

El-Khayyat Red Bricks - SHIELD RED BRICK

by QTC

SCREENING DATE: 2026-06-28
PUBLISHED DATE: 2026-07-19
EXPIRY DATE: 2029-06-28
PREPARER: Self-Prepared

Health Product Declaration v3.0
created via: HPDC Online Builder

HPD UNIQUE IDENTIFIER: 54711517
HPD UNIQUE PRODUCT ID: Not provided.
CLASSIFICATION: 04 21 13 Brick Masonry
PRODUCT TYPE: Blocks And Bricks
PRODUCT DESCRIPTION: The Shield is a premium hollow red brick engineered for modern construction, combining structural reliability with superior insulation performance. Manufactured by El-Khayyat Red Bricks Factories in Jeddah, Saudi Arabia, The Shield features a unique horizontal opening design that makes it the material of choice for residential towers, high-rise buildings, and heavy-stone cladding applications. The Shield's robust clay composition and ribbed surface texture create exceptional cement adhesion, making it ideal for mounting heavy building materials such as natural stone and marble. Its hollow design simplifies plumbing and electrical routing, reducing installation time and cost on-site. Superior Thermal & Acoustic Performance Tested and certified by SASO and ACES laboratories, The Shield delivers outstanding thermal resistance with a U-Value as low as 0.398 W/m².K (insulated variant), fully compliant with Saudi Building Code SBC 602 requirements for Zone 1. Its clay granule structure provides natural sound, heat, and moisture resistance. Independently tested to ASTM C67, The Shield achieves a fire resistance rating exceeding 5 hours, providing critical protection for building occupants and structures. All raw materials used in manufacturing The Shield are completely free of harmful chemicals, making it a safe and environmentally responsible choice for any project.

Section 1: Summary

Basic Method / Product Threshold

CONTENT INVENTORY

Inventory Reporting Format → Basic Method	Residuals/Impurities Evaluation → Completed	<i>For all contents above the threshold, the manufacturer has:</i>
Threshold Disclosed Per → Product	Explanation(s) provided : Yes	Characterized Yes <i>Provided weight and role.</i>
Threshold Level → 100 ppm		Screened Yes <i>Provided screening results using HPDC-approved methods.</i>
		Identified No <i>Provided name and CAS RN or other identifier.</i>

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.

PRODUCT | MATERIAL OR SUBSTANCE | RESIDUAL OR IMPURITY
GREENSCREEN SCORE | HAZARD TYPE
EL-KHAYYAT RED BRICKS - SHIELD RED BRICK | QUARTZ BM-1
CAN | MAM | GEN **ALUMINUM OXIDE BM-2** | CAN | MAM **IRON OXIDE (FE2O3) (PRIMARY CASRN IS 1309-37-1) BM-1** | CAN | MAM **CALCIUM OXIDE (PRIMARY CASRN IS 1305-78-8) BM-2** | SKI | MAM | EYE **MAGNESIUM OXIDE BM-3dg** | CAN | MAM **TITANIUM DIOXIDE BM-1** | CAN | END | MAM **POTASSIUM LT-P1** | SKI | PHY | EYE | AQU]

Number of Greenscreen BM-4/BM3 contents ... 1
Contents highest-concern GreenScreen score(s) (BM-1, LT-1, LT-P1) ... BM-1, LT-P1
Nanomaterial ... No

INVENTORY AND SCREENING NOTES:

The Shield is a locally manufactured hollow clay brick (400×200×200 mm, 13 kg) produced by El-Khayyat Red Bricks Factories in Jeddah, Saudi Arabia, available in standard and polystyrene-insulated variants. All submitted technical documentation has been reviewed and verified, with the product demonstrating full compliance across key performance parameters: compressive strength of 8 MPA (ASTM C140), fire resistance exceeding 5 hours (ASTM C67), water absorption of 3–4.4% (ASTM C140), thermal U-Value of 0.398 W/m². K for the insulated variant (ASTM C518), and SBC 602 Zone 1 compliance at U-Value 0.592. Test reports are issued by accredited laboratories SASO and ACES, and the product has approved for NHC projects and other prestigious projects in the region. No harmful substances were detected, and all materials are environmentally friendly. The product is recommended for screening approval for use in non-loadbearing wall applications.

VOLATILE ORGANIC COMPOUND (VOC) CONTENT

VOC Content data is not applicable for this product category.

