

GOOD PRACTICE GUIDE

**For the fabrication
of TechniStone® material**

everlasting beauty

TechniStone®

EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA

This guide provides information and recommendations on health and safety issues to be considered in the cutting, grinding, polishing and installation of engineered stone material produced by Technistone.

The final TechniStone® product is inert, hygienic and suitable for direct contact with food. There are no risks associated with the final hardened TechniStone® product. The material is suitable for contact with food (certified by the American NSF organization), meets the strictest standards for indoor air quality (Indoor Advantage Gold) and hygienic restrictions.








However, during the production process and product fabrication and installation, you must consider the following information regarding the health of workers.

This Good Practice Guide is approved and follows the World-Wide Agglomerated Stone Manufacturers Association (A.St.A. World-Wide) standard rules.

HEALTH & SAFETY INFORMATION ABOUT RESPIRABLE FRACTION OF CRYSTALLINE SILICA (SiO₂).

Crystalline silica is a basic component of soil, sand, granite, quartz, and many other minerals. Respirable size particles of crystalline silica may result when workers chip, cut, drill or grind these objects. Respirable crystalline silica may present a health hazard if workers are not properly protected and workplaces are not properly controlled to reduce silica dust.

Following is the classification of crystalline silica:

 STOT RE 1	<p>HAZARD H372: Causes damage to lungs through prolonged or repeated exposure (inhalation)</p> <p>PREVENTION P260: Do not breathe dust generated in the cutting, grinding and polishing processes. P264: Wash face and hands thoroughly after handling. P270: Do not eat, drink or smoke when using this material. P284: Wear respiratory protection for particles (P3).</p> <p>FIRST AID MEASURES P314: Get medical advice/attention if you feel unwell. P501: Dispose of scrap material in accordance with local regulation</p>
 	
 	

Technistone strongly encourages fabricators and installers to adhere to the recommendations contained in this Good Practice Guide so as to control exposure to respirable crystalline silica and reduce health risks.

At minimum, fabricators and installers of TechniStone® material are required to comply with all local laws and regulations pertaining to occupational health and safety. In addition to the information in this Guide, it is also recommended that fabricators and installers of TechniStone® become familiar with the European Network on Silica (NEPSI) and its Good Practice Guide for the handling of silica, and with the Occupational Health and Safety Administration (OSHA) National Emphasis Program for Crystalline Silica.

Visit www.nepsi.eu and www.osha.org for more information.

PREVENTIVE MEASURES

EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA

These instructions provide information and guidance on:

- 1 Access to the workplace
- 2 Water-injected hand machines and tools
- 3 Local extraction and filtration systems
- 4 General ventilation in factories plants
- 5 Periodic maintenance and supervision
- 6 Cleaning methods
- 7 Dust monitoring
- 8 Other risks: cuts, projected particles, noise, handling loads
- 9 Installation of worktops
- 10 Personal Protective Equipment
- 11 Hygiene standards
- 12 Training and information for workers
- 13 Health Surveillance

1 ACCESS TO THE WORKPLACE

Restrict access to work areas to authorized personnel only. Put signs when the area is at risk.

2 WATER-INJECTED HAND CUTTING MACHINES AND TOOLS

There are two primary methods exist to control silica dust: using water injected machinery and local extraction and filtration systems.

Avoid using dry processing techniques whenever possible. All cutting, shaping, polishing and finishing of material should be done using water injected tools. Dust that is wet is less able to become or remain airborne. Water pumps, hoses and nozzles should be kept in excellent operating condition and cleaned regularly. When working with water it is essential to avoid electrical risks by using ground fault circuit interrupters (GFCIs) and watertight, sealable electrical connectors for electric tools and equipment. Employees operating in wet areas should also be required to wear rubber boots.

3 LOCAL EXTRACTION AND FILTRATION SYSTEMS

Use a reputable exhaust ventilation supplier. Only use qualified engineers to carry out the design and the installation.

The design should include the following items: a hood, an enclosure or other inlet to collect and contain contaminants, ducts to remove contaminants away from the source, a filter or any other air cleaning device, normally placed between the hood and fan, a fan or other device to move air to provide the air flow, and finally other ducts to discharge the clean air outside the workplace.

Apply local exhaust ventilation at the generation source to capture the dust.

Tightly close the dust source to help prevent it spreading.

Local exhaust ventilation should be connected to a suitable dust extraction unit (e.g. a bag filter or cyclone).

Workers should not stand between the source of exposure and the local exhaust ventilation; otherwise, they will be directly in the path of the contaminated air flow.

Please observe periodically the position of workers and train them.

Where possible, ensure that **the work area is not close to doors, windows or walkways** so as not to interfere with the local exhaust ventilation and to prevent dust from spreading.

Ensure that there is a clean air supply to replace the extracted air.

The ducts should be short and simple, avoid long sections of flexible ducts.

Discharge extracted air to a safe place away from doors, windows and air inlets.

4 GENERAL VENTILATION IN FACTORIES

Because the hazardous dust is very fine and may stay in the air for days it is important to have adequate general ventilation.

