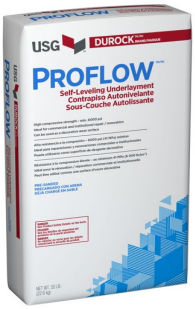
Environmental Product Declaration

USG Durock™ Brand Proflow Self-Leveling Underlayment – Southard, OK

Features and Benefits:

Versatile, high-strength premium poured underlayment for multiple applications

- UL Classified and specified for use in 130+ assemblies
- No mechanical preparation required for most applications
- Exceptionally smooth, crack-resistant surface
- Helps maximize sound isolation between floors
- Third-party tested and certified for low VOCs/low chemical emissions



Physical and Mechanical Properties	*Approximate Values Standard (Metric)*
Mixing Ratio:	3.6–4.8 quarts (3.4 to 4.5 liters) of water per 50 lb. bag
Approximate Compressive Strength ASTM C109 (modified)[1]:	6,000–8,000 psi[2]
Approximate Dry Density:	113–123 lbs./cu. ft.[2]
Approximate Coverage:	21 square feet per bag at 1/4 in. thickness
Approximate Flow Time:	15 minutes[2]
Approximate Final Set ASTM C191:	60-90 minutes
Approximate Walkable (light foot traffic):	2 hours (after set)
Thickness Range:	Featheredge - 1 in.
Packaging:	50 lb. fill form and seal bags

Notes: 1. ASTM C109 modified refers to air drying as opposed to damp curing. 2. Results published herein were achieved under controlled laboratory conditions. Actual field results may differ due to environmental conditions, inconsistent proportioning of field applied water and USG Durock™ ProFlow self-leveling underlayment, as well as differences in mixing/pumping equipment.

LCA RESULTS (TRACI 2.1) – CRADLE TO GATE	
Declared Unit – 1 Metric Ton	**A1-A3 Results**
Global Warming Potential (kg CO_2 eq.)	**2.03E+02**
Ozone Depletion Potential (kg CFC-11 eq.)	**3.03E-08**
Acidification Potential (kg SO_2 eq.)	**3.62E-01**
Eutrophication Potential (kg N eq.)	**5.96E-02**
Photochemical Ozone Creation Potential (kg O_3 eq.)	**9.12E+00**
Abiotic Resource Depletion Potential Fossil Fuels (MJ, LHV)	**3.63E+02**

Environmental Product Declaration

USG Durock™ Brand Proflow

Self-Leveling Underlayment – Southard, OK

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 several 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 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.

DECLARATION NUMBER	EPD 750
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
EPD Type	Type III Declaration per ISO 14025:2006
DECLARED PRODUCT	USG Durock™ Brand ProFlow™ Self-Leveling Underlayment
REFERENCE PCR	ASTM, Product Category Rules for Preparing an Environmental Product Declaration for: Portland Cement, Blended Hydraulic Cement, Masonry and Cement, 2021
DATE OF ISSUE PERIOD OF VALIDITY	08/01/24 5 Years
CONTENTS OF THE DECLARATION	This EPD is complete and contains the following: • Product System Documentation • Life Cycle Calculation Rules • Life Cycle Assessment Results • Further Information • References
This declaration was independently verified in accordance with ISO 14025 and ISO 21930:2017 □ INTERNAL ☒ 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

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, cgcinc.com and usg.ecomedes.com.

1. Product System Documentation

1.1 Product Description and Product Identification

USG Durock™ Brand ProFlow™ self-leveling underlayment is a premium interior cementitious underlayment that provides one of the highest compressive strengths in the industry, more than 6,000 psi. Designed by USG for interior use in commercial, institutional and rehab construction, it provides a smooth, hard underlayment surface over concrete slabs, pre-stressed concrete, or concrete planks at thicknesses from featheredge to 1 inch. Suitable for use with a variety of floor coverings, including commercial-grade resilient floor coverings, USG Durock™ ProFlow self-leveling underlayment can also be used as a decorative wear surface with an approved coating system.

USG Durock™ ProFlow self-leveling underlayment is an economical solution for commercial and institutional floors. Typical applications are less labor intensive than many other types of construction, while the product's high compressive strength minimizes floor damage from trades. Quick set times and high production rates allow light trade traffic within 24 hours of installation. In addition, the exceptional surface hardness of USG Durock™ ProFlow self-leveling underlayment resists indentation.

