LAMINAM
SUPERIOR NATURAL SURFACES

Safety information sheet | Dry-pressed ceramic tile

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PRODUCT AND COMPANY IDENTIFICATION

This safety information sheet does not replace current regulatory and company requirements. The information contained in this document must be shared with company employees and/or subcontractors.

Common Name: Dry-pressed ceramic tiles (SLAB) produced by Laminam Company in all the thickness 2/2+, 3/3+, 5/5+, 6/6+, 12/12+, 20/20+
CAS Reg. No.: Not applicable[1]
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Recommended use: Building material for architectural and furnishing - Dry pressed ceramic tiles water absorption (E<0.5%), Group BIa annex G according with ISO13006.
The slabs are mixtures of selected clays, silica sand and other natural minerals that have been mixed with water and fired in a high-temperature kiln (approx. 1200°C).

HAZARD IDENTIFICATION SUMMARY

The use, handling, storage, and installation of Laminam materials, which do not involve mechanical processing and therefore do not generate dust, **do not expose end users or workers to any inhalation health risks.**
The instructions contained in this guide are not intended to replace the current national and international regulations on occupational health and safety, nor the recommendations contained in the user and maintenance manuals of machines and equipment, which must be read and understood before using any equipment.
For fire risk, please refer to the specific chapter.

[1]According with REACH regulation (Registration, Evaluation, Authorisation and Restriction of Chemicals –EU Regulation 18/12/2006), ceramic tiles are classified as “ARTICLE: object with physical properties more important to its function than any chemical properties”. This implies that since it is not a chemical or a material releasing chemical substances, there is no CAS number and the requirement for an SDS is not applicable.
The product is excluded from registration requirements because it does not contain substances meant for intentional release (Articles 33 and 57 of the REACH Regulation).

COMPOSITION, INGREDIENT INFORMATION

General description: ceramic material according to ISO 13006, Table 1, UGL, Group BIa: dry-pressed products with porosity not exceeding 0.5%.
Composition: Laminam slabs are produced from a finely ground mixture of natural raw materials such as clays and feldspathic sands, together with inorganic pigments.
The production process involves forming at high pressure and firing at a temperature such as to induce irreversible transformations that lead to obtaining a homogeneous, solid and compact mass, insoluble in water and chemically stable.
The product is made with the following raw materials:

RAW MATERIALS*	AVERAGE % BY WEIGHT
Clay	30-33
Feldspars	60-63
Sand	4-10

** presence of inorganic pigments in a quantity less than 5%*

FOR THE END USER, THE TRANSPORTER AND THE INSTALLER

PRODUCT is safe as an intact slab

The Laminam product is safe for the end user installed in its destination of use, it poses no health risks under the correct conditions of use and maintenance.
NFPA (National Fire Protection Association) Rating: Health - 0, Flammability - 0, Reactivity - 0
NFPA Definitions: (0-least, 1-slight, 2-moderate, 3-high, 4-extreme).

Potential Health Effects: none for intact slabs. The finished slab product is odorless, stable, non-flammable, and poses no health risks. The finished tiles do not contain asbestos, cristobalite, organic resins and hazardous substances (such as cadmium, lead) or toxic substances (TSCA regulation).
Potential Environmental Effects: they do not release hazardous materials after installation and are not considered hazardous waste when disposed of under normal conditions. The product is recyclable as inert depending on the recovery chains in the area.
In case of mechanical processing or do it yourself, refer to the “processing workers” section.

DURING HANDLING AND IN CASE OF PRODUCT DAMAGE

The handling of slabs and their packaging should be carried out with care and awareness of the weight and dimensions, following the best practices and regulations of the individual countries where it is performed. Below are the links to the Laminam Technical Guides:

TECHNICAL GUIDE FOR FURNISHING AND DESIGN

TECHNICAL GUIDE FOR CLADDING AND FLOORING

TECHNICAL GUIDE FOR EXTERNAL FACADES

- Use restraint systems (such as U or L types) when moving the slabs on the A-frame.
- It is strictly forbidden to move or transport A frame with slabs that are not fully secured. A-frames or crates must be transported parallel to the ground, and driven without any sudden movements to ensure the load remains stable.
- Avoid any impact that could accidentally break the slab.
- Use the most suitable lifting tool for the operation to be performed. Broken pieces of Laminam can have very sharp edges and should not be lifted with textile slings without cut protection.
- It is forbidden to use cranes to lift slabs that have signs of structural defects (cracks, breaks).
- Comply with specific usage and inspection regulations for handling lifting equipment (bridge cranes, forklifts, hoists, etc.).

