COMPAC
THE SURFACES COMPANY

GOOD PRACTICES GUIDE

FOR THE MANUFACTURE OF COMPAC TECHNOLOGICAL MARBLE AND QUARTZ

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Approved by the Agglomerated Stone Association of Europe (A.S.T.A. Europe)

Exposure to respirable crystalline silica

This Guide provides information and recommendations on safety and health matters relating to the processes of handling, cutting and installing TECHNOLOGICAL MARBLE AND QUARTZ from COMPAC, The Surfaces Company.

Information on safety and health related to respirable crystalline silica (SiO_2).

Respirable crystalline silica is a basic component of the Earth's crust, found in sand, granite, quartz and many other minerals. When workers break, cut, perforate or strike rock containing SiO_2, particles in suspension are emitted that may be inhaled , and this is a health hazard in the event that workers are not wearing appropriate protection or if the workplace is not equipped with suitable devices for the suppression of silica dust in the atmosphere.

STOT RE 1

H372 HAZARD/STOT RE 1: Causes damage to organs (lungs) through prolonged or repeated exposure (inhalation).

PREVENTION

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash hands… thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P284 [In case of inadequate ventilation] wear respiratory protection (P3).

FIRST-AID

P314 Get Medical advice/attention if you feel unwell.

P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

MARMOL COMPAC, S.A. strongly encourages installers of our products to follow the recommendations given in our Good Practices Guide so as to avoid or minimise exposure to crystalline silica.

Manufacturers and installers of MARBLE and QUARTZ must comply as a minimum with all the laws and regulations related to employee safety and health. In addition to the information contained in the present Guide, it is recommended that manufacturers and installers of COMPAC TECHNOLOGICAL MARBLE and QUARTZ be familiar with the information provided by the European Network for Silica (NEPSI), and their Good Practices Guide for handling silica, as well as with OSHA's Notice of Proposed Rulemaking (NPRM) for Occupational Exposure to Respirable Crystalline Silica.

Visit http://nepsi.eu and www.osha.org for more information.

The instructions provide information and guidance on:

- Access to the workplace.
- Machinery and equipment with water supplies.
- Localised extraction and filtering systems.
- General ventilation of workplaces.
- Periodic control and maintenance.
- Cleaning methods.
- Dust measurement.
- Other risks: cutting, flying particles, noise, loads.
- Hygiene standards.
- Personal protection equipment.
- Countertop installation.
- Workforce training and information.
- Health Surveillance.

PREVENTIVE MEASURES

Access to the workplace:

Restrict access to work areas to authorised personnel only. Signpost the hazard area.

Cutting machinery and equipment using water supply systems.

There are two main methods for the control of silica dust: filtering and localised extraction systems, and wet process machinery.

All dry mechanising (without wet processes) are to be avoided.

All jobs involving cutting, shaping, polishing and finishing of materials must be performed using wet-process tools and machinery. When dust is dampened it is prevented from remaining suspended in the air. All water pumps, hoses and nozzles must be maintained in good working order and be cleaned and inspected regularly. In order to prevent electrical hazards when working with water, a ground fault circuit interrupter (GFCI) and impermeable and properly sealed electrical connections to electric tools and equipment must always be used. Workers working in wet areas must also always wear rubber boots.

Localised extraction and filtering systems

Use a local extraction equipment supplier of recognised quality. For installation, contact qualified engineers for the design and installation of these systems.

The design should have the following elements: an extractor hood; a compartment or other inlet permitting the trapping and containment of the contaminant; pipes to transfer the contaminant outside the work area; a filter or other device for cleaning air, normally placed between the hood and the ventilator; a ventilator or other device for generating an air flow; and finally other pipes for transferring air with airborne particles to the exterior of the workplace.

• Apply the localised vacuuming point at the source of the dust generation to trap dust. Seal off the dust source as hermetically as possible to prevent airborne spread.

• The localised vacuuming point must be connected to a suitable dust extraction unit (such as a bag filter or cyclone).

• Do not allow workers to remain in a position between the source of exposure and the localised vacuuming point, as this places them in direct contact with the flow of contaminated air. The position of workers on site must be monitored periodically and instructions must be made clear.

• As far as possible, locate the work area away from doors, windows or transit zones so as to avoid air currents that may interfere with localised vacuuming points and cause dust to spread.

• Always ensure that clean air enters the workplace to replace extracted air.

• Pipes should be as sort and as simple as possible; avoid long, complicated and flexible sections.

• Discharge extracted air in a safe place away from doors, windows and air ingress zones.

General ventilation of workplaces

A good general ventilation system should be in use at all times, as silica dust is very fine and may remain airborne for various days.

Ensure that the building is suitably ventilated, and if necessary use forced ventilation. Ensure that ventilation systems do not cause accumulated dust to blow away and extend to clean areas.

Foam dust suppression, in which a liquid or foam is applied to the surface of the dust-generating material can be used to avoid airborne dust from entering entrance or exit routes or transit areas.