1.2 Designated Application

The products covered by this EPD are designed for interior use in commercial, multi-family and rehab construction. Suitable for use with a variety of floor coverings, including commercial-grade resilient floor coverings. USG Durock™ ProFlow self-leveling underlayment can also be used as a decorative wear surface with an approved coating system.

1.3 Placing on the Market/Application Rules

USG Durock™ Brand ProFlow™ is sold to distributors and installed by flooring contractors in commercial, multi-family and rehab construction projects.

1.4 Delivery Status

USG Durock™ Brand ProFlow™ Self-Leveling Underlayment products arrive to the customer in fill form and seal paper bags that are stacked on wooden pallets and wrapped with plastic film.

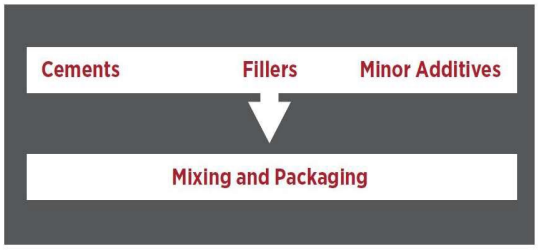
1.5 Product Composition

Table 1: Product specifications and formula

MATERIAL	USG DUROCK™ BRAND PROFLOW™ SELF-LEVELING UNDERLAYMENT
Binder	49.8%
Filler	46.5%
Additives	3.7%
Sum	100%

1.6 Product Manufacture

The manufacture of USG Durock™ Brand ProFlow™ Self-Leveling Underlayment consists of the blending of the dry ingredients followed by packaging into form fill and seal bags. The finished product is then stacked on wooden pallets and wrapped with a plastic film.



1.7 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 every wall, ceiling, and flooring product. 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.

1.8 Packaging

USG Durock™ Brand ProFlow™ Self-Leveling Underlayment is packaged in 80 lb. form fill and seal bags. The finished product is then stacked on wooden pallets and wrapped with a plastic film. All packaging components have been modeled in this study.

1.9 Conditions of Use

To ensure the longevity of the product, products should not be exposed to moisture, high humidity, or high temperature. Criteria can be found in the USG warranty information specific to each product.

1.10 Reference Service Life

The Reference Service Life is considered not to be relevant for this cradle-to-gate study.

2. LCA Calculation Rules

2.1 Functional Unit

The declared unit for this LCA study is one metric tonne of product. This declared unit is consistent with the PCR.

Table 2: Declared Unit

Name	USG Durock™ Brand ProFlow™ Self-Leveling Underlayment
Declared Unit (kg)	**1,000 kg**
Declared Unit (lbs.)	**2205 lbs.**

2.2 System Boundary

This EPD represents a "cradle-to-gate" LCA analysis for USG Durock™ Brand ProFlow™ Self-Leveling Underlayment. It covers all the production steps from raw material extraction (i.e., the cradle) to finished product on wooden pallets (i.e., the gate).

2.3 Estimates and Assumptions

These flooring products are USG products with well-defined formulations, energy inputs and raw material transport distances. No significant assumptions were required, and all minor assumptions were verified by a 3rd party. All material and energy inputs were accounted for as were the raw material transportation mode and distances. Additional data limitations included the use of proxy processes rather than actual supplier generated primary data. This would include such processes as Portland cement, which is representative of US-produced Portland cement but may not necessarily be representative of USG's particular Portland cement supplier. In addition, the data is limited in that the primary data was collected during the 2017 year 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 impacts assessment methodology, etc.

2.4 Cut-off Criteria

All inputs and outputs to a (unit) process were included in the calculation for which data is available. In case of insufficient input data or data gaps for a unit process, the cut-off criteria was 1% of renewable and non-renewable primary energy usage and 1% of the total mass of that unit process. The total neglected input flows did not exceed 1% of energy usage and mass.

2.5 Background Data

All background was sourced from critically reviewed LCA for Experts databases.

2.6 Data Requirements and Data Sources

The LCA model was created using the LCA for Experts 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 2022 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.

2.7 Period Under Review

All raw material and energy inputs are for the 2022 calendar year.

2.8 Allocation

No allocation was required in this study. The LCI data was collected for the 2022 production year.

2.9 Comparability

A comparison or evaluation of EPD data is only possible if all data sets to be compared are 1) created according to EN 15804 and 2) are considered in a whole building context or utilize identical defined use stage scenarios. Comparisons are only allowable when EPDs report cradle-to-gate information using a declared unit. Refer to section 5.3 of EN 15804 for further information. Comparison of the environmental performance of this product 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. Full conformance with the PCR for Cement-based products allows EPD comparability only when all stages of a panel life cycle have been considered. However, variations and deviations are possible.

