Health, Safety and Environment Management System

Crystalline Silica Exposure Control Plan

PROCEDURE

APPROVAL AND VERSION HISTORY

Crystalline Silica Exposure Control Plan		Version # 00
Approved by:	(signature)  Senior Manager, Health and Safety	**Effective Date:** November 28, 2016

Version #	**Description of Changes**	**Prepared By**	**Date**
00	Initial version	J. Payne	November 28, 2016
01			
02			
03			

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EPCOR PROVIDING MORE	**Silica Exposure Control Plan**	**Procedure**
Effective Date: --	Revision Date: --	Last Reviewed: --
Document Owner: EPCOR Water Health and Safety Department		Review Cycle: Every 3 years

1.0 PURPOSE AND OBJECTIVE

The purpose of the Silica Exposure Control Plan (SECP) is to provide knowledge and awareness regarding the identification, evaluation and control of hazards associated with crystalline silica exposure within EPCOR Water sites.

The objective of the SECP is to identify potential crystalline silica exposure work areas and tasks and to reduce worker exposures through best practices of implementing the hierarchy of controls (elimination/substitution, engineering, administrative and personal protective equipment).

EPCOR's goal is to ensure exposures to silica are kept *As Low as Reasonably Achievable* (ALARA) and below all occupational exposure limits. As stated in the EPCOR Standard MS20-STD7-Occupational Hygiene Management Program, **a level of less than 50% of the occupational exposure limit, or accepted industry best practices will be utilized as the target for acceptable exposure**. Occupational exposures exceeding 50% of the jurisdictional exposure limit are to be controlled with engineering, administrative or personal protective equipment (PPE) controls. However, determination of acceptable or unacceptable exposure will be based upon jurisdictional exposure limits, acceptable occupational hygiene practices and professional judgement.

2.0 SCOPE

This procedure applies to all EPCOR Water operations including EPCOR employees and contractors whose positions are identified by the hazard assessment(s) and hygiene monitoring programs as having the potential for exposure to crystalline silica. Business Units (BU) may develop additional procedures specific to the operations of their work site.

3.0 BACKGROUND INFORMATION

Silica is a common mineral found in rock and sand and it exists in crystalline and non-crystalline forms. The three-dimensional repeating pattern arrangement of atoms in crystalline silica makes it the main concern when considering health effects. Crystalline silica occurs in several forms including quartz, cristobalite and tridymite. Quartz is the most common form.

Work activities at EPCOR Water facilities having the potential to generate airborne respirable crystalline silica includes common construction tasks such as sanding, drilling, chipping, grinding, cutting, sawing, sweeping, coring and abrasive sandblasting of concrete or asphalt products.

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4.0 Health Hazards

Crystalline silica dust particles can be inhaled (main exposure route) and deposited in lungs and cause respiratory illnesses. Exposure is in the form of airborne respirable size fraction of the dust. The respirable size is small enough to get deep into the lung where gas exchange takes place.

Silicosis is the most common respiratory illness and it affects the lung tissue by developing scarring around the particles. Exposure has also been linked to lung cancer.

Crystalline silica classified as a human carcinogen (Group 1) by the International Agency for Research on Cancer (IARC). Health hazards are dependent on many factors including particle size, exposure duration, concentration and individual susceptibility.

5.0 Regulatory Requirements

The procedure is provided as a minimum and complies with Part 2 of the Alberta Occupational Health and Safety Code (July 2009), Part 6 of the British Columbia Health and Safety Regulations and Part XXIV of the Saskatchewan Occupational Health and Safety Regulations (1996).

The airborne exposure limit (8-hour) for all forms of crystalline silica in Alberta, British Columbia and Saskatchewan is **0.025 mg/m^3.** Alberta has added a requirement that the exposure limit is not adjusted for extended work shifts above 8 hours.

5.1 Health Assessments

If a worker becomes an “Exposed Worker” according to the Alberta OHS Code definition, a health assessment of the worker must be conducted. The purpose of the health assessment is to identify risk factors for lung disease and early lung changes at a point where intervention can have maximum benefit.

The health assessment must be completed not more than 30 calendar days after the worker becomes an “Exposed Worker” and every two years after the initial assessment. The heath assessment must include the provisions outlined in Part 4, Section 40 of the Alberta OHS Code, Health Assessments for Workers Exposed to Asbestos, Silica, or Coal Dust. An “Exposed Worker” may refuse to undergo part or all of a health assessment by giving a written statement of refusal.

