Terracotta Panels and Baguettes by Shildan Group

Health Product Declaration v2.2

created via: HPDC Online Builder

HPD UNIQUE IDENTIFIER: 20519
CLASSIFICATION: 074299
PRODUCT DESCRIPTION: Shildan provides advanced terracotta rainscreen and sunscreen systems for today's high performing, energy efficient facades. Information herein pertains to Shildan's double-leaf terracotta rainscreen panels and baguette suncreens, including ALPHATON® and LONGOTON®

Section 1: Summary

Basic Method / Product Threshold

CONTENT INVENTORY

Inventory Reporting Format
- ○ Nested Materials Method
- ◉ Basic Method

Threshold Disclosed Per
- ○ Material
- ◉ Product

Threshold level
- ○ 100 ppm
- ◉ 1,000 ppm
- ○ Per GHS SDS
- ○ Other

Residuals/Impurities
- ○ Considered
- ◉ Partially Considered
- ○ Not Considered

Explanation(s) provided for Residuals/Impurities?
- ◉ Yes ○ No

All Substances Above the Threshold Indicated Are:

Characterized ◉ Yes Ex/SC ○ Yes ○ No
% weight and role provided for all substances except SC substances characterized according to SC guidance.

Screened ◉ Yes Ex/SC ○ Yes ○ No
All substances screened using Priority Hazard Lists with results disclosed except SC substances screened according to SC guidance.

Identified ◉ Yes Ex/SC ○ Yes ○ No
All substances disclosed by Name (Specific or Generic) and Identifier except SC substances identified according to SC guidance.

CONTENT IN DESCENDING ORDER OF QUANTITY

Summary of product contents and results from screening individual chemical substances against HPD Priority Hazard Lists and the GreenScreen for Safer Chemicals®. The HPD does not assess whether using or handling this product will expose individuals to its chemical substances or any health risk. Refer to Section 2 for further details.

MATERIAL | SUBSTANCE | *RESIDUAL OR IMPURITY*
GREENSCREEN SCORE | HAZARD TYPE

TERRACOTTA PANELS AND BAGUETTES [ALUMINUM SILICATE, NATURAL LT-UNK KAOLINITE (AL2(OH)4(SI2O5)) NoGS *SC:SAND* Not Screened *LIMESTONE (PRIMARY CASRN IS 1317-65-3)* LT-UNK TITANIUM (PRIMARY CASRN IS 7440-32-6) LT-UNK IRON OXIDE LT-UNK MANGANESE OXIDE LT-UNK]

Number of Greenscreen BM-4/BM3 contents ... 0

Contents highest concern GreenScreen Benchmark or List translator Score ... LT-UNK

Nanomaterial ... Yes

INVENTORY AND SCREENING NOTES:

Special conditions applied: GeologicalMaterial

[LEED v4] "Yes ex/SC" result is due only to materials and substances for which Special Conditions were applied. Thus "Yes ex/SC" does not disqualify the product for the LEED v4 Materials and Resources Disclosure and Optimization credit, Option 1.

Per Environmental Product Declarations and Safety Data Sheets provided by suppliers, Pharos Project Database

VOLATILE ORGANIC COMPOUND (VOC) CONTENT

VOC Content data is not applicable for this product category.

CERTIFICATIONS AND COMPLIANCE

See Section 3 for additional listings.

VOC emissions: N/A

CONSISTENCY WITH OTHER PROGRAMS

No pre-checks completed or disclosed.

