

Guide to the Laminam[®] good processing practice

“Exposure to free
crystalline silica”

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Introduction

This guide provides good practice for the processing and final manufacturing of Laminam® slabs in order to protect the health and safety of the involved operators.

This document is prepared taking into account the main indications provided for by national regulations and on the basis of the experience gained by Laminam® S.p.a.

On attachment one you will find our safety data sheet which contains specific information on the physicochemical, toxicological and environmental hazard properties required for correct and safe handling and enables users to take the necessary measures to protect health, the environment and safety at work.

Note: the instructions in this guide are in no way intended to replace the current national regulations on health and safety in the workplace, nor the recommendations in the operating and maintenance manuals for machines and systems, which must be read and understood before using any equipment.

In accordance with good practice, companies that process, install and handle Laminam® slabs must implement the prevention measures provided on the last pages of this guide, where there are specific information on the physicochemical, toxicological and environmental hazard properties required, the environment and safety at work, in addition to those specific to their work activity, and inform and train their workers.

Foreword

Laminam® is a porcelain stoneware ceramic slab with dimensions from 1000x3000mm up to 1620x3240mm and thickness ranging from 3.5 to 12.5mm. Laminam® slabs are supplied with a fiberglass mat bonded to the back using a special two-component polyurethane adhesive.

The combination of porcelain stoneware slabs and fiberglass makes it possible to obtain a product with high mechanical resistance.

The raw materials used in the ceramic manufacturing process include various minerals such as granite and sand in which crystalline silica - a silicon compound whose chemical formula is SiO₂ - is naturally present.

**Benchtop**

Supernova Marble Gold
Laminam® 12+
1620x3240mm, 12+mm thickness

Exposure to free crystalline silica

Only during the working/processing of Laminam® slabs, such as: cutting, grinding, polishing, drilling, etc., dust may be released that partly contains free crystalline silica and possibly glass fibers.

What is silica

Silica, or silicon dioxide, 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.

What is crystalline silica?

It is a particular form of solid state silica with an ordered molecular structure.

The most common type of Crystalline Silica is Quartz (CAS 14808-60-7), another form of crystalline silica is Cristobalite, widely used to produce quartz resins, totally absent in Laminam® materials.

Different types of building materials and natural or artificial stones contain quantities of silica, for example:

Technical specifications Laminam® 12+

Laminate porcelain obtained by wet grinding of clay raw materials, granite and metamorphic rocks, with a feldspathic component and ceramic pigments. Specially shaped in a compactor and sintered at 1200°C, with gas firing. Structurally reinforced with inert material (fiberglass blanket bonded on the back).

<i>Type</i>	<i>Amount</i>
Composite (engineered or manufactured) stone in low silica	> 40%
Natural sandstone	67%
Granite	25-40%
Bricks	35-45%
Shale	>22%
Laminam®	15-20%

With a crystalline silica content of between 15 and 20%, Laminam® materials have some of the lowest risk levels found on construction materials, including materials of natural origin.

Therefore, within processing companies, Laminam® slabs are able to contribute to the reduction of free crystalline silica dust with the same processing as other natural materials or composite stones and therefore to the risk of silicosis in the workplace.

What is free crystalline silica?

Crystalline silica dust is generated exclusively during mechanical processing of natural and artificial stones (cutting, drilling, grinding, etc.).

Some of these dust particles can be so small that they are not visible and can be inhaled by a worker.

Note: Handling, storage and installation of Laminam® materials, which do not include processing and thus do not generate free crystalline silica, do not expose workers and end users to any health hazard.

Health and safety information on the respirable fraction of Crystalline silica and fiberglass

As stated in the introduction, workers may be exposed to free crystalline silica only during cutting, drilling and grinding of the material because during these operations may release particles of respirable and/or inhalable size of crystalline silica and fiberglass.

Risks increase when working with materials containing >50% crystalline silica such as granite, natural sandstone and especially composite stones containing >90% crystalline silica.

To prevent the onset of occupational diseases, such as silicosis and lung disease, the company must take all preventive and protective safety measures to eliminate the risk of exposure to respirable and/or inhalable dust according to industrial hygiene practices; these measures are collective (e.g.

localized suction or in any case widespread dust collection systems) and/or individual (e.g. FFP3 filtering face masks).

