Human Resources, Health, Safety and Employee Well-Being

**SILICA Program**

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Introduction and Objectives

York University is committed to providing a healthy and safe learning and work environment. Silica is one of the designated substances listed under the *Designated Substances Regulation* (O. Reg. 490/09). As a result, the use of silica in the workplace must be evaluated to eliminate or minimize the risk of exposure.

The objective of York University’s Silica Program is to assist managers and employees in meeting the requirements of the *Designated Substances Regulation*, with respect to silica in the workplace. This program will include information on:

* Hazards associated with silica exposure;
* Methods to assess the extent to which employees are exposed to silica;
* Appropriate controls to eliminate/minimize the employee’s exposure;
* Training requirements; and
* Requirements under the *Occupational Health and Safety Act* of Ontario and the relevant regulations.

Scope

This program is intended to protect all persons working with materials containing silica at York University, including but not limited to staff, faculty, instructors, and students.

For the purpose of this program:

* the term “employee” will be used interchangeably with “worker”; and
* the terms York and York University will be used interchangeably; however, they are both referring to York University Campuses and sites.

Background

Silica is one of the designated substances listed under the *Designated Substances Regulation* (O. Reg. 490/09). A “designated substance” is defined in OHSA as “a biological, chemical or physical agent or combination thereof prescribed as a designated substance to which the exposure of a worker is prohibited, regulated, restricted, limited or controlled”.

York University employees may be involved in work activities that could potentially lead to exposure to crystalline silica. The prolonged inhalation of dust containing free crystalline silica is a health hazard. It is the area manager’s responsibility to acquaint employees with any hazard of the work and in the handling, storage, use, disposal and transport of silica.

This program has been established to ensure compliance with Ontario Regulation 490 and Ontario Regulation 833 (Control of Exposure to Biological or Chemical Agents).

Definitions / Acronyms

**HSEWB:** Health, Safety & Employee Well-Being unit.

**Employer:** A person who employs one or more workers or contracts for the services of one or more workers, OHSA Section 1. (1).

**Employee:** All persons working for York University including faculty, staff, instructors, student employees, and anyone who is defined as a “employee” under *the Occupational Health and Safety Act.*

**Healthy workplace:** Is one that actively works to: (1) prevent harm to an employee’s

physical and psychological health and safety and (2) promote physical and psychological well-being.

**HSO:** Health and Safety Officer.

**JHSC:** Joint Health and Safety Committee.

**Manager:** Includes: “management supervisor” for staff; and “academic administrator” for faculty members, instructional and other academic employees (e.g., Chair, Director, Office of the Dean, etc.); and anyone who has charge of a workplace, or authority over a worker as defined as a supervisor under the *Occupational Health and Safety Act.*

**OHSA:** Occupational Health and Safety Act, Revised Statutes of Ontario, 1990, Chapter O.1. For further details, please refer to:

<http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o01_e.htm>

**Respirable:** This is a size fraction of the airborne particulates that are deposited in the gas-exchange region of the respiratory tract and can be collected during air sampling with a particle size-selective device that,

(a) meets the American Conference of Governmental Industrial Hygienists (ACGIH) particle size-selective criteria for airborne particulate matter; and

(b) has the cut point of 4 microns at 50 per cent collective efficiency. (O. Reg. 833)

**SDS:**  Safety Data Sheets are detailed safety information printouts provided by the supplier outlining the hazards associated with a chemical.

**Silica:** Means crystalline silica in a respirable form. O. Reg. 490/09 s. 1.

**Silica User:** An employee who performs any work activity involving silica containing materials.

**TWA:** Time-Weighted Average. The TWA limit means the time-weighted average airborne concentration of a biological or chemical agent to which a worker may be exposed in a workday or work week. O. Reg. 490/09, s. 1.

Roles and Responsibilities

 **Shared Responsibility – All York University Community Members:**

* Create, promote, and maintain a healthy and safe work environment;
* Work in accordance with procedures outlined in the respective area;
* Report any identified hazards to the appropriate area Manager; and
* Follow requirements outlined within this program.

