



# Best Practice

**Title:** Dust Control  
**Issue No.:** CSDA-BP-022  
**Effective Date:** Oct. 1, 2018

---

## Introduction

The cutting, coring, grinding and polishing of dry concrete can generate lots of fine concrete dust. The control, collection, handling and disposal of concrete dust is environmentally sensitive with potentially very costly implications. Concrete dust contains silica and Respirable Crystalline silica (RCS) which are hazardous and regulated by OSHA. The purpose of this document is to identify practical strategies for handling large volumes of fine concrete dust and understand the available tools for concrete dust control, collection and handling, while maximizing the effectiveness of the tools.

## Compliance to Applicable Laws and Codes

- I. **OSHA standard on Respirable Crystalline Silica Dust for Construction, 29-CFR 1926.1153**
  - 1) If the standard applies to the work performed, the employer has two options for limiting employee exposure to RCS dust:
  - 2) Specified exposure control methods, or Table-1 compliance.
  - 3) Alternative exposure control methods.
- II. Other Codes and/or Jobsite Specific Requirements

## Communicate Hazards and Train Employees

Compliance with OSHA Hazard Communication Standard (HCS) 29-CFR 1910.1200

## Provide Respiratory Protection when Required

Some of the tasks identified in Table-1 have respiratory protection requirements. The minimum Assigned Protection Factor (APF) relates to paragraph (d)(3)(i)(A) of the Respiratory Protection Standard 29-CFR 1910.134. Determine the task duration for the requirements for respirator use in the OSHA Standard on Respirable Crystalline Silica Dust for Construction for Table-1 compliance.

| Issue No.   | Title        | Rev. | Effective Date | Page        |
|-------------|--------------|------|----------------|-------------|
| CSDA-BP-022 | Dust Control | 1    | Oct. 1, 2018   | Page 1 of 4 |



# Best Practice

**Title:** Dust Control  
**Issue No.:** CSDA-BP-022  
**Effective Date:** Oct. 1, 2018

## Establish, Implement and Maintain a Written Exposure Control Plan (WECP) with a Designated Competent Person (CP)

Establish a Written Exposure Control Plan (WECP) per the requirements outlined in the OSHA RCS standard. The WECP details the work methods/practices that will be followed on each site, reviewed with the employees prior to the start of their work and monitored by a designated CP per the OSHA RCS standard requirements.

WECP summary highlights (follow the OSHA RCS standard to be certain it is complete):

- A description of tasks to be performed that involve exposure to RCS.
- A description of the engineering controls, administrative controls and PPE used to limit employee exposure to RCS at threshold levels in compliance with the OSHA RCS standard. Include reference to the OSHA RCS standard for compliance by Table-1 or alternative methods like objective data and/or monitoring.
- A description of the housekeeping measures used to limit employee exposure to RCS including jobsite cleanup and emptying collection bins for dry dust and/or slurry.
- A description of the procedures used to restrict access to work areas to limit the number of employees (and bystanders) exposed to RCS. Include exposures generated by other employers in the vicinity.

### Fine Dust Vacuums

Vacuums that filter to HEPA or near HEPA levels are classified as “fine dust vacuums.” Since RCS is a very lightweight particle (invisible to the naked eye) the flow of air measured by the CFM (cubic feet per minute) of the vacuum will effectively carry the lightweight RCS particles in suspension of the air stream. It is important to use a vacuum of equal or greater CFM rating to match the Table-1 requirements or establish equivalency to any objective data used to demonstrate compliance to the OSHA RCS standard.

Multiple vacuums can be used together in parallel to increase the CFM rating.

If a certified HEPA filter (or filter module) is used on a vacuum that already filters to HEPA levels, it will decrease the CFM rating of the vacuum. In essence it will become another resistance in the air flow. Some jobs require HEPA “certification,” for example, for EPA compliance on renovation projects that disturb lead-based paint in homes, child care facilities and schools built prior to 1978. Many vacuum manufacturers of fine dust vacuums may add a “certified” HEPA filter to a vacuum that filters to HEPA or

| Issue No.   | Title        | Rev. | Effective Date | Page        |
|-------------|--------------|------|----------------|-------------|
| CSDA-BP-022 | Dust Control | 1    | Oct. 1, 2018   | Page 2 of 4 |



# Best Practice

**Title:** Dust Control  
**Issue No.:** CSDA-BP-022  
**Effective Date:** Oct. 1, 2018

near HEPA levels. OSHA defines HEPA levels in the OSHA RCS standard and does not require an official certificate of compliance to these levels like one that may be required on a lead abatement project for EPA compliance.

The length and diameter of hoses directly impact resistance to air flow. Maintaining shorter distances to the vacuum and adjusting for larger diameter with longer hoses are a couple ways to help maximize performance.

Visible dust is an industry accepted metric for the performance (or failure) of an engineering control system. Although the visible dust may not have a direct correlation to the respirable size dust particles, it is a quick and easy metric to indicate if the system is working properly.

PEL, TWA and AL

The Permissible Exposure Limit (PEL) for the OSHA RCS standard is currently 50 micrograms/cubic meter calculated as an eight-hour Time Weighted Average (TWA). According to OSHA, employers will ensure that no employee is exposed to an airborne concentration of RCS in excess of the PEL. Since it is a time weighted average, a short burst of overexposure may result in an average over an eight-hour window to meet the PEL.

The trigger time is the time when the RCS dust is created and the fine dust particles linger in the air for an extended period. OSHA starts that clock for exposure to RCS at the trigger time and the clock doesn't stop for breaks in that area of exposure. Work can be coordinated so that work not creating RCS can be performed prior to the trigger time and does not count against the Table-1 time restrictions for respirator use. It should also be noted that some work items that do not have a Table-1 respirator restriction can be performed prior to the trigger time of items having such requirements, thus extending employees' time on jobsites. For example, wet flat-sawing outside for four hours prior to breaker/jackhammer with mist dust control equates to no respirator requirement. However, starting with the breaker/jackhammer would begin the trigger time of a higher exposure source level and would end the work day four hours later, bwithout having to use a respirator (Table-1).

HEPA air scrubbers and fans can minimize the concentration of RCS particles suspended in the work area.

The Action Level (AL) is exposure levels at or below 25 micrograms/cubic meter calculated as a TWA. The action level is effectively considered to be no exposure.

| Issue No.   | Title        | Rev. | Effective Date | Page        |
|-------------|--------------|------|----------------|-------------|
| CSDA-BP-022 | Dust Control | 1    | Oct. 1, 2018   | Page 3 of 4 |



# Best Practice

**Title:** Dust Control  
**Issue No.:** CSDA-BP-022  
**Effective Date:** Oct. 1, 2018

---

*This document has been developed or is provided by the Concrete Sawing & Drilling Association, Inc. It is intended as a guideline, sample specification, or recommended practice for use by fully qualified, trained, professional personnel who are otherwise competent to evaluate the significance of its use within the context of specific concrete sawing and drilling projects. No express or implied warranty is made with respect to the foregoing including without limitation any implied warranty of fitness or applicability for a particular purpose. The Concrete Sawing & Drilling Association, Inc. and all contributors of this document shall not be liable for damages of any kind arising out of the use of this document, and, further specifically disclaims any and all responsibility and liability for the accuracy and application of the information contained in this document to the fullest extent permitted by law. In accepting this document, user agrees to accept sole responsibility for its application.*

| Issue No.   | Title        | Rev. | Effective Date | Page        |
|-------------|--------------|------|----------------|-------------|
| CSDA-BP-022 | Dust Control | 1    | Oct. 1, 2018   | Page 4 of 4 |