

ENVIRONMENTAL PRODUCT DECLARATION

BEHR PREMIUM® CONCRETE & MASONRY BONDING PRIMER

INTERIOR/EXTERIOR PRIMER



Shown above: BEHR PREMIUM® Concrete & Masonry Bonding Primer is a water-based primer that promotes a uniform topcoat finish and creates strong adhesion between the coating and surface.

BEHR Paint Company

Behr Paint Company, producer of BEHR® and KILZ® products, is one of the largest manufacturers and suppliers of paint, primers, stains and surface finish products to do-it-yourselfers and professionals. Sustainability is a core concept of our business strategy and culture ensuring top economic, social and environmental performance. Behr Paint Company's commitment to sustainability, quality, value, and performance has driven our desire for innovation and transparency. The creation of a Life Cycle Assessment (LCA) report and Environmental Product Declaration (EPD) allows us to continually improve our operations and illustrate a complete story behind our products.

To learn more, visit behr.com and kilz.com



In order to support comparative assertions, this EPD meets all comparability requirements stated in ISO 14025:2006. However, such 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, as the EPD results may not be entirely comparable. Any EPD comparison must be carried out at the building level per ISO 21930 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.

ENVIRONMENTAL PRODUCT DECLARATION



BEHR PREMIUM® Concrete & Masonry Bonding Primer

According to ISO 14025,
and ISO21930

EPD PROGRAM AND PROGRAM OPERATOR NAME, ADDRESS, LOGO, AND WEBSITE	UL Solutions 333 Pfingsten Rd, Northbrook IL, 60062	www.ul.com www.spot.ul.com
GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER	Program Operator Rules v 2.7 2022	
MANUFACTURER NAME AND ADDRESS	Behr Process LLC 1801 E St Andrew Pl, Santa Ana, CA 92705	
DECLARATION NUMBER	4791080617.131.1	
DECLARED PRODUCT & FUNCTIONAL UNIT OR DECLARED UNIT	1m ² of covered and protected substrate for a period of 60 years with 97% opacity after drying	
REFERENCE PCR AND VERSION NUMBER	PCR for architectural coating: NAICS 325510, NSF (2022)	
DESCRIPTION OF PRODUCT APPLICATION/USE	Exterior Primer	
PRODUCT RSL DESCRIPTION (IF APPL.)	10 years market life used over a 60 year estimated building life	
MARKETS OF APPLICABILITY	North America	
DATE OF ISSUE	November 11, 2024	
PERIOD OF VALIDITY	5 Years	
EPD TYPE	Product-specific	
RANGE OF DATASET VARIABILITY	N/A	
OVERALL DATA QUALITY ASSESSMENT SCORE	Very good	
EPD SCOPE	Cradle to grave	
YEAR(S) OF REPORTED PRIMARY DATA	2021	
LCA SOFTWARE & VERSION NUMBER	Sphera's LCA for Experts (fka GaBi) v10.7.0.183	
LCI DATABASE(S) & VERSION NUMBER	Sphera's Managed LCA Content (fka GaBi) 2023.1	
LCIA METHODOLOGY & VERSION NUMBER	IPCC AR5, TRACI 2.1, CML 2001 (2013)	
The PCR review was conducted by:	NSF International	
	PCR Review Panel	
	ncss@nsf.org	
This declaration was independently verified in accordance with ISO 14025: 2006. <input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL	Cooper McCollum, UL Solutions 	
	Sphera	
This life cycle assessment was conducted in accordance with ISO 14040/44 and the reference PCR by:	Maggie Wildnauer 	
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Maggie Wildnauer, WAP Sustainability	

ENVIRONMENTAL PRODUCT DECLARATION



BEHR PREMIUM® Concrete & Masonry Bonding Primer

According to ISO 14025,
ISO 21930

LIMITATIONS

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; the level of accuracy in estimation of effect differs for any particular product line and reported impact.

Comparability: EPDs from different programs may not be comparable. Full conformance with a PCR allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible". Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared.