**Divisional/ Department Head or Delegate**

This level corresponds with the Employer under the OHSA. (President, Vice-President, Provost & VP-Academic, Associate/ Assistant Vice-President, Executive Director, Principal, Dean, Dean of Libraries, Senior Executive Officer, Director).

* Assess specific risks for the Faculty/Department and review protocols applicable to the use, handling, and storage of silica;
* Ensure adequate resources are made available to support controls; and
* Monitor the effectiveness of this program and applicable procedure(s) on an ongoing basis.

**Manager**

This level corresponds with the Supervisor under the OHSA. (Manager, Associate Dean).

* Communicate this program and related procedures to employees within their Faculty/Department;
* Notify constructors / subcontractors of the presence of silica in the workplace, as applicable;
* Coordinate a risk assessment and document the exposure or likelihood of exposure to an employee by inhalation of silica;
* Identify processes and the type of work that involve the use of silica and advise employees of silica hazards in their workplace;
* Implement proper controls to prevent/minimize exposure to silica to the lowest practical level;
* Develop standard operating procedures/protocols (where applicable) related to the task/work activity involving the use of silica in the area;
* Provide written procedures to the employee, where required by the regulation or where the management believes it to be reasonable for the protection of the employee;
* Ensure that employees perform work as required, using the required equipment and protective measures identified by the university or by the OHSA or its regulations;
* Create and maintain an updated inventory of silica containing products in the area;
* Ensure supplier labels are legible on silica containing materials;
* Ensure all users of silica products have timely access to safety data sheets (SDSs) whether in an electronic or paper format;
* Maintain paper copy of SDSs for silica related products used in the workplace if there is no access to an electronic copy;
* Identify training needs, coordinate and ensure that sufficient training and instructions for safe handling of silica is provided for the users;
* Maintain employee training records for silica;
* Ensure that emergency procedures are in place to deal with an incident involving a silica exposure;
* Respond to workplace health and safety hazards or concerns brought forward by employees;
* Report any incident involving silica product to relevant parties (e.g. HSEWB, Risk Management, area Health & Safety Officer, York Security, etc.) and complete required documentation such as the [Workplace Incident Report](https://yulink-new.yorku.ca/documents/872311/0/Workplace%2BIncident%2BReport%2B%28WIR%29%2B-%2BJuly%2B2019.pdf/85f23d92-5aff-4f7d-ab33-c467c4ec3a38) (for employees) or the [York University Incident Report (Non-Employee)](https://www.yorku.ca/riskmanagement/wp-content/uploads/sites/65/2020/03/Incident-Report-Non-Employee.pdf) (for students), and submit it in a timely manner regardless of severity or outcome of the incident;
* Conduct safety incident reviews with staff in the respective area as part of the incident follow-up process;
* Oversee/monitor the effectiveness of this program and applicable procedure(s) on an ongoing basis;
* Address any issues of non-compliance; and
* Consult with area Health and Safety Officer and/or Health & Safety Advisor for any matters related to this program.

**Local Partner**

Serves as advisor to Divisional / Department Head and Manager. (HR People Partners, Area Health and Safety Officer).

* Support area management in fulfilling their responsibilities with respect to this program;
* Assist with coordinating silica training for employees and other users of silica containing products;
* Provide advice/support to management with respect to issues related to silica; and
* Participate and/or provide assistance to management in investigating incidents involving the use/handling of silica products.

**Employee(s)**

Includes users of silica containing products.

* Participate in training, as required;
* Work in compliance with the OHSA, the *Designated Substances Regulation* and follow any procedures developed by York/management to enable them to work safely;
* Follow the Silica Program requirements regarding labelling, handling and storage of silica products;
* Post a warning sign (see Appendix C) at the access point to the work area before the work starts. It is to be posted for the duration of the work and removed when the project/work process is complete. The employee(s) involved in the work are to remove the sign;
* Wear personal protective equipment, as required;
* Report incidents involving a silica related exposure to their Manager, whether or not symptoms or occupational illness result;
* Provide input and suggest solutions for controlling hazards in the workplace; and
* Consider in participating in the medical surveillance program where required by the control program.