Ensure that the building is **properly ventilated, if necessary using forced ventilation.** Ensure the ventilation system does not move settled dust and that contaminated air does not spread to clean areas.

Dust suppression sprays (fine mist of air and water) may be used to prevent the generation of airborne dust throughout indoor and outdoor traffic routes or conveyors. Emissions from dust extraction systems in buildings must comply with local environmental legislation.

5 PERIODIC MAINTENANCE AND SUPERVISION

Ensure equipment is maintained in good working condition as advised by the supplier's recommendations manual.

Clean the equipment on a regular basis, at least one time at the end of the shift.

Do not clean with a dry brush or using compressed air.

Do not allow dust/waste deposits to dry out before they are cleaned up.

Ensure the local exhaust ventilation is maintained in good working condition in accordance with the supplier's or the installer's recommendations. Noisy or vibrating fans can indicate a problem.

Replace consumables (filters, etc) in accordance with the manufacturer's recommendations.

Do not modify any part of the system. If you do so, check with the supplier to ensure that the system retains the CE mark or make inspection and risk assessment by and licensed expert.

You should receive instructions for use and a diagram of the installed systems. You must receive a commissioning report showing the airflows at all inlets, the air speed in the ducts and the pressure index in the cleaner or filter.

Please contact the supplier for information on the expected performance of the local exhaust ventilation. Keep this information to compare with future test results.

At least once a week, visually inspect the equipment for signs of damage. If they are constantly used, check them more frequently. If used rarely, check before each use. Keep records of inspections for the period of time required by the country's laws (recommended minimum five years).

6 CLEANING METHODS

Because the hazardous dust is very fine and can go easily to the air and so may stay there for days it is important to have a comprehensive housekeeping program.

Clean the equipment every day, at least one time.

Clean the workplace daily. Use walls and flooring surfaces that can easily be kept clean and that do not absorb or accumulate dust.

Clean floors and other surfaces on a regular basis. Clean also the entire warehouse structures and inlet roof.

Use wet or vacuum cleaning methods. Do not clean with a dry brush or using compressed air, it will boost the exposure to very high levels.

Clean up any spill immediately.



Do not allow dust / debris deposits to dry out before they are cleaned up.

If vacuum cleaning systems are required for spill of large volumes of dust, they should be specially designed to avoid overloading and blocking.

When it is not possible to use wet or vacuum cleaning methods, and only dry cleaning with brushes can be carried out, ensure that workers wear appropriate personal protective equipment and that measures are taken to prevent crystalline silica dust from spreading outside the work area.

When necessary, to prevent dust from spreading between building levels, use solid floors and cover them with a wear-resistant material, colored to highlight dust contamination

Control panels can be protected from dust by using a plastic barrier or similar membrane. When using wet cleaning methods, provide an adequate number of correctly positioned water connection points.

Provide an adequate number of vacuum connection points when using a central vacuum cleaning system.

7 DUST MONITORING

Risk assessment should be carried out to determine whether existing controls are adequate. Both personal and static measurements can be used together, as they are complementary. It is up to the Industrial Hygiene specialists contracted by employers to propose for the most appropriate solutions, while respecting the applicable legislation.

The sampling strategy, equipment used, analysis methods etc, must be defined by the Industrial Hygiene specialists.

Carry out an **INITIAL RISK ASSESSMENT** of exposure to **Respirable Crystalline Silica (RSC)** at work



Main provisions of the NEPSI Agreement

8 OTHER RISKS: CUTS, PROJECTED PARTICLES, NOISE, HANDLING LOADS

The fabrication of TechniStone® material may involve some risk such as; blows and cuts with objects and tools, projected particles, noise exposure, vibrations and handling loads. Review the risk assessment results carried out by Health and Safety experts. Use the appropriate tools for each task and keep them in good working order.

Use the personal protective equipment recommended at all times: dust mask, gloves, eye and ear protection and high visibility jacket in the area of tuck or forklift traffic.

For slabs handlings use also the helmet. Insure that all A-frame are feet wit safety bars to avoid the falling of slabs at the moment of taking off or leaving down the slab. The safety bars must feet in all A-frame, in the warehouse and also in the trucks. Worker using crane, truck crane or forklift must be properly training.

Check formally on a daily basis crane, truck crane and forklift.

Check periodically and according to manufacturer manual and regulations, with and expert inspector, crane, truck crane and forklift.

Check periodically and according to manufacturer manual and regulations, with and expert inspector, electrical installations.

Use mechanical means to transport heavy parts or materials. As far as possible avoid handling or transporting weights over 20 kg or in awkward positions, also try to avoid repetitive movements.

9 INSTALLATION OF WORKTOPS

The worktop should be finished when it leaves the workshop so that no further work will be carried out on site. Please take accurate dimensions of the kitchen.

If the worktop requires a final check in the house, we recommend you find a well-ventilated place (terrace, balcony, etc) and use a wet cleaning method if possible. For this task, P3 type Silica respiratory protection and ear and eye protection must be used for particles.