Cleaning dust from clothing or the workplace carried out dry with brushes or compressed air should also be discouraged.

It is recommended to implement a Respiratory protective equipment (RPE) program in accordance with national standards/rules, possibly including:

- provision of suitable RPE;
- a maintenance and repair schedule for the suction systems.
- Information, training and education of workers.
- Health monitoring.

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



- Do not breathe dust and/or aerosols
- Wash hands and face thoroughly after use;
- Do not eat, drink or smoke during use;
- Use respiratory equipment against dust (P3)
- In case of sickness seek medical assistance
- Dispose of waste in accordance with local regulations
- Irritation and other effects are possible by inhalation of dust
- The product in dust may cause irritation or corneal injury due to mechanical action.
- Protect eyes and wear protective clothing

** Table drawn up through information received from the following sources:

<https://www.safeworkaustralia.gov.au/silicada> (Silica Exposure Guidelines of the Australian Government)

Guidelines for occupational exposure to free crystalline silica preparatory documents -Work and Health, Silica Italian Network, Regions Coordination – ISPESL – ISS – INAIL

1 Inhalable fraction: the mass fraction of total airborne particles that is inhaled through nose and mouth. Respirable fraction: the mass fraction of inhaled particles that penetrates the uninhaled airway.

Preventive safety measures for processing using industrial equipment, systems and machines

In order to reduce the risk of inhalation, it is preferable to use water-based equipment to carry out cutting, drilling, grinding, etc. operations that allow airborne dust to be reduced.

Machines and equipment must only be used by experienced personnel specifically instructed and trained for the tasks associated with the use of such equipment and informed of the risks.

A Risk Assessment is recommended so as to implement active and collective preventive measures, as described in the following points, by way of example.

Localized suction and filtering equipment and PPE (personal protective equipment)

In working environments where the concentration of airborne dust is to be monitored, it is therefore suggested to use one or more of the following:

- localized suction and filtration equipment, which allows pollutants to be removed from operators.
- wet cutting systems that allow to significantly reduce the dust dispersed in the air directly.
- use of Personal Protective Equipment for the risk of airborne dust.

The access to localised filtration equipment must be allowed only to authorised and trained personnel.

It is recommended to arrange periodic and scheduled maintenance according to the use and maintenance manual of the systems for preserving correct functionality over time.

Ventilation of working environments

Wherever cutting, drilling and grinding operations are carried out, it is important to guarantee natural and/or forced ventilation in order to guarantee adequate air circulation and the possible extraction of airborne fibers and dust.

Personal protective equipment (PPE) for other risks.

- Hand protection: anti-cut gloves to handle the material and to process it in pieces.
- Eye and face protection: goggles and face-protecting mask against the possible projection of particles and splinters.
- Skin protection: clothing covering the body when handling whole slabs. Workers must wear/use personal protective equipment in accordance with the information and training received each time they carry out work involving the dispersion of dust and fibers.

Works carried out on site

Operations on the material such as cutting, drilling or processing which generate dust should be carried out outdoors or in a well-ventilated working environment.

The operator must wear personal protective equipment to limit the risks mentioned above, giving priority to the use of water-based tools for processing.

Hygienic and cleanliness rules for the working environments

- Workers must wear suitable work clothing against dust.
- Do not use compressed air to clean clothing, body parts or machinery.
- Drinking, eating and/or smoking is prohibited during work and in work areas.
- Wash hands and face and change clothing before drinking and eating.
- Keep workplace where processing is carried out clean, including areas where dust may be deposited, such as warehouses and yards.
- Use suitable suction systems and wet cleaning systems. Do not use brooms or compressed air to clean workplaces.



Island Benchtop and wall lining

Supernova Marble Black
Laminam® 12+
1620x3240mm, 12+mm thickness

Design by Katie Scott
from Sticks+Stones

Training and information for workers

Inform workers about the risks associated with the processing described in this guide and train them on the correct working procedures and the use of personal protective equipment.