**Joint Health and Safety Committees (JHSCs)**

* Support employees with health and safety concerns in the workplace;
* Report any hazards identified during workplace inspections to the appropriate area manager; and
* Participate in the review of this program.

**Union(s)**

* Provide representation to employees in accordance with the applicable collective agreement and legislative requirements; and
* Participate in the program review process through the JHSCs.

**Health, Safety & Employee Well-Being (HSEWB)**

* Lead the development, implementation, and ongoing management of this program;
* Liaise with relevant external governmental agencies (e.g., Ontario Ministry of Labour, Immigration, Training and Skills Development / Workplace Safety and Insurance Board), where required;
* Provide support, education and counsel to employees and managers with respect to this program;
* Conduct and/or assist with related risk assessments, as requested;
* Develop and provide silica training to employees and other users of silica containing products on the safe use, handling, and disposal of these products;
* Review all Workplace Incident Reports (WIR) and complete all WSIB reporting requirements as applicable;
* Assist in investigating incidents involving the use of silica in the workplace as appropriate and provide recommendations to prevent/reduce impact of similar occurrences;
* Maintain records of exposure assessments of the employees; and
* Coordinate the review of the Silica Program (at least every 5 years) with JHSCs and relevant parties, and make revisions as needed.

**Contractors/ Subcontractors**

Although contractors and subcontractors are not employees of York University, their presence on our campus necessitates that they follow all applicable policies and procedures. Please connect with your York representative to find out about the constructor/ contractor requirements on York University premises.

With regards to Silica containing products, the contractors/ subcontractors are required to:

* Notify York representative, subcontractors and/or other parties of any silica product brought on site or involved in the project;
* Ensure that any silica product brought on site is properly labelled;
* Maintain SDSs for silica products brought on site and make these available to on-site employees, as well as York representative (e.g. Facilities Services Project Manager or the area management for the area under construction/ renovation); and
* Inform the constructor and York representative of any silica related issues or concerns, including any incidents that arise during the use of silica products on site.
* Follow the OHSA and applicable regulation related to their work on York campus(s) and site(s).

Part A: Prevention and Education

Identifying the Hazard

Silica or silicon dioxide (SiO2) is a naturally occurring mineral, which exists in two forms: crystalline and amorphous. Crystalline silica is significantly more toxic than amorphous silica. The silica minerals, when pure, are colourless and transparent and have a vitreous lustre. Silica is used in fabrication of stone and clay products, manufacturing of glass, ceramic products and glazes, used as an abrasive and grinding media (sandblasting, polishing, grinding) and in construction materials.

Silica becomes a concern when silica dust/particles (respirable fraction) are inhaled. Potential health effects include coughing and mild temporary irritation during short term exposure, and lung diseases (e.g. silicosis) for prolonged exposure.

Activities such as abrasive blasting with sand; sawing brick or concrete; sanding or drilling into concrete walls; grinding mortar; manufacturing brick, concrete blocks, stone countertops, or ceramic products; and cutting or crushing stone could result in worker exposures to respirable crystalline silica dust.

The following can assist in identifying silica in the workplace:

* Check and review for presence of silica before ordering materials;
* Review the Safety Data Sheets (SDSs) of the materials used in the workplace; and
* Review workplace activities and process that may result in generation of silica dust.

If silica materials are identified or suspected, it should be reported to your manager. HSEWB is also available to assist and provide advice as required.

Assessing the Risk

If there is a need, the area manager and/or employee can request that a risk assessment be conducted.

 HSEWB is responsible for conducting risk assessments for designated substances, including silica. The written assessment will evaluate:

1. The methods and procedures used or to be used in the processing, use, handling, or storage of silica;
2. The extent and potential extent of the exposure of a worker to the inhalation of silica (air sampling may be required); and
3. The measures and procedures necessary to control such exposure by means of engineering controls, work practices and hygiene practices and facilities. O. Reg. 490/09, s. 19 (2) (b).

