E-05	0.00E+00	0.00E+00	7.32E-07	0.00E+00	4.68E-06	2.44E-04
Photochemical Ozone Creation Potential (POCP)	kg O3 eq.	4.13E-02	4.90E-03	1.16E-03	0.00E+00	0.00E+00	1.63E-04	0.00E+00	1.90E-03	4.94E-02
Abiotic Depletion Potential (ADP) - fossil fuels	MJ surplus energy	2.48E+00	3.62E-01	6.41E-02	0.00E+00	0.00E+00	4.41E-03	0.00E+00	2.38E-02	2.94E+00

Resource and Waste Flows for USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane 1 Square Meter of Applied Coating at the Crack Isolation Application Rate - 1-Gallon Pail - Gypsum, OH										
Use of Primary Resources	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	7.90E-01	1.68E-01	2.36E-02	0.00E+00	0.00E+00	1.29E-03	0.00E+00	2.76E-02	1.01E+00
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	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
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.97E+01	2.73E+00	5.05E-01	0.00E+00	0.00E+00	3.33E-02	0.00E+00	1.91E-01	2.31E+01
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	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
Secondary material, secondary fuel and recovered energy										
Secondary Material (SM)	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	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	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
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	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
Renewable Energy (RE)	MJ, NCV	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
Consumption of Fresh Water	m3	4.32E-03	8.47E-04	1.08E-04	0.00E+00	0.00E+00	4.65E-06	0.00E+00	4.71E-05	5.33E-03
Additional inventory parameters for transparency										
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO2-eq.	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
Emission from calcination and uptake from carbonation	kg CO2-eq.	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO2-eq.	0.00E+00	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO2-eq.	4.58E-04	1.10E-04	1.31E-05	0.00E+00	0.00E+00	1.66E-06	0.00E+00	2.00E-05	6.03E-04
Emissions from combustion of waste from renewable sources used in production processes	kg CO2-eq.	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
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO2-eq.	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
Indicators describing waste										
Hazardous waste disposed	kg	1.78E-06	1.75E-11	3.64E-08	0.00E+00	0.00E+00	1.38E-13	0.00E+00	1.03E-11	1.82E-06
Non-hazardous waste disposed	kg	5.43E-02	6.45E-04	5.36E-02	0.00E+00	0.00E+00	2.86E-06	0.00E+00	9.69E-01	1.08E+00
High-level radioactive waste	kg	3.75E-04	8.47E-06	8.36E-06	0.00E+00	0.00E+00	9.22E-08	0.00E+00	2.18E-06	3.94E-04
Intermediate and low-level waste	kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Assignments of output flows at the end-of-life										
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	0.00E+00
Materials for recycling (MR)	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	0.00E+00
Materials for energy recovery (MER)	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	0.00E+00
Recovered energy exported (EE)	MJ, NCV	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



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# Environmental Product Declaration

## USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane

Gypsum, OH



The following results cover USG Durock™ Brand Waterproofing and Crack Isolation Membrane in a 1-gallon pail container.

Environmental LCA Results per Gallon for a 1-Gallon Pail of USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane - Gypsum, OH										
Impact Assessment Method: TRACI 2.1	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Environmental Impact Category	Impact	Impact	Impact	Impact	Impact	Impact	Impact	Impact	Impact	Impact
Global Warming	kg CO2 eq.	4.24E+00	1.03E+00	1.52E-01	0.00E+00	0.00E+00	1.20E-02	0.00E+00	2.28E-01	5.66E+00
Ozone Depletion Potential (ODP)	kg CFC 11 eq.	3.99E-10	1.94E-15	8.13E-12	0.00E+00	0.00E+00	2.29E-17	0.00E+00	3.58E-15	4.07E-10
Acidification Potential	kg SO2 eq.	1.34E-02	1.05E-03	5.09E-04	0.00E+00	0.00E+00	3.65E-05	0.00E+00	5.00E-04	1.55E-02
Eutrophication Potential (EP)	kg N eq.	8.60E-04	2.51E-04	1.04E-04	0.00E+00	0.00E+00	3.74E-06	0.00E+00	2.39E-05	1.24E-03
Photochemical Ozone Creation Potential (POCP)	kg O3 eq.	2.11E-01	2.50E-02	5.91E-03	0.00E+00	0.00E+00	8.33E-04	0.00E+00	9.72E-03	2.52E-01
Abiotic Depletion Potential (ADP) - fossil fuels	MJ surplus energy	1.27E+01	1.85E+00	3.27E-01	0.00E+00	0.00E+00	2.25E-02	0.00E+00	1.22E-01	1.50E+01