Health surveillance

The workers involved in the processing of Laminam® slabs must be suitable for their task according to the opinion expressed by the company's competent doctor according to the local regulations in force.

The information contained in this sheet must be available to the competent doctor, together with all the updated assessments of the consequent risks, in order to allow him to revise the Health Protocol and on the basis of that to establish the necessary periodic and specific surveillance.

Attachment one

This safety Information Sheet doesn't replace the current regulatory and company requirements.

1. Product and Company identification

Series: **Laminam® 3+**, **Laminam® 5+** and **Laminam® 12+**.

Trademark: **LAMINAM®**

Common Name: Dry-pressed ceramic tiles (SLAB)

Chemical Name : None

Chemical Family: Natural inorganic products

Chemical Formula: Not applicable

CAS Reg. No.: Not applicable

Firm: LAMINAM® S.p.A.

Via Ghiarola Nuova, 258 41042 Fiorano M.se (Mo) - Italy

Competent person responsible for the safety information sheet: QEH&S department, LAMINAM® Spa, Tel.: +39 0536 1844200, e-mail: info@laminam.it

Recommended use: Building material for architectural and furnishing - Dry pressed ceramic tiles water absorption (E<0,5%), Group Bla annex G according with ISO13006.



Benchtop Supernova Luna Grey, Laminam® 12+
1620x3240mm, 12+mm thickness

According with REACH (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” so that, a SDS is not required/mandatory.

2. Hazard identification summary

The finished, fired tiles are odourless, stable, non-flammable, and pose no immediate hazard to health.

The fired tiles do not contain asbestos. They do not release hazardous materials after installation and are not considered hazardous waste when disposal is necessary under normal conditions. Respiratory, hand and eye protection may be needed to prevent excess exposure to airborne particulates if dust is produced by cutting the tiles during installation or if dust is produced by any other operations, including demolition/removal projects.

3. Composition, information of ingredient

General description:

Ceramic material according to ISO 13006, table 1, Group B1a: 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, kaolins, 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 resistant.

From the mineralogical point of view the material obtained can be assimilated to a prevailing vitreous mass (amorphous phase) that incorporates both residual and newly formed crystals.

<i>Mineralogical composition</i>	<i>%</i>	<i>CAS registry number</i>
a-quartz	mag-20	14808-60-7
Mullite	05-ott	1302-93-8
Amorphous phase*	60-70	N.A
Feldspars	05-ott	68476-25-5

Chemical average composition

<i>Item</i>	<i>%</i>
SiO ₂	60-70
Al ₂ O ₃	20-30
Fe ₂ O ₃	0-3
CaO	0-10
MgO	0-1
Na ₂	03-apr
K ₂ O	02-mar
ZrO ₂	0-4

*AS regards the amorphous phase, it refers to the part of the mixture which, during firing process, melts and transforms into glass; its chemical composition corresponds to the average composition of the mixture.

4. First aid measures

Non applicable for intact tiles. Tiles are monolithic objects and they generate dust only when they are dry-cut.

IF ON SKIN OR CLOTHING: Wash thoroughly after working with tiles.

IF IN EYES: Hold eye 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 eye. Call a doctor for treatment advice.

IF INHALED: Remove to fresh air if exposed to large amounts of tile dust. Administer artificial respiration if breathing has stopped. Keep victim at rest. Call a doctor for treatment advice.

IF SWALLOWED: .Not applicable for intact tiles.

Have emergency eyewash station available in area where tiles are cut.

5. Fire fighting measures

Flash Point (Method Used)	Not applicable
Autoignition Temperature	Not applicable
Flammable Limits (% by Volume in Air)	LFL- not applicable
Fire Extinguishing Media	None required Non-flammable
Special Fire Fighting Procedures	None required
Fire and Explosion Hazards	None

6. Accidental release measures

Non applicable for intact tiles.

7. Handling and storage

HANDLING: to reduce at the minimum the generation and accumulation of dust wet cutting is recommended. When wet cutting is not possible, working in a well-ventilated area and the use of respiratory protection is mandatory.

STORAGE: Do not store near acids. If tiles contact some acids, damage/discoloration to the surface may occur.

Shelf life is unlimited.

