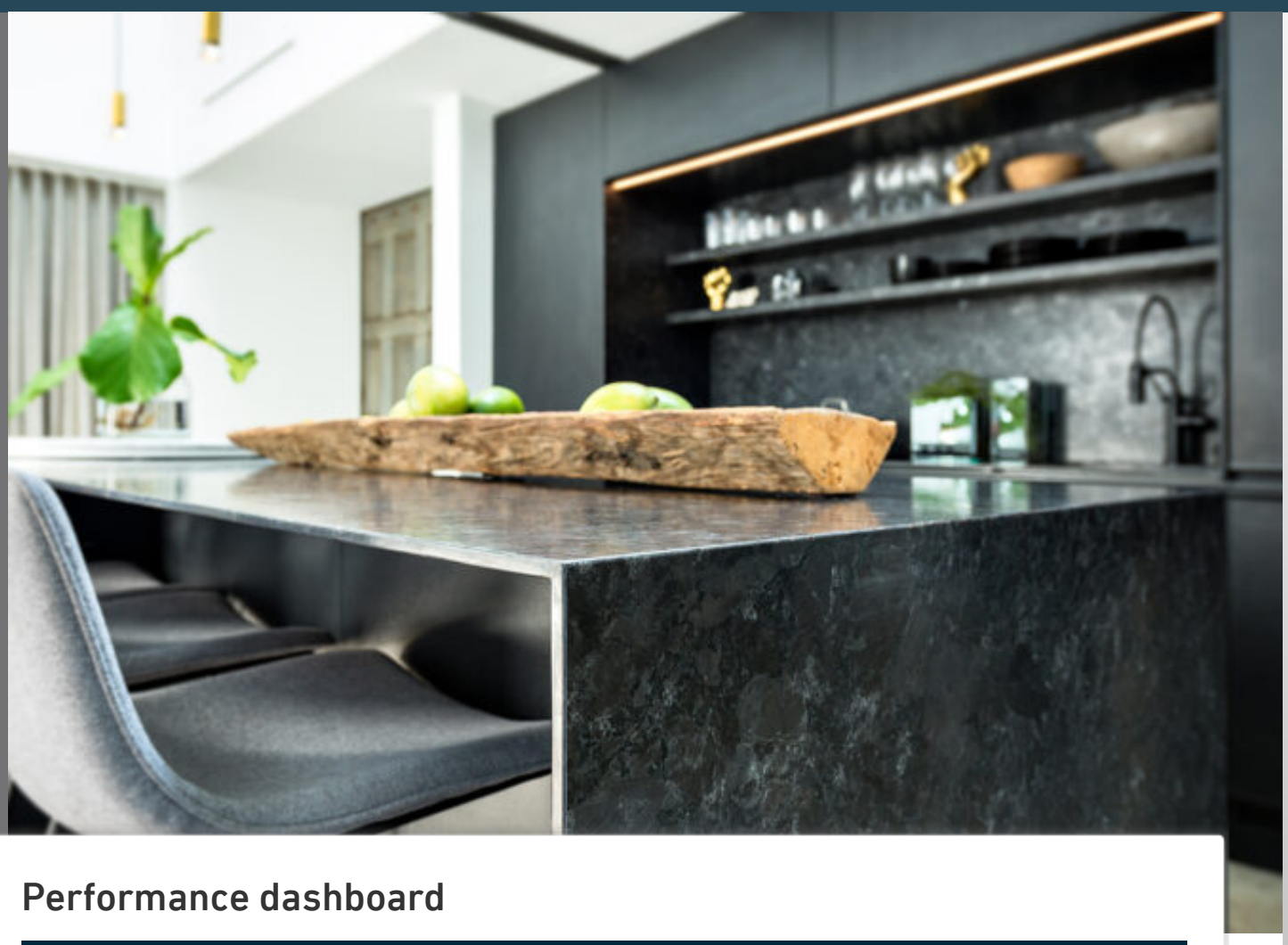
POLYCOR

Granite Countertops

The slab of granite supplied to fabricators and dealers is a semi-processed product that can be installed in a kitchen of any other space. Polycor's top-quality countertops offer an large choice of colors & finishes. Granite being the most durable surface material, it makes sense aethetically and financially to bring this natural and healthy material on top of everything.