6.0 Method

6.1 Hazard Assessment and Controls

The hazardous component of silica is the respirable size fraction; i.e. particles that can penetrate deep into the lung. The absence of visible dust may not always mean the absence of an airborne silica hazard due to the small particle size of 10 micron or less in diameter. A variety of factors can impact the degree of exposure including duration, proximity, mechanism which dust is being generated, percentage of silica and ventilation.

The hazard assessment should determine the probability of generating airborne respirable crystalline silica in the workplace. The hazard assessment will consist of:

- Identification of work activities that may generate silica dust and workers at risk of exposure through inhalation, which is the primary exposure route.
- Evaluation of the risk of exposure through severity and likelihood; and
- Application of control measures to reduce the risk of exposure through elimination/substitution, engineering, administrative or personal protective equipment.

6.1.1 Engineering Controls may include local exhaust ventilation such as a shroud or vacuum attachment to capture and filter exhaust dust (HEPA filtration is recommended). Note many new saws and grinders have built in dust control options.

Certain tools may have a water spray attachment engineered directly into the tool for dust suppression. For example, wet cutting saws have a water spray attachment that can be built into the blade that allows the user to control the amount of water flow.

Poorly ventilated indoor spaces will require filtered air exchange ventilation through the use of HEPA air movers during high dust generating tasks.

6.1.2 Administrative Controls may include work procedures that require additional water spray systems that can be effective in reducing generated silica dust from becoming airborne. An example would be providing water mist during jackhammering by a dedicated worker. Other administrative controls could be posting of warning signage, scheduling work during non-occupied periods or relocating unprotected workers.

If preventing exposure to silica is not preventable, steps need to be taken to achieve adequate control of exposure in accordance with provincial OHS legislation, including if appropriate the selection of suitable respiratory control measures. Protective equipment. Respiratory protection is required in addition to the above mentioned.

6.1.3 Personal Protective Equipment

Respiratory Protection

When elimination, substitution, engineering controls, and administrative controls are not feasible, or do not reduce exposure levels below the applicable exposure limits, personal protective equipment (PPE) will be utilized to reduce worker exposure. In most cases PPE will be used in combination with other control measures as the last line of defense against hazards. Silica is hazardous when it is inhaled; therefore, respirators are valuable pieces of protective equipment for anyone working with crystalline silica. A non-disposable half-mask respirator with a 100 series particulate cartridge is the minimum respirator requirement for silica exposure and is required when concentrations exceed 50% of the exposure limit 0.025 mg/m^3. Air sample collection to quantify the airborne concentration is identified in section 7.0 Evaluating Effectiveness of Controls. Depending on airborne concentrations full face respirators with 100 series cartridges may be required. To ensure the proper fit and selection of an appropriate respirator refer to the EPCOR Respiratory Code of Practice.

Protective Clothing

In addition to respiratory protective equipment, protective clothing should be used to help control silica dust on personal clothing and the body. It also helps prevent the spread of silica by reducing the chance of contaminated clothing being taken home.

If there is a potential that a worker's skin or clothing could become contaminated with silica, the use of disposable coveralls should be considered. Disposable coveralls are to be donned while working within a controlled area and the disposable coveralls must be removed upon decontamination or at the perimeter of the controlled area. Disposable coveralls used in hot weather conditions can add to heat stress concerns for workers and this hazard should be considered.

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Prior to leaving the work area, place contaminated disposable coveralls in receptacles for disposal and wash exposed skin surfaces and exterior surfaces of the respirator prior to removing respirator using a wash pail or sink that is provided. All persons in the work area must properly decontaminate themselves prior to leaving.

Normal cloths coveralls can be worn, however these coveralls are required to be laundered on a regular basis if they become contaminated with silica containing dust. Washing facilities and laundering procedures must be suitable for handling silica contaminated laundry (regular site washing facilities must be used and workers should not launder clothing at home). Dirty cloth coveralls should not be worn in common lunch areas, vehicles or home from the work site. Air sampling studies have shown that re-use of heavily contaminated (dusty) coveralls can contribute to workers overall airborne exposure.

6.2 Other Control Measures

Housekeeping; employers and workers should ensure that work areas are kept clean and free of silica dust. Surfaces should be cleaned with water, wet mops, wet rags and HEPA vacuums to prevent silica dust from contaminating work clothes and tools. Dry sweeping (indoors and outdoors) is not recommended as it can raise dust levels and requires respiratory protection.