If during handling/installation the product breaks or gets damaged, or during cutting phases the broken parts have very sharp edges you have to use:
EYE PROTECTION: use safety glasses or goggles with side shields.
GLOVES: always wear cut-resistant gloves when handling the slabs.
LIMB PROTECTION: use long-sleeved clothing and long pants as work attire to prevent accidental contact or brushing.
FEET PROTECTION: use safety work shoes.

FOR PROCESSING WORKERS
Introduction

Silica, or silicon dioxide (SiO_2), is a molecule formed by the combination of two elements (silicon and oxygen) that make up about 70% of the earth's crust. Silica can be crystalline or non-crystalline. Crystalline Silica is a particular form of solid silica, with an ordered molecular structure.
The most common type of Crystalline Silica is Quartz; another form of crystalline silica, is Cristobalite, widely used to produce quartz resins. Cristobalite is totally absent from Laminam materials.

Quartz is present not only in our environment, like in the sand on the beach, but also in a myriad of products, such as:
- Tableware and glassware
- Cleaning products, detergents and abrasives
- Cosmetics and food supplements
- Construction materials (cements and mortars)
- Food additives[2]

The smallest particles of crystalline silica (known as respirable crystalline silica) can penetrate our respiratory system through inhalation; their penetration ability increases as the particle size decreases. The finest fraction of inhalable crystalline silica (according to EN 481:1993, with a median diameter of 4.25 µm and a maximum size of less than 10 µm) is defined as respirable crystalline silica (RCS).
For regulation and additional information please refer to Regulatory Framework (see Annex 1).

Risk Assessment

THE RISK DEPENDS ON THE TYPE OF PROCESSING BEING CARRIED OUT.
NOTE: Exposure limits are precautionary and aimed at protecting workers' health, while the hazard of respirable dust containing quartz depends on the type of processing it has undergone. The limits refer to RCS in inhalable dust.
For exposure limits please refer to Annex 2 of the present document.
It should be noted that when discussing risks, there are always potential risks. For example, the potential risk associated with ceramic products in relation to exposure to respirable crystalline silica for the average Californian installing tiles is below the thresholds established by Prop 65 regulations (www.P65warnings.ca.gov).

POTENTIAL DANGER (for details please refer to note[3]):
H350 (23.93%): May cause cancer [Danger Carcinogenicity]
H372 (42.76%): Causes damage to organs through prolonged or repeated exposure [Danger Specific target organ toxicity, repeated exposure]
H373 (56.13%): May causes damage to organs through prolonged or repeated exposure

2 The Consumer Product Information Database (CPID)
3 https://pubchem.ncbi.nlm.nih.gov/compound/Quartz#section=Safety-and-Hazards
Aggregated GHS information provided by 4065 company reports from 148 notifications to the ECHA C&L inventory. Each notification may be associated with multiple companies. 1633 out of 4065 companies reported non-compliance with GHS hazard criteria. For more detailed information, please visit the ECHA C&L website
https://echa.europa.eu/it/information-on-chemicals/cl-inventory-database/-/discli/details/54394
https://hcis.safeworkaustralia.gov.au/HazardousChemical/Details?chemicalID=4837
Information may vary between notifications depending on impurities, additives, and other factors. The percentage value in parentheses indicates the classification ratio reported by companies providing hazard codes. The percentage value is based on the number of reports received by the competent bodies on all work activities that may be subject to risk (e.g. mining, construction, natural stone extraction, etc.). Only hazard codes with percentage values above 10% are reported.

