

## **I Purpose**

To provide a means by which employees of the City of Hendersonville will be protected from the hazards associated with respirable crystalline silica.

## **II Scope and Application**

This policy and the Exposure Control Plans cover all employees who perform work that through mechanical pressure releases silica dust. Employee exposure will remain below 25 micrograms per cubic meter of air (25 µg/m<sup>3</sup>) as an 8-hour time-weighted average (TWA) under any foreseeable conditions.

## **III Definitions**

*Action level* means a concentration of airborne respirable crystalline silica of 25 µg/m<sup>3</sup>, calculated as an 8-hour TWA.

*Competent person* means an individual who is capable of identifying existing and foreseeable respirable crystalline silica hazards, has the authority to take prompt corrective measures to eliminate or minimize them, including stopping work, and understands and carries out the written exposure plan for each task.

*Employee exposure* means the exposure to airborne respirable crystalline silica that would occur if the employee were not using a respirator.

*High-efficiency particulate air [HEPA] filter* means a filter that is at least 99.97 percent efficient in removing monodispersed particles of 0.3 micrometers in diameter.

*Objective data* means information, such as air monitoring data from industry-wide surveys or calculations based on the composition of a substance, demonstrating employee exposure to respirable crystalline silica associated with a particular product or material or a specific process, task, or activity. The data must reflect workplace conditions closely resembling or with a higher exposure potential than the processes, types of material, control methods, work practices, and environmental conditions in the City's current operations.

*Permissible exposure limit (PEL)*. The City shall ensure that no employee is exposed to an airborne concentration of respirable crystalline silica in excess of 50 µg/m<sup>3</sup>, calculated as an 8-hour TWA.

*Physician or other licensed health care professional [PLHCP]* means an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide some or all of the particular health care services required by paragraph (h) of this section.

*Respirable crystalline silica* Silica dust that is composed of crystalline silica (quartz, Cristobalite, and/or Tridymite) small enough (< 10 microns) to be inhaled into the respiratory system created when cutting, sawing, grinding, drilling, and crushing stone, rock, concrete, brick, block, and mortar. 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.

*Respiratory protection program*. Where respirator use is required by this section, the City shall

institute a respiratory protection program in accordance with 29 CFR 1910.134.

*Restricted Area* means an area demarcated as a work zone where silica dust could be released, typically project areas or sites where maintenance work is being conducted

*Specified Exposure Control Methods When Working With Materials Containing Crystalline Silica* – See Appendix B.

#### **IV. Methods of Compliance**

The City of Hendersonville shall use engineering and work practice controls to reduce and maintain employee exposure to respirable crystalline silica to or below the PEL, unless the City can demonstrate that such controls are not feasible. Wherever such feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PEL, the City shall nonetheless use them to reduce employee exposure to the lowest feasible level and shall supplement them with the use of respiratory protection.

Where respiratory protection is required by this section, the City must provide each employee an appropriate respirator that complies with the requirements of this paragraph and 29 CFR 1910.134. Respiratory protection is required:

- Where exposures exceed the PEL during periods necessary to install or implement feasible engineering and work practice control,
- Where exposures exceed the PEL during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible, and
- During tasks for which a City has implemented all feasible engineering and work practice controls and such controls are not sufficient to reduce exposures to or below the PEL.

#### **V. Engineering and Safe Work Practices**

The following measures will be used to reduce exposure to crystalline silica.

- Use concrete/masonry saws that have an integrated water to the blade.
- Wet down the dust at the point of generation or wet cutting.
- Frequent spraying of work area to keep surface damp.
- Install local exhaust ventilation to prevent dust from being released into the air.
- Rotate employees to limit exposure.
- If not operating the machine, stand away and upwind.
- Keep the cab closed on such equipment.
- Substitute abrasives for material with less than 1% silica.
- Do not dry sweep or brush silica dust. Instead, use a HEPA filtered vacuum cleaner, followed by wet mopping or wet sweeping as necessary.

#### **VI. Control Measures**

When implementing the control measures specified in Appendix B, the City shall:

- For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust;
- For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust;
- For measures implemented that include an enclosed cab or booth, ensure that the enclosed cab or booth:

Is maintained as free as practicable from settled dust;  
Has door seals and closing mechanisms that work properly;  
Has gaskets and seals that are in good condition and working properly;  
Is under positive pressure maintained through continuous delivery of fresh air;

Has intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0  $\mu\text{m}$  range (*e.g.*, MERV-16 or better); and  
Has heating and cooling capabilities.

Where an employee performs more than one task on Appendix A during the course of a shift, and the total duration of all tasks combined is more than four hours, the required respiratory protection for each task is the respiratory protection specified for more than four hours per shift. If the total duration of all tasks on Appendix B combined is less than four hours, the required respiratory protection for each task is the respiratory protection specified for less than four hours per shift

## **VII. Exposure assessment**

The City shall assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level in accordance with Section VI.

The City shall assess the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to respirable crystalline silica. All work tasks will be kept under four hours.