BEHR PREMIUM® Concrete & Masonry Bonding Primer

According to ISO 14025,
ISO 21930

1. Product Definition and Information

1.1. Description of Company/Organization

Founded in 1947, Behr Paint Company's unwavering commitment to quality, innovation, and value has helped foster their growth into one of the largest manufacturers of paints, primers, decorative finishes, stains, surface preparation and application products for DIYers and professionals in North America. With operations in the United States, Canada, and Mexico, this Santa Ana, California based company has worked diligently to deliver the quality brands, BEHR®, KILZ®, and WHIZZ® to meet the coating, color, and application needs of consumers, designers and professional paint contractors resulting in BEHR® becoming one of the most trusted brands in America. BEHR® paint delivers superior value at every price point so everyone can transform their space into the look they want, with the colors they love.

1.2. Product Description

Product Identification

BEHR PREMIUM® Concrete & Masonry Bonding Primer is a high performance, ready-to-use, water-based prep product designed specially to promote optimum adhesion to interior and exterior surfaces. Its water-thin viscosity penetrates concrete and masonry to form a better bonding profile for the topcoat. For properly prepared bare or previously coated concrete and masonry, this primer provides a sound surface with excellent resistance to alkali and efflorescence. BEHR PREMIUM® Concrete & Masonry Bonding Primer is available in gallon and 5-gallon sized containers.

Product Specification

Table 1. Specifications for BEHR PREMIUM® Concrete & Masonry Bonding Primer

SKU	FILL / MAX TINT LOAD	RESIN TYPE	% SOLIDS BY VOLUME	% SOLIDS BY WEIGHT	FILM THICKNESS @ 350 SQ FT/GL	FILM THICKNESS @ 500 SQ FT/GL	VISCOSITY (#1 ZAHN)
880	128 fl oz 0 fl oz*	Silicate/Acrylic	13% ± 2%	17% ± 2%	Wet: 4.6 mils Dry: 0.7 mils	Wet: 4.0 mils Dry: 0.6 mils	18 – 30 sec

*DO NOT TINT



ENVIRONMENTAL PRODUCT DECLARATION



BEHR PREMIUM® Concrete & Masonry Bonding Primer

According to ISO 14025,
ISO 21930

1.3. Application

Recommended application information for BEHR PREMIUM® Concrete & Masonry Bonding Primer is as follows:

Brush: nylon/polyester

Roller: 3/8" – 1/2" nap roller cover

Spray: High Quality Pump Spray

Thinning: DO NOT THIN. Product is formulated for use at package consistency.

Behr Paint Company does not have emissions data for BEHR PREMIUM® Concrete & Masonry Bonding Primer so calculations were made utilizing the VOC content which is 2.2 g/l. Federally accepted test methods outlined by the EPA were used to determine the VOC content. VOC content in g/L for each SKU is shown in Table 2.

Table 2. VOC content (g/L)

	880 – C&M BONDING PRIMER
VOC (g/L of paint)	2.2

1.4. Material Composition

The material composition of the product is shown in Table 3.

Table 3. Material composition range in weight % for BEHR PREMIUM® Concrete & Masonry Bonding Primer

MATERIAL	880
Additive	10 - 15%
Resin/Binder	20 - 25%
Water	60 - 65%





1.5. Manufacturing

As shown in Figure 1, manufacturing begins with metering of raw materials, followed by the pre-mix, dispersion, and let-down steps. The finished paint is dispensed into cans, and/or pails, which are then labeled, boxed, and loaded onto pallets for distribution.