Resource and Waste Flows per Gallon for a 1-Gallon Pail of USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane - Gypsum, OH										
Use of Primary Resources	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	4.03E+00	8.55E-01	1.20E-01	0.00E+00	0.00E+00	6.62E-03	0.00E+00	1.41E-01	5.16E+00
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	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
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.00E+02	1.39E+01	2.58E+00	0.00E+00	0.00E+00	1.70E-01	0.00E+00	9.78E-01	1.18E+02
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	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
Secondary material, secondary fuel and recovered energy										
Secondary Material (SM)	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	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	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
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	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
Renewable Energy (RE)	MJ, NCV	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
Consumption of Fresh Water	m3	2.21E-02	4.32E-03	5.53E-04	0.00E+00	0.00E+00	2.38E-05	0.00E+00	2.41E-04	2.72E-02
Additional inventory parameters for transparency										
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO2-eq.	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
Emission from calcination and uptake from carbonation	kg CO2-eq.	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO2-eq.	0.00E+00	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO2-eq.	2.34E-03	5.60E-04	6.68E-05	0.00E+00	0.00E+00	8.47E-06	0.00E+00	1.02E-04	3.08E-03
Emissions from combustion of waste from renewable sources used in production processes	kg CO2-eq.	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
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO2-eq.	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
Indicators describing waste										
Hazardous waste disposed	kg	9.11E-06	8.91E-11	1.86E-07	0.00E+00	0.00E+00	7.07E-13	0.00E+00	5.24E-11	9.30E-06
Non-hazardous waste disposed	kg	2.77E-01	3.29E-03	2.73E-01	0.00E+00	0.00E+00	1.46E-05	0.00E+00	4.95E+00	5.51E+00
High-level radioactive waste	kg	1.91E-03	4.33E-05	4.27E-05	0.00E+00	0.00E+00	4.71E-07	0.00E+00	1.11E-05	2.01E-03
Intermediate and low-level waste	kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Assignments of output flows at the end-of-life										
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	0.00E+00
Materials for recycling (MR)	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	0.00E+00
Materials for energy recovery (MER)	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	0.00E+00
Recovered energy exported (EE)	MJ, NCV	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



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# Environmental Product Declaration

## USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane

Gypsum, OH



The following results cover the application of USG Durock™ Brand Waterproofing and Crack Isolation Membrane at the waterproofing application rate. These results are specifically for a 3.5-gallon pail container.

Environmental LCA Results for USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane 1 Square Meter of Applied Coating at the Waterproofing Application Rate) - 3.5-Gallon Pail - Gypsum, OH										
Impact Assessment Method: TRACI 2.1	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Environmental Impact Category		Impact	Impact	Impact	Impact	Impact	Impact	Impact	Impact	Impact
Global Warming	kg CO2 eq.	5.57E-01	1.27E-01	2.07E-02	0.00E+00	0.00E+00	1.44E-03	0.00E+00	2.73E-02	7.33E-01
Ozone Depletion Potential (ODP)	kg CFC 11 eq.	4.77E-11	2.40E-16	9.73E-13	0.00E+00	0.00E+00	2.73E-18	0.00E+00	4.28E-16	4.87E-11
Acidification Potential	kg SO2 eq.	1.70E-03	1.29E-04	6.70E-05	0.00E+00	0.00E+00	4.36E-06	0.00E+00	5.98E-05	1.96E-03
Eutrophication Potential (EP)	kg N eq.	1.10E-04	3.10E-05	1.45E-05	0.00E+00	0.00E+00	4.48E-07	0.00E+00	2.86E-06	1.59E-04
Photochemical Ozone Creation Potential (POCP)	kg O3 eq.	2.76E-02	3.09E-03	8.19E-04	0.00E+00	0.00E+00	9.95E-05	0.00E+00	1.16E-03	3.28E-02
Abiotic Depletion Potential (ADP) - fossil fuels	MJ surplus energy	1.71E+00	2.28E-01	4.59E-02	0.00E+00	0.00E+00	2.69E-03	0.00E+00	1.46E-02	2.00E+00