Appendix A can be used to calculate workplace exposure to silica. The conclusions of the assessment will indicate whether or not a control program is necessary.

If an assessment is conducted, the JHSC(s) should be consulted, and a copy of the assessment is to be provided to them. Also, when changes are made to the work process that may affect a change to the employee’s exposure, a re-assessment should be conducted to re-evaluate the exposure under the new conditions.

Controlling the Risk

If the assessment reveals that a control program is required, HSEWB will work with the area management to develop a written program. A control program must include provisions for:

1. Engineering controls, work practices and hygiene practices to control the exposure of an employee to silica;
2. Methods and procedures to monitor the concentrations of airborne silica in the workplace and the exposure of an employee;
3. Personal records of the exposure of an employee to silica at the workplace, including the time-weighted average exposure of the employee and of the concentrations of silica and the times in which such concentrations were taken to be representative of the exposure of the employee and used in calculating the average exposure to be maintained by the employer;
4. Medical examinations and clinical tests of an employee;
5. Records of medical examinations and clinical tests of an employee to be maintained by a physician who has examined the employee or under whose direction the examination and the tests have been performed; and
6. A training program for managers and employees on the health effects of silica and the measures and procedures required under the silica control program.

Regardless of whether a control program is required, the implementation of measures and procedures by means of engineering controls, work practices and hygiene practices to ensure that the TWA of an employee is reduced to the lowest practical level should be taken. Measures to reduce the risk of silica exposure include:

|  |  |
| --- | --- |
| **Control Method** | **Control Measures** |
| Elimination (including substitution) | * silica sand used in abrasive blasting may be replaced by metal shot and grit, alumina, garnet, cereal husks, sawdust, high pressure water, steel sand, silicon carbide or corundum
	+ (Note: When choosing non-silica containing abrasives, avoid choosing abrasives that may introduce new health hazards to the workplace. For example, abrasives containing walnut shells may cause allergic reactions in some employees);
* replacement of sandstone grinding wheels with ones using an abrasive like aluminum oxide
* magnesite or aluminum oxide bricks in place of silica bricks in furnaces.
 |
| Engineering Controls | **Process Review**When it is not possible to use a silica substitute, changing how a process is performed can lower silica exposures. For instance:* wet methods reduce dust and should be used whenever practical, particularly in cutting, grinding, and drilling operations.
* the modification of an abrasive operation to produce a coarser dust that is less hazardous because it settles more readily and is less likely to be trapped in the lungs if inhaled.

**Enclosure and/or Isolation** If a process cannot be modified to reduce exposure, it may have to be isolated or enclosed. * dusty operations can be isolated by carrying them out in areas that are physically separated from non-dusty areas and keeping employees not involved in the operation out of the area
* where isolation is not effective, the process can be completely sealed off from the rest of the workplace with an enclosure
* a warning sign (Appendix C) indicating the presence of silica dust hazard in the area should be posted in a visible location

**Ventilation*** local exhaust ventilation to remove dust at its source
* dust-generating tools equipped with dust collection systems to prevent dust from spreading or becoming airborne
 |
| Administrative Controls | **Practices and Hygiene Practices** * wash and shower at the end of each shift
* no smoking, eating, drinking, or chewing in contaminated areas and lunches should be stored in an uncontaminated area
* follow good housekeeping practices wherever silica dust is generated
* containers of silica containing waste should be kept tightly covered to prevent dust from becoming airborne
* surfaces should be kept clean by washing down with water or vacuuming with a vacuum equipped with a high-efficiency particulate air (HEPA) filter
* cleaning with compressed air or dry sweeping should be avoided
 |
| Personal Protective Equipment | * clothing that is contaminated with silica dust should not be re-worn without cleaning
* if respirators must be used, follow York’s [Respiratory Protection Program](https://yulink-new.yorku.ca/documents/20182/1360664/Respirator%2BProtection%2BProgram/f32b6886-569a-48c7-8252-32fb4c0acb3b)
 |

These methods are also known as the "hierarchy of control". The hierarchy should be considered in the order presented (i.e., it is always best to try to eliminate the hazard first).