Performance dashboard

Features & functionality

Covers the wide selection of Polycor's heritage granites and any surface finishes available

Has an unmatched durability and minimal maintenance needs

Includes ultra-thin countertops 1CM

Visit Polycor for more product information

Granites
Countertops
Ultra-thin 1CM slabs

Environment & materials

Polycor's commitment to carbon neutrality translates into:

Reduction of product's GWP

Reduction of product's energy intensity

Polycor's ownship of the chain of custody from quarries to plants ensures:

No child labor and forced labor

Materials remain 100% natural, free from chemicals or dyes

Certifications & rating systems:

Environmental Product Declaration (EPD)

Natural Stone Sustainability Standard (ANSI 373)

Health Product Declaration (HPD)

MasterFormat® 12 36 40

Granite Countertops Guide Specs

For spec help, contact us or call 418.692.4695

See LCA, interpretation & rating systems

SM Transparency Report (EPD)™

VERIFICATION	LCA
3rd-party reviewed	✓
Transparency Report (EPD)	
3rd-party verified	✓

Validity: 2023/02/13 – 2028/02/12

Decl #: POL– 20230213 – 004

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SUMMARY

Reference PCR
NSF PCR For Residential Countertops

Regions; system boundaries
North America; Cradle to grave

Functional unit / reference service life:
1 m^2 of natural stone countertops; 10 years

LCIA methodology: TRACI 2.1

LCA software; LCI database
SimaPro Developer 9.4
EcoInvent 3.8, US-EI 2.2

LCA conducted by: Sustainable Minds

Public LCA:
Life Cycle Assessment of Granite and Marble Stone Countertops by Polycor

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LCA results & interpretation

Granite Countertops

Life cycle assessment

Scope and summary

○ Cradle to gate ○ Cradle to gate with options ● Cradle to grave

Product description
Countertops refer to raised, flat, and horizontal surfaces, built for work mainly in kitchens, bathrooms, and workrooms. This surface is mostly supported by cabinets and is positioned at a suitable height for the user to perform the intended tasks. Countertops processed and fabricated by Polycor are made of natural stone, and the stone type included in this report is granite.

The results in this study are presented for countertops with a thickness of 27.09mm. However, this study applies to countertops with a range of thicknesses and can be scaled using the scaling factors on Page 4.

Functional unit
The functional unit is **one square meter** of countertops for a service life of 10 years in residential use, including a front edge and a backsplash. The amount of granite needed to meet the functional unit is **95.61 kg**.

Manufacturing data
The data for all granite stone products were collected from Polycor's granite quarries and processing facilities covering a period of two years: January 2020 to December 2021. Data for granite quarry operations were collected from 13 quarry sites across North America and grouped as American granite quarries and Canadian granite quarries.

After granite is extracted from the quarry, it goes to a processing facility. Stone processor operations data were collected from eight Polycor granite processing sites across North America. Processor data was also grouped similarly to quarries as American granite plants and Canadian granite plants. NSI resources and other literature data were used to develop estimates or assumptions for other upstream or downstream activities where necessary.

Default installation, packaging, and disposal scenarios
Countertops are delivered at the job site ready for installation, where minor cuts may be necessary to accommodate design. Drills and grinders are typically used for install. Ancillary materials used in the installation of the product include adhesives, resins, acrylics, sealers, and silicones. Wood and cardboard used as packaging to safely deliver the stone to the site is then transported to be either landfilled or recycled, following US EPA's end of life scenarios for containers and packaging. At the end of its useful life, the countertop is removed and transported to be either landfilled (31.5%) or recycled (68.5%).

Other life cycle stages
Installation impacts are driven by the use of fuels and electricity during installation (A5), and it results in significant impacts.

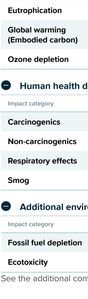
For maintenance (B2), granite countertops require monthly cleaning under normal operating conditions. These maintenance activities also have significant impacts on the total life cycle impacts.