Flow Diagram

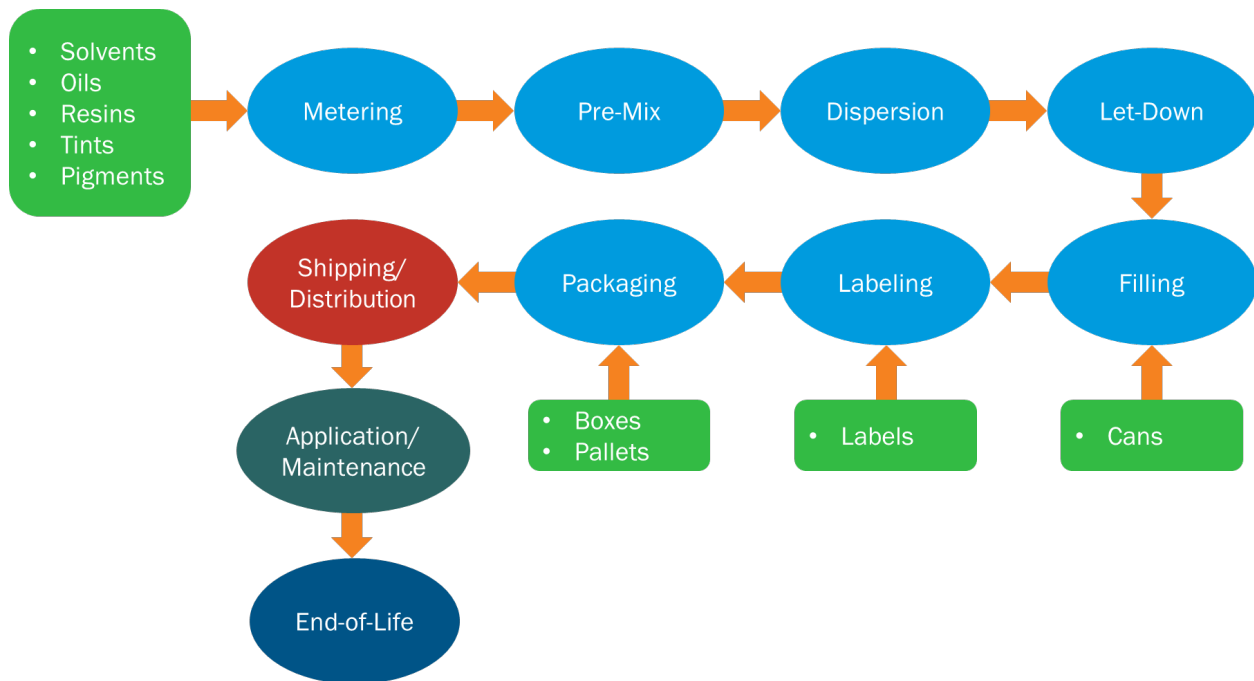


Figure 1. Flow diagram for cradle-to-grave LCA of BEHR PREMIUM® Concrete & Masonry Bonding Primer

1.6. Packaging

Table 4 provides descriptions, volumes, and materials for the primary paint packaging used for BEHR PREMIUM® Concrete & Masonry Bonding Primer. These packages are then placed in cardboard boxes and loaded onto heat-treated wooden pallets for distribution.

Table 4. Description of primary paint packaging

CONTAINER	VOLUME	MATERIAL
Can	Gallon	Polypropylene
Pail	5 Gallons	High Density Polyethylene



ENVIRONMENTAL PRODUCT DECLARATION



BEHR PREMIUM® Concrete & Masonry Bonding Primer



According to ISO 14025,
ISO 21930

1.7. Transportation

Raw materials and packaging are transported to each of the production facilities via truck or rail. After production and packaging, the paint is sent to one of twelve distribution centers by truck before being trucked to individual The Home Depot stores. Weighted average distances are calculated for transportation from distribution centers to stores in seven different regions.

1.8. Product Installation and Use

The use stage begins when the user applies the product to a substrate. This stage does not require any energy or additional cleaning inputs, but includes the VOCs emitted during application and drying.

1.9. Reference Service Life and Estimated Building Service Life

Per the PCR, all results declared are calculated for a market life of 10 years. The estimated building life is 60 years per the PCR.

1.10. Reuse, Recycling, and Energy Recovery

The Home Depot stores encourage customers to use PaintCare or local paint recycling programs.

1.11. Disposal

Product end-of-life occurs with the disposal of the substrate material. 100% of the waste is disposed of in a landfill at the end-of-life stage and cannot be separated from the substrate before disposal. Packaging is recovered at a rate of 6.2% for plastics, 33.9% for metals, and 80.9% for paper and corrugated material. Recovery rates represent the average fractions of waste recovered in the US.