**Respiratory Protection**

Where respiratory equipment is provided, it shall:

1. be appropriate in the circumstances for the concentration of airborne silica;
2. meet or exceed the requirements set out in the *Designated Substances Regulation* (O.Reg. 490/09)
3. is issued and used in accordance with the requirements the *Designated Substances Regulation* (O.Reg. 490/09)

The following general use, care, and maintenance procedures should be followed whenever respirators are required:

* respirators should be used and maintained in accordance with the manufacturer’s specifications;
* proper seal of respirators should be checked prior to each use;
* storage of respirators should be in a convenient, clean, and sanitary location and stored in a manner that does not subject them to damage or distortion;
* respirators assigned for the exclusive use of one employee, should be cleaned, disinfected, and inspected after each shift;
* respirators used by more than one employee, should be cleaned, disinfected, and inspected after each use; and
* any respirator parts that are damaged or that have deteriorated should be replaced before the respirator is used.

For additional information on the respirators, refer to York’s [Respiratory Protection Program](https://yulink-new.yorku.ca/documents/20182/1360664/Respirator%2BProtection%2BProgram/f32b6886-569a-48c7-8252-32fb4c0acb3b).

Respirators with a tight-fitting facepiece must be fitted to the employee in such a way that there is an effective seal between the equipment and the employee’s face. Each employee must be fit-tested for each type of respirator to be worn. For any respirator fit testing needs, please contact the HSEWB at hsewb@yorku.ca.

Evaluating Implemented Control Measures

To confirm that the controls are effective, and hazards are eliminated or minimized, several methods can be utilized which include, but are not limited to:

* Physical inspections
* Observations
* Incident investigation reports
* Air monitoring
* Employee feedback

Education & Training

Education and training are required for employees and management who use silica containing materials prior to the commencement of work. The purpose of education and training is to help the user conduct their work safely and to prevent / minimize the risk of exposure.

**General Awareness Training**

This training is provided by HSEWB upon request by contacting hslearn@yorku.ca. Silica training will cover the following:

* legislative overview;
* the hazards of silica, including health effects and symptom recognition;
* the typical operations containing silica;
* personal hygiene, respirator requirements, and safe work measures;
* the use, care, maintenance, cleaning, and disposal of personal respiratory protective equipment.

The university must consult with JHSCs about the content and the delivery of the training program. The training details (refer to Appendix B) shall be reviewed at least once every 5 years (or as needed) in consultation with Joint Health and Safety Committees as part of this program review.

**Job Specific Training**

In addition to the above, all silica users are to have on-the-job training provided by their manager that will include:

* where silica is present in their work area;
* standard operating procedures for the safe handling, storage, and disposal of silica materials;
* the location of emergency equipment; and
* emergency response procedures for their work area.

**Training Frequency**

HSEWB recommends that employees using silica complete silica training every three years or more frequently, if required by their faculty or department.

Part B: Procedures and Processes

Medical Surveillance

Where a control program is required (when the assessment discloses that an employee is likely to inhale silica and that the health of the employee may be affected), the control program shall include a medical surveillance program. Medical surveillance where applicable should be carried out according to specifications set out at the *Designated Substances Regulations* (O. Reg. 490/09).

Incident Investigation & Reporting

If an incident involving a silica exposure occurs, the Manager should investigate the incident to find out the cause(s), contributing factors and take necessary measures to prevent future occurrences. Incident investigations at the University follow two processes depending on the affected individual(s):

|  |  |
| --- | --- |
| **Incident Involves Employee (includes student employees)** | **Incident Involves Non-Employee** **(student, visitor, etc.)** |
| * [Workplace Incident Report](https://yulink-new.yorku.ca/documents/20182/92034/Supervisor%27s%2BAccident%2BInvestigation%2BReport%2BForm/a6c15261-3614-4295-938d-5d473c22b783) (WIR) to be submitted to HSWEB at WIR@yorku.ca within 24 hours
* Employee’s Manager is responsible for the investigation
* Joint Health & Safety Committee is notified of the incident
* HSEWB provides support as needed
 | * [York University Incident Report (Non-Employee)](https://www.yorku.ca/riskmanagement/wp-content/uploads/sites/65/2020/03/Incident-Report-Non-Employee.pdf) to be submitted to Risk Management and the area Health and Safety Officer
* The student’s faculty or department is typically responsible for investigation
* HSEWB provides support as needed
 |