[Warning Specific target organ toxicity, repeated exposure]

Laminam commissioned a third-party study by prestigious international universities following the worst-case scenario logic: cutting and grinding with hand tools (not vacuum or water-assisted machinery), simulating continuous processing for eight hours. **Even in the worst dry processing case using a normal dust mask (personal protective equipment FFP3 / N99) you can work safely under exposure limit for 8 hours every day of continuous cutting in the EU UK, USA, Australia and 4.5 hours every day for Canada. It should be noted that workers must ALWAYS be protected from inhaling all type of dusts (and aerosols) regardless the chemical composition.**

Figure 1- Example of an FFP3 or N99 mask

The FFP3/N99 filtering face masks are mandatory for all operations where complete dust capture is not achieved.
In case of processing involving wet cutting systems or professional suction/filtering systems, the exposure to airborne particulate matter is extremely reduced. It must be verified periodically that in all processing activities (including planned, extraordinary, and breakdown maintenance), the equipment operate according to the manufacturer's instructions.
Therefore, conduct monitoring of airborne dust in all operations as indicated above, and assess whether the limits of the country where the processing is carried out are widely respected.

Additionally, the training and supervision of workers, as well as all occupational hygiene standards (housekeeping, cleaning of clothes, etc.), must be periodically verified according to the local laws.
The information regarding individual protection, based on current knowledge, is based on general information for normal uses and conditions. In case of special or unusual uses or conditions, it is suggested to seek assistance of an industrial hygienist or other qualified professional.

The main precautionary statements to be followed when processing the slabs are reported below:

Do not breathe dust and/or aerosols: wear respiratory protection (FFP3/N99).
Wash hands and face thoroughly after processing.

Wear protective clothing and eye protection. The dust produced may cause irritation or corneal injury through mechanical action.

Do not eat, drink or smoke in the working area.

The product is recyclable as inert according to the recovery chains in the area.
Dispose the waste in accordance with local regulations.

First aid measures

Not applicable for intact slabs.
Slabs are monolithic objects and generate dust only when cut. Improper fabrication or installation techniques can expose the worker to harmful dust.
IN CASE OF RESIDUE ON EITHER SKIN OR CLOTHING: wash thoroughly. Do not clean clothes with compressed air. Change work clothes.
IN CASE OF EYE CONTACT: ensure an emergency eyewash station is available in the area where slabs are cut. Keep eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing the eye. If irritation persists, contact a doctor for further advice.
TO PREVENT INHALATION: use respiratory protective devices (FFP3/N99).
To minimize dust production and accumulation, wet processing is recommended. When wet cutting is not possible, it is mandatory to work in a well-ventilated area or equipped with M Class extraction systems. In the presence of large amounts of dust, move to a well-ventilated area or outdoors.
IN CASE OF INGESTION: not applicable for intact slabs. Scenario not expected as a result of this product.

FIRE SAFETY MEASURES

The ceramic slab is classified according to EN 13501 and Decision 96/603/EC as A1 (no contribution to fire).
The ceramic slab with fiberglass and adhesive, according to EN 13501, is classified as A2-s1, d0 (A2 - limited combustibility, s1 - very limited smoke production, d0 - does not release flammable particles).
We are available to provide further information in case of specific requests.

ADDITIONAL INFORMATION

This information is based on our present knowledge and is aimed to describe the product for the purpose of health, safety and environmental requirements only. For technical product specifications, please refer to the appropriate documentation.