3. LCA: Scenarios and additional technical information

Life Cycle Assessment Results

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)

	PRODUCTION STAGE			CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES	
	Raw material supply	Transport	manufacturing	Transport from gate to site	Assembly/Install	Use Stage	maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction	Transport	Waste Processing	Disposal	Reuse, Recovery, Recycling Potential	RSL
EPD types	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Cradle to gate - declared unit	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	

	PRODUCTION STAGE			CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES	
	Raw material supply	Transport	manufacturing	Transport from gate to site	Assembly/Instal l	Use Stage	maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction	Transport	Waste Processing	Disposal	Reuse, Recovery, Recycling Potential	RSL
EPD types	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Cradle to grave - functional unit	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	MND	Mandatory

1) Included for a declared scenario
2) Included if all scenarios are given

Figure 1: System Boundary

4.1 Life Cycle Impact Assessment Results

Table 3: LCA Results using TRACI 2.1 Impacts

Environmental LCA Results for 1 Tonne of Durock™ Brand ProFlow Self-Leveling Underlayment (A1-A3)					
Impact Assessment Method: TRACI 2.1		**A1**	**A2**	**A3**	**Total A1-A3**
Environmental Impact Category	Units	Impact	Impact	Impact	Impact
Global warming excl. biogenic carbon	kg CO2 eq.	1.89E+02	2.16E+01	-6.87E+00	2.03E+02
Ozone Depletion Potential (ODP)	kg CFC 11 eq.	6.90E-10	5.61E-14	2.96E-08	3.03E-08
Acidification Potential	kg SO2 eq.	2.40E-01	9.56E-02	2.66E-02	3.62E-01
Eutrophication Potential (EP)	kg N eq.	4.54E-02	8.52E-03	5.68E-03	5.96E-02
Photochemical Ozone Creation Potential (POCP)	kg O3 eq.	5.31E+00	3.25E+00	5.58E-01	9.12E+00
Abiotic Depletion Potential (ADP) - fossil fuels	MJ surplus energy	3.11E+02	4.05E+01	1.15E+01	3.63E+02

Table 4: Additional LCA Results

Resource and Waste Flows Resource and Waste Flows for Durock™ Brand ProFlow Self-Leveling Undelayment (A1-A3)					
Use of Primary Resources	**Unit**	**A1**	**A2**	**A3**	**Total A1-A3**
Renewable primary resources used as an energy carrier (RPRE)	MJ, NCV	3.94E+02	1.22E+01	2.21E+02	6.27E+02
Renewable primary resources with energy content used as material (RPRM)	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources used as an energy carrier (NRPRE)	MJ, NCV	2.56E+03	3.06E+02	9.98E+01	2.97E+03
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
Secondary material, secondary fuel and recovered energy		**A1**	**A2**	**A3**	**Total A1-A3**
Secondary Material (SM)	kg	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
Non-renewable Secondary Fuel (NRSF)	MJ, NCV	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
Consumption of Fresh Water	m3	7.10E-01	4.18E-02	4.02E-02	7.92E-01
Additional inventory parameters for transparency		**A1**	**A2**	**A3**	**Total A1-A3**
Removals and emissions associated with biogenic carbon content of the bio-based product	kg CO2-eq.	-6.10E-01	0.00E+00	0.00E+00	-6.10E-01
Emission from calcination and uptake from carbonation	kg CO2-eq.	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	0.00E+00	-1.24E+01	-1.24E+01
Emissions from land use change	kg CO2-eq.	3.43E-02	2.47E-02	1.07E-02	6.97E-02
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
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
Indicators describing waste		**A1**	**A2**	**A3**	**Total A1-A3**
Hazardous waste disposed	kg	1.31E-04	8.80E-10	9.08E-05	2.22E-04
Non-hazardous waste disposed	kg	4.07E+00	2.66E-02	2.26E+00	6.35E+00
High-level radioactive waste	kg	3.19E-02	8.77E-04	2.78E-03	3.56E-02
Intermediate and low-level waste	kg	N/A	N/A	N/A	N/A
Assignments of output flows at the end-of-life		**A1**	**A2**	**A3**	**Total A1-A3**
Components for re-use (CRU)	kg	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
Materials for energy recovery (MER)	kg	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

5. LCA Interpretation

The LCA results for the production of this product were dominated by raw material contributions. For example, raw material contributions from binders and fillers were responsible for 76% of the global warming impact in a cradle to gate analysis for USG Durock™ Brand ProFlow™ Self-Leveling Underlayment.