If the injury that occurred due to incident is a critical injury, the Manager and/or York Security must notify HSEWB immediately. Further details can be found in the [Incident Investigation Program](https://yulink-new.yorku.ca/documents/20182/92034/Accident%2BInvestigation/6b6a91fa-0445-49a6-9592-d189ad4282c6).

Reprisal

This program prohibits reprisals against employees who exercise their rights or bring forward concerns pertaining to their health and safety. Employees who engage in reprisals or threats of reprisals may be disciplined up to and including termination from employment.

Reprisal includes:

* Any act of retaliation that occurs because an employee has complained or provided information about an incident or concern;
* Intentionally pressuring a person to ignore or not report an incident or concern; and/or
* Intentionally pressuring a person to lie or provide less than full cooperation with an investigation.

Non-Compliance

Any employee who violates this program, and/or Manager who fails to take action when advised of a violation, will be subject to appropriate disciplinary action, up to and including termination of employment.

Disciplinary action will also be taking if a complaint is found to have been made fraudulently and with malicious intent.

Record Keeping

HSEWB is the Office of Primary Responsibility for keeping records related to tests of employees to comply with health and safety legislation and standards, which includes personal and medical records.

Records of workplace assessments, including the results of monitoring the concentrations of airborne silica in the workplace and the exposure of employees shall be kept by HSEWB for a period of at least five years.

The records of medical examinations and clinical tests of an employee and of the exposures of the employee to airborne silica furnished by the employer shall be kept by the physician who has conducted the examinations and tests (O. Reg. 490/09, s. 30, 31).

Training records are retained by the area management.

Copies of control programs are retained by both HSEWB and the area management.

Reviewed By

The York University Silica Program shall be reviewed once every five years in consultation with the Joint Health and Safety Committees and area Health and Safety Officers.

This program was also reviewed by the following parties/areas:

* Facilities Services
* School of Arts, Media, Performance and Design
* Faculty of Science
* School of Engineering
* Risk Management

Related Policies / Programs / Procedures

* [Hazard Recognition and Reporting Program](https://yulink-new.yorku.ca/documents/20182/1360664/Hazard%2BRecognition%2Band%2BReporting%2BProgram/f8bc5ecd-08d2-4079-a0d7-0e953214a3b6)
* [Incident Investigation Program](https://yulink-new.yorku.ca/documents/20182/6878449/Incident%2BInvestigation/6b6a91fa-0445-49a6-9592-d189ad4282c6)
* [Risk Management Services Injury Reporting Procedure](https://www.yorku.ca/riskmanagement/incident-reporting/)
* [WHMIS Program](https://yulink-new.yorku.ca/group/yulink/whmis)
* [Laboratory Safety Program](https://yulink-new.yorku.ca/documents/20182/29507656/Laboratory%2BSafety%2BProgram/388ec4d8-728d-4f64-ae87-e96d6ceaac14)
* [Respiratory Protection Program](https://yulink-new.yorku.ca/documents/20182/1360664/Respirator%2BProtection%2BProgram/f32b6886-569a-48c7-8252-32fb4c0acb3b)

References

[Ontario Occupational Health and Safety Act](https://www.ontario.ca/laws/statute/90o01?_ga=2.230211935.274527881.1521735756-1246752648.1517512619)

[Designated Substances Regulations (O. Reg. 490/09)](https://www.ontario.ca/laws/regulation/090490)

[Workplace Hazardous Materials Information System Regulation (O. Reg. 860)](https://www.ontario.ca/laws/regulation/900860)

[Silica Control Tool: Occupational Health Clinics for Ontario Employees Inc.](https://www.ohcow.on.ca/occupational-illness/silica-control-tool-ontario/)

[Canadian Center for Occupational Health and Safety (CCOHS)](https://www.ccohs.ca/oshanswers/chemicals/chem_profiles/quartz_silica.html)

Appendices

Appendices and additional resources can be found on [York University’s Silica Program page](https://yulink-new.yorku.ca/documents/20182/92034/Silica/f608f422-17b6-476f-897c-e2b3b6b2df2c) on YU-Link (note: Passport York credentials will be required for access).