BEHR PREMIUM® Concrete & Masonry Bonding Primer

According to ISO 14025,
ISO 21930

2. Life Cycle Assessment Background Information

2.1. Functional or Declared Unit

The functional unit for the study is:

Covering and protecting 1 m² of substrate for a period of 60 years (the assumed lifetime of a building), exhibiting 97% opacity after drying

The functional unit and reference flow required for the functional unit were calculated for the market life as prescribed by the PCR. Only a market-based lifetime is utilized because primers do not merit the types of performance testing outlined in the PCR. The lifetime and reference flow are shown in Table 5.

For further technical information on BEHR PREMIUM® Concrete & Masonry Bonding Primer, visit www.behr.com.

Table 5. Sheen, base, market life, and reference flows for each product

SKU	SHEEN	BASE	MARKET LIFETIME (YEARS)	PAINT PER UNIT AREA (KG/M ²)	COLORANT PER UNIT AREA (KG/M ²)
880	Flat	White	10	0.086	0.0000

2.2. System Boundary

The LCA was performed according to ISO 14040 standards. The system boundary is cradle-to-grave, and includes the following modules as defined in the PCR. The declaration covers BEHR PREMIUM® Concrete & Masonry Bonding Primer sold in the North American market for the reference year 2021.



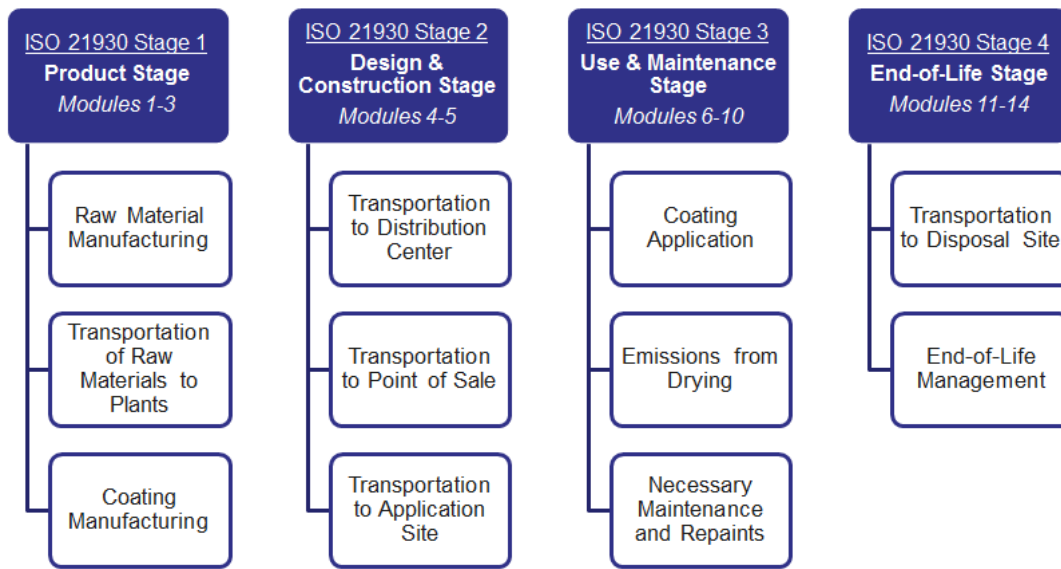


Figure 2. System boundaries for cradle to grave LCA

2.3. Estimates and Assumptions

The modeling approach makes assumptions that are prescribed by the PCR, such as in packaging disposal and recovery treatment, as well as transportation distances and use phase assumptions.

2.4. Cut-off Criteria

No cut-off criteria was defined by this study. For processes within the system boundary, all available energy and material flow data have been included in the model.