ANNEX 1

Regulatory Framework

Crystalline silica has been, and continues to be, a subject of great attention by European (European Commission) and international (IARC, ACGIH, and others) authorities. Some accredited studies highlight the carcinogenicity of Crystalline Silica in particular work contexts, but the IARC itself, in the "Overall Evaluation" of its monograph, vol. 68 (1997) (1), concludes that "carcinogenicity was not detected in all industrial settings examined" and specifies that "the mechanical, thermal, and chemical history of silica particles determines their surface properties and the presence and abundance of various surface functionalities. Surface reactivity varies among samples from different sources. Heating transforms hydrophilic surfaces into hydrophobic ones. In particular, freshly fractured surfaces are more reactive than aged ones."
The CLP Regulation[4] aims to ensure a high level of protection of human health and the environment as well as the free circulation of substances and mixtures within the European Union; Annex VI – part 3 of the Regulation lists hazardous substances for which a harmonized classification and labeling have been adopted at the community level. This list does not include the substance "Crystalline Silica," which therefore lacks a harmonized hazard classification. In this regulatory context, the update of the Carcinogens and Mutagens Directive - 2004/37/EC (known as the CMD Directive) by Directive 2017/2398, transposed into our legal system by the recent Legislative Decree no. 44/2020, is included.
The CMD Directive deals with the protection of workers exposed to carcinogenic or mutagenic agents. It considers as a "carcinogenic agent" a substance or preparation classified as such, or an explicitly indicated process, or a substance or preparation emitted during an indicated process.
The recent amendment to the CMD Directive has not introduced the chemical substance "Crystalline Silica" into its scope, but rather "Work involving exposure to respirable crystalline silica dust generated by a work process" as identified in point 6 of its Annex I – "List of substances, preparations, processes" of the Directive. In work contexts, it is therefore appropriate to distinguish among silica dust that is generally present, that present in the respirable fraction, and that generated by a work process.

ANNEX 2

Exposure Limits

Awareness of the risks associated with respirable crystalline silica (RCS), regardless of the processes iAwareness of the risks associated with respirable crystalline silica (RCS), regardless of the processes involved (which are still under investigation), has led to the adoption of exposure limits. Most countries, in fact, adopt occupational exposure limits for RCS, typically expressed as a Time-Weighted Average (TWA), defined as the average concentration of a substance in the air over an 8-hour work shift.
Internationally RCS exposure limits[5] generally range between 0.05 and 0.1 mg/m³. In **Europe**, for example, Directive 2004/37/EC sets a TWA limit of 0.1 mg/m³ (European Commission, 2004). In the **United States,** the Occupational Safety and Health Administration (OSHA) has set a Permissible Exposure Limit (PEL) for RCS at 0.05 mg/m³ over an 8-hour period (OSHA, 2016). In **Australia**, Safe Work Australia (2023) has established an occupational exposure limit of 0.05 mg/m³. In **Canada**, the exposure limit can vary between provinces, some of which adopt the limit of 0.025 mg/m³ recommended by the American Conference of Governmental Industrial Hygienists (ACGIH).
Other limits include:

- PEL (OSHA - The Permissible Exposure Limit (PEL or OSHA PEL) is a legal limit in the United States for employee exposure to a chemical substance or physical agent): 30 mg/m³/%SiO_2+2 for total dust, 10 mg/m³/%SiO_2+2 for respirable dust (quartz, tripoli), calculated from the formula for respirable dust for quartz (cristobalite, tridymite).
- IDLH (Immediately Dangerous to Life or Health NIOSH) 25 mg/m³ (cristobalite, tridymite), 50 mg/m³ (quartz, tripoli[6]).

[4] Regulation (EC) No 1272/2008 (CLP), which came into force on January 20, 2009, repealing EU Directives 67/548/EEC and 1999/45/EC, governs the classification, labeling, and packaging of chemical substances and mixtures at the European level. The regulation aligns with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) while maintaining the necessary links with Regulation (EC) No 1907/2006 (REACH) concerning the registration, evaluation, authorization, and restriction of chemical substances.
[5] Hoy et al., 2023
[6] Tripoli is a crystalline silica with an extremely fine particle size (less than ten micrometers). Commercial tripoli is an almost pure silica material used for a variety of delicate abrasive purposes, including soaps, toothpaste, metal polishing compounds, jewelry polishing compounds, and polishing compounds.

LAMINAM
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LAMINAM IN THE WORLD

Laminam Australia	Laminam China	Laminam Japan	Laminam Rus	
Laminam Benelux	Laminam France	Laminam Israel	Laminam UK	
Laminam Canada	Laminam Germany	Laminam Italy	Laminam USA	Interstone Poland