6.3 Task Based Control Option Examples

Activities that have been documented at EPCOR Water sites that could cause potential silica exposure for EPCOR workers or contractors are listed in Appendix 1 along with control options. Examples given are general in nature and the control options provided may change with different scenarios. Appendix 1 is to be used as a starting point when planning hazard controls on a job.

Written procedures will be prepared for frequently performed activities that involve silica or silica containing materials. These written procedures may be incorporated into the site specific Silica Exposure Control Plans (SECP). A template for preparation of a SECP is provided in Appendix 2.

7.0 EVALUATING EFFECTIVENESS OF CONTROLS

The main purpose of site inspections and air monitoring for potential silica generating tasks is to ensure that the engineering, administrative and PPE controls are effective in reducing worker exposures. When personal air monitoring identifies elevated airborne concentrations exceeding controls then adjustments will be required.

Baseline occupational hygiene assessments should be performed for new silica potential exposure tasks. Once baseline assessments have been completed annual testing is not required unless conditions or processes change. Baseline occupational hygiene assessments will involve the collection of air samples to quantify airborne exposure levels. Air sampling will follow NIOSH (National Institute of Occupational Safety and Health) 7500 methodology

8.0 ROLES AND RESPONSIBILITIES

EPCOR Business Unit Workplace Health, Safety, and Environment:

- Develop and maintain the EPCOR Silica Standard,
- Assist in the development and implementation of the SECP,
- Assist in the development of written safe work procedures,
- Assist in the annual evaluation of the SECP,

- Assist in orientating employees to the SECP,
- Perform workplace inspections, air monitoring, etc. to provide advice regarding compliance with provincial OHS legislation and EPCOR occupational health and safety policies and procedures,
- Ensure that workers undergo periodic health assessments,
- Ensure workers handling Silica containing materials are properly trained.

EPCOR Occupational Hygienist:

- Assist in the development of site specific exposure control plans for silica;
- Conduct exposure monitoring for silica as required;
- Support site specific business units in meeting their responsibilities as part of the standard.

Employee

- Read and understand the SECP.
- Use proper exhaust units and assigned PPE.
- Follow established safe work procedures.
- Practice good personal hygiene.
- Report any unsafe acts or conditions to the Supervisor or prime contractor.

Site Management:

- Develop and maintain a Silica Exposure Control Plan,
- Arrange for the analysis of any unknown suspected Silica materials,
- Prepare Hazard Assessments for staff who are required to work with or around Silica materials,
- Determine the appropriate Hazard Controls,
- Coordinate the SECP orientations to staff,
- Orientate consultants and contractors to the SECP, security, and other protocols prior to their working at the site,
- Advise EPCOR HSE and management of any incidents,
- Maintain incident and inspection records.

Other Departments:

- Prepare Hazard Assessments for staff required to work with or around Silica materials. Determine the appropriate Hazard Controls.

9.0 EXCEPTIONS

This section left intentionally blank.

10.0 DEFINITIONS

Contractor

Any person or entity, including their employees, that has been contracted, sub-contracted, or otherwise engaged to provide services to the company on a fee for service basis.

Exposure Limit

The exposure limits for airborne crystalline silica is 0.025 mg/m^3 for an 8 hour work day for B.C., Alberta and Saskatchewan.

Exposed Worker

Worker who may reasonably be expected to work in a restricted area at least 30 work days in a 12-month period.

HEPA
High efficiency particulate air filter capable of capturing 99.97% of particulates.

Inhalation
Taking a foreign material into the lungs while breathing (a route of entry).

Restricted Area
Area of a work site where there is a reasonable chance that the airborne concentration of asbestos, silica, coal dust or lead exceeds or may exceed the occupational exposure limit for one or more of the substances.

Silica
Silica is the scientific name for a group of mineral made up of silicon and oxygen. In this document it refers to crystalline silica which occurs in several forms, including quartz, cristobalite and trydimite. Quartz is the most common form. Crystalline silica is the main concern when considering health effects.

Respirable Silica Dust
Particulates defined as having a 50% size cut-point of 4 microns. Particles below this size range can enter the deep lung and produce the pathogenic effects.

PPE
Personal Protective Equipment.

11.0 TRAINING

Employees who are involved in construction or work activities involving silica-containing materials must receive training that includes:

- Hazard identification/evaluation, including modes and routes of entry,
- Health effects of silica exposure,
- Appropriate written handling procedures,
- Appropriate engineering controls and work practices to reduce Silica exposure,
- The use of PPE, the proper respirator, and the limitations of respirators,
- The required personal hygiene.