Resource and Waste Flows for USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane 1 Square Meter of Applied Coating at the Waterproofing Application Rate - 3.5-Gallon Pail - Gypsum, OH											
Use of Primary Resources	Units	Stage									
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4	
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	5.27E-01	1.06E-01	1.71E-02	0.00E+00	0.00E+00	7.91E-04	0.00E+00	1.69E-02	6.68E-01	
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	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	
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.35E+01	1.72E+00	3.60E-01	0.00E+00	0.00E+00	2.03E-02	0.00E+00	1.17E-01	1.57E+01	
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	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	
Secondary material, secondary fuel and recovered energy		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4	
Secondary Material (SM)	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	0.00E+00	
Renewable Secondary Fuel (RSF)	MJ, NCV	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	
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	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	
Renewable Energy (RE)	MJ, NCV	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	
Consumption of Fresh Water	m3	2.94E-03	5.34E-04	7.29E-05	0.00E+00	0.00E+00	2.84E-06	0.00E+00	2.88E-05	3.57E-03	
Additional inventory parameters for transparency		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4	
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO2-eq.	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	
Emission from calcination and uptake from carbonation	kg CO2-eq.	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO2-eq.	0.00E+00	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Emissions from land use change	kg CO2-eq.	2.85E-04	6.92E-05	8.85E-06	0.00E+00	0.00E+00	1.01E-06	0.00E+00	1.22E-05	3.77E-04	
Emissions from combustion of waste from renewable sources used in production processes	kg CO2-eq.	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	
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO2-eq.	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	
Indicators describing waste		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4	
Hazardous waste disposed	kg	1.09E-06	1.10E-11	2.23E-08	0.00E+00	0.00E+00	8.45E-14	0.00E+00	6.26E-12	1.11E-06	
Non-hazardous waste disposed	kg	3.37E-02	4.07E-04	5.31E-02	0.00E+00	0.00E+00	1.75E-06	0.00E+00	5.92E-01	6.79E-01	
High-level radioactive waste	kg	2.47E-04	5.34E-06	5.73E-06	0.00E+00	0.00E+00	5.64E-08	0.00E+00	1.33E-06	2.59E-04	
Intermediate and low-level waste	kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Assignments of output flows at the end-of-life		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4	
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	0.00E+00	
Materials for recycling (MR)	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	0.00E+00	
Materials for energy recovery (MER)	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	0.00E+00	
Recovered energy exported (EE)	MJ, NCV	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	



# Environmental Product Declaration

## USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane

Gypsum, OH



The following results cover the application of USG Durock™ Brand Waterproofing and Crack Isolation Membrane at the crack isolation application rate. These results are specifically for a 3.5-gallon pail container.

Environmental LCA Results for USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane 1 Square Meter of Applied Coating at the Crack Isolation Application Rate - 3.5-Gallon Pail - Gypsum, OH										
Impact Assessment Method: TRACI 2.1	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Environmental Impact Category	Units	Impact	Impact	Impact	Impact	Impact	Impact	Impact	Impact	Impact
Global Warming	kg CO2 eq.	9.11E-01	2.07E-01	3.39E-02	0.00E+00	0.00E+00	2.36E-03	0.00E+00	4.46E-02	1.20E+00
Ozone Depletion Potential (ODP)	kg CFC 11 eq.	7.80E-11	3.93E-16	1.59E-12	0.00E+00	0.00E+00	4.47E-18	0.00E+00	7.01E-16	7.96E-11
Acidification Potential	kg SO2 eq.	2.78E-03	2.12E-04	1.10E-04	0.00E+00	0.00E+00	7.14E-06	0.00E+00	9.78E-05	3.21E-03
Eutrophication Potential (EP)	kg N eq.	1.80E-04	5.07E-05	2.38E-05	0.00E+00	0.00E+00	7.32E-07	0.00E+00	4.68E-06	2.60E-04
Photochemical Ozone Creation Potential (POCP)	kg O3 eq.	4.52E-02	5.06E-03	1.34E-03	0.00E+00	0.00E+00	1.63E-04	0.00E+00	1.90E-03	5.36E-02
Abiotic Depletion Potential (ADP) - fossil fuels	MJ surplus energy	2.80E+00	3.73E-01	7.52E-02	0.00E+00	0.00E+00	4.41E-03	0.00E+00	2.38E-02	3.28E+00