8. Exposure controls, personal protection

8.1. Exposure table

In case of exposure to respirable dust generated during cutting or demolition 8 (at the date of issue of this sheet):

<i>Major Ingredient</i>	<i>OSHA PEL</i>	<i>NIOSH IDLH</i>	<i>ACGIH TLV*</i>	<i>Units</i>
Crystalline silica as quartz -respirable fraction	10 %SiO ₂ + 2	0.05	0.025	mg/m ³
Total dust	30 %SiO ₂ + 2	No	No	mg/m ³

* 2006 Edition, respirable fraction to be determined as per Appendix D of ACGIH TLV.

8.2. Engineering controls/personal protection

VENTILATION: Use adequate ventilation to keep exposure to dust below recommended exposure levels. Avoid inhalation of dust. The highest probability of silica exposure occurs during installation using dry cutting methods or during removal of installed tile. Wet cutting methods are recommended in order to reduce almost completely this risk.

EYE PROTECTION: Safety goggles or glasses with side shields.

CLOTHING: Long-sleeved shirt and long pants, Chemical-resistant footwear plus socks and safety boots.

GLOVES: Cotton or leather gloves,

RESPIRATOR: Not required when handled under normal conditions. When handling in enclosed areas with inadequate ventilation, use a dust/mist filtering respirator.

NOTE: Personal protection information in Section 8 is based on general information for normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the assistance of an industrial hygienist or other qualified professional be obtained.

9. Physical and chemical properties

Appearance	Brittle solid; colour may vary
Odour	Odourless
Melting Point	Not Available
Boiling Point	Not applicable
Vapour Pressure	Not applicable
Vapour Density (Air = 1)	Not applicable
Solubility in Water	Insoluble
Percent Volatile by Volume	Not applicable

**Wall lining**

I Naturali Bianco Statuario Venato
Laminam® 5+
1000x3000mm, 5.6mm thickness

10. Stability and reactivity

<i>Stability</i>	<i>Stable in current form.</i>
Conditions to Avoid	Avoid contact with acids (e.g., acetic, hydrofluoric, etc.)
Incompatibility (Materials to Avoid)	Avoid contact with acids (e.g., acetic, hydrofluoric, etc.)
Hazardous Polymerization	Will not occur.
Hazardous Decomposition Products	None

11. Toxicological information

Slabs are monolithic objects and they generate dust only when they are dry-cut.

Thus, a potential hazard for human health connected to ceramic tiles due to Respirable Crystalline Silica (that is only a fraction of the generated dust) occur only in case of non-capture or nonabatement of dust for long exposure time.

The risks related to dust/breathable that may contain crystalline silica in their fraction respirable, and may cause lung injury and cancer hazard, are reported in the following table:

<i>GHS Classification</i>	<i>Hazard Statements</i>
Crystalline Silica: Category 3 (Respiratory tract irritation) (H335)	May cause respiratory irritation
Categories 1A (H372)	Causes damage to organs (lung/respiratory) through prolonged or repeated exposure (inhalation)

12. Ecological information

No information available at this time.

13. Disposal consideration

Waste should be disposed of in a landfill certified to accept such materials in accordance with federal, state, and local regulations.

14. Transport information

<i>D.O.T Shipping Name</i>	<i>Not applicable</i>
Hazard Class	Non-regulated (for disposal purposes material is non-hazardous Class III regulated material)
ID Number	Not applicable
Marking	Not applicable
Label	None
Placard	None
Hazardous Substance/RQ	Not applicable
Shipping Description	Ceramic Tiles
Packaging References	None

15. Regulatory information

The product is excluded from registration obligations as it does not contain substances intended for intentional release (Articles 33 and 57 of the REACH Regulation)

Note: The information in this data sheet provides information related to the potential hazards associated with dusts which may be produced during cutting or otherwise changing the shape of the tile during installation and/or removal.

16. Other information

Global Harmonization Identification System

Health: 3 Fire: 4 Reactivity: 4

Hazardous Material Identification System

Health: 1 Fire: 0 Reactivity: 0

National Fire Protection Association

Health: 1 Fire: 0 Reactivity: 0

This information is based on our current knowledge and is intended to describe the product for the purpose of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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