## **VIII. Housekeeping**

Employees shall not allow dry sweeping or dry brushing where such activity could contribute to employee exposure to respirable crystalline silica unless wet sweeping, HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure are not feasible.

Employees shall not allow compressed air to be used to clean clothing or surfaces where such activity could contribute to employee exposure to respirable crystalline silica unless:

- The compressed air is used in conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air; or
- No alternative method is feasible.

## **IX. Medical Surveillance**

The City shall make medical surveillance available at no cost to the employee, and at a reasonable time and place, for each employee who will be required under this section to use a respirator for 30 or more days per year, as specified in 29 CFR 1926.1153 (h).

## **X. Employee information and training.**

Each employee covered by this section will be able to demonstrate knowledge and understanding of at least the following:

- The health hazards associated with exposure to respirable crystalline silica such as the development of silicosis, lung cancer, pulmonary tuberculosis, and airways diseases. These exposures may also be related to the development of autoimmune disorders, chronic renal disease, and other adverse health effects.
- Specific tasks in the workplace that could result in exposure to respirable crystalline silica along with specific measures the City has implemented to protect employees from exposure including engineering controls, work practices, and respirators (see appendix A);
- The identities of competent persons designated by the City (see Appendix C).
- The purpose and a description of any medical surveillance program required by Section VII of this section.
- This plan will be readily available for examination and copying, upon request, to each employee covered by this section and their designated representatives at no charge.
- The City shall make regular inspections of job sites, materials, and equipment to implement the written exposure control plans.

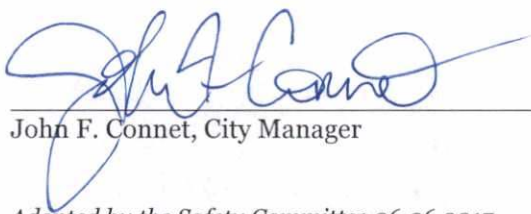
- Employees will be trained on this Policy upon hire and refresher trainings as needed.

## **XI. Recordkeeping.**

The City shall ensure that records are maintained and made available in accordance with 29 CFR 1910.1020.

1. Air monitoring data. When air monitoring is done, the City shall make and maintain an accurate record of all exposure measurements taken to assess employee exposure to respirable crystalline silica. This record shall include at least the following information:
  - The date of measurement for each sample taken;
  - The task monitored;
  - Sampling and analytical methods used;
  - Number, duration, and results of samples taken;
  - Identity of the laboratory that performed the analysis;
  - Type of personal protective equipment, such as respirators, worn by the employees monitored; and
  - Name, employee number, and job classification of all employees represented by the monitoring, indicating which employees were actually monitored.
2. Objective data. The City shall make and maintain an accurate record of any objective data relied upon to comply with the requirements of this section. This record shall include at least the following information:
  - The crystalline silica-containing material in question;
  - The source of the objective data;
  - The testing protocol and results of testing;
  - A description of the process, task, or activity on which the objective data were based;
  - Other data relevant to the process, task, activity, material, or exposures on which the objective data were based.
3. Medical surveillance. The City shall make and maintain an accurate record for each employee covered by medical surveillance under Section IX of this section. The record shall include the following information about the employee:
  - Name and social security number;
  - A copy of the PLHCPs' and specialists' written medical opinions; and
  - A copy of the information provided to the PLHCPs and specialists.
4. Medical records maintained and available in accordance with 29 CFR 1910.1020.

This plan will be reviewed annually and updated as necessary.

  
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John F. Connet, City Manager

  
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Date of Approval

*Adopted by the Safety Committee 06.06.2017*

*Reviewed by HR Coordinator 09.18.2018. 10.03.2019, 09.25.2020, 1\_31\_2024*

## Exposure Control Plan

**Description of Task:** Cutting asbestos pipe

### Control Description

Controls:

- Use saw with integrated water system.

Work Practices:

- Check equipment and hoses that everything is in good working condition.
- Check there is adequate water in the tank.
- Clear hose of kinks.
- Employee operating saw shall wear a Tyvex suit.

Respirator protection:

- Not needed.

### Housekeeping:

- Leave cut pipe in the hole.
- Remove Tyvex suit carefully, turning it inside out and placing in garbage bag.
- Rinse hands and equipment.

### Procedures Used to Restrict Access to Work Areas:

Employees not operating equipment should be out of immediate work area.