Emissions from dust extraction systems used in buildings must comply with local environmental legislation.

Periodic control and maintenance

Maintain equipment in good working order at all times and follow the recommendations of the equipment supplier manual.

Clean equipment regularly, at least after each shift. Do not clean dusty areas with dry sweeping or with compressed air. Do not allow dust deposits or waste dust to dry before cleaning.
Maintain local vacuuming points in good working order at all times and follow the recommendations of the equipment supplier or installer. Fans, blowers or ventilators that operate noisily or with excess vibration may be indicative of faulty operation.
Always replace consumables (filters, etc.) in accordance with the manufacturer's instructions.

Never modify any parts of an operational system. If modifications are required, contact the original supplier to ensure that the system can preserve its CE labelling, or have a qualified professional undertake an inspection and risk evaluation. Ensure that you have received and safely stored a user instruction manual and diagram of the system installed. This should include a report on the installation clearly showing the air flows from all ingresses, the air flow rate through pipes and the air pressure at cleaners or filters. Contact your supplier to obtain information on the performance

as foreseen for the local vacuuming unit. Safeguard this information for comparison with future inspection and testing and results.

At least once a week, visually inspect the equipment for possible signs of damage, and if in constant use, check more often.

Cleaning

Hazardous dust is dust that contains fine particles that are easily airborne and may remain in this state for various days. This is why it is important to implement a suitable cleaning programme on site.

Clean equipment every day, at least once at the end of each shift. Clean the workplace daily. Use wall and floor surfaces that are easily cleaned and maintained and make dust accumulation difficult. Clean floors and other surfaces regularly. Clean all storage facilities and roof or wall extraction areas regularly.

Use cleaning methods with water or vacuuming systems. Do not clean by sweeping with dry brooms. Do not use compressed air, as this increases exposure levels dangerously. Clean spills immediately. Do not allow dust deposits or waste dust to dry before cleaning.

If vacuum cleaning systems are used to remove large-volume spills or breakages involving dusty materials, these vacuuming systems must be designed specifically to avoid overloading or blockages.

If it is not possible to use a wet cleaning or vacuuming process, and a dry cleaning process must be used, ensure that all workers involved wear appropriate personal protection equipment and that steps are taken to prevent crystalline silica dust from extending outside the work area.

When necessary, prevent dust from spreading to other levels of the building; use compact flooring and cover these with materials resistant to wear, with a colouring on which dust is visually noticeable.

Control panels or buttons may be protected from dust by using plastic or membranous protections.

When using cleaning methods with water, ensure that there are a suitable number of appropriate water supply outlets and that these are correctly located around the work area.

Also ensure that there are a suitable number of appropriate vacuum connections when a centralised vacuum cleaning system is used.

Dust measurement

Perform risk evaluations regularly to determine if existing controls are in place and appropriate. Static and personal measurements should be used jointly, as they are complementary It is up to the experts designated by the employers and the employees' representatives to opt for the most adequate solutions, while respecting the national and EU provisions. The sampling strategy, equipment to be used, analysis methods, etc. should be determined by experts in occupational hygiene. Full documentation on the risk evaluation and monitoring programme must be safely kept and a quality system implemented, as above. All personnel involved in sampling activities must give a good example and wear suitable respiratory protection in the required areas. The dust measurement protocol must be implemented regularly. Consult the NEPSI Agreement.

Carry out an INITIAL RISK ASSESSMENT of exposure to Respirable Crystalline Silica (RCS) at the workplace

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Implement Good Practices

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Organise health surveillance

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Provide information, instruction and training to the workforce

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Monitor the application of the Agreement and Good Practices (site level)

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Main provisions of the NEPSI Agreement

Other risks: cutting, flying particles, noise, load handling.

When using or working with COMPAC TECHNOLOGICAL QUARTZ, workers may be subject to certain hazards such as: blows and cuts from tools, risk of flying particles, exposure to noise, vibrations, and load handling.

- Act in accordance with risk evaluations performed by experts in health and safety.
- Use appropriate tools for each task and maintain them in optimum working conditions.
- Use protection equipment required at each time: respiratory protection mask, gloves, eye goggles, ear protection and high visibility jacket in loading and unloading areas.
- When handling slabs, workers must always wear a helmet as well as other protection equipment.
- Ensure that all slab storage stands have safety bars that prevent slabs from falling off when being lifted or lowered. Safety bars should fit in all stands, in warehouses and also on trucks.
- Workers handling cranes, mobile cranes or forklifts must be appropriately trained.
- Inspect cranes, mobile cranes and forklifts every day for proper operation.
- Have a qualified professional perform spot checks on cranes, mobile cranes or forklifts in accordance with regulations and the manufacturer's instructions.
- Have a qualified electrician perform regular inspections of electrical installations in accordance with regulations and the manufacturer's instructions.
- Use mechanical means to transport pieces or heavy materials. As far as possible prevent workers from handling and transporting weights above 20kg by hand or using unusual postures; avoid repetitive movements as well.