If the final check is carried out by using a dry cleaning method, safety measures are the same.

We also recommend the use of a portable vacuum system (vacuum cleaner).

Use instruments such as manual suction pads when handling the material.

When fixing joints, trims and sockets etc. using products such as Solumastick, Colorsil, dissolvents etc. latex gloves must be worn and P3 protection containing organic vapor filters.

To complete the installation, all dust must be cleaned up in order not to create, as far as possible, dusty environments; also the worktop must be cleaned.

10 PERSONAL PROTECTIVE EQUIPMENT (PPE)

In those areas or workplaces where risks still exist the use of personal protective equipment is mandatory and they must be clearly defined by appropriate signs.

Personal protective equipment must comply with relevant local laws and regulations on the design and manufacture in relation to health and safety. All the personal protective equipment that the company provides must meet regulatory standards.

Respiratory protection for silica must meet regulatory standards. Note that facial hair reduces the effectiveness of a mask.

When using PPE, provide employees with training on selection, use and maintenance of the equipment.

If employees have to wear more than one PPE item, ensure that they are compatible with each other.

Check the effectiveness of respiratory protective equipment before use. Consult the supplier about the appropriate adaptation methods.

Keep records of PPE provided. Provide clean storage facilities for PPE when not in use.

11 HYGIENE STANDARDS

Provide storage facilities for workers' clothes. Clean clothes should be separated from work clothes.

This area should have toilets, wash basins and showers as well as personal lockers. Workers should wash their hands and faces and take overalls off before eating.

Define a specific and clean area where workers can prepare meals, eat and drink away from their workstation.

Provide workers with an adequate supply of clean work clothes, including additional outfits. Workers who handle silica dust should wear overalls made of a fabric that prevents the absorption of dust.

Do not use compressed air to clean overalls. Workers should not smoke inside the facility.

12 TRAINING AND INFORMATION FOR EMPLOYEES

Staff should receive training on risks associated with the fabrication of TechniStone® material.

New employees should attend a training session that addresses all health and safety aspects, including the company's safe working procedures for dealing with hazardous substances such as respirable crystalline silica.

Use a variety of training methods incorporating visual aids, videos, group discussions and handouts.

Workers' knowledge should be assessed at the end of each session to verify that they have understood the training material.

Refresher training sessions should be provided to keep workers up to date on health and safety policies and procedures.

Give your workers information on the health and safety effects associated with respirable crystalline silica dust, noise or any other risk associated with their activity.

Give them information on:

- Good practices to use in the workplace and safe working procedures.
- When and how to use respiratory protective equipment (RPE) or other personal protective equipment (PPE).
- Dust monitoring programs and other planned corrective measures.
- Safety data sheets for the used products.
- Work equipment, machinery and tools affecting their work.
- In the event that an employee's measured personal exposure to respirable crystalline silica exceeds the relevant occupational exposure limit value, that employee must be provided with details of his/her personal exposure monitoring result if required by law.

Attendance at training sessions should be compulsory. Participation should be well documented and records should be kept.

Workers should be asked to provide feedback on each training session, which might help in the organization of future training sessions.

13 HEALTH SURVEILLANCE

The Company should keep a record of which positions are exposed to respirable crystalline silica. Specific health surveillance protocols should be implemented for those employees at risk.

This may include:

- Spirometry
- X ray
- High-resolution tomography

In some countries the health check has to be conducted before the hiring. Please be sure of the situation in your country.

As always, companies are required to comply with all applicable laws and regulations.

WARNING

LEGAL COMPLIANCE AND SAFETY REQUERIMENTS

Fabricators and installers agree that it will, at all times, comply with all local and other applicable rules, regulations, ordinances and laws regarding the application, handling, storage, fabrication and disposal of all Technistone products. In particular Fabricators must perform periodic risk assessment of all jobs and take the appropriate measures to control the risk.

Fabricator acknowledges and understands that: fabrication of the materials, especially through dry cutting, emits air-borne particles, including respirable crystalline silica, that may cause silicosis or other respiratory diseases; and Technistone strongly recommends that fabricators and installers take all appropriate precautions, including wet cutting, wet grinding, wet milling and wet polishing, as it may reduce the risk of inhalation of air-borne particles and silicosis.

TECHNICAL ADVISORY SERVICES REPORT

The recommendations and advice given in this document are for information and guidance purposes only, intended for the implementing of organizational, technical and personnel measures as appropriate. In no case can they be construed to replace or substitute the legal obligations in health and safety matters as provided for in the legislation of each country; nor do they replace any other measures for risk evaluation, corrective action planning, specific technical advice or reports, training and information activities, preventive medicine, etc., which all correspond to the worker health and safety departments of companies or their outside consultants on these matters.

GOOD PRACTICE GUIDE

Technistone, a.s.
Bratri Stefanu 1070
500 03 Hradec Kralove
Czech Republic

www.technistone.com

Version 1 (March 2017)
Approved by World-Wide Agglomerated Stone
Manufacturers Association (A.St.A. World-Wide)

everlasting beauty

TechniStone®