Appendix 3, Silica Awareness Bulletin can be used as a starting point for worker training. For any questions regardging training contact your Health and Safety Advisor or Occupational Hygienist.

12.0 ATTACHMENTS

Appendix 1 Silica Exposure Work Activity Examples
Appendix 2 Site Specific Silica Exposure Control Management Plan Information

13.0 RELATED DOCUMENTS

- MS20-STD7- Occupational Health and Hygiene Standard
- MS20-STD5- Respiratory Protection Standard

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14.0 REFERENCES

- Alberta Occupational Health and Safety Act Regulation and Code (2009)
- British Columbia Occupational Health and Safety Act Regulation (2011)
- Saskatchewan Occupational Health and Safety Regulations (1996)
- Workplace Health and Safety Bulletin – Crystalline Silica at the Work Site (CH059)
- Silica: Preventing Exposure at Work – Worker's Compensation Board of B.C. (2006)

15.0 RECORDS

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Appendix 1- Silica Exposure Work Activity Examples

Task	Exposure Control Methods	Respiratory Protective Equipment	Comments
Concrete/Asphalt Cutting – Hand Held or Walk behind Saws	Wet cutting methods can be very effective and should be used as a first option when saw cutting concrete/asphalt. Vacuum dust collection systems (VDCS) for saws must be considered as dust control when wet methods cannot be used. Control zones are required to restrict access to the work area for unprotected workers. Size of control zone may vary depending on dust controls used. Appropriate PPE and hazard identification must be posted. Workers should decontaminate prior to leaving the work area.	*Half Face Respirator with 100 Series Cartridges are the minimum protection level even with wet or VDCS methods. *Full Face Respirator with 100 Series Cartridges are required when wet of VDCS are not use. If clothing can become saturated with silica dust workrers should use a disposable protective layer or frequently change saturated/contaminated cloth coveralls with proper laundering. *Respiratory protection depends on multiple factors which can impact the degree of exposure including duration, proximity, mechanism which dust is being generated, percentage of silica and ventilation.	Avoid dry saw cutting, even short duration concrete cuts under 15 min can cause high airborne exposures. Wet cutting saws can often adjust water flow and larger saws may require more setup. VDCS may involve a separate vacuum setup. Maintain the dust control equipment as per manufacturer's schedule. Be aware of other hazards such as electrical, slip/trip or water (freezing) that may occur.
Chipping or Jack Hammering Concrete	Wet methods where water is applied with a constant mist is the best way to control dust. Since direct wetting attachments are not regular installed, a dedicated helper is often required to assist with applying water. To be effective, water misting must be applied constantly at the point where the jackhammer or chipper hits/breaks the surface. Just picking up a hose and general spraying the area every so often is not effective. Vacuum dust collection systems (VDCS) can be used but currently are not readily available.	*Half Face Respirator with 100 Series Cartridges are the minimum protection level even with wet or VDCS methods. *Full Face Respirator with 100 Series Cartridges are required when wet or VDCS are not use. If clothing can become saturated with silica dust workrers should use a disposable protective layer or	Indoor jackhammering ventilation could include a HEPA filtered air unit for areas with poor natural air movement. Dust and debris have the potential to clog misting spray nozzles. Be aware of other hazards such as electrical, slip/trip or water (freezing) that may occur.