Due to the nature of natural stone, it is anticipated that granite countertops will last for a service life of 10 years. End-of-life stages have lower contributions on the total life cycle impacts.

Material composition greater than 1% by weight

MATERIAL	% WEIGHT
Granite	100%

Total impacts by life cycle stages [mPts/per func unit]



LIFE CYCLE STAGE	MPTS/FUNC. UNIT
Material acquisition and pre-processing	1.62E+00
Construction	4.09E+00
Installation	8.15E-01
Use and maintenance	2.06E-01
End of life	2.17E-02

What's causing the greatest impacts

All life cycle stages
For the granite flooring product, the cradle-to-gate stage (A1-A3) dominates the results for all the impact categories. This study assessed a multitude of inventory and environmental indicators. In addition to the six major impact categories (global warming potential, ozone depletion, acidification, smog, eutrophication, and fossil fuel depletion), additional impact categories have also been included. These six impact categories are globally deemed mature enough to be included in Type III environmental declarations. Other categories are being developed and defined, and LCA should continue making advances in their development. However, the EPD users shall not use additional measures for comparative purposes. LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

For granite countertops, the cradle-to-gate stages (A1-A3) dominates the results for all the impact categories. The construction stage (A3) dominates the results, followed by the quarry operation (A1) stage, the next highest impact contributor to five out of ten categories. The cradle-to-gate stage (A1-A3) contributes to over 60% of the total impacts in all impact categories. Installation of countertops (A5) and maintenance (B2) also make considerable impacts, but the end-of-life (C) stage has insignificant contribution to the overall impacts.

The overall results are consistent with expectations for stone countertop products' life cycles, as these products are not associated with energy consumption during their use stage.

Quarry operations and transport to processors
Impacts generated at granite quarries (A1) are mainly due to the use of grid electricity and fuels in the quarries. Other material inputs generate little impact in comparison to the electricity and fuel consumed. The transportation of granite from quarries to processing plants also generates considerable impacts in numerous impact categories.

Construction and transport to building sites
For granite countertops, construction (A3) stage is the highest contributor to most of the impact categories. Energy consumed at the construction sites, including both processors and fabricators, is responsible for the majority of impacts, while other material inputs have little contribution. Transporting countertops from fabricators includes not only the shipment of countertops to the building sites, but also the initial visit for site measurements, which also makes significant contributions to overall impacts.

Sensitivity analysis
Based on the recommendation provided by Polycor, impacts for processor operations specific to a m^2 of granite countertops was calculated to be 10% more than the average stone processing for m^2 of other granite products as they go through heavy polishing than other stone products and consume 10% more energy. A sensitivity analysis was performed to check the robustness of the results when the energy consumed is +-20% of the estimate used in this study. The resulting variation in the potential CO_2 equivalent emissions and fossil fuel depletion impacts was ~8% and 10%. But the variation in total life cycle impacts of granite countertops is just ~6% for the two impacts.

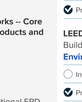
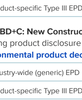
Natural stone is one of the lowest embodied carbon construction materials. Although we are proud of this intrinsic quality, we want to make sure that we'll never stop improving it. Our main driver is our ambitious 2025 carbon neutrality pledge. By increasing the use of renewable energy, reducing our dependency on fossil fuels, electrifying our car fleet and increasing the energy efficiency throughout our value chain, we aim to reduce our embodied carbon by 40% by the end of 2025!

Beyond embodied carbon, Polycor only uses rainwater for stone extraction, recycles it, and also uses dry sawing technology in a growing number of quarry operations. In quarrying, production, installation and maintenance, natural stone lowers water use throughout its life cycle.

Polycor is the leader within the Natural Stone Sustainability Standard (ANSI 373) with 25% of our sites certified. This standard examines and verifies numerous areas of natural stone production, effectively improving the baseline for the environmental and social performance of natural stone in alignment with green building practices.