Third Party Verified?
- ○ Yes
- ◉ No

PREPARER: Self-Prepared
VERIFIER:
VERIFICATION #:

SCREENING DATE: 2020-06-02
PUBLISHED DATE: 2020-06-12
EXPIRY DATE: 2023-06-02

Section 2: Content in Descending Order of Quantity

This section lists contents in a product based on specific threshold(s) and reports detailed health information including hazards. This HPD uses the inventory method indicated above, which is one of three possible methods:

- *Basic Inventory method with Product-level threshold.*
- *Nested Material Inventory method with Product-level threshold*
- *Nested Material Inventory method with individual Material-level thresholds*

Definitions and requirements for the three inventory methods and requirements for each data field can be found in the HPD Open Standard version 2.1.1, available on the HPDC website at: www.hpd-collaborative.org/hpd-2-1-1-standard

TERRACOTTA PANELS AND BAGUETTES

PRODUCT THRESHOLD: 1000 ppm

RESIDUALS AND IMPURITIES CONSIDERED: Partially

RESIDUALS AND IMPURITIES NOTES: Residuals and Impurities were considered based on supplier SDS, process chemistry via Pharos CML. Terracotta products may contain varying trace Residual or Impurity elements according to differing supplier data (0.0% to 7% other elements; 15% other elements that are not clay). SDS may not identify all Residuals or Impurities present in Terracotta panels that would require reporting on the HPD. Any residuals and impurities are from Natural Geological Material such as gravel, dolomite and limestone found in Germany. These Geological materials may be subject to the Special conditions protocol. Terracotta Panels made from naturally resourced materials.

OTHER PRODUCT NOTES: The recycled portion of the terracotta panels varies according to color but Moeding reports up to 35% of the material is recycled (Pre-Consumer). Terracotta breakage materials is not disguarded, but is used as grog (recycling material) in Moeding products. A recycling mill in the factory, grinding breakage materials down to create chamotte (grog).

ALUMINUM SILICATE, NATURAL

ID: 12141-46-7

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library

HAZARD SCREENING DATE: 2020-06-02

%: 50.0000 - 85.0000 GS: LT-UNK RC: PreC NANO: No SUBSTANCE ROLE: Alloy element

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: Aluminum silicate is a naturally occurring mineral in clay

KAOLINITE (AL2(OH)4(SI2O5))

ID: 1318-74-7

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library

HAZARD SCREENING DATE: 2020-06-02

%: 10.0000 - 40.0000 GS: NoGS RC: UNK NANO: Unknown SUBSTANCE ROLE: Residual

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: Kaolitnite is a mineral found within clay and is a a hydrous aluminum silicate formed by the decomposition of minerals. It is a natural material extruded from the ground in the process of farming clay

SC:SAND

ID: SC:GeoMat

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2020-06-02**

%: **Impurity/Residual** GS: **Not Screened** RC: **None** NANO: **No** SUBSTANCE ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
	Hazard Screening not performed	

SUBSTANCE NOTES:
Version: SCGeoMats/2018-02-23
Origin: Markkofen, Germany
Typical Composition: Mica, Feldspar, Quartz silt
Potential presence of toxic metals: None
Presence of Radioactive Elements: N/A

The composition of the sand contains natural deposit components of varying percentages such as Mica, Feldspar, and quartz silt.

The clay is naturally extruded from the ground. This soil is excavated and stored, and the clay mined. The stored soil is returned to the farmland once clay mining is finished, necessitating a minimally harmful process on the environment.

LIMESTONE (PRIMARY CASRN IS 1317-65-3)

ID: **359415-48-8**

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2020-06-02**

%: **Impurity/Residual** GS: **LT-UNK** RC: **None** NANO: **Yes** SUBSTANCE ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: The remaining 7% of the terracotta's compositions contains natural deposit components or varying percentages such as lime, dolomite, and coloring ferrous oxide.

TITANIUM (PRIMARY CASRN IS 7440-32-6)

ID: **1445772-67-7**

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2020-06-02**

%: **0.0000 - 5.0000** GS: **LT-UNK** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: Trace elements of this can found within the terracotta

IRON OXIDE

ID: **1332-37-2**

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2020-06-02**

%: **0.0000 - 7.0000** GS: **LT-UNK** RC: **UNK** NANO: **Unknown** SUBSTANCE ROLE: **Pigment**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: For this reason, various fired colors can arise depending on the clay involved. Manganese oxide and iron oxide are used to achieve certain colors. May or may not be included to achieve certain colors.