2.5. Data Sources and Quality

Primary data, for the 2021 reference year, was obtained from three of Behr’s production facilities that produce BEHR PREMIUM® Concrete & Masonry Bonding Primer. Those facilities are located in Chicago Heights, IL; Allentown, PA and Santa Ana, CA. Background data was obtained from the GaBi 2023.1 database and is representative of the years 2012-2021. Overall, both primary and background data are representative of the product system and have been deemed very good quality.





2.6. Period under Review

The period under review is 2021.

2.7. Allocation

Manufacturing inputs for the three facilities were allocated to each paint product by volume.

3. Life Cycle Assessment Results

In accordance with the PCR, TRACI 2.1 impact characterization methodology is used to calculate the declared environmental impacts, except for global warming potential and abiotic resource depletion, which follow the methodology in the IPCC 5th assessment report, and CML, respectively (Table 6). Additional inventory metrics are also calculated per the guiding PCR. The declared impacts and inventory metrics are summarized in this section. The total LCIA results for market life for each impact category are provided in Table 7.

Furthermore, the results of each impact category for each stage are presented in Table 8 to Table 13. Additionally, in this section, the LCI results for each stage are presented along with the total LCI results for each impact category.

3.1. Life Cycle Impact Assessment Results

Table 6. Environmental impact categories for North America

PARAMETER	DESCRIPTION	LCIA METHOD	UNIT
GWP	Global warming potential, fossil	IPCCC AR5 (2013)	kg CO ₂ eq.
ODP	Stratospheric ozone layer depletion potential	TRACI 2.1	kg CFC 11 eq.
AP	Land and water acidification potential	TRACI 2.1	kg SO ₂ eq.
EP	Eutrophication potential	TRACI 2.1	kg N eq.
SFP	Tropospheric ozone photochemical oxidant (smog) formation potential	TRACI 2.1	kg O ₃ eq.
ADPf	Abiotic resource potential for fossil resources	CML 2001	MJ



ENVIRONMENTAL PRODUCT DECLARATION



BEHR PREMIUM® Concrete & Masonry Bonding Primer

According to ISO 14025,
ISO 21930

Table 7. Total LCIA results for the product, per 1 m² for 60 years by market life

SKU	GWP KG CO ₂ EQ.	AP KG SO ₂ EQ.	EP KG N EQ.	ODP KG CFC 11 EQ.	SFP KG O ₃ EQ.	ADPF MJ
880	7.85E-01	1.61E-03	2.47E-04	1.70E-14	3.33E-02	1.79E+01

Table 8. GWP LCIA results for the product, per 1 m² for 60 years by market life (kg CO₂ eq.)

SKU	STAGE 1	STAGE 2	STAGE 3	STAGE 4	TOTAL
880	5.84E-01	1.86E-01	0.00E+00	1.57E-02	7.85E-01

Table 9. AP LCIA results for the product, per 1 m² for 60 years by market life (kg SO₂ eq.)

SKU	STAGE 1	STAGE 2	STAGE 3	STAGE 4	TOTAL
880	1.16E-03	3.82E-04	0.00E+00	6.85E-05	1.61E-03

Table 10. EP LCIA results for the product, per 1 m² for 60 years by market life (kg N eq.)

SKU	STAGE 1	STAGE 2	STAGE 3	STAGE 4	TOTAL
880	9.27E-05	5.02E-05	0.00E+00	1.04E-04	2.47E-04

Table 11. ODP LCIA results for the product, per 1 m² for 60 years by market life (kg CFC-11 eq.)

SKU	STAGE 1	STAGE 2	STAGE 3	STAGE 4	TOTAL
880	1.53E-14	1.30E-15	0.00E+00	3.79E-16	1.70E-14

Table 12. SFP LCIA results for the product, per 1 m² for 60 years by market life (kg O₃ eq.)