	Control zones are required to restrict access to the work area for unprotected workers. Size of control zone may vary depending on dust controls used. Appropriate PPE and hazard identification must be posted. Workers should decontaminate prior to leaving the work area.	frequently change saturated/contaminated cloth coveralls with proper laundering. *Respiratory protection depends on multiple factors which can impact the degree of exposure including duration, proximity, mechanism which dust is being generated, percentage of silica and ventilation.	Visibility issues have been identified when using water and jackhammering due to splashing on faceshields. Fine water misting should eliminate/reduce this issue.Lack of dust control will also increase respiratory requirements.
Abrasive Blasting	Abrasive blasting systems using a wet vapour can help reduce dust generated at the source compared to dry blasting. Wet vapour blasting is recommended over dry blasting when feasible.	Full face supplied-air helmet or hood respirator with a neck shroud is required for blasters. Half Face Respirator with 100 Series Cartridges are required for workers in the general blasting area control zone.	Silica based abrasives should not be used at any time. Use of wet vapour blasting can typically be adjusted on the amount of vapour and grit used. The use of the vapour blast will produce more waste in the form of a slurry for cleanup purposes. If coatings are required after abrasive blasting the quality control should be verified. Exhaust ventilation should be filtered, HEPA is recommended. Failure to filter exhaust ventilation will require a control zone in the area of the exhaust and additional cleanup. Avoid exhaust ducting to occupied areas.
	A poly enclosure hoarding is recommended when source control of the dust cannot be established and it can migrate to adjacent work areas. Enclosures hoardings, specifically indoors will require exhaust ventilation.		
	Control zones are required to restrict access to the work area for unprotected workers. Size of control zone may vary depending on dust controls used. Appropriate PPE and hazard identification must be posted. Workers should decontaminate prior to leaving the work area.		
Surface Grinding	Vacuum dust collection systems (VDCS) for grinders in the form of a shroud or hood installed by manufacturer are recommended. HEPA filtered exhaust is recommended for filtration.	Half Face Respirator with 100 Series Cartridges are the minimum protection level even with wet or VDCS methods.	VDCS for non-flat grinding surfaces may not be as effective. Worker positioning, i.e. grinders above

	Water-fed control equipment is available for dust reduction but is typically used during granite and concrete polishing or during any cutting action with an abrasive wheel. Water-fed dust control can be effective in areas where the VDCS cannot fit.	Full Face Respirator with 100 Series Cartridges are required when wet or VDCS are not use. If clothing can become saturated with silica dust workrers should use a disposable protective layer or frequently change saturated/contaminated cloth coveralls with proper laundering. Respiratory protection depends on multiple factors which can impact the degree of exposure including duration, proximity, mechanism which dust is being generated, percentage of silica and ventilation.	or below head can affect dust exposures. Maintain the dust control equipment as per manufacturer's schedule. Be aware of other hazards such as electrical, slip/trip or water (freezing) that may occur. Never use compressed air to clean surfaces.
	Adjusting work practices to use less aggressive grinding wheel or consideration of alternative practices. For example chipping a majority of the material first and then smoothing the surface may reduce dust.		
	Control zones are required to restrict access to the work area for unprotected workers. Size of control zone may vary depending on dust controls used. Appropriate PPE and hazard identification must be posted. Workers should decontaminate prior to leaving the work area.		
Concrete Drilling	Drills with VDCS or some form of dust capture (dust cap/bag) are available and recommended.	Half Face Respirator with 100 Series Cartridges are the minimum protection level.	Worker positioning, i.e. drilling above or below head can affect dust exposures. Maintain the dust control equipment as per manufacturer's schedule. Be aware of other hazards such as electrical, slip/trip or water (freezing) that may occur.
Cleanup of Surfaces	Wetting/mist of dust used when sweeping/scooping of debris when practical.	Half Face Respirator with 100 Series Cartridges are the minimum protection level. Full Face Respirator with 100 Series Cartridges are required when wet or VDCS are not use. If clothing can become saturated with silica dust	Educated workers on safe work procedures for cleanup tasks. Avoid dry sweeping whenever possible.
	Use vacuum (HEAP equipped) when practical.		
	Dust suppressants should be used if dry sweeping is the only practical option.		
	Planning for bulk/coarse debris cleanup followed by a fine-dust debris cleanup can reduce the amount of dry sweeping.		

	A control zone barrier may be required for large cleanup areas.	workrers should use a disposable protective layer or frequently change saturated/contaminated cloth coveralls with proper laundering. Respiratory protection depends on multiple factors which can impact the degree of exposure including duration, proximity, mechanism which dust is being generated, percentage of silica and ventilation.	

Notes:

1. PPE in the table is focused on respiratory and clothing protection. Additional PPE such as hearing, face, foot and hand protection may also be required.
2. The selection of respiratory protection depends on multiple factors which can impact the degree of exposure including duration, proximity, mechanism which dust is being generated, percentage of silica and ventilation. Occupational air sampling assessments can help quantify airborne concentrations and assist with adequate respiratory selection.

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Appendix 2

Site Specific Silica Exposure Control Management Plan Information

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SILICA EXPOSURE CONTROL PLAN

Site Specific Information

SITE: *(Enter site name)*

(READ FIRST)

This Silica Exposure Control Plan (SECP) Information Form is a generic document that serves as a template for each site/location to document your own site specific information not included in the EPCOR Silica Exposure Control Procedure MS20 PRO x. This completed form shall be combined with the EPCOR Silica Exposure Control Procedure MS20 PROx to complete a site specific SECP. The SECP must be prepared for all sites that may have workers performing activities where they may be exposed to silica.