See how we make it greener

LCA results

LIFE CYCLE STAGE	MATERIAL ACQUISITION AND PRE-PROCESSING	CONSTRUCTION	INSTALLATION	USE AND MAINTENANCE	END-OF-LIFE
Information modules: Included | Stages B1, B3-B7, C1, C3, and D have no associated activities and are not applicable for this study.	**A1 Quarry operations**	**A3 Construction**	**A4 Transport to building sites**	**B2 Maintenance**	**C2 Waste transport**
	A2 Transport to processors		**A5 Installation**		**C4 Disposal**
					

SM Single Score

Learn about SM Single Score results

Impacts of 1 square meter of natural stone countertop	1.62E+00 mPts	4.09E+00 mPts	8.15E-01 mPts	2.06E-01 mPts	2.17E-02 mPts
Materials or processes contributing >20% to total impacts in each life cycle stage	Energy consumed during stone quarrying (electricity and fuels).	Energy consumed during stone processing and fabrication (electricity and fuels).	Use of ancillary materials (adhesives) for installation and transport of product to building site.	Material consumed for maintenance.	Waste transport to end-of-life centers.

TRACI v2.1 results per functional unit

LIFE CYCLE STAGE	MATERIAL ACQUISITION AND PRE-PROCESSING	CONSTRUCTION	INSTALLATION	USE AND MAINTENANCE	END-OF-LIFE

Ecological damage

Impact category	Unit					
Acidification	**kg SO_2 eq**	1.15E-01	1.50E-01	6.74E-02	1.91E-02	2.03E-03
Eutrophication	**kg N eq**	2.19E-02	2.87E-02	5.82E-03	1.46E-02	2.47E-04
Global warming (Embodied carbon)	**kg CO_2 eq**	1.04E+01	3.21E+01	9.80E+00	4.23E-02	4.94E-01
Ozone depletion	**kg CFC-11 eq**	7.44E-07	1.83E-06	1.18E-06	1.62E-07	9.61E-08

Human health damage

Impact category	Unit					
Carcinogenics	**CTU_h**	3.90E-07	1.23E-06	1.29E-07	2.06E-08	1.96E-10
Non-carcinogenics	**CTU_h**	1.38E-06	3.06E-06	8.38E-07	2.19E-07	1.66E-08
Respiratory effects	**kg $PM_{2.5}$ eq**	1.31E-02	3.17E-02	2.88E-03	7.56E-03	1.75E-04
Smog	**kg O_3 eq**	3.18E+00	3.04E+00	1.95E+00	2.54E-01	5.60E-02

Additional environmental information

Impact category	Unit					
Fossil fuel depletion	**MJ, LHV**	2.43E+01	5.16E+01	2.09E+01	4.07E+00	1.01E+00
Ecotoxicity	**CTU_e**	2.49E+01	3.14E+01	1.43E+01	3.60E+00	2.35E-01

See the additional content required by the NSF PCR for residential countertops on page 4 of the **Transparency Report PDF**.

References

LCA Background Report
Polycor Natural Stone Flooring LCA Background Report (public version), Polycor 2022. SimaPro Analyst 9.4, ecoinvent 3.4 database.

PCRs

NSF PCR for residential countertops
PCR review conducted by Evan Griffing, Ph.D.; Thomas P. Gloria, Ph.D.; and Jack Geibig.

ISO 14025, "Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services", ISO 21930:2017

Download PDF SM Transparency Report, which includes the additional EPD content required by the NSF PCR.

SM Transparency Reports (TR) are ISO 14025 Type III environmental declarations (EPD) that enable purchasers and users to compare the potential environmental performance of products on a life cycle basis. This EPD was not written to support comparative assertions. Even for similar products, differences in functional unit, use and end-of-life stage assumptions, and data quality may produce incomparable results. It is not recommended to compare EPDs with another organization as there may be differences in methodology, assumptions, allocation methods, data quality such as variability in datasets, and results of variability in assessment software tools used. A limitation to this study is that not all manufacturers in North America participated. TRs/EPDs of products that conform to the same PCR and include the same life cycle stages, but are made by different manufacturers, may not sufficiently align to support direct comparisons. They therefore, cannot be used as comparative assertions unless the conditions defined in ISO 14025 Section 6.7.2. 'Requirements for Comparability' are satisfied.

Rating systems

The intent is to reward project teams for selecting products from manufacturers who have verified improved life-cycle environmental performance.

LEED BD+C: New Construction | v4 - LEED v4
Building product disclosure and optimization
Environmental product declarations

○ Industry-wide (generic) EPD	½product
● Product-specific Type III EPD	1 product

LEED BD+C: New Construction | v4.1 - LEED v4.1
Building product disclosure and optimization
Environmental product declarations

○ Industry-wide (generic) EPD	1 product
● Product-specific Type III EPD	1.5 product

BREEAM New Construction 2018
Mat 02 - Environmental impacts from construction products
Environmental Product Declarations (EPD)

○ Industry-average EPD	.5 point
○ Multi-product specific EPD	.75 points
● Product-specific EPD	1 point

SM Transparency Report (EPD)™

VERIFICATION	LCA
3rd-party reviewed	●
Transparency Report (EPD)	
3rd-party verified	●

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How we make it greener

Granite Countertops

Collapse all

See LCA results by life cycle stage

RAW MATERIALS ACQUISITION

Natural stone quarrying process has high yields and little excess material because the stone is close to surface. It's different from metal mining, where large amounts of earth must be removed to extract very little quantities. Also, underground quarrying, which has been perfected for generations at our Eureka Quarry, reduces land use and is a practice that Polycor wishes to extend to several quarries.

In addition, few consumables are needed to extract natural stone. Contrast that with other building materials, Polycor specifically focuses on sourcing the highest grades of natural stone so that, for instance, a black granite stone, doesn't need dyes to achieve its rich color.

From the bedrock to the point of sale, Polycor maintains an unbroken ownership of the supply chain allowing it to maintain standards of quality and practice.

TRANSPORTATION

Using stone from local sources is the single biggest opportunity to reduce its embodied carbon. Since natural stone is a heavy material, the environmental impacts for transporting it end up being one of its most significant source of carbon. Natural stone is sourced world-wide and each deposit has unique aesthetic and performance characteristics so this is not always avoidable. Be sure to understand the distances between the quarry, the processing facility, sometimes the distribution centers but also the transportation mode. In most of Polycor's operations, the quarry is within miles of the processing facility.

MANUFACTURING

Manufacturing natural stone is so simple that you can sumarize it by a single action, cutting. Cutting large piece into smaller pieces ending in a finished product. Also, the beauty of natural stone products is that there is no chemical mixed within our products. Therefore, they are inherently a non-emitting source of VOCs.

Recycling water is reused several times into the manufacturing process and is compulsory to achieve ANSI 373 Standard.

There are a large variety of sizes and finishes that are commonly used for natural stone. Design teams can help reducing energy consumption in the following ways: Usage of low embodied carbon finishes such as water jet, 3D analysis to loose as few stone as possible troughout it's transformation, accepting the natural variation in the material so there is more usable material.

OTHER (USE, END OF LIFE)

Whether you think of the Egyptian pyramids, the Colosseum of Rome, the cathedrals of the European capitals or closer to us; the famous Empire State building; natural stone is the most durable, classic and timeless building material on Earth. With 100+ years of durability, natural stone lasts longer than other building construction material and projects that use natural stone require less maintenance.

Since we don't use any chemicals, natural stone products as well as excess process materials throughout the extraction and transformation phases can be reused or recycled into gravel for roads, landscaping products and even furniture and jewelry. In short, natural stone can be reused and recycled multiple times during its life cycle; the only limit is your imagination!

Nevertheless, even if natural stone ends up in a construction landfill, there will be no toxic chemicals seeping into the earth as the material degrades. It simply returns to the earth, cradle to cradle.

SM Transparency Report (EPD)™

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3rd-party reviewed	✓
	Transparency Report (EPD)
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Additional EPD content required by: NSF PCR For Residential Countertops

Data

Background This product-specific declaration was created by collecting product data for one square meter of natural stone countertops. Material and production inputs from each of Polycor's quarry and processor sites were used to calculate weighted averages of those inputs based on the production share of the site. industry average data for countertop fabrication was also used.

Allocation The allocation methods used were examined according to the updated allocation rules in ISO 21930:2017. Quarry inputs and outputs were divided evenly among the quarried granite by mass, and no co-product allocation was needed. Similarly, no co-product allocation was required for processor operations as well since processing data was collected from Polycor's processing plants specific to granite. The processor inputs and outputs were divided evenly among the processed stone by area.

Cut-off criteria for the inclusion of mass and energy flows are 1% of renewable primary resource (energy), use, 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 does not exceed 5% of energy usage, mass, and environmental impacts. No known flows are deliberately excluded from this declaration. Biogenic carbon is included in reported results.

Quality Primary data was collected for a time period of two years, which represents typical operations of Polycor's granite quarry and processors across North America. Inventory data is considered to have a good precision and provide a representative depiction of the industry average. Data is also considered to be complete as no know flows are deliberately excluded from this analysis other than those defined to be outside of the system boundary. Proxy and generic datasets have been used for some materials and processes, but are considered to be sufficiently representative.

Relevant technical properties

Parameter	Unit	Test Method	Value
CSI Masterformat classification	12 36 40		
Stone type	Granite		
Stone grades	All grades		
Thickness to achieve functional unit	mm		27.09
Product weight	kg		95.61
Density	kg/m³		2,654
Flexural strength	Mpa	C880	8.27
Modulus of rupture	MPa	C99	10.34
Compressive strength	MPa	C170	131.00
Thermal conductivity	W/m.k	C518	1.73
Thermal resistance	m.K/W	C518	0.56
Liquid water absorption	% of dry wt	C97	0.1-1.0%

Major system boundary exclusions

- Capital goods and infrastructure,
- Maintenance and operation of support equipment;
- Manufacture and transport of packaging materials not associated with final product;
- Human labor and employee transport;
- Building operational energy and water use not associated with final product.

Production flow chart

Stone Quarrying — Use of explosives, power drills, power saws, diamond belts etc. — stone blocks extracted from natural rock layers.

Stone transport from quarries to processing facilities

Stone Processing — Stone blocks go through block saws, saw slabs, bridge saws etc.— stone blocks processed to stone flooring and paving products.

Scenarios and additional technical information

Transport from Quarry to Processor (A2)

Based on the primary data, the transport distance between Polycor's granite quarry and processing facilities varies, & the weighted distance is 83 km. For the quarries who had no primary information, a conservative stone transportation distance of 100 km via truck & trailer was assumed..

Transport to the building site (A4)

Parameter	Value	Unit
Vehicle type	Passenger car Lorry, 16-32 ton	
Fuel type	Petrol (for initial visit) Diesel (for countertop transport)	
Liters of fuel	0.41	l/100 km
Distance from manufacturer to installation site Initial visit Delivery of the countertop	 80 80	 km (weighted avg)
Capacity utilization (mass based)	100	%
Gross density of products transported	2,654	kg/m³
Capacity utilization volume factor	1	

Installation into the building (A5)

It is assumed that countertop fabrication (cutting and finishing to required size) is done at the processing plants and is typically delivered to the job site ready for installation. The scrap generated is insignificant and will be recycled if generated, so an installation scrap rate of 0% is assumed.

Installation scrap assumed	0	%
Ancillary materials - Adhesive Resin Acrylate Sealer Silicone	 0.017 0.089 0.0005 0.009 0.078	kg
Net freshwater consumption	0	m³
Power of Drills and grinders	1.38	kW
Operation time for Drills and grinders	15	min.
Packaging waste transport distance	32	km
Direct emissions to ambient air, soil and water	0	kg
VOC emissions	0	µg/m³

Maintenance scenario parameters (B1-B7)

Maintenance process information	Cleaning the surface of granite countertops
Maintenance cycle	Weekly cleaning (520 cycles per RSL)
Net freshwater consumption - municipal water supply	52 (for entire lifetime) Liter
Ancillary materials - Soap	2.6 (for entire lifetime) kg
Energy input during maintenance	Not necessary

Reference service life information

Reference Service Life (RSL)	10	years
Design application parameters	Indoor applications	
Indoor environment	Installation as recommended by manufacturer.	
Use conditions	All conditions	

End of life (C1-C4)

Assumptions for scenario development	The product is dismantled and removed from the building manually. It is transported to a local facility where it requires no further processing before final disposition.		
Disposal scenarios	Recycling	68.5	%
	Landfill	31.5	%
Waste transport		32	km
Removals of biogenic carbon (excluding packaging)		0	kg CO_2

Hazardous waste

Polycor's granite countertops do not contain substances that are identified as hazardous according to the Resource Conservation and Recovery Act (RCRA), Subtitle C.

Scaling factors

The results presented below have been reported to 1.066 inches (27.09 mm) for granite countertops. However, they may be scaled according to different thicknesses as desired using scaling factors. To calculate the results for additional thickness options, simply multiply the results by the corresponding conversion factor presented here:

Thickness	**1.066" (27.09 mm)**	7/8" (22.24 mm)	1" (25.41 mm)	1 1/8" (28.58 mm)
Conversion Factor	**1**	0.821	0.938	1.055

LCIA results, resource use, output & waste flows, and carbon emissions & removals per m² of granite countertops

Parameter	Unit	Material acquisition and pre-processing stage	Countertop Construction	Installation stage	Use and maintenance stage	End of life		Total
		A1-A2	A3	A4-A5	B2	C2	C4	
LCIA results (per m² of granite countertops)								
Ozone depletion	kg CFC-11 eq	7.44E-07	1.83E-06	1.18E-06	1.62E-07	8.35E-08	1.26E-08	**4.01E-06**
Global warming	kg CO2 eq	1.04E+01	3.21E+01	9.80E+00	4.23E-02	4.20E-01	7.42E-02	**5.29E+01**
Smog	kg O3 eq	3.18E+00	3.04E+00	1.95E+00	2.54E-01	3.45E-02	2.15E-02	**8.47E+00**
Acidification	kg SO2 eq	1.15E-01	1.50E-01	6.74E-02	1.91E-02	1.31E-03	7.15E-04	**3.53E-01**
Eutrophication	kg N eq	2.19E-02	2.87E-02	5.82E-03	1.46E-02	1.77E-04	6.99E-05	**7.13E-02**
Carcinogenics	CTUh	3.90E-07	1.23E-06	1.29E-07	2.06E-08	1.74E-10	2.17E-11	**1.77E-06**
Non-carcinogenics	CTUh	1.38E-06	3.06E-06	8.38E-07	2.19E-07	1.57E-08	8.58E-10	**5.51E-06**
Respiratory effects	kg PM2.5 eq	1.31E-02	3.17E-02	2.88E-03	7.56E-03	8.24E-05	9.27E-05	**5.54E-02**
Ecotoxicity	CTUe	2.49E+01	3.14E+01	1.43E+01	3.60E+00	2.28E-01	7.04E-03	**7.44E+01**
Fossil fuel depletion	MJ surplus	2.43E+01	5.16E+01	2.09E+01	4.07E+00	8.53E-01	1.57E-01	**1.02E+02**
Energy consumption, energy type, and material resources (per m² of granite countertops)								
Renewable fuels	MJ, LHV	5.76E+00	1.30E+02	8.59E+00	1.14E+02	8.73E-03	2.14E-03	**2.58E+02**
Virgin renewable resources	MJ, LHV	6.56E-01	9.52E+01	4.81E-01	0.00E+00	0.00E+00	0.00E+00	**9.63E+01**
Fossil fuels	MJ, LHV	1.36E+02	4.39E+02	3.20E+02	3.04E+01	5.58E+00	1.03E+00	**9.32E+02**
Nuclear fuels	MJ, LHV	1.13E+01	2.22E+02	5.48E+00	4.36E+00	3.50E-02	8.56E-03	**2.43E+02**
Miscellaneous fuels	MJ, LHV	8.22E-04	2.12E-02	1.60E-03	1.10E+01	1.37E-06	2.56E-07	**1.10E+01**
Virgin non-renewable resources	MJ, LHV	1.47E+02	6.54E+02	3.24E+02	4.57E+01	5.62E+00	1.04E+00	**1.18E+03**
Recycled resources	kg	0	0	0	0	0	0	**0**
Renewable secondary fuels	MJ, LHV	0	0	0	0	0	0	**0**
Non-renewable secondary fuels	MJ, LHV	0	0	0	0	0	0	**0**
Recovered energy	MJ, LHV	0	0	0	0	0	0	**0**
