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INFORMATION SHEET

Dry-pressed ceramic tiles, with water absorption E_b<0.5 %

OBJECTIVE:

This "Technical Data Sheet" is provided at the request of the consumer/recipient. The sole purpose of this document is to inform the consumer about the measures to be taken for the safe use of the product supplied.

CRYSTALLINE SILICA AND SILICOSIS RISK:

The term silica refers to one of the most common mineral substances found in nature, formed by silicon (Si) and oxygen (O) which, together, make up about 74% by weight of the earth's crust. Generally, these two chemical elements combine with others to form silicates, constituent minerals of many rocks.
The indicative content of crystalline silica in some building materials is as follows:

- Marble: 0-5%
- Ceramics (ABK Group production): 15-20%
- Granite: 15-35%
- Slate: up to 40%
- Quartzite: more than 95%
- Recomposed quartz: 85-100%;

Most of the work activities that come into contact with bricks, mortars, paints, cement, bricks, ceramics, slate, sand, concrete and that generally generate dust are those most at risk.
The inhalable free crystalline silica in its "respirable" fraction is formed with subsequent processes (cutting, sanding, shaping, milling, drilling, etc.), i.e. processes that generate dust, where in the absence of the necessary precautions, the inhalation of dust can cause serious diseases. The larger silica particles are retained by the nose and expelled by coughing, while the fine ones are able to penetrate the pulmonary alveoli and cause damage. Crystalline silica affects the respiratory tract causing diseases such as silicosis, pulmonary disease or lung cancer.
Obviously, the risk of silicosis can be higher or lower depending on the level of concentration of this substance within the materials used in production processes. Consequently, prevention and protection measures must also be adapted to the findings of the risk assessment.
Even if ceramic is one of the safest materials, it is therefore very important to handle the ceramic product correctly.

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CERAMIC PRODUCT:

The ceramic product can be classified under the REACH discipline (EC Regulation 1907/2006) as "ARTICOLO[1]"; therefore, the adoption of an SDS (Safety Data Sheet) is not envisaged; which is required for classifications of 'substance' or 'mixture'.
The information sheet proposed by ABK Group S.p.A. is structured on the SDS scheme, shown below, where this is compatible and significant and therefore omitting the points of non-relevance.
The SDS according to Article 31(6) of the REACH Regulation must include the following 16 titles:

- SECTION 1: Identification of the substance/mixture and the company
- SECTION 2: Hazard Identification
- SECTION 3: Composition/ingredient information (should be included).
- SECTION 4: First Aid Measures – NOT APPLICABLE
- SECTION 5: Fire-fighting measures
- SECTION 6: Measures in the event of accidental release
- SECTION 7: Handling and Storage
- SECTION 8: Exposure/Personal Protection Controls
- SECTION 9: Physical and Chemical Properties
- SECTION 10: Stability and Responsiveness
- SECTION 11: Toxicological information
- SECTION 12: Ecological information
- SECTION 13: Disposal Considerations
- SECTION 14: Transportation Information - NOT APPLICABLE
- SECTION 15: Regulatory Information
- SECTION 16: Other Information

[1] Item Definitions:
REACH Regulation – Art. 3 paragraph 3: *"Article: an object to which a particular shape, surface or design is given during production which determines its function to a greater extent than its chemical composition"*
CLP regulation - Art. 2 paragraph 9: "*an object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition*".
OSHA Standard 1910.1200 (c): "*Article means a manufactured item other than a fluid or particle:*

I. *which is formed to a specific shape or design during manufacture;*
II. *which has end use function(s) dependent in whole or in part upon its shape or design during end use;*
III. *which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees".*

1. PRODUCT AND COMPANY IDENTIFICATION

Type of product and use:

Dry-pressed ceramic slabs, with water absorption E_b<0,5 %; for indoor and outdoor cladding and/or flooring

Trade Name:

Dry-pressed ceramic plate(s), with water absorption E_b<0.5 % in accordance with ISO 13006 and EN 14411

Manufacturer/Supplier:

ABK Group S.p.A. - S.S. per Vignola 569, 226 - 41014, Solignano (MO)

2. HAZARD IDENTIFICATION

The fired ceramic product is odourless, stable and non-flammable and does not pose a health risk. It does not release substances of any kind (fumes/gases/vapours/dust) after installation. It is not considered hazardous waste at the end-of-life stage.

3. INFORMATION/MINERALOGICAL COMPOSITION

The product is manufactured from inorganic, non-metallic raw materials in powder form, such as clays, feldspars and sands.
The powders are fired at a high temperature (above 1200°C) and transformed into solid ceramic objects with a partially crystalline and partially amorphous structure.

