

# SAFETY INSTRUCTIONS FOR WORKING WITH CERAMIC TILES

Tiles are made from raw materials of mineral origin (clay mostly) that have been mixed with water, dried, shaped, and fired in kilns at a high temperature. Some have a layer of glaze on one surface that has also been fired along with the base. **Tiles are used as a construction material to clad the surface of facades, walls, and floors.**

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The information provided in this leaflet is based on our current knowledge at the date indicated, refers exclusively to the product stated and does not constitute a guarantee as to the specific properties of the product. It is the user's responsibility to use the product in accordance with the recommendations and advice provided.

## 1. DANGERS

**Intact ceramic tiles are not known to have any adverse effects on health or the environment.**

**Dust can be produced during some product modification processes (cutting, rectifying, disposal etc.) that, because of its abrasive effect, can irritate parts of the body exposed to it. Any of these handling processes of the finished product must be carried out taking into account the measures indicated in section 6 of these instructions, minimising or avoiding the generation of dust.**

The dust released to the environment during these operations contains respirable crystalline silica (RCS), the inhalation of which can provoke acute or chronic silicosis (nodular fibrosis of the lungs) depending on how much dust the person is exposed to and for how long. Silicosis is a risk factor as regards developing lung cancer. Early symptoms of prolonged exposure to crystalline silica can include persistent cough, shortness of breath, and chest pain.

On December 12<sup>th</sup>, 2017, Directive (EU) 2017/2398 of the European Parliament and of the Council of 12 December 2017 amending Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or

mutagens at work was published. In the Annex I of this Directive (List of substances, mixtures and processes) the "Works involving exposure to respirable crystalline silica dust generated by a work process" were included.

Therefore, work involving exposure to respirable crystalline silica dust generated in a work process falls within the scope of this directive.

The amount of RCS contained in the dust that can be released by ceramic tiles during their machining is variable as it depends on their composition and on the size of the particles produced (RCS particles are smaller than 4 µm).

46 samples of tiles were analysed to quantify crystalline silica content (in form of quartz, cristobalite and tridymite) in a study performed in 2019. The detected concentration of quartz in tiles ranged from 2.9 to 25% weight. Cristobalite and tridymite were not detected in any of the tile products (Proposition 65: Crystalline Silica in Ceramic and Glass Tile, see section 7).

A preliminary study, conducted in 2023, on a battery of 16 ceramic tile products, using a standardised dry cutting test, based on UNE-EN 1093-3:2008, showed a crystalline silica percentage in the respirable generated dust ranging from 9% to 30% (Report C234777, see section 7).

## 2. FIRST AIDS



### Dust inhalation:

Move the affected person outdoors.  
Administer artificial respiration if necessary.  
If respiratory symptoms persist, seek medical attention immediately.



### Contact with the eyes:

Remove contact lenses, if worn and easy to do. Open the eyes and rinse thoroughly with plenty of clean water for at least 15 minutes. If irritation persists, seek medical attention.

**Ingestion of dust:**

This is unlikely to occur. The product is not toxic if ingested and is not retained in the intestinal tract. Never induce vomiting.

**Skin contact with dust:**

Although the product is non-toxic upon skin contact, wash with soap and water.

### 3. STORAGE

Ceramic tiles do not require specific conditions for safe storage and are not incompatible with other products or materials. However, it is recommended to store the tiles in a dry place protected from excessive humidity to preserve the integrity of the packaging and the product it contains.

### 4. DISPOSAL /RECOVERY

Tile waste is classified as inert material, so can be disposed of in a landfill authorised for this purpose in accordance with applicable regulations or it can be recovered and used for new purposes, e.g., as road filled material. However, please inform yourself about and comply with the local waste management regulations that are of application.

### 5. TRANSPORTATION

Ceramic tiles are considered non-hazardous goods according to international land, sea and air transportation criteria.

## 6. SAFE HANDLING

The measures described refer to processes that involve dust generation and/or tile breakage such as cutting, grinding, polishing or drilling.

### GENERAL MEASURES

Ensure good ventilation in the workspace. Avoid formation and dispersion of environmental dust. Wet working methods and practices that avoid or reduce the production of dust are recommended. If dust formation cannot be avoided, localized extraction systems should be used, or materials should be handled in a closed system. Collect the dust produced regularly using suction mechanisms or wet cleaning methods.

### PERSONAL PROTECTION

**During ceramic tiles handling:**

Wear gloves to avoid possible cuts and scratches.

Wear safety shoes/boots to prevent foot injuries caused by falling tiles.

**During processes that generate dust.**

Use breathing protection with P3 filters, safety glasses and appropriate clothing to prevent exposure to the dust.

It is recommended that you seek advice from the suppliers of personal protective equipment (PPE) to determine which are the most suitable for the particular workplace and amount of dust. It is also advisable to carry out regular inspections of personal protective equipment (PPE) to ensure its optimal condition and functionality.

### TRAINING

It is advisable to provide regular training to workers on the safe handling of ceramic tiles and the proper use of personal protective equipment (PPE).

### FIRE PREVENTION

Ceramic tiles are not combustible and do not contribute to fire in the event of fire.

Follow standard fire protection provisions.

### PROTECTING THE ENVIRONMENT

Treat possible discharges and emissions considering applicable limit values. It is advisable to adopt waste management measures that consider the reduction, reuse, and recycling of materials in order to minimise the environmental impact.

## 7. USEFUL INFORMATION

Occupational exposure limit values proposed in Spain by the National Institute of safety and hygiene at work (INSHT)  
<http://bdlep.inssbt.es/LEP/>

Occupational exposure limit values proposed in USA, collected by Occupational Safety and Health Administration (OSHA)  
<https://www.osha.gov/dsg/annotated-pels/tablez-1.html>

Guide to safety and occupational risk prevention for professional floor and Wall tile installers. Source: PROALSO (Association of Professional Floor and Wall Tile Installers)  
[http://www.proalso.es/images/pdf/M7%20PRL\\_web.pdf](http://www.proalso.es/images/pdf/M7%20PRL_web.pdf)

Good practise guide on workers health protection through the good handling and use of crystalline silica and products containing it. Source: NEPSI (The European Network on Silica)  
<http://www.nepsi.eu/good-practice-guide>

Tile study to quantify quartz levels (Human Health Risk assessment for Proposition 65: Crystalline Silica in Ceramic and Glass Tile).  
[https://tcnatile.com/wp-content/uploads/2022/08/Human\\_Health\\_Risk\\_Assessment\\_for\\_Proposition\\_65\\_Crystalline\\_Silica\\_in\\_Ceramic\\_and\\_Glass\\_Tile\\_May\\_2019.pdf](https://tcnatile.com/wp-content/uploads/2022/08/Human_Health_Risk_Assessment_for_Proposition_65_Crystalline_Silica_in_Ceramic_and_Glass_Tile_May_2019.pdf)

Report C234477. Improvement of the management of information associated with the composition of raw materials and products in the ceramic tile sector.  
<https://transparencia.ascer.es/media/1121/c234777.pdf>

## 8. ACCOUNTABILITY & COMPLIANCE

The manufacturer is committed to update these instructions as regulations and best practices in occupational safety evolve. It is recommended to review this document periodically to ensure its compliance with current regulations.



*'These safety instructions have been updated in November 2024 with the technical advice of the Institute of Ceramic Technology'.*