MANGANESE OXIDE

ID: 11129-60-5

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2020-06-02**

%: **0.0000 - 7.0000** GS: **LT-UNK** RC: **UNK** NANO: **Unknown** SUBSTANCE ROLE: **Pigment**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: For this reason, various fired colors can arise depending on the clay involved. Manganese oxide and iron oxide are used to achieve certain colors. May or may not be included to achieve certain colors.

Section 3: Certifications and Compliance

This section lists applicable certification and standards compliance information for VOC emissions and VOC content. Other types of health or environmental performance testing or certifications completed for the product may be provided.

VOC EMISSIONS **N/A**

CERTIFYING PARTY: Self-declared
APPLICABLE FACILITIES: All
CERTIFICATE URL:

ISSUE DATE: 2020-04-09

EXPIRY DATE:

CERTIFIER OR LAB: N/A

CERTIFICATION AND COMPLIANCE NOTES: This HPD is for a products that are NOT liquid/wet applied. All products included in this HPD are exterior products and are inherently non-emitting VOC sources.

Section 4: Accessories

This section lists related products or materials that the manufacturer requires or recommends for installation (such as adhesives or fasteners), maintenance, cleaning, or operations. For information relating to the contents of these related products, refer to their applicable Health Product Declarations, if available.

ALUMINUM CURTAINWALL EXTRUSION HPD URL: **No HPD available**

CONDITION WHEN RECOMMENDED OR REQUIRED AND/OR OTHER NOTES:
Aluminum curtainwall extrusion and all other products contained within the related CHPD mentioned herein are a apart of Shildan's rainscreen and sunscreen systems.

Section 5: General Notes

The Shildan/Moeding Terracotta Rainscreen Façade system merges the advantages of two worlds of construction technology, making it a building technique of the future. The warm, natural look of terracotta is combined with a more modern, highly-articulated rainscreen system to produce a truly advanced “masonry” exterior wall system with great advantages. The Terracotta Rainscreen system allows air to circulate behind the panels to provide pressure equalization, preventing water from being drawn into the building. This energy saving, no maintenance ventilated system keeps your building dry and protected from the worst weather conditions without the use of grout or sealants and without any need for maintenance. This includes positive and negative wind loads, as well as seismic, thermal, and normal movement. Shildan Group provides advanced terracotta façade products and systems to the architectural community. Since introducing terracotta rainscreen to the US market in 1998, Shildan has completed more than 350 institutional projects, with approximately 5 million ft² terracotta in place in the US. We specialize in designing and engineering systems to meet the needs of today’s high performing facades. Shildan is a member of the AIA and USGBC. Our experienced technical sales team offers early design guidance to architects, engineers & owners, design build services and technical assistance. Shildan offers premium support and solutions throughout the life of a project. Our in-house team of project managers & engineers works to develop custom colors and shapes to meet each project’s unique design intent. Information herein pertains to Shildan's double-leaf terracotta rainscreen panels and baguette suncreens, including ALPHATON® and LONGOTON®. Shildan offers both standard and custom panel and baguette die profiles, colors, and glazes on a per project basis. Shildan/Moeding terracotta facade panels are made in the Girnghuber (GIMA) factory in Marklkofen, Germany. Many different types of clay building materials are produced in this factory, including clay roof tiles, clay facing

bricks, large terracotta bricks, clay construction blocks, clay pavement bricks, and ventilated facade clay tiles. The majority of the natural clay is mined in clay fields directly next to Moeding's production facilities, minimizing the transport distance of raw materials and allowing for a very consistent production material. Approximately one meter of soil exists on farmland atop the clay. This soil is excavated and stored, and the clay mined. the stored soil is returned to the farmland once clay mining is finished, necessitating a minimally harmful process on the environment. Terracotta breakage materials is not disguarded, but is used as chamotte (recycling material) in Moeding products. A recycling mill in the factory, grinding breakage materials down to create chamotte (grog). Shildan's terracotta is comprised of of clay (50% to 85%) and sand (10% to 40%). Clay is made of natural mineralogical composition. Materials are quarried close to the surface in selected natural mineral deposits. Sand and firing waste are added as shortening materials for offsetting the natural fluctuations in the mineralogical composition of the raw clay. The remaining 7% of the terracotta's compositions contains natural deposit components or varying percentages such as limestone, dolomite, and coloring ferrous oxide. For this reason, various fired colors can arise depending on the clay involved. Manganese oxide and iron oxide are used to achieve certain colors. Glazes and engobes are also used in order to achieve certain color shades.