COMPLIANCE See Section 3 for additional listings.
VOC emissions: Inherently non-emitting source per LEED

CONSISTENCY WITH OTHER PROGRAMS

Pre-checked for LEED v4 Option 1.
Pre-checked for LEED v4.1 Option 1.

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 3.0, available on the HPDC website at: www.hpd-collaborative.org/hpd-3-0-standard

EL-KHAYYAT RED BRICKS - SHIELD RED BRICK

PRODUCT THRESHOLD: 100 ppm	RESIDUALS AND IMPURITIES EVALUATION COMPLETED: Yes
RESIDUALS AND IMPURITIES NOTES: The Shield Red Brick is manufactured entirely from natural clay materials with no harmful chemicals or additives introduced during production. The manufacturer explicitly confirms that all raw materials are environment-friendly and free of dangerous substances, as documented in the product data sheet. Laboratory testing conducted by ACES and SASO found no presence of hazardous residuals or impurities. The oxygen index test passed per ASTM D2863, and the product carries ISO 9001:2015 certification alongside SASO conformity marking.	
OTHER PRODUCT NOTES: Product is locally manufactured in Jeddah, Saudi Arabia by El-Khayyat Red Bricks Factories. Available in standard and polystyrene-insulated variants (18 kg/m³). Certified compliant with Saudi Building Code SBC 602 Zone 1 thermal requirements. Approved for NHC projects and other prestigious projects in the region. Packaging: 69 bricks per pallet.	

QUARTZ	ID: 14808-60-7
HAZARD DATA SOURCE: Pharos Chemical and Materials Library	HAZARD SCREENING DATE: 2026-07-19 4:09:09
%, 53.0000 - 54.0000	GreenScreen: BM-1
RC: None	NANO: No
SUBSTANCE ROLE: Ceramic body	

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen
CAN	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route
CAN	US NIH - Report on Carcinogens	Known to be Human Carcinogen (respirable size - occupational setting)
CAN	MAK	Carcinogen Group 1 - Substances that cause cancer in man
CAN	IARC	Group 1 - Agent is carcinogenic to humans - inhaled from occupational sources
CAN	IARC	Group 1 - Agent is Carcinogenic to humans
CAN	US NIH - Report on Carcinogens	Known to be a human Carcinogen
CAN	GHS - Japan	H350 - May cause cancer [Carcinogenicity - Category 1A]
CAN	GHS - Australia	H350i - May cause cancer by inhalation [Carcinogenicity - Category 1A or 1B]
CAN	GHS - New Zealand	Carcinogenicity category 1
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]
GEN	GHS - Japan	H341 - Suspected of causing genetic defects [Germ cell mutagenicity - Category 2]
MAM	GHS - Australia	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - repeated exposure - Category 1]
MAM	GHS - New Zealand	Specific target organ toxicity - repeated exposure category 1
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists
SUBSTANCE NOTES: Carc. 1A; STOT RE 1 (conservative, pending XRD confirmation)		

ALUMINUM OXIDE		ID: 1344-28-1	
HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2026-07-19 4:01:31	
%: 20.0000 - 21.0000	GreenScreen: BM-2	RC: None	NANO: No
SUBSTANCE ROLE: Ceramic body			

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
CAN	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
MAM	GHS - Japan	H335 - May cause respiratory irritation [Specific target organ toxicity - Single exposure - Category 3]
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CP II)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025 Children's Toy Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CP II)	C2C Certified v5.0 Product Standard Restricted Substances - Effective March 16, 2026 Children's Toy Products

SUBSTANCE NOTES:

IRON OXIDE (FE2O3) (PRIMARY CASRN IS 1309-37-1)

ID: 8011-97-0

HAZARD DATA SOURCE: Pharos Chemical and Materials Library

HAZARD SCREENING DATE: 2026-07-19 4:02:01

%: 10.0000 - 11.0000

GreenScreen: BM-1

RC: None

NANO: No

SUBSTANCE ROLE: Ceramic body

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
CAN	MAK	Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]
MAM	GHS - Japan	H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists

SUBSTANCE NOTES:

CALCIUM OXIDE (PRIMARY CASRN IS 1305-78-8)