4. FIRST AID MEASURES

The product does not pose a health risk; the product is monolithic. However, observe the instructions provided in sections 6, 7 and 8 of this sheet during handling/machining.

5. IN CASE OF FIRE

The product is inert and fireproof, it has high mechanical strength and chemical resistance, and it remains unchanged over time.
In the event of fire, the product does not burn or degrade and consequently does not release substances that may be harmful to humans or the environment.
The product is classified as Class A1 in accordance with EN 13501-1:2019.

6. TECHNIQUES FOR REDUCING DUST DURING CUTTING OPERATIONS

To reduce the production of dust when cutting, the score-and-snap method is recommended.
An electric wet tile cutter performs a straight and precise cut in a very short time without releasing dust into the environment.

An angle grinder can be used to cut any desired shape and meet design specifications. To reduce the quantity of dust released, be sure to wet the tile frequently, either manually or using devices integrated with the grinder.
Avoid dry cutting with power tools.

The literature on emissions generated when cutting cement products reveals that the use of a wet saw reduces respirable crystalline dust by 99% compared to the use of a power saw without water control[2]. Other studies show that respirable crystalline silica emissions are about 50 times lower when using the score-and-snap method than when using wet power tools and are about 1,000 times lower than when cutting with a power saw without dust suppression devices[3].

7. HANDLING AND STORAGE

Machining:
Wear gloves and safety shoes during handling, cutting and grinding operations.

Handling & Storage:
For pack weighing more than 25 Kg or when handling large size products, it is recommended to use mechanical load handling tools or to have two or more operators move the load and/or to observe the provisions of technical standards (ISO 11228-1:2022) and current legislation (in Italy Legislative Decree 81/08 as amended and supplemented).
The maximum load-bearing capacities of the storage facilities must be observed when storing the product.
Storage life is unlimited.

8. PERSONAL PROTECTION / EXPOSURE CONTROL

Personal Protective Equipment (PPE):
Performing the machining operations as recommended in point 6 above significantly reduces dust production. Dry cutting is the only operation liable to produce dust and consequently lead to the risk of exposure to respirable crystalline silica.

To limit dust generation:

We recommend wet cutting or the score and snap method during the installation process. Do not dry cut using power tools during the installation process.
Improper installation techniques could expose installer to harmful dust.

[2] Charles RV, Sheehy J, Feng HA, Sieber WK;; "Laboratory evaluation to reduce respirable crystalline silica dust when cutting concrete roofing tiles using a masonry saw", Journal of Occupational and Environmental Hygiene, 2010, 7: 245-251.
[3] "Human Health Risk Assessment for Proposition 65: Crystalline Silica"; Environmental Health & Engineering, Inc. (EH&E), June 2018.

PPE:

Personal protection equipment		***Respiratory protection*** *When dry cutting and/or operating in enclosed areas with inadequate ventilation, use a respirator with a dust/mist filter.*
		***Protective gloves*** *The product may have sharp edges, so cut-proof gloves should be worn during machining/handling operations.*
		***Safety glasses*** *Required in dusty environments and to avoid injury caused by fragments during cutting.*
		***Safety footwear*** *Safety footwear should be worn when handling/machining the product.*

The personal protection information provided in this section is based on general information for standard use and under normal conditions (wet cutting or the score-and-snap method). In the event of special or unusual uses or conditions, the assistance of an industrial hygienist or other qualified professional should be sought for the use of appropriate protection equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Aspect:	Solid – stable product
Smell:	Odorless
Melting Point:	>1200 °C
Flash Point:	Not applicable
Self-ignition:	Product non-self-flammable
Risk of explosion:	Product non-explosive
Water solubility:	Non-soluble

10. STABILITY AND RESPONSIVENESS

Ceramic is resistant to chemical attack and is a hygienic product that helps to maintain healthy environments.
Ceramic does not deform or freeze and is unaffected by variations in temperature. It is resistant to even the most aggressive chemical cleaning agents[4] and can be used in any application, including exterior building façades where it improves aesthetic quality and ensures thermal insulation and protection from the elements.

11. TOXICOLOGICAL INFORMATION

Bricks, roof tiles, tiles, refractory materials, and clay pipes can generate dust when cut improperly.
To limit the generation of dust, follow the instructions given in point 6 above.
Several studies[5] show that the dust released by porcelain tile cutting operations consists of both crystalline and amorphous phases, generally in a ratio of about 30:70. The crystalline phase usually consists of quartz and residual components such as feldspar and mullite.
Only a small fraction of the quartz generated during cutting can be classified as Respirable Crystalline Silica. This limited fraction must be taken into account in order to assess the possible risks of exposure to the health of the operator and to adopt the relevant protection systems.
For respirable crystalline silica powder, the Occupational Safety and Health Administration (OSHA) defines the action level as 25 µg/m^3 as a concentration of respirable crystalline silica in the air calculated as a time-weighted average over an 8-hour workday and a 40-hour workweek.