APPENDIX B Respirable Crystalline Silica Exposure Control Plan

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| Equipment/task   | Engineering and work practice control methods   | Required respiratory protection and minimum assigned protection factor (APF) |                |
|--|---|--|----------------|
|  |   | ≤ 4 hours/shift  | >4 hours/shift |
| (i) Stationary masonry saws  | Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.   | None   | None           |
| (ii) Handheld power saws (any blade diameter)  | Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions:   |  |                |
|  | -When used outdoors   | None   | APF 10         |
|  | -When used indoors or in an enclosed area   | APF 10   | APF 10         |
| (iii) Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less) | For tasks performed outdoors only: Use saw equipped with commercially available dust collection system, Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency | None   | None           |
| (iv) Walk-behind saws  | Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.   |  |                |
|  | -When used outdoors   | None   | None           |
|  | -When used indoors or in an enclosed area   | APF 10   | APF 10         |
| (v) Drivable saws  | For tasks performed outdoors only: Use saw equipped with integrated water delivery system that continuously feeds water to the blade Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions  | None   | None           |
| (vi) Rig-mounted core saws or drills   | Use tool equipped with integrated water delivery system that supplies water to cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.  | None   | None           |
| (vii) Handheld and stand-mounted drills (including impact and rotary hammer drills)                | Use drill equipped with commercially available shroud or cowl with dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes                                 | None   | None           |
| (viii) Dowel drilling rigs for concrete  | For tasks performed outdoors only:  |  |                |
|  | Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filtercleaning mechanism<br>Use a HEPA-filtered vacuum when cleaning holes  | APF 10   | APF 10         |

APPENDIX B Respirable Crystalline Silica Exposure Control Plan

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|  |   |        |        |
|--|---|--------|--------|
| (ix) Vehicle-mounted drilling rigs for rock and concrete       | Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector  | None   | None   |
|  | OR  |        |        |
|  | Operate from within an enclosed cab and use water for dust suppression on drill bit   | None   | None   |
| (x) Jackhammers and handheld powered chipping tools            | Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact:   |        |        |
|  | -When used outdoors   | None   | APF 10 |
|  | -When used indoors or in an enclosed area   | APF 10 | APF 10 |
|  | OR  |        |        |
|  | Use tool equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions                                    |        |        |
|  | Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism:  |        |        |
|  | -When used indoors or in an enclosed area   | APF 10 | APF 10 |
| (xi) Handheld grinders for mortar removal (i.e., tuckpointing) | Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions                                 | APF 10 | APF 25 |
|  | Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism  |        |        |
|  |   |        |        |
| (xii) Handheld grinders for uses other than mortar removal     | For tasks performed outdoors only:  |        |        |
|  | Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions   | None   | None   |
|  | OR  |        |        |
|  | Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions                                 |        |        |
|  | Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism: |        |        |
|  | -When used outdoors   | None   | None   |
|  | -When used indoors or in an enclosed area   | None   | APF 10 |

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|   |  |      |      |
|---|--|------|------|
| (xiii) Walk-behind milling machines and floor grinders  | Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions   | None | None |
|   | OR   |      |      |
|   | Use machine equipped with dust collection system recommended by the manufacturer. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes | None | None |
| (xiv) Small drivable milling machines (less than half-lane)   | Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions   | None | None |
| (xv) Large drivable milling machines (half-lane and larger)   | For cuts of any depth on asphalt only:   | None | None |
|   | Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust  |      |      |
|   | Operate and maintain machine to minimize dust emissions  |      |      |
|   | For cuts of four inches in depth or less on any substrate:   |      |      |
|   | Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust  | None | None |
|   | Operate and maintain machine to minimize dust emissions  |      |      |
|   | OR   |      |      |
|   | Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant   | None | None |
| Operate and maintain machine to minimize dust emissions   |  |      |      |
| (xvi) Crushing machines   | Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyers, sieves/sizing or vibrating components, and discharge points)   | None | None |
|   | Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions   |      |      |
|   | Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station  |      |      |
| (xvii) Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (e.g., hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials | Operate equipment from within an enclosed cab  | None | None |
|   | When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions  | None | None |

APPENDIX B Respirable Crystalline Silica Exposure Control Plan

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|   |   |      |      |
|---|---|------|------|
| (xviii) Heavy equipment and utility vehicles for tasks such as grading and excavating but not including: Demolishing, abrading, or fracturing silica-containing materials | Apply water and/or dust suppressants as necessary to minimize dust emissions  | None | None |
|   | OR  |      |      |
|   | When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab | None | None |

## Appendix C to the Silica Policy

### Competent Person List (updated 2/7/24)

#### Department/Facility

#### Employee Name

#### Water/Sewer

|                  |                 |
|------------------|-----------------|
| Kevin Albertson  | Tim Laughter    |
| Chris Allen      | Richard Ledford |
| Damian Bingham   | Brian McCall    |
| JR Blackwell     | Adam Rice       |
| James Clugh      | Montana Riley   |
| Chase Dowdy      | Tim Sexton      |
| Bradley Duncan   | Caleb Smathers  |
| Steven Galloway  | Brandon Smith   |
| Harley Gordon    | Bo Stepp        |
| Dawson Heatherly | Kyle Trammell   |
| Matthew Herman   | Dylan Ward      |
| Matthew Keener   | AustinWilliams  |

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#### Public Works

|                |                  |
|----------------|------------------|
| Chris Barnwell | Mark Moore       |
| Jeremy Buckner | Brent Pope       |
| Paul Curtis    | Stacy Redden     |
| Josh Corn      | Joshua Ruff      |
| Tyler Clugh    | James Shipman    |
| Brett Ellison  | Timothy Smith    |
| Ross Henderson | Dakota Sullins   |
| Timmy Hensley  | Frank Tankersley |
| Kyle Kirchner  | Jerry Villars    |
| Jody Martin    |                  |
| Josh Maybin    |                  |