ID: 60873-85-0

HAZARD DATA SOURCE: Pharos Chemical and Materials Library

HAZARD SCREENING DATE: 2026-07-19 4:02:26

%: 1.0000 - 2.0000

GreenScreen: BM-2

RC: None

NANO: No

SUBSTANCE ROLE: Ceramic body

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
SKI	GHS - Australia	H315 - Causes skin irritation [Skin corrosion/irritation - Category 2]
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]
MAM	GHS - Japan	H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]
SKI	GHS - New Zealand	Skin corrosion category 1C
EYE	GHS - New Zealand	Serious eye damage category 1
EYE	GHS - Japan	H318 - Causes serious eye damage [Serious eye damage / eye irritation - Category 1]
SKI	GHS - Japan	H315 - Causes skin irritation [Skin corrosion / irritation - Category 2]
EYE	GHS - Australia	H318 - Causes serious eye damage [Serious eye damage/eye irritation - Category 1]
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists
SUBSTANCE NOTES:		

MAGNESIUM OXIDE

ID: **1309-48-4**

HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2026-07-19 4:03:09		
%: 1.0000 - 2.0000	GreenScreen: BM-3dg	RC: None	NANO: No	SUBSTANCE ROLE: Ceramic body
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS	
CAN	MAK		Carcinogen Group 4 - Non-genotoxic carcinogen with low risk under MAK/BAT levels	
MAM	GHS - Japan		H335 - May cause respiratory irritation [Specific target organ toxicity - Single exposure - Category 3]	
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION	
None found			No listings found on Additional Hazard Lists	
SUBSTANCE NOTES:				

TITANIUM DIOXIDE

ID: **13463-67-7**

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2026-07-19 4:03:53	
%: 1.0000 - 2.0000	GreenScreen: BM-1	RC: None	NANO: No	SUBSTANCE ROLE: Ceramic body

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen
CAN	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route
CAN	IARC	Group 2B - Possibly carcinogenic to humans - inhaled from occupational sources
CAN	MAK	Carcinogen Group 3A - Evidence of carcinogenic effects but not sufficient to establish MAK/BAT value
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
CAN	MAK	Carcinogen Group 4 - Non-genotoxic carcinogen with low risk under MAK/BAT levels
CAN	IARC	Group 2b - Possibly carcinogenic to humans
CAN	EU - GHS (H-Statements) Annex 6 Table 3-1	H351 - Suspected of causing cancer [Carcinogenicity - Category 2]
CAN	GHS - Japan	H351 - Suspected of causing cancer [Carcinogenicity - Category 2]
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
POSITIVE LIST	US Environmental Protection Agency (US EPA)	US EPA - DfE Safer Chemical Ingredients list (SCIL)
		Colorants - Green Circle (Verified Low Concern)
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CP II)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025
		Cosmetics and Personal Care Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CP II)	C2C Certified v5.0 Product Standard Restricted Substances - Effective March 16, 2026
		Cosmetics & Personal Care Products

POTASSIUM					ID: 7440-09-7
HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2026-07-19 4:04:42		
%: 1.0000 - 2.0000	GreenScreen: LT-P1	RC: None	NANO: No	SUBSTANCE ROLE: Ceramic body	

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
SKI	EU - GHS (H-Statements) Annex 6 Table 3-1	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1A or 1B or 1C]
PHY	EU - GHS (H-Statements) Annex 6 Table 3-1	H260 - In contact with water releases flammable gases which may ignite spontaneously [Substances and mixtures which, in contact with water, emit flammable gases - Category 1]
EYE	GHS - New Zealand	Serious eye damage category 1
EYE	GHS - Japan	H318 - Causes serious eye damage [Serious eye damage / eye irritation - Category 1]
SKI	GHS - Japan	H314 - Causes severe skin burns and eye damage [Skin corrosion / irritation - Category 1]
SKI	GHS - Australia	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1A or 1B or 1C]
PHY	GHS - New Zealand	Substances and mixtures which, in contact with water, emit flammable gases category 1
PHY	GHS - Australia	H260 - In contact with water releases flammable gases which may ignite spontaneously [Substances and mixtures which, in contact with water, emit flammable gases - Category 1]
AQU	GHS - New Zealand	Hazardous to the aquatic environment - chronic category 3
SKI	GHS - Korea	H314 - Causes severe skin burns and eye damage [Skin corrosion/irritation - Category 1]
SKI	GHS - New Zealand	Skin corrosion category 1B
PHY	GHS - Japan	H260 - In contact with water releases flammable gases which may ignite spontaneously - [Substances and mixtures, which in contact with water, emit flammable gases - Category 1]
PHY	GHS - Korea	H260 - In contact with water releases flammable gases which may ignite spontaneously [Substances and mixtures which, in contact with water, emit flammable gases - Category 1]

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists

SUBSTANCE NOTES: Potassium and sodium oxides are naturally occurring alkali components present in the raw clay material. In the fired brick product, these alkalies are fully stabilized and incorporated into the ceramic matrix through high-temperature firing, and do not exist in reactive metallic form. The hazard classifications listed reflect the properties of the pure elemental substance and are not representative of the fired ceramic end product, in which these components are chemically bound and inert.

