NAPA EH&S Programs: Striving for EH&S Excellence
Protecting industry employees and the environment

Complying with OSHA's Silica Rule

NAPA EH&S Programs: Striving for EH&S Excellence
Protecting industry employees and the environment

- Regulatory advocacy with Congress and Agencies
- EH&S compliance assistance (e.g., SDS, Silica, SPCC, HoS)
- Science-based classifications
- Community (health) concerns
- Online training programs
- Diamond Achievement: self-assessing for improvement
- Environ. Product Declaration
- NAPA Care Benevolent Fund

Compliance with OSHA's Silica Rule

- **Known health hazard and top priority for U.S. OSHA**
- **Construction Rule effective June 2017 (extended until Sept.); General Industry Rule effective June 2018**
- **NAPA's current guidance focuses on construction obligations**
- **Reduces occupational Permissible Exposure Limit (PEL) to 50 "units" across all sