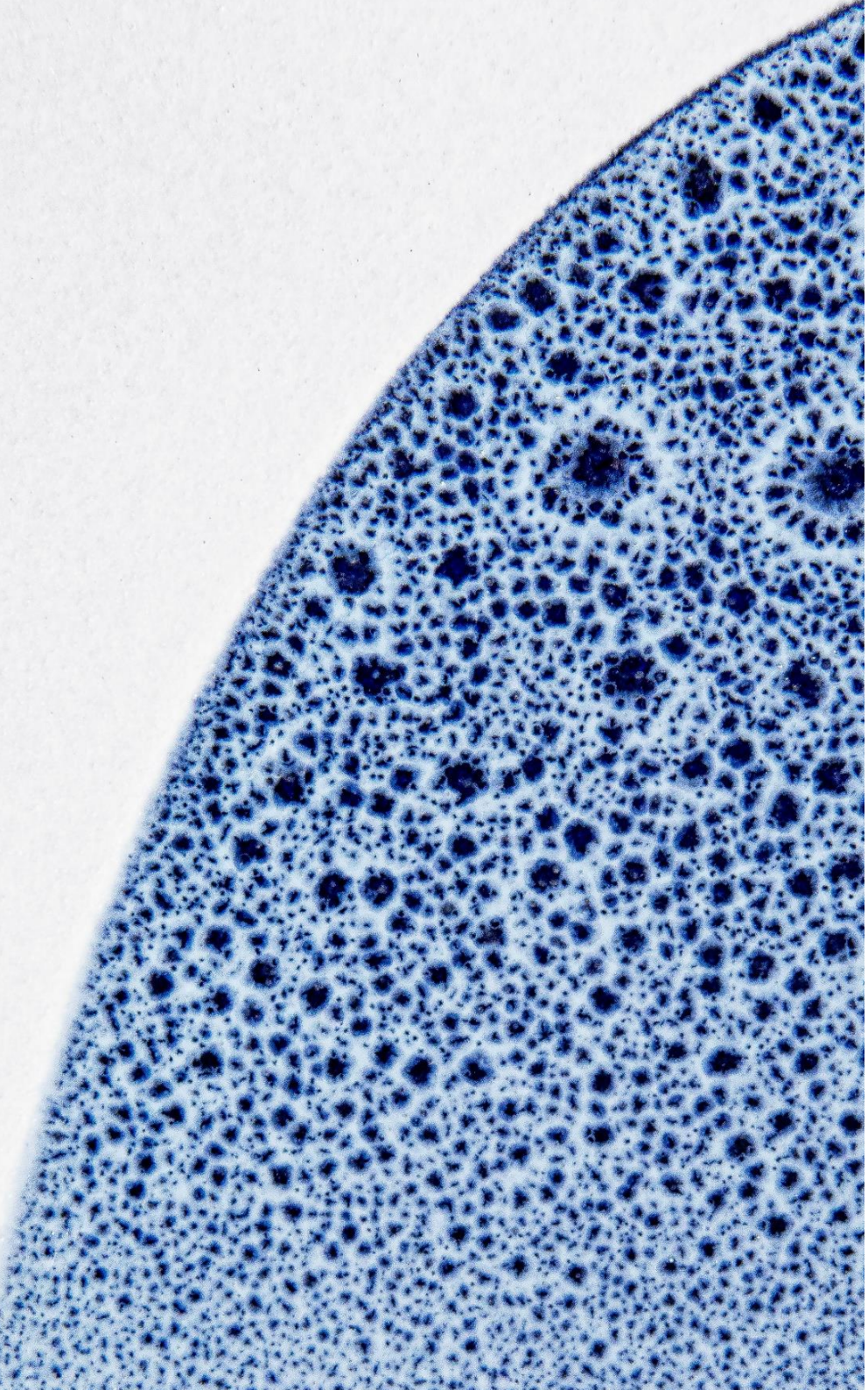


ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Ceramic Tile
Heath Ceramics



EPD HUB, HUB-4386

Published on 20.10.2026, last updated on 20.10.2026, valid until 19.10.2031

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Heath Ceramics
Address	2900 18th St, 94110, San Francisco, California, US
Contact details	tile@heathceramics.com
Website	www.heathceramics.com

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025
Sector	Manufactured product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-B7, and modules C1-4 and D
EPD author	Lauren Olson, Heath Ceramics
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Yazan Badour as an authorized verifier for EPD Hub

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	Ceramic Tile
Additional labels	-
Product reference	-
Place(s) of raw material origin	USA, CAN, AUS
Place of production	2900 18th St, 94110, San Francisco, California, US
Place(s) of installation and use	Worldwide
Period for data	Fiscal Year 2024 (4/1/23-3/31/24)
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	0%
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	59.7

ENVIRONMENTAL DATA SUMMARY

Declared unit	Ceramic tile
Declared unit mass	18.065 kg
Mass of packaging	0.684 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	39.5
GWP-total, A1-A3 ($kgCO_2e$)	38.6
Secondary material, inputs (%)	0.72
Secondary material, outputs (%)	0
Total energy use, A1-A3 (kWh)	81
Net freshwater use, A1-A3 (m^3)	0.28

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Handcrafted in California since 1959. Over 100 glazes, ranging from soft matte neutrals to deep, glossy shades designed exclusively on Heath's manganese clay body.

PRODUCT DESCRIPTION

Our love of beautiful materials finds its purest expression in Heath Tile. Perfectly imperfect tiles reflect an intention, a pride in craft, the truth of quality, and the beauty in simplicity. They are made by real people, glazed using traditional techniques, and fired and finished in our San Francisco tile factory.

Heath Tile first earned wide recognition when Edith Heath won the prestigious AIA Industrial Arts Medal in 1971 for her installation at the Norton Simon Museum in Pasadena. Her approach to design—which we continue to carry forward—celebrates the natural character of our brown California clay body and the inherent unpredictability of glaze chemistry. Heath Tile's iconic aesthetic supports truly unique and varied installations, ranging from home environments to large-scale public spaces. Today, Heath Ceramics is a B Corp and has earned certifications from Declare and the California Green Business Network.

This EPD includes representative products derived from Heath Ceramics line of products produced at the facility located in San Francisco, California. Ceramic tiles are primarily composed of clays, silica, and other additives, which are then molded into shape and fired in a kiln. Ceramic tiles can be glazed or unglazed. There are several advantages to ceramic tiles. They are fire-resistant, non-combustible, durable, and extremely easy to maintain. The UNSPSC code for this flooring product is 301617, and the CSI code is 09 30 00.

Results in this EPD are presented based on a representative product, which is derived from the total materials purchased during fiscal year 2024 and production data of the same time period. For more information on specific products, please visit http://heathceramics.com.

This EPD is applicable to all color options and collections for Heath Ceramics, including Classic Field, Dimensional, Stan Bitters, and Trim Tile.

Further information can be found at:
www.heathceramics.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	-	-
Minerals	100	USA, CAN, AUS
Fossil materials	-	-
Bio-based materials	-	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0.0079
Biogenic carbon content in packaging, kg C	1.5382

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 square meter of ceramic tile
Mass per declared unit	18.065 kg
Functional unit	Ceramic tile covering 1 square meter
Reference service life	75

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	x	x	ND	x	ND	ND	ND	ND	ND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Not declared = ND.

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

A market-based approach is used in modelling the electricity mix utilized in the factory. The energy sources were provided by the energy provider, with the mix being 100% renewable for most of the time period, except for a 4-month period when it switched to a standard energy mix. The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD. The standard energy mix (4 months) used renewable energy (39.1%), large hydroelectric (9.1%), nuclear (18.9%), and unspecified power (32.8%). The renewable energy mix (8 months) included hydroelectric (0.9%), solar (21.5%), and wind (77.6%). Carbon emissions factors were provided by the energy supplier for electricity and estimated using the US Environmental Protection Agency (EPA) equivalents for natural gas.

The packaging sources were provided by the distributor, but only by zip code, and therefore, there is some estimation. Packaging includes corrugated cardboard boxes with 37.5% recycled content, wood pallet, plastic strapping (polypropylene graduate and film extrusion), kraft sheets between tiles (multiple sources), steel connectors, and metal staples.

Transportation of raw materials was based on the best available information from suppliers, although in one case, the distance from the port to the mine had to be estimated. Production losses are derived from the amount of fired tile ceramic recycled in the same fiscal year. The manufacturing waste is recycled into an aggregate that replaces mined sand in cement. The recycling facility location is known, and the distances are correct. The manufacturing process is done at only one facility in San Francisco, owned and operated by Heath Ceramics.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions. The distance to the consumer was determined via detailed customer data analysis from fiscal year 2024. The material loss during installation of 4.5% was reported by the Tile Council of North America EPD.

The packaging materials are exclusive to this analysis. The packaging during installation is recycled, landfilled, or incinerated according to the disposal pathways in Table 3: Packaging of the Tile Council of North America EPD. When materials used in packaging were not explicitly listed, they were grouped with according to materials. Steel connectors for plastic straps had the same disposal pathway as plastic straps because they are connected. Kraft paper inserts had the same disposal pathways as a cardboard box. Copper staples for the boxes followed the same disposal pathway as the cardboard boxes because they are connected to the boxes and can be easily separated during the cardboard box recycling process. The transport distance for all waste was determined to be 161 km from the Tile Council of North America EPD.

PRODUCT USE (B2)

The use phase (B2) described by the Tile Council of North America EPD is a damp mop 36 times a year, using 0.783 liters of tap water per square meter of tile per year or 0.05 cubic meters per year.

Air, soil, and water impacts during the use phase have not been studied.

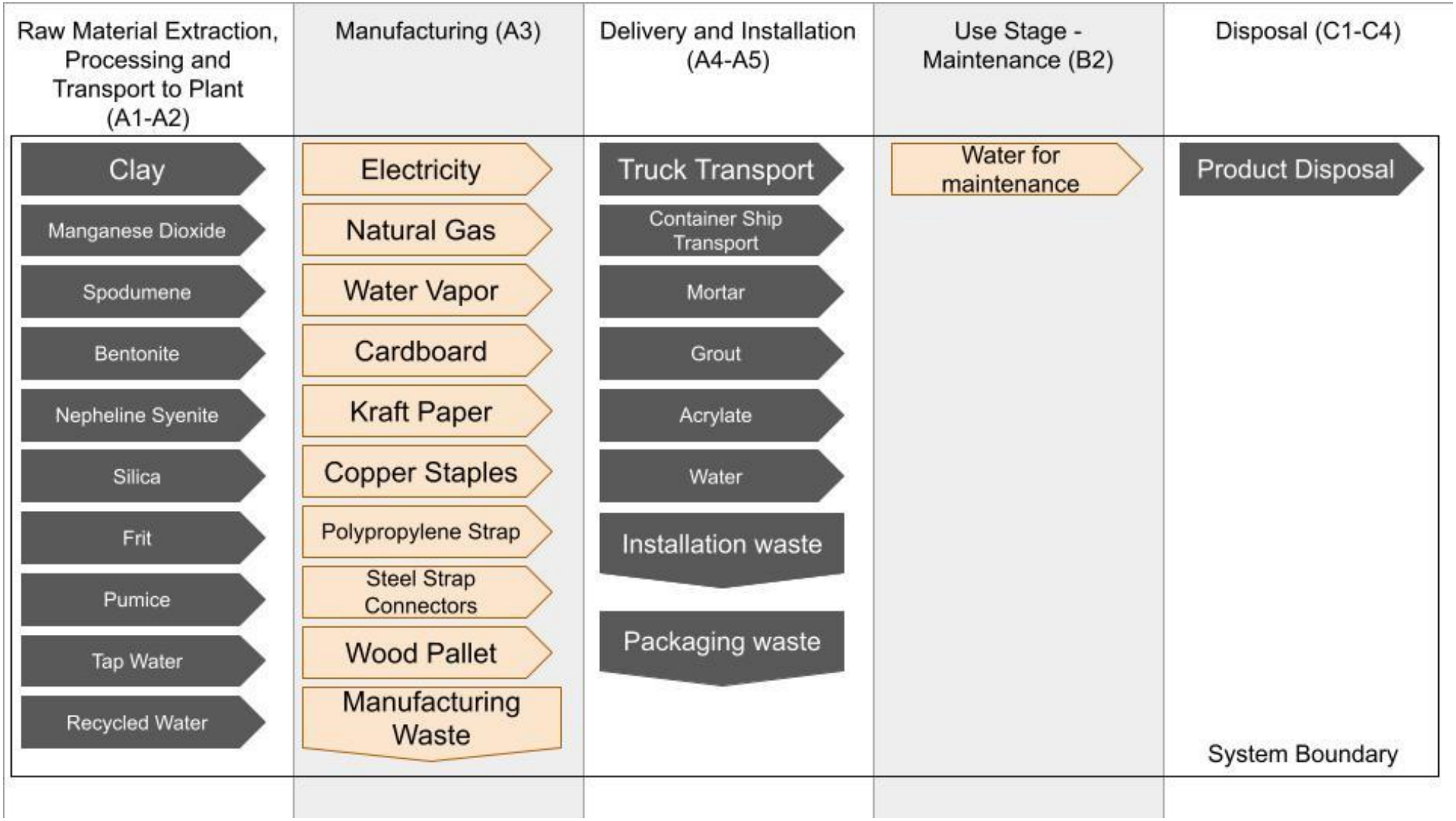
PRODUCT END OF LIFE (C1-C4, D)

The estimated service life of tile is 75 years, according to the Tile Council of North America's EPD, and 100% of the tile and materials are expected to be landfilled, no recycling or reuse. The landfilled amount includes the tile and the installation materials. There is no energy associated with the demolition,

likely because it is usually done by hand. Transport distance for waste is estimated to be 50 km.

For module D, the incineration energy from the packaging in A5 is estimated to be all electricity, and at the incineration efficiency of 84% as detailed in the Tile Council of North America EPD.

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process that is more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

This study includes the provision of all materials, transportation, energy, and emission flows, and end-of-life processing of the product. All industrial processes from raw material acquisition and pre-processing, production, product distribution, installation, and end-of-life management are included. Due to a lack of data, some ancillary materials are excluded, but they do not exceed the 1% cut-off criteria. These include some chemical admixtures which are used in the product only in very small amounts and have a negligible impact on the emissions of the product.

The production of capital equipment, construction activities, and infrastructure, as well as the maintenance and operation of capital equipment, personnel-related activities, energy and waste use related to company management and sales activities, are excluded.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are made according to the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	Allocated by mass
Packaging material	Allocated by mass
Ancillary materials	Allocated by mass
Manufacturing energy and waste	Allocated by mass

All estimations and assumptions regarding the cut-off criteria and the allocation are declared in the part cut-off criteria except the estimations/assumptions below:

Proxy data is used for certain materials due to their unavailability in the database.
- Module A1: All materials are included except for some chemical

admixtures that are used in very small quantities and fall under the cut-off criteria.
- Modules A2, A4, & C2: Vehicle capacity utilization volume factor is assumed to be 1, which means full load. It may vary, but as the role of transportation emissions in total results is small, the variation in load is assumed to be negligible. To be conservative, empty returns are included in this study as implemented through an average load factor in the Ecoinvent transport datapoints.
- Module A4: Transportation does not cause losses as products are packaged properly. Also, the volume capacity utilization factor is assumed to be 1 for the nested packaged products. Additionally, transportation distances for the installation materials are assumed to be 50 km based on a particular scenario of the customer's premises in San Francisco, CA, and a truck/lorry is assumed to be the vehicle type used.
- Module A5: Packaging waste is declared as installation waste.
- Module C2: Transportation distance to waste handling facility is estimated as 161 km as per North American Tile EPD, and the transportation method is assumed as lorry/truck.
Module C3, C4, D: The product undergoes separate collection as a certain percentage of each material is assumed to be recycled, incinerated, and landfilled. The recycled end-of-life materials are assumed to serve as recycled aggregates or as backfilling materials.

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Average product
Grouping method	Multiple products
Variation in GWP-fossil for A1-A3, %	0%

The EPD represents an average ceramic tile product based on total production during the reporting fiscal year. Raw material inputs, glaze materials, energy consumption, and other manufacturing inputs and outputs were aggregated for the fiscal year and normalized by the total square meters of tile produced. The resulting inventory therefore represents the actual production-weighted average of the multiple products covered by the EPD. The EPD applies to all color options and collections included within the study scope, including Classic Field, Dimensional, Stan Bitters, and Trim Tile. The results are representative of a group of very similar products with minor variations in the proportions of ingredients.

All products covered by this EPD were manufactured at the same Heath Ceramics facility at 2900 18th Street, San Francisco, California; therefore, no averaging across manufacturing sites was performed.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.4. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11/3.12 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11/3.12 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2‘.

https://whytile.com/library/epd-ceramic-tile/

ENVIRONMENTAL IMPACT DATA

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	1.55E+01	4.61E+00	1.84E+01	3.86E+01	5.77E+00	5.71E+00	ND	2.19E-02	ND	ND	ND	ND	ND	0.00E+00	2.23E-01	0.00E+00	2.58E-01	-4.34E-08
GWP – fossil	kg CO_2e	1.55E+01	4.61E+00	1.94E+01	3.95E+01	5.77E+00	4.60E+00	ND	2.19E-02	ND	ND	ND	ND	ND	0.00E+00	2.23E-01	0.00E+00	2.59E-01	-4.34E-08
GWP – biogenic	kg CO_2e	3.09E-02	9.66E-04	-1.08E+00	-1.05E+00	1.26E-03	1.11E+00	ND	2.79E-05	ND	ND	ND	ND	ND	0.00E+00	4.86E-05	0.00E+00	-1.46E-03	-3.69E-11
GWP – LULUC	kg CO_2e	1.46E-02	1.74E-03	1.41E-01	1.57E-01	2.56E-03	8.24E-03	ND	2.10E-05	ND	ND	ND	ND	ND	0.00E+00	9.85E-05	0.00E+00	1.66E-04	-3.85E-11
Ozone depletion pot.	kg CFC_{-11}e	2.10E-07	9.24E-08	6.24E-08	3.65E-07	8.07E-08	3.08E-08	ND	1.62E-10	ND	ND	ND	ND	ND	0.00E+00	3.11E-09	0.00E+00	6.47E-09	-6.03E-16
Acidification potential	mol H^+e	1.45E-01	1.68E-02	3.31E-02	1.95E-01	1.97E-02	2.09E-02	ND	1.20E-04	ND	ND	ND	ND	ND	0.00E+00	7.42E-04	0.00E+00	2.76E-03	-3.26E-10
EP-freshwater[2)]	kg Pe	5.67E-03	3.08E-04	4.27E-04	6.41E-03	4.48E-04	7.57E-04	ND	7.56E-06	ND	ND	ND	ND	ND	0.00E+00	1.73E-05	0.00E+00	3.99E-04	-1.66E-10
EP-marine	kg Ne	1.50E-02	5.50E-03	7.74E-03	2.82E-02	6.34E-03	4.06E-03	ND	2.21E-05	ND	ND	ND	ND	ND	0.00E+00	2.40E-04	0.00E+00	6.88E-04	-1.51E-10
EP-terrestrial	mol Ne	1.86E-01	6.00E-02	8.30E-02	3.29E-01	6.90E-02	4.37E-02	ND	2.29E-04	ND	ND	ND	ND	ND	0.00E+00	2.62E-03	0.00E+00	7.41E-03	-1.32E-09
POCP ("smog")[3)]	kg NMVOCe	5.56E-02	2.55E-02	2.38E-02	1.05E-01	2.71E-02	1.36E-02	ND	6.90E-05	ND	ND	ND	ND	ND	0.00E+00	1.03E-03	0.00E+00	2.60E-03	-3.56E-10
ADP-minerals & metals[4)]	kg Sbe	5.99E-04	1.26E-05	5.04E-06	6.17E-04	1.89E-05	3.77E-05	ND	1.30E-07	ND	ND	ND	ND	ND	0.00E+00	7.31E-07	0.00E+00	5.87E-07	-1.30E-13
ADP-fossil resources	MJ	1.78E+02	6.66E+01	1.57E+01	2.61E+02	8.09E+01	3.27E+01	ND	2.62E-01	ND	ND	ND	ND	ND	0.00E+00	3.12E+00	0.00E+00	5.66E+00	-3.79E-07
Water use[5)]	m^3e depr.	9.83E+00	3.39E-01	-2.60E+01	-1.58E+01	3.75E-01	-4.90E-01	ND	6.36E-03	ND	ND	ND	ND	ND	0.00E+00	1.45E-02	0.00E+00	4.65E-02	-4.64E-08

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	1.20E-06	4.54E-07	2.68E-07	1.92E-06	4.57E-07	2.71E-07	ND	1.23E-09	ND	ND	ND	ND	ND	0.00E+00	1.77E-08	0.00E+00	4.18E-08	-3.69E-15
Ionizing radiation[6)]	kBq U235e	8.20E-01	7.97E-02	2.45E+10	2.45E+10	6.54E-02	1.10E+09	ND	2.09E-03	ND	ND	ND	ND	ND	0.00E+00	2.53E-03	0.00E+00	4.95E-03	-5.88E-10
Ecotoxicity (freshwater)	CTUe	1.59E+02	7.81E+00	5.26E+02	6.93E+02	1.28E+01	3.81E+01	ND	6.40E-02	ND	ND	ND	ND	ND	0.00E+00	4.94E-01	0.00E+00	5.55E+00	-3.10E-07
Human toxicity, cancer	CTUh	8.64E-09	7.62E-10	2.39E-08	3.33E-08	9.81E-10	2.06E-09	ND	5.28E-12	ND	ND	ND	ND	ND	0.00E+00	3.78E-11	0.00E+00	1.34E-10	-8.33E-17
Human tox. non-cancer	CTUh	4.34E-07	4.29E-08	5.68E-06	6.15E-06	5.05E-08	2.98E-07	ND	1.94E-10	ND	ND	ND	ND	ND	0.00E+00	1.95E-09	0.00E+00	7.36E-09	-1.82E-15
SQP[7)]	-	9.28E+01	6.63E+01	1.36E+02	2.95E+02	4.82E+01	2.89E+01	ND	5.65E-02	ND	ND	ND	ND	ND	0.00E+00	1.86E+00	0.00E+00	1.32E+01	-2.31E-07

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	1.70E+01	1.08E+00	1.47E+01	3.28E+01	1.11E+00	-5.77E+00	ND	2.83E-02	ND	ND	ND	ND	ND	0.00E+00	4.28E-02	0.00E+00	8.32E-02	-1.13E-08
Renew. PER as material	MJ	0.00E+00	0.00E+00	9.84E+00	9.84E+00	0.00E+00	-9.84E+00	ND	0.00E+00	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renew. PER	MJ	1.70E+01	1.08E+00	2.46E+01	4.26E+01	1.11E+00	-1.56E+01	ND	2.83E-02	ND	ND	ND	ND	ND	0.00E+00	4.28E-02	0.00E+00	8.32E-02	-1.13E-08
Non-re. PER as energy	MJ	1.78E+02	6.66E+01	1.37E+01	2.59E+02	8.09E+01	3.24E+01	ND	2.62E-01	ND	ND	ND	ND	ND	0.00E+00	3.12E+00	0.00E+00	5.66E+00	-3.79E-07
Non-re. PER as material	MJ	0.00E+00	0.00E+00	4.20E-01	4.20E-01	0.00E+00	-2.82E-01	ND	0.00E+00	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	-1.38E-01	0.00E+00
Total use of non-re. PER	MJ	1.78E+02	6.66E+01	1.41E+01	2.59E+02	8.09E+01	3.21E+01	ND	2.62E-01	ND	ND	ND	ND	ND	0.00E+00	3.12E+00	0.00E+00	5.53E+00	-3.79E-07
Secondary materials	kg	1.31E-01	2.89E-02	1.19E-01	2.78E-01	3.64E-02	2.23E-02	ND	8.28E-05	ND	ND	ND	ND	ND	0.00E+00	1.40E-03	0.00E+00	2.07E-03	-6.09E-07
Renew. secondary fuels	MJ	3.37E-03	3.60E-04	1.54E-01	1.57E-01	4.62E-04	1.13E-02	ND	5.86E-07	ND	ND	ND	ND	ND	0.00E+00	1.79E-05	0.00E+00	3.87E-05	-3.22E-12
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	0.00E+00	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m^3	2.52E-01	9.77E-03	1.86E-02	2.80E-01	1.07E-02	1.60E-02	ND	5.02E-02	ND	ND	ND	ND	ND	0.00E+00	4.14E-04	0.00E+00	-8.43E-02	-4.75E-10

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	1.11E+00	9.63E-02	8.73E-02	1.29E+00	1.41E-01	1.74E-01	ND	2.43E-03	ND	ND	ND	ND	ND	0.00E+00	5.44E-03	0.00E+00	1.12E-02	-4.63E-08
Non-hazardous waste	kg	4.51E+01	1.92E+00	1.74E+00	4.87E+01	2.64E+00	9.28E+00	ND	7.10E-01	ND	ND	ND	ND	ND	0.00E+00	1.02E-01	0.00E+00	1.13E+02	-1.32E-06
Radioactive waste	kg	2.04E-04	1.97E-05	5.29E-05	2.77E-04	1.60E-05	2.39E-05	ND	5.05E-07	ND	ND	ND	ND	ND	0.00E+00	6.19E-07	0.00E+00	1.21E-06	-1.49E-13

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	0.00E+00	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	2.88E+00	2.88E+00	0.00E+00	6.65E-01	ND	0.00E+00	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	3.91E-17	3.91E-17	0.00E+00	3.44E-02	ND	0.00E+00	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	0.00E+00	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy – Electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	0.00E+00	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy – Heat	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	0.00E+00	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	1.54E+01	4.58E+00	1.99E+01	3.99E+01	5.74E+00	4.71E+00	ND	2.18E-02	ND	ND	ND	ND	ND	0.00E+00	2.21E-01	0.00E+00	2.58E-01	-4.29E-08
Ozone depletion Pot.	kg $CFC_{-11}e$	1.82E-07	7.35E-08	6.15E-08	3.17E-07	6.44E-08	2.60E-08	ND	1.41E-10	ND	ND	ND	ND	ND	0.00E+00	2.49E-09	0.00E+00	5.18E-09	-5.23E-16
Acidification	kg SO_2e	1.24E-01	1.28E-02	2.67E-02	1.64E-01	1.51E-02	1.71E-02	ND	1.00E-04	ND	ND	ND	ND	ND	0.00E+00	5.68E-04	0.00E+00	2.21E-03	-2.42E-10
Eutrophication	kg PO_4^3e	1.19E-02	2.99E-03	6.97E-03	2.19E-02	3.62E-03	3.83E-03	ND	1.17E-05	ND	ND	ND	ND	ND	0.00E+00	1.38E-04	0.00E+00	6.07E-04	-8.56E-11
POCP (“smog”)	kg C_2H_4e	6.15E-03	1.13E-03	2.31E-03	9.58E-03	1.34E-03	1.12E-03	ND	5.58E-06	ND	ND	ND	ND	ND	0.00E+00	5.09E-05	0.00E+00	1.46E-04	-1.72E-11
ADP-elements	kg Sbe	5.70E-04	1.23E-05	4.95E-06	5.87E-04	1.85E-05	3.36E-05	ND	1.27E-07	ND	ND	ND	ND	ND	0.00E+00	7.14E-07	0.00E+00	5.70E-07	-9.46E-14

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADP-fossil	MJ	1.65E+02	6.53E+01	1.53E+01	2.46E+02	7.99E+01	3.13E+01	ND	2.30E-01	ND	ND	ND	ND	ND	0.00E+00	3.08E+00	0.00E+00	5.58E+00	-3.70E-07

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	1.55E+01	4.61E+00	1.95E+01	3.96E+01	5.77E+00	4.61E+00	ND	2.19E-02	ND	ND	ND	ND	ND	0.00E+00	2.23E-01	0.00E+00	2.59E-01	-4.34E-08

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH4 fossil, CH4 biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO2 is set to zero

ENVIRONMENTAL IMPACTS – TRACI 2.1. / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	1.53E+01	4.53E+00	1.97E+01	3.95E+01	5.69E+00	4.67E+00	ND	2.15E-02	ND	ND	ND	ND	ND	0.00E+00	2.20E-01	0.00E+00	2.55E-01	-4.40E-08
Ozone Depletion	kg CFC_{-11}e	2.21E-07	9.74E-08	7.63E-08	3.95E-07	8.51E-08	3.30E-08	ND	1.73E-10	ND	ND	ND	ND	ND	0.00E+00	3.28E-09	0.00E+00	6.83E-09	-6.30E-16
Acidification	kg SO_2e	1.17E-01	1.48E-02	2.80E-02	1.60E-01	1.75E-02	1.76E-02	ND	1.03E-04	ND	ND	ND	ND	ND	0.00E+00	6.59E-04	0.00E+00	2.36E-03	-2.92E-10
Eutrophication	kg Ne	8.55E-03	1.46E-03	3.23E-03	1.32E-02	1.83E-03	2.18E-03	ND	9.71E-06	ND	ND	ND	ND	ND	0.00E+00	7.00E-05	0.00E+00	3.46E-04	-7.28E-11
POCP (“smog”)	kg O_3e	9.22E-01	3.82E-01	4.89E-01	1.79E+00	4.32E-01	2.48E-01	ND	1.34E-03	ND	ND	ND	ND	ND	0.00E+00	1.64E-02	0.00E+00	4.53E-02	-7.71E-09
ADP-fossil	MJ	1.80E+02	6.67E+01	6.82E+00	2.53E+02	8.10E+01	3.22E+01	ND	2.63E-01	ND	ND	ND	ND	ND	0.00E+00	3.13E+00	0.00E+00	5.67E+00	-3.80E-07

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

1. Electricity - BIOMASS - Puget Sound Energy, Inc., United States, LCA Commons, 0.83 kgCO2e/MJ
2. Electricity - GEOTHERMAL - California Independent System Operator, United States, LCA Commons, 0.0587 kgCO2e/MJ
3. Electricity production, hydro, reservoir, non-alpine region, Alabama, Ecoinvent, 0.0512 kgCO2e/kWh
4. Electricity - SOLAR - PacifiCorp West, United States, LCA Commons, 0.0201 kgCO2e/MJ
5. Electricity - WIND - Los Angeles Department of Water and Power, United States, LCA Commons, 0.0180 kgCO2e/MJ
6. Electricity - HYDRO - California Independent System Operator, United States, LCA Commons, 0.0029 kgCO2e/MJ
7. Electricity - NUCLEAR - California Independent System Operator, United States, LCA Commons, 0.0086 kgCO2e/MJ
8. Electricity, USA, California, 2023, California, One Click LCA, 0.35 kgCO2e/kWh
9. Natural gas, combusted in industrial equipment, United States, LCA Commons, 2.44 kgCO2e/m3

Transport scenario documentation - A4 (Transport resources)

1. Transport, freight, lorry 16-32 metric ton, EURO5, 1564.0583 km
2. Transport, freight, lorry 16-32 metric ton, EURO5, 6.1304 km
3. Transport, freight, sea, container ship, 94.5283 km

Transport to the building site (A4) - Scenario documentation

Scenario parameter	Value
Capacity utilization (including empty return) %	100%
Bulk density of transported products	2030
Volume capacity utilization factor	-

Installation at the building site (A5) - Scenario documentation

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	-
Water use (m^3)	0.0004 m3 water
Ancillary materials: type and mass (kg)	4.07 kg Mortar, 0.212 kg Grout, 0.043 kg Acrylate
Waste materials: type and mass (kg)	0.903 kg waste tile (5%)
Waste materials: output routes	-
Direct emissions (kg)	-

Use stages scenario documentation - B2 Maintenance

Scenario information	Value
Maintenance process description	Damp mop - North American Tile EPD 2019
Maintenance cycle (per RSL)	36 times/year
Energy use (kWh/cycle)	-
Water use (m3 or litres/cycle)	0.783 liters of tap water per square meter of tile per year
Ancillary materials (kg/cycle)	-
Waste materials (kg/cycle)	-

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	22.8 kg
Collection process: Mixed waste (kg)	-
Recovery: re-use (kg)	-
Recovery: recycling (kg)	-
Recovery: energy recovery (kg)	-
Disposal (kg)	22.8 kg landfilled
Scenario assumptions e.g. transportation (mode, km) & other	161 km - North American Tile EPD 2019

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance is filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez
Tool verification validity: 27 March 2025 - 26 March 2028

Yazan Badour as an authorized verifier for EPD Hub Limited 20.10.2026



VERIFIED ISO 14025