A study conducted in 2018[6] shows that the potential harmful effects associated with exposure to respirable crystalline silica generated during cutting operations are 75 times lower than the threshold of 1 in 100,000 set by the Californian law Proposition 65[7], better known as the “Safe Drinking Water and Toxic Enforcement Act of 1986”.

[4] For all ABK Group S.p.A. products, the action of hydrofluoric acid and/or mixtures with even minimal percentages of this acid is an exception. For some products where there are important decorations, follow the information sheets offered.
[5] C. Zanelli, M.Raimondo, G.Guarini, M.Dondi; "The vitreous phase of porcelain stoneware: Composition, evolution during sintering and physical p "; Journal of Non-Crystalline Solids; 357 (2011): 3251-3260.
[6] "Human Health Risk Assessment for Proposition 65: Crystalline Silica"; Environmental Health & Engineering, Inc. (EH&E), June 2018.
[7] https://oehha.ca.gov/proposition-65

12. ECOLOGICAL INFORMATION

During manufacture of the product:

- the company recycles all process water at the grinding stage / feeds process water into internal treatment plants and reuses it internally or externally;
- production waste is recycled;
- natural gas is burned only for the purpose of energy production. Combustion process emissions are kept below strict limits and monitored. Measures are taken to protect the environment.

The product can be crushed mechanically without creating a risk for the environment and can be reused in a wide range of different applications, e.g. aggregates for concrete or road construction.

13. DISPOSAL INFORMATION

According to the European Waste Catalogue (EWC), ceramic tiles fall into group 17 “Construction and demolition wastes - tiles and ceramics” (code: 17 01 03).

14. TRANSPORT INFORMATION

ADR / RID / ADN regulations do not apply to the transport of ceramic tiles.

15. REGULATORY INFORMATION

The product:

The article complies with the European provisions identified in Regulation 1272/2008 on classification, labelling and packaging of substances and mixtures and Regulation 1907/2006 on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
The product meets the requirements of the following standards:

- ISO 13006:2018 - Definitions, classification, characteristics and marking;
- EN 14411:2016
- EN 15804:2012+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations (EPD) — Core rules for the product category of construction products.
- UNI EN 13501-1:2019, Fire classification of construction products and building elements

To protect the Worker - Applicable legislation:

National legislation

- D.Lgs. GovernoD.Lgs. Government no. 81 of 09/04/2008 and subsequent amendments – Implementation of article 1 of law no. 123 of 3 August 2007 on the protection of health and safety in the workplace.

Community legislation

- Council Directive 98/24/EC of 7 April 1998, as amended, on the protection of workers from the risks related to chemical agents at work.

- Directive 2004/37/EC of the European Parliament and of the Council of 29 April 2004, as amended, on the protection of workers from the risks related to exposure to carcinogens or mutagens at work.

International Technical Standards

- UNI EN 689:2019 – Atmosphere in the workplace – Measurement of inhalation exposure to chemical agents – Strategy for verifying compliance with occupational exposure limit values – publication in English.

Other

- A.C.G.I.H. 2022 – American Conference of Governmental Industrial Hygienists – original language publication.
- SCOEL 2002 – Scientific Committee on Occupational Exposure Limits – publication in original language.

16. OTHER INFORMATION

The Confindustria Ceramica Association promotes sectoral studies and the adoption of guidelines with the aim of increasing the sustainability of Italian ceramic products. ABK Group S.p.A. is a proud member of Confindustria Ceramica.
For more information:
http://www.confindustriaceramica.it/

ABK Group S.p.A. is present on the web at the following links:
ABK Emotions on the surface: floors, walls and large slabs
ABKSTONE
MATTER (materiaslab.com)
Flaviker Contemporary Ecoceramics - Full-body porcelain stoneware wall tiles for indoors and outdoors (flavikerpisa.it)
Desvres Ariana Ceramica Italiana: porcelain stoneware wall and floor tiles made in Italy
Gardenia Orchid | Surfaces for Architecture and Interior
Versace Ceramics (versace-tiles.com)
HardKoll – Chemical industry specialising in the development and production of building solutions

The sector-specific Environmental Product Declaration – EPD that has accompanied the production of Italian companies associated with Confindustria Ceramica on the markets since 2015 is available at the following link.
Italian language:
http://privato.confindustriaceramica.it/site/home/documento1006112.html
Language ENGLISH:
http://privato.confindustriaceramica.it/site/home/documento1006100.html