Resource and Waste Flows for USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane 1 Square Meter of Applied Coating at the Crack Isolation Application Rate - 3.5-Gallon Pail - Gypsum, OH										
Use of Primary Resources	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	8.63E-01	1.73E-01	2.80E-02	0.00E+00	0.00E+00	1.29E-03	0.00E+00	2.76E-02	1.09E+00
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	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
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	2.21E+01	2.82E+00	5.90E-01	0.00E+00	0.00E+00	3.33E-02	0.00E+00	1.91E-01	2.57E+01
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	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
Secondary material, secondary fuel and recovered energy		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Secondary Material (SM)	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	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	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
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	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
Renewable Energy (RE)	MJ, NCV	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
Consumption of Fresh Water	m3	4.80E-03	8.74E-04	1.19E-04	0.00E+00	0.00E+00	4.65E-06	0.00E+00	4.71E-05	5.85E-03
Additional inventory parameters for transparency		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO2-eq.	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
Emission from calcination and uptake from carbonation	kg CO2-eq.	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO2-eq.	0.00E+00	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO2-eq.	4.67E-04	1.13E-04	1.45E-05	0.00E+00	0.00E+00	1.66E-06	0.00E+00	2.00E-05	6.17E-04
Emissions from combustion of waste from renewable sources used in production processes	kg CO2-eq.	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
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO2-eq.	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
Indicators describing waste		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Hazardous waste disposed	kg	1.78E-06	1.80E-11	3.64E-08	0.00E+00	0.00E+00	1.38E-13	0.00E+00	1.03E-11	1.82E-06
Non-hazardous waste disposed	kg	5.51E-02	6.66E-04	8.71E-02	0.00E+00	0.00E+00	2.86E-06	0.00E+00	9.69E-01	1.11E+00
High-level radioactive waste	kg	4.04E-04	8.74E-06	9.38E-06	0.00E+00	0.00E+00	9.22E-08	0.00E+00	2.18E-06	4.24E-04
Intermediate and low-level waste	kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Assignments of output flows at the end-of-life		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
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	0.00E+00
Materials for recycling (MR)	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	0.00E+00
Materials for energy recovery (MER)	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	0.00E+00
Recovered energy exported (EE)	MJ, NCV	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



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# Environmental Product Declaration

## USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane

Gypsum, OH



The following results cover USG Durock™ Brand Waterproofing and Crack Isolation Membrane in a 3.5-gallon pail container.

Environmental LCA Results per Gallon for a 3.5-Gallon Pail of USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane - Gypsum, OH										
Impact Assessment Method: TRACI 2.1	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Environmental Impact Category	Impact	Impact	Impact	Impact	Impact	Impact	Impact	Impact	Impact	Impact
Global Warming	kg CO2 eq.	4.66E+00	1.06E+00	1.73E-01	0.00E+00	0.00E+00	1.20E-02	0.00E+00	2.28E-01	6.14E+00
Ozone Depletion Potential (ODP)	kg CFC 11 eq.	3.99E-10	2.01E-15	8.15E-12	0.00E+00	0.00E+00	2.29E-17	0.00E+00	3.58E-15	4.08E-10
Acidification Potential	kg SO2 eq.	1.42E-02	1.08E-03	5.57E-04	0.00E+00	0.00E+00	3.65E-05	0.00E+00	5.00E-04	1.64E-02
Eutrophication Potential (EP)	kg N eq.	9.23E-04	2.59E-04	1.20E-04	0.00E+00	0.00E+00	3.74E-06	0.00E+00	2.39E-05	1.33E-03
Photochemical Ozone Creation Potential (POCP)	kg O3 eq.	2.31E-01	2.59E-02	6.84E-03	0.00E+00	0.00E+00	8.33E-04	0.00E+00	9.72E-03	2.74E-01
Abiotic Depletion Potential (ADP) - fossil fuels	MJ surplus energy	1.43E+01	1.91E+00	3.84E-01	0.00E+00	0.00E+00	2.25E-02	0.00E+00	1.22E-01	1.68E+01