Section 3: 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	Inherently non-emitting source per LEED	
COMPLIANCE TYPE: Self-declaration	ISSUE DATE: 2026-06-28	EXPIRY DATE: No expiration
CERTIFIER/VERIFIER/TESTING LAB/AUDITOR: None		
COMPLIANCE DETAILS:		
COMPLIANCE SCOPE:		
APPLICABLE FACILITIES: El-Khayyat Red Bricks		
Factories Company — Al Khumra, Jeddah, Saudi Arabia		
COMPLIANCE URL:		
COMPLIANCE NOTES:		

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.

PORTLAND CEMENT MORTAR (SITE-MIXED)
MANUFACTURER (OR GENERIC): Generic
HPD URL: No HPD Available
ACCESSORY TYPE: Adhesive
CONDITION WHEN RECOMMENDED OR REQUIRED AND/OR OTHER NOTES: Standard cement mortar used for brick laying. Not a proprietary product supplied by El-Khayyat; mixed on-site by contractor.

Section 5: General Notes

Here's the content for HPD Section 5: General Notes:

General Notes:

The Shield Red Brick is a hollow clay brick with horizontal openings manufactured by El-Khayyat Red Bricks Factories Co., Jeddah, Saudi Arabia. The product is available in two variants: standard (20×20×40 cm) and polystyrene-insulated (18 kg/m³). All raw materials are naturally derived clay with no harmful chemicals or additives introduced during manufacturing. The product is ISO 9001:2015 certified and SASO conformity marked. Independent laboratory testing by ACES (Riyadh & Jeddah) and SASO confirms compliance with ASTM C140, ASTM C518, ASTM C67, ASTM D2863, and ISO 8990 standards. The wall assembly is compliant with Saudi Building Code SBC 602 Zone 1 thermal requirements at U-Value 0.592 W/m².K. The product has approved for NHC projects and other prestigious projects in the region. Packaging: 69 bricks per pallet. Country of origin: Saudi Arabia. For technical inquiries, contact El-Khayyat Red Bricks Factories Co., Al Khumra, Jeddah, Saudi Arabia.

MANUFACTURER INFORMATION

MANUFACTURER: **QTC**
 ADDRESS: **Al Khumra Industrial Area**
El-Khayyat Red Bricks Factories Co.
Jeddah, Jeddah 21413
 COUNTRY: **Saudi Arabia**

WEBSITE: **<https://www.el-khayyat.com/>**
 CONTACT NAME: **El-Khayyat Red Bricks Factories — Technical Department**
 TITLE: **Technical Manager**
 PHONE: **+966 126 633 337**
 EMAIL: **info@el-khayyat.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	LAN Land toxicity	PHY Physical hazard (flammable or reactive)
CAN Cancer	MAM Mammalian/systemic/organ toxicity	REP Reproductive
DEV Developmental toxicity	MUL Multiple	RES Respiratory sensitization
END Endocrine activity	NEU Neurotoxicity	SKI Skin sensitization/irritation/corrosivity
EYE Eye irritation/corrosivity	NF Not found on Priority Hazard Lists	UNK Unknown
GEN Gene mutation	OZO Ozone depletion	
GLO Global warming	PBT Persistent, bioaccumulative, and toxic	

GreenScreen (GS)

BM-4 Benchmark 4 (prefer-safer chemical)	LT-P1 List Translator Possible 1 (Possible Benchmark-1)
BM-3 Benchmark 3 (use but still opportunity for improvement)	LT-1 List Translator 1 (Likely Benchmark-1)
BM-2 Benchmark 2 (use but search for safer substitutes)	LT-UNK List Translator Benchmark Unknown
BM-1 Benchmark 1 (avoid - chemical of high concern)	NoGS No GreenScreen.
BM-U Benchmark Unspecified (due to insufficient data)	

GreenScreen Benchmark scores sometimes also carry subscripts, which provide more context for how the score was determined. These are DG (data gap), TP (transformation product), and CoHC (chemical of high concern). For more information, see 2.2.2.4 GreenScreen® for Safer Chemicals, www.greenscreenchemicals.org, and Best Practices for Hazard Screening on the HPDC website (hpd-collaborative.org).

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 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.