Use of net freshwater resources	m³	7.50E+01	1.44E+01	2.26E+00	1.21E-01	9.52E-04	1.82E-04	**9.18E+01**
Primary energy demand	MJ	1.54E+02	8.86E+02	3.36E+02	1.59E+02	5.63E+00	1.04E+00	**1.54E+03**
Primary energy demand (fossil, nuclear)	MJ	1.47E+02	6.61E+02	3.27E+02	3.47E+01	5.62E+00	1.04E+00	**1.18E+03**
Renewable (solar, wind, hydro, biomass)	MJ	6.41E+00	2.25E+02	9.08E+00	1.14E+02	8.73E-03	2.14E-03	**3.55E+02**
Emissions to air (per m² of granite countertops)								
Sulphur oxides (SO_x)	kg	1.24E-02	5.97E-02	1.15E-02	5.46E-03	3.33E-04	1.06E-04	**8.95E-02**
Nitrogen oxides (NO_x)	kg	1.15E-01	1.24E-01	7.75E-02	8.65E-03	1.39E-03	8.70E-04	**3.28E-01**
Carbon dioxide (CO_2)	Kg	9.40E+00	4.35E+01	9.24E+00	6.30E+00	4.02E-01	7.22E-02	**6.89E+01**
Methane (CH_4)	kg	2.02E-02	9.83E-02	1.82E-02	1.32E-02	4.10E-04	4.45E-05	**1.50E-01**
Nitrous oxide (N_2O)	kg	1.53E-04	1.12E-03	3.37E-04	1.57E-03	1.66E-05	2.44E-06	**3.20E-03**
Carbon monoxide (CO)	kg	7.31E-02	9.32E-02	4.01E-02	6.30E-02	7.53E-05	2.24E-04	**2.70E-01**
Water usage and emissions to water (per m² of granite countertops)								
Phosphates, nitrates, dioxin, and heavy metals	kg	7.79E-04	1.94E-02	7.85E-04	3.59E-02	1.53E-06	3.45E-07	**5.69E-02**
Consumption (total water input)	m³	9.43E+01	2.46E+01	5.52E+00	1.37E-01	1.07E-03	2.10E-04	**1.25E+02**
Output flows and waste category indicators (per m² of granite countertops)								
Hazardous waste disposed	kg	7.70E-03	1.94E-03	0	0	0	0	**9.64E-03**
Non-hazardous waste disposed	kg	1.43E-01	2.35E+01	2.04E+00	0	0	3.01E+01	**5.58E+01**
High-level radioactive waste, conditioned, to final repository	kg	7.67E-03	2.82E-01	7.49E-06	5.39E-05	5.78E-07	1.12E-07	**2.90E-01**
Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	3.35E-06	2.75E-05	1.31E-10	1.88E-08	5.90E-07	4.79E-09	**3.15E-05**
Components for re-use	kg	0	0	0	0	0	0	**0**
Landfill avoidance / materials for recycling	kg	4.51E+02	7.07E+01	4.10E+00	0	0	6.55E+01	**5.91E+02**
Incineration with energy recovery	kg	0	0	0	0	0	0	**0**
Incineration without energy recovery	kg	0	0	0	0	0	0	**0**
Carbon emissions and removals (per m² of granite countertops)								
Biogenic Carbon Removal from Product	kg CO_2	0	0	0	0	0	0	**0**
Biogenic Carbon Emission from Product	kg CO_2	0	0	0	0	0	0	**0**
Biogenic Carbon Removal from Packaging	kg CO_2	0	7.63E-02	3.81E-03	0	0	0	**8.01E-02**
Biogenic Carbon Emission from Packaging	kg CO_2	0	0	1.12E-02	0	0	0	**1.12E-02**
Biogenic Carbon Emission from Combustion of Waste from Renewable Sources Used in Production Processes	kg CO_2	0	0	0	0	0	0	**0**
Carbon Emissions from Combustion of Waste from Non-Renewable Sources used in Production Processes	kg CO_2	0	0	0	0	0	0	**0**