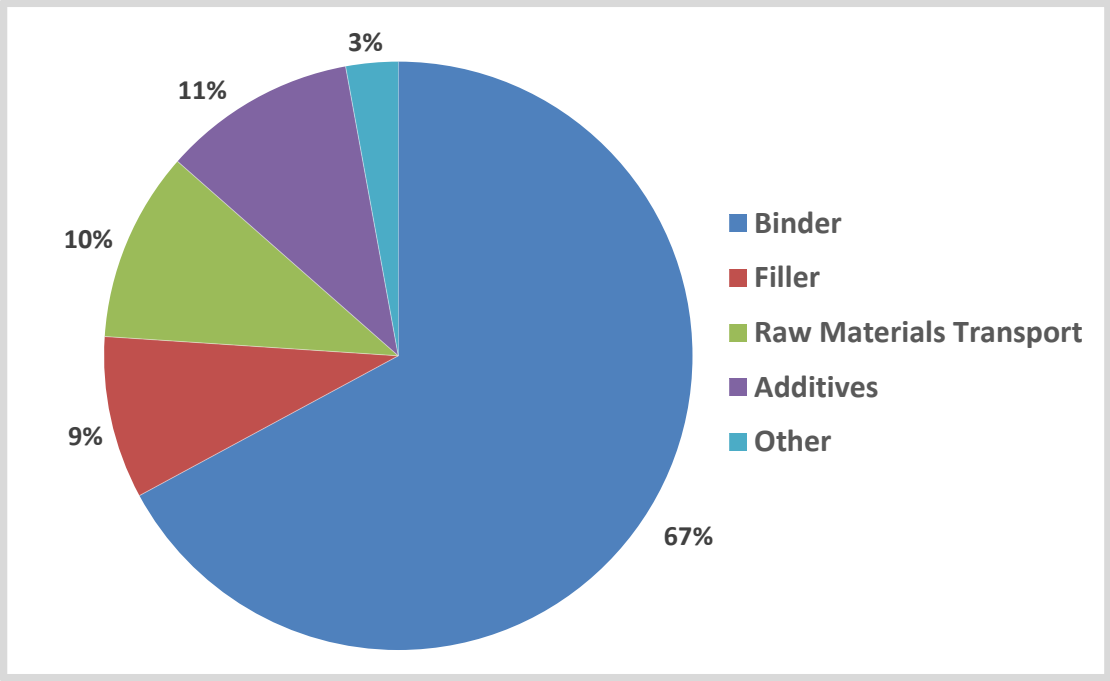


Figure 2:

6. References

LCA Report

A Cradle-to-Gate Life Cycle Assessment of USG Flooring Products produced at Southard, OK, X/XX/23. USG (Confidential)

Product PCR

ASTM, Product Category Rules for Preparing an Environmental Product Declaration for: Portland Cement, Blended Hydraulic Cement, Masonry and Cement, 2021

Sustainability Reporting Standards

EN 15804:2012-04 - Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction product

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

ISO 14040:2006/Amended 1:2020 - Environmental management – Life cycle assessment – Principles and framework

ISO 14044:2006/amended 2: 2020 - Environmental management – Life cycle assessment – Requirements and guidelines

ISO 14046:2013 - Environmental management- Water footprint- Principles, requirements and guidelines

ISO 15392:2008 - Sustainability in building construction- General principles

ISO 15686-1:2011 - Buildings and constructed assets- Service life planning- Part 1: General principles

ISO 15686-2:2008 - Buildings and constructed assets- Service life planning Part 2: Service life prediction procedures

ISO 15686-7:2008 - Buildings and constructed assets- Service life planning Part 7: Performance evaluation for feedback of service life data from practice

ISO 15686-8:2008 - Buildings and constructed assets- Service life planning Part 8: Reference service life and service life estimation

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

ASTM C423-22 (2022), Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method

ASTM E84-22 (2022), Standard Test Method for Surface Burning Characteristics of Building Materials

ASTM E90-09 (2016), Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

ASTM E413 – 22, Classification for Rating Sound Insulation