Resource and Waste Flows per Gallon for a 3.5-Gallon Pail of USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane - Gypsum, OH										
Use of Primary Resources	Units	Stage								
		A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total A1-C4
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	4.42E+00	8.85E-01	1.43E-01	0.00E+00	0.00E+00	6.62E-03	0.00E+00	1.41E-01	5.59E+00
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	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
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	1.13E+02	1.44E+01	3.01E+00	0.00E+00	0.00E+00	1.70E-01	0.00E+00	9.78E-01	1.32E+02
Non-renewable primary resources with energy content used as material (NRPRM)	MJ, NCV	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
Secondary material, secondary fuel and recovered energy										
Secondary Material (SM)	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	0.00E+00
Renewable Secondary Fuel (RSF)	MJ, NCV	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
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	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
Renewable Energy (RE)	MJ, NCV	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
Consumption of Fresh Water	m3	2.46E-02	4.47E-03	6.10E-04	0.00E+00	0.00E+00	2.38E-05	0.00E+00	2.41E-04	2.99E-02
Additional inventory parameters for transparency										
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO2-eq.	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
Emission from calcination and uptake from carbonation	kg CO2-eq.	0.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Removals and emissions associated with biogenic carbon content of the bio-based packaging	kg CO2-eq.	0.00E+00	2.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Emissions from land use change	kg CO2-eq.	2.39E-03	5.79E-04	7.40E-05	0.00E+00	0.00E+00	8.47E-06	0.00E+00	1.02E-04	3.16E-03
Emissions from combustion of waste from renewable sources used in production processes	kg CO2-eq.	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
Emissions from combustion of waste from non-renewable sources used in production processes	kg CO2-eq.	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
Indicators describing waste										
Hazardous waste disposed	kg	9.13E-06	9.22E-11	1.86E-07	0.00E+00	0.00E+00	7.07E-13	0.00E+00	5.24E-11	9.32E-06
Non-hazardous waste disposed	kg	2.82E-01	3.41E-03	4.40E-01	0.00E+00	0.00E+00	1.46E-05	0.00E+00	4.95E+00	5.68E+00
High-level radioactive waste	kg	2.07E-03	4.47E-05	4.79E-05	0.00E+00	0.00E+00	4.71E-07	0.00E+00	1.11E-05	2.17E-03
Intermediate and low-level waste	kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Assignments of output flows at the end-of-life										
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	0.00E+00
Materials for recycling (MR)	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	0.00E+00
Materials for energy recovery (MER)	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	0.00E+00
Recovered energy exported (EE)	MJ, NCV	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

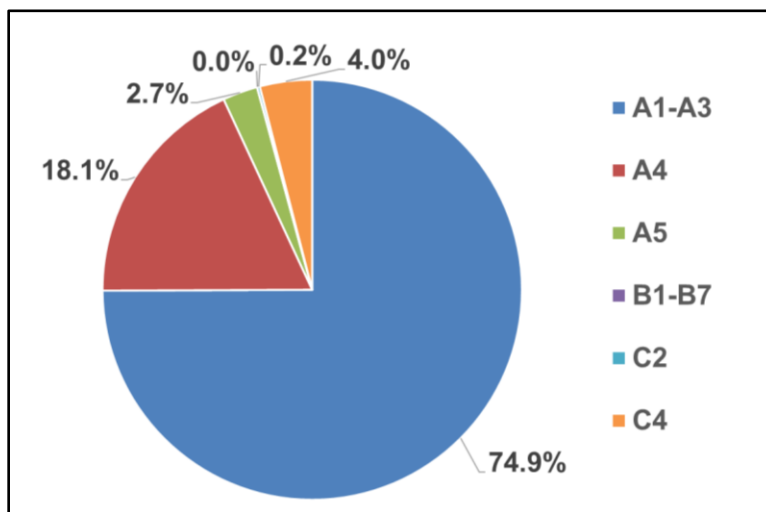


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#### 4. LCA Interpretation

The LCA results for the production of USG Durock™ Brand Liquid Waterproofing and Crack Isolation Membrane were dominated by impacts associated with the polymer content of the product.

**Figure 3: Process Dominance Analysis for GWP 1 Square Meter of Applied Coating at the Waterproofing Application Rate using a 1-Gallon Pail produced at Gypsum, OH**



#### 5. References

##### LCA Report

A Cradle-to-Gate and Cradle-to-Grave Life Cycle Assessment of USG Sealers and Primers, 2/2/23. USG (Confidential)

##### Product PCR

NSF: PCR for Resinous Floor Coatings; valid through December 17, 2023

##### Sustainability Reporting Standards

ISO 14025:2006 - Environmental labels and declarations — Type III environmental declarations — Principles and procedures

ISO 21930:2017 - Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services