Section 6: References

MANUFACTURER INFORMATION

MANUFACTURER: **Shildan Group**
ADDRESS: **2047 Briggs Rd**
Mount Laurel NJ 08054, United States
WEBSITE: **shildan.com**

CONTACT NAME: **Moshe Steinmetz**
TITLE: **President**
PHONE: **215-525-410**
EMAIL: **info@shildan.com**

The listed contact is responsible for the validity of this HPD and attests that it is accurate and complete to the best of his or her knowledge.

KEY

Hazard Types

AQU Aquatic toxicity
CAN Cancer
DEV Developmental toxicity
END Endocrine activity
EYE Eye irritation/corrosivity
GEN Gene mutation
GLO Global warming
LAN Land toxicity
MAM Mammalian/systemic/organ toxicity
MUL Multiple
NEU Neurotoxicity
NF Not found on Priority Hazard Lists
OZO Ozone depletion
PBT Persistent, bioaccumulative, and toxic
PHY Physical hazard (flammable or reactive)
REP Reproductive
RES Respiratory sensitization
SKI Skin sensitization/irritation/corrosivity
UNK Unknown

GreenScreen (GS)

BM-4 Benchmark 4 (prefer-safer chemical)
BM-3 Benchmark 3 (use but still opportunity for improvement)
BM-2 Benchmark 2 (use but search for safer substitutes)
BM-1 Benchmark 1 (avoid - chemical of high concern)
BM-U Benchmark Unspecified (due to insufficient data)
LT-P1 List Translator Possible 1 (Possible Benchmark-1)
LT-1 List Translator 1 (Likely Benchmark-1)
LT-UNK List Translator Benchmark Unknown (the chemical is present on at least one GreenScreen Specified List, but the information contained within the list did not result in a clear mapping to a LT-1 or LTP1 score.)
NoGS No GreenScreen.

Recycled Types

PreC Pre-consumer recycled content
PostC Post-consumer recycled content
UNK Inclusion of recycled content is unknown
None Does not include recycled content

Other Terms:

GHS SDS Globally Harmonized System of Classification and Labeling of Chemicals Safety Data Sheet

Inventory Methods:

Nested Method / Material Threshold Substances listed within each material per threshold indicated per material
Nested Method / Product Threshold Substances listed within each material per threshold indicated per product
Basic Method / Product Threshold Substances listed individually per threshold indicated per product

Nano Composed of nano scale particles or nanotechnology
Third Party Verified Verification by independent certifier approved by HPDC
Preparer Third party preparer, if not self-prepared by manufacturer
Applicable facilities Manufacturing sites to which testing applies

The Health Product Declaration (HPD) Open Standard provides for the disclosure of product contents and potential associated human and environmental health hazards. Hazard associations are based on the HPD Priority Hazard Lists, the GreenScreen List Translator™, and when available, full GreenScreen® assessments. The HPD Open Standard v2.1 is not:

- *a method for the assessment of exposure or risk associated with product handling or use,*
- *a method for assessing potential health impacts of: (i) substances used or created during the manufacturing process or (ii) substances created after the product is delivered for end use.*

Information about life cycle, exposure and/or risk assessments performed on the product may be reported by the manufacturer in appropriate Notes sections, and/or, where applicable, in the Certifications section.

The HPD Open Standard was created and is supported by the Health Product Declaration Collaborative (the HPD Collaborative), a customer-led organization composed of stakeholders throughout the building industry that is committed to the continuous improvement of building products through transparency, openness, and innovation throughout the product supply chain.

The product manufacturer and any applicable independent verifier are solely responsible for the accuracy of statements and claims made in this HPD and for compliance with the HPD standard noted.