SKU	STAGE 1	STAGE 2	STAGE 3	STAGE 4	TOTAL
880	2.21E-02	6.94E-03	2.98E-03	1.23E-03	3.33E-02





BEHR PREMIUM® Concrete & Masonry Bonding Primer

According to ISO 14025,
ISO 21930

Table 13. ADPf LCIA results for the product, per 1 m² for 60 years by market life (MJ)

SKU	STAGE 1	STAGE 2	STAGE 3	STAGE 4	TOTAL
880	1.47E+01	3.24E+00	0.00E+00	1.96E-02	1.79E+01

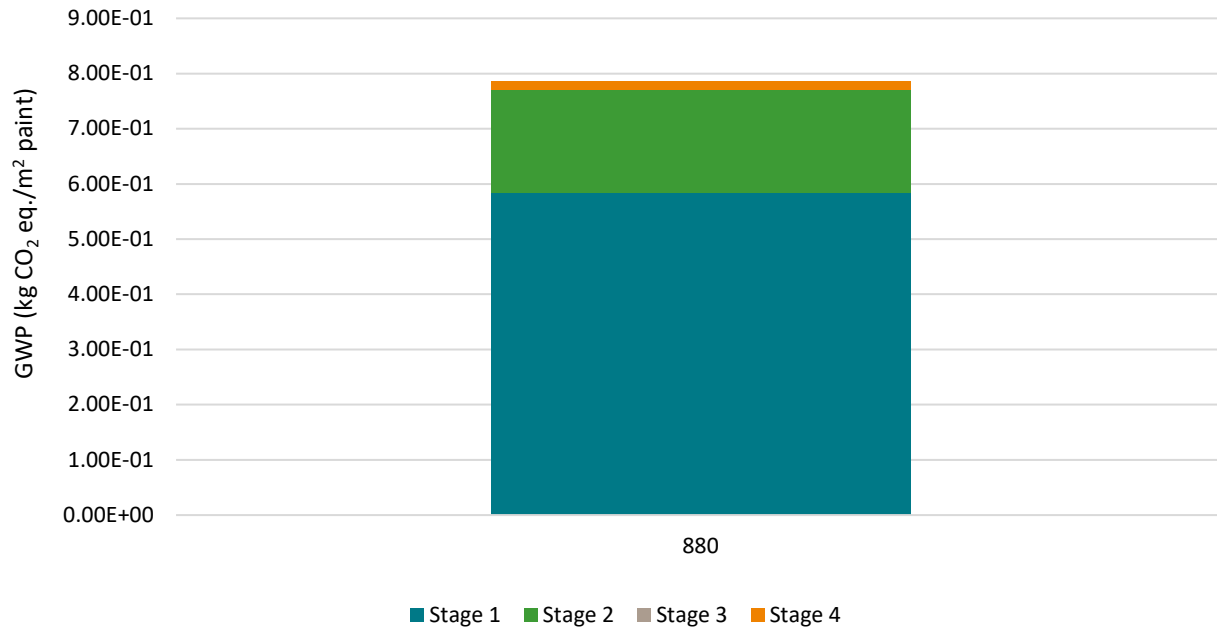


Figure 3: GWP results by stage by market life





BEHR PREMIUM® Concrete & Masonry Bonding Primer

According to ISO 14025,
ISO 21930

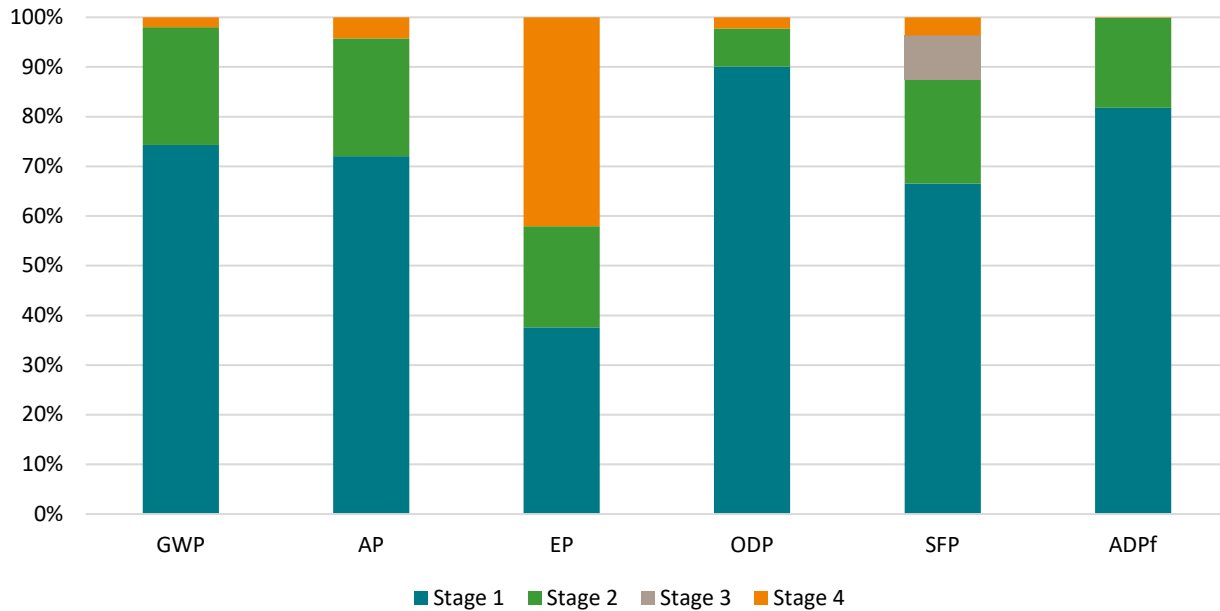


Figure 4. LCIA contribution results for 880

3.2. Life Cycle Inventory Results

Table 14. Total Resource use results for the product, per 1 m² for 60 years by market life

SKU	RPR _E MJ	RPR _M MJ	NRPR _E MJ	NRPR _M MJ	SM KG	RSF MJ	NRSF MJ	RE MJ	FW M ³
880	8.51E-01	1.41E-01	1.41E+01	4.37E+00	2.73E-04	0	0	0	3.74E-03

Table 15. RPR_E results for the product, per 1 m² for 60 years by market life (MJ)

SKU	Stage 1	Stage 2	Stage 3	Stage 4	Total
880	6.90E-01	1.43E-01	0.00E+00	1.87E-02	8.51E-01

Table 16. RPR_M results for the product, per 1 m² for 60 years by market life (MJ)

SKU	Stage 1	Stage 2	Stage 3	Stage 4	Total