The information shall state exact details of site specific policies, practices and other information. The document should be controlled and therefore is assigned a document number for tracking purposes. The paragraphs and statements in italics preceding each section are for instruction and guidance for preparation of the site specific exposure control plans and should be deleted when completed.)

APPROVAL AND VERSION HISTORY

		Version # 00
Approved by: *(Enter name)*	(signature) Position Title: *Enter position title*	***Effective Date:*** *(Enter date)*

Version #	**Description of Changes**	**Prepared By**	**Date**
00	Initial release	*(Enter name)*	*(Enter date)*
01	*(Enter changes)*	*(Enter name)*	*(Enter date)*
02			
03			

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PERSONNEL

SILICA EXPOSURE CONTROL COORDINATOR: *(or other key individual responsible for silica exposure control management- supervisors, BU Occupational Hygiene Specialist, H&S Advisor) (Enter name and position)*

OTHER SITE CONTACTS: *(Enter names and positions)*

TRAINING

(State what training is required for pertinent positions that will be involved in Silica exposure control management*. This may include the Supervisor, Foreman, and Worker.)*

SITE-SPECIFIC SILICA EXPOSURECONTROL PROCEDURES

(Include any specific procedures that have been prepared for common or frequently performed activities that may produce silica exposure (eg. concrete cutting). Alternatively, a list of documents can be stated here, but the location and access of the documents shall also be stated.)

SITE SILICA EXPOSURE CONTROL SAFE WORK PRACTICE/PLAN AND PERMITTING SYSTEM

(State the safe work practice/plan system. If a different practice/plan and permitting system for SILICA exposure control is implemented, describe the process and include examples of permitting documentation.)

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RECORDS RETENTION

(State the method of retention, where they are stored, access information, and position(s) responsible for their maintenance.)
(State the method of archiving records.)
(State the duration of storage.)

OTHER SITE-SPECIFIC INFORMATION

(State other pertinent information that is site-specific that is not documented in this form or in the Silica Management Procedure.)

SECP REVIEW

(State the frequency of site SMP review.)
(State who will be involved in the site SMP review.)
(State how the SMP review will be documented.)

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Appendix 3

Silica Awareness Bulletin

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EPCOR Water - Silica Awareness Bulletin

Studies have shown that common construction work tasks involving sanding, drilling, chipping, grinding, cutting, sawing, and sweeping of concrete products, conducted without the use of dust controls have the potential to expose workers to airborne concentrations or respirable crystalline silica above exposure limits (indoors and exterior). Worker exposure is dependent on many factors. The purpose of this bulletin is to help make EPCOR Water workers aware of potential hazards associated with silica dust generating tasks and control measures to reduce exposures.

What is silica?
Silica is a common mineral found in rock and sand and it exists in crystalline and non-crystalline forms. The arrangements of atoms in crystalline silica make it the main concern when considering health effects. Crystalline silica occurs in several forms including quartz, cristobalite and tridymite. Quartz is the most common form.

How can we be exposed to silica?
Since silica is a component of construction materials (mainly concrete), inhalation of airborne dust generated from specific activities can cause worker exposure. Ingestion is also a minor exposure route.

Health Hazards
Crystalline silica dust particles can be inhaled and deposited in lungs and cause respiratory illnesses, the most common being silicosis. Silicosis affects the lung tissue by developing scarring around the particles. Crystalline silica is also a suspected carcinogen. Health hazards are dependent on many factors including particle size, exposure duration, concentration and individual susceptibility.

Regulatory Requirements
Alberta, British Columbia and Saskatchewan have general and specific requirements identified for crystalline silica. The exposure limit for all forms of crystalline silica is 0.025 mg/m^3.

Effective Control Options
Effective control options should be used to eliminate or reduce the risk to workers from silica dust exposure. The goal is to keep exposures As Low as Reasonably Achievable (ALARA). The hierarchy control options, Elimination, Engineering, Administrative and PPE, should be considered when planning a job with potential silica exposure. When assessing exposure it is important to always consider exposure factors such as duration of task, how often will I be doing this type of work and the work environment. The table in Appendix 1 of the SECP should be used as a reference for best practices.

EPCOR requires that all employees and contractors ensure their health and safety is considered when conducting tasks involving potential silica generation.

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