Worktop installation

Worktops should be delivered with all operations ready-made so as to avoid finishing operations on site. Precise kitchen measurements should be made before shipment.

Should worktops require retouching in the home, it is recommended to perform these operations in a well-ventilated place (terrace, balcony, etc.) and as far as possible using wet processes. For these operations, personal protection equipment must be used: type-P3 respiratory protection against crystalline silica particles, goggles and ear protection.

If re-touching operations are performed using dry processes, the safety measures are the same, with additional support from a potable dust vacuum system.

To handle pieces, use manual suction cups or similar.

For grouting in joins, back splashes, plinths, etc. with products such as Solumastik, Colorsil, solvents, etc. use latex gloves and appropriate filters for organic vapours or combined filters.

As far as possible, avoid creating dusty atmospheres, and to finish the installation, all remains of dust should be collected and removed, and the worktop must be thoroughly cleaned.

Personal protection equipment (PPEs)

• In work areas or at workstations where risks cannot be totally eliminated, wearing personal protection equipment is compulsory, and these areas must be clearly indicated with the appropriate signs.

• Personal protection equipment must comply with current EC safety and health standards in respect of design and manufacture. The company is responsible for supplying all personal protection equipment, which must bear the EC mark.

• Respiratory protection against silica must be type P3. Bear in mind that facial hair may reduce the effectiveness of a face mask. Operators with facial hair must be equipped with respirators or other alternative equipment.

• When PPEs are used, a company programme should be implemented covering all aspects of equipment selection, use and maintenance.

• When more than one PPE is being worn, ensure that all equipment is fully compatible.

• Check the effectiveness of all respiratory equipment before use. Consult with the supplier as to appropriate adaptation methods.

• Safeguard all registers of delivery of personal protection equipment to workers. Provide for safe and clean storage areas for PPEs when not in use.

Hygiene standards

• Provide a place for storing worker clothing. Clean clothing should be kept separately from work clothing.

• Work areas must have toilets, showers and washbasins, as well as personalised lockers. Workers should not eat before washing faces and hands and changing out of their work clothing.

• Mark off a specific clean area where workers can prepare food, eat and drink away from their workstations.

• Provide workers with a sufficient amount of clean work clothing, including changes as required.

• Workers handling products with silica dust must wear overalls manufactured in fabric that prevents dust absorption.

• Do not use compressed air to clean off work clothing. Workers must not smoke inside buildings.

Workforce training and information

Ensure that all personnel receives training on the risks associated with working with COMPAC technological quartz .

Newly admitted workers should participate in training sessions that cover all aspects of safety and health, including the employer's safe work procedures for handling hazardous substances such as respirable crystalline silica.

Use a variety of training methods including visual aids, videos, group discussions and documents.

Worker knowledge levels must be evaluated after each session to ensure that training information has been properly assimilated.

Training sessions should be programmed regularly to keep workers up to date on all aspects of health and safety at work.

Inform workers of the consequences of working with respirable crystalline silica dust on their health and safety, as well as other aspects related to this activity, such as noise and other risks.

Specifically, provide information on:

- The good practices they should use at the workplace and safe work procedures to be followed.
- When and how to use respiratory protection equipment (RPEs) or any other personal protection equipment (PPEs).
- Dust control programmes and other corrective measures in place.
- The safety data sheets for the materials being used. The equipment, machinery and tools to be used at the workplace.
- The equipment, machinery and tools to be used at the workplace.

If the measurement of a worker's occupational exposure limits to crystalline silica exceeds the maximum, detailed information should be given to the worker on the results of his or her personal health surveillance.

Participation in training session shall be obligatory. Participation in training sessions must be documented and these register must be appropriately safeguarded.

Workers should be asked for their appraisal of each training session so as to assist in organising future sessions.

Health Surveillance

Worker health surveillance must bear in mind all those workplaces where people are exposed to silica.

Specific health surveillance protocols must be drawn up and applied for exposed workers.

- Spirometry
- X-rays
- Frequency
- High resolution tomography

In some countries health controls must be made before the worker signs an employment contract. Get accurate information on your country's situation in this regard.

As usual, all companies must comply with all laws and regulations of application.

PRECAUTIONS

Manufacturers and installers agree to comply at all times with all standards, regulations, ordinances and laws governing the application, handling, storage, manufacture and processing and removal of waste products in respect of COMPAC TECHNOLOGICAL QUARTZ. In particular, manufacturers and installers must carry out regular evaluations of the risks involved in all jobs to be performed and adopt the necessary measures to control and minimise said risks.

Manufacturers and installers accept and understand that using COMPAC materials, particularly dry cutting, involves the risk of airborne particles, among which is respirable crystalline silica, which can cause silicosis and other respiratory diseases. COMPAC strongly encourages installers of our products to take all necessary precautions, in cutting, shaping, grinding and polishing these products using wet processes, to reduce the risk of inhalation of airborne dust and silica particles so as to prevent 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 organisational, 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.