880	1.41E-01	0.00E+00	0.00E+00	0.00E+00	1.41E-01



ENVIRONMENTAL PRODUCT DECLARATION



BEHR PREMIUM® Concrete & Masonry Bonding Primer

According to ISO 14025,
ISO 21930

Table 17. NRPR_e results for the product, per 1 m² for 60 years by market life (MJ)

SKU	Stage 1	Stage 2	Stage 3	Stage 4	Total
880	1.08E+01	3.30E+00	0.00E+00	1.77E-02	1.41E+01

Table 18. NRPR_m results for the product, per 1 m² for 60 years by market life (MJ)

SKU	Stage 1	Stage 2	Stage 3	Stage 4	Total
880	4.37E+00	0.00E+00	0.00E+00	0.00E+00	4.37E+00

Table 19. SM results for the product, per 1 m² for 60 years by market life (kg)

SKU	Stage 1	Stage 2	Stage 3	Stage 4	Total
880	2.73E-04	0.00E+00	0.00E+00	0.00E+00	2.73E-04

Table 20. FW results for the product, per 1 m² for 60 years by market life (m³)

SKU	Stage 1	Stage 2	Stage 3	Stage 4	Total
880	2.86E-03	8.78E-04	0.00E+00	-2.29E-06	3.74E-03

Table 21. Total output and waste results for the product, per 1 m² for 60 years by market life

SKU	HWD %	NHWD %
880	0.17%	99.83%

Table 22. Waste results for the product, per 1 m² for 60 years by market life

SKU	Waste	Stage 1	Stage 2	Stage 3	Stage 4	Total
880	HWD	3.73%	0.00%	0.00%	0.00%	0.17%
	NHWD	96.27%	0.00%	0.00%	100.00%	99.83%