Appendix A: Calculation of Occupational Exposure

Appendix B: Silica Training Program Details

Appendix C: Warning Sign

Appendix A: Calculation of Occupational Exposure

The time-weighted average exposure of a worker to airborne silica shall be calculated for a forty-hour week and an eight-hour day as follows:

1. The average concentrations of silica to which a worker is exposed shall be determined from analyses of air samples representative of the exposure of the worker to silica during work operations in accordance with standard methods for workplace air sampling and analysis.

2. The results of the analyses are the concentrations expressed as milligrams silica per cubic metre of air (mg/m3).

3. The concentrations shall be multiplied by the time in hours to which the worker is taken to be exposed to such concentrations.

4. The cumulative daily or weekly exposure shall be calculated using the following formula:

C1T1 + C2T2 + ... + CnTn = cumulative daily/weekly exposure

where,

C1 is the concentration found in an air sample, and

T1 is the total time in hours to which the worker is taken to be exposed to concentration C1 in a work day or work week.

5. The time-weighted average exposure shall be calculated by dividing the cumulative daily exposure by eight and the weekly exposure by 40 respectively.

O.Reg. 490/09 Part I

Appendix B: Silica Training Program Details

Introduction

As required by Ontario Reg. 490/09, s.20 (2) (4) “…the silica control program shall include provisions for a training program for supervisors and workers on the health effects of silica and the measures and procedures required under the silica control program”.

Purpose

To educate and inform employees on the health effects of silica and applying control methods to eliminate/reduce the exposure when working with silica.

Trainer

Silica training is provided by Health, Safety & Employee Well-Being (HSEWB) to all employees and management who work with materials containing silica.

It is the responsibility of the area management to identify all work involving silica and notify HSEWB of the training needs.

Training Outline

The silica training incorporates information on legislative requirements on silica work, types of silica and health effects, and control methods.

An outline of the silica training is presented on the following table:

|  |  |  |  |
| --- | --- | --- | --- |
| ***Item*** | ***Content*** | ***Method*** | ***Time*** |
| Legislation | Occupational Health & Safety Act Designated Substances Regulation-O. Reg. 490/09) Occupational exposure limits (TWA-Time Weighted Average) York University’s Silica Control Program | Power Point Presentation/ Handout | 20 Minutes |
| Types of Silica- Properties | Silicon Dioxide (SO2)-Amorphous-Crystalline | Power Point Presentation/ Handout | 10 Minutes |
| Silica-Health Effects | Review of Safety Data Sheets (SDS)Routes of Entry and Health Effects:-Eye contact-Skin contact-Inhalation (silicosis) | Handout | 20 Minutes |
| Control Methods | Engineering ControlsAdministrative ControlsWork Practices Hygiene Practices | Power Point Presentation/ Handout | 30 Minutes |
| Personal Protective Equipment (PPE) | Respirator Use and MaintenanceOther PPE: gloves, safety glasses, coveralls etc. | Handout/ Hands On | 30 Minutes |
| Incident Response | Emergency ProceduresIncident Reporting | Power Point Presentation/ Handout | 10 Minutes |

Appendix C: Warning Sign

Employees handling silica are to post this sign at the access point to the work area before the work starts. It is to be posted for the duration of the work and removed when the project/work process is complete.

The employee(s) involved in the work are to remove the sign. Management is to monitor compliance with this process.

**CAUTION**

**There is a silica dust hazard. Silica dust is potentially dangerous to breathe.**

**Access to the work area is restricted to authorized persons.**

**Respirators must be worn in the work area.**