ENVIRONMENTAL PRODUCT DECLARATION



BEHR PREMIUM® Concrete & Masonry Bonding Primer

According to ISO 14025,
ISO 21930

Table 23. Energy resource use results for the product, per 1 m² for 60 years by market life

SKU	BIO ENERGY MJ	FOSSIL ENERGY MJ	HYDRO/WIND ENERGY MJ	NUCLEAR ENERGY MJ	OTHER RENEWABLE ENERGY MJ	NON-RENEWABLE ENERGY RESOURCES KG	RENEWABLE ENERGY RESOURCES KG
880	3.89E-09	1.79E+01	2.82E-01	5.41E-01	7.11E-01	4.87E-01	-6.83E-08

Table 24. Bio-energy results for the product, per 1 m² for 60 years by market life (MJ)

SKU	Stage 1	Stage 2	Stage 3	Stage 4	Total
880	3.42E-09	-4.15E-12	0.00E+00	4.74E-10	3.89E-09

Table 25. Fossil energy results for the product, per 1 m² for 60 years by market life (MJ)

SKU	Stage 1	Stage 2	Stage 3	Stage 4	Total
880	1.47E+01	3.24E+00	0.00E+00	1.96E-02	1.79E+01

Table 26. Hydro/ Wind energy results for the product, per 1 m² for 60 years by market life (MJ)

SKU	Stage 1	Stage 2	Stage 3	Stage 4	Total
880	2.50E-01	2.90E-02	0.00E+00	3.09E-03	2.82E-01

Table 27. Nuclear energy results for the product, per 1 m² for 60 years by market life (MJ)

SKU	Stage 1	Stage 2	Stage 3	Stage 4	Total
880	4.85E-01	5.79E-02	0.00E+00	-1.97E-03	5.41E-01

Table 28. Other energy results for the product, per 1 m² for 60 years by market life (MJ)

SKU	Stage 1	Stage 2	Stage 3	Stage 4	Total
880	5.82E-01	1.14E-01	0.00E+00	1.56E-02	7.11E-01





BEHR PREMIUM® Concrete & Masonry Bonding Primer

According to ISO 14025,
ISO 21930

Table 29. Non-renewable resource results for the product, per 1 m² for 60 years by market life (kg)

SKU	Stage 1	Stage 2	Stage 3	Stage 4	Total
880	3.82E-01	1.04E-01	0.00E+00	7.54E-04	4.87E-01

Table 30. Renewable resource results for the product, per 1 m² for 60 years by market life (kg)

SKU	Stage 1	Stage 2	Stage 3	Stage 4	Total
880	1.48E-08	1.10E-11	0.00E+00	-8.31E-08	-6.83E-08

4. Additional Environmental Information

4.1. Further Information

For further information visit behr.com and kilz.com.

5. References

- LCA EF 2023 Sphera Solutions Inc; Life Cycle Assessment for Experts: Software-System and Database for Life Cycle Engineering. Chicago, IL, USA, 1992-2023. <https://sphera.com/life-cycle-assessment-lca-database/>
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- ISO 14040 ISO 14040:2009-11 Environmental management - Life cycle assessment - Principles and framework
- ISO 14044 ISO 14044:2006-10 Environmental management - Life cycle assessment - Requirements and guidelines
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- USEPA 2012 NUS Environmental Protection Agency. (2012). *Tool for the Reduction and Assessment of Chemical and other Environmental Impacts (TRACI) – User’s Manual*. Washington, D.C.: U.S. EPA.
- USEPA 2020 US Environmental Protection Agency. (2015, June). *Advancing Sustainable Materials Management: 2018 Tables and Figures. Assessing Trends in Material Generation, Recycling and Disposal in the United States*. Retrieved from US EPA: https://www.epa.gov/sites/default/files/2021-01/documents/2018_tables_and_figures_dec_2020_fnl_508.pdf



ENVIRONMENTAL PRODUCT DECLARATION



BEHR PREMIUM® Concrete & Masonry Bonding Primer



According to ISO 14025,
ISO 21930

6. Contact Information

6.1. Study Commissioner



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6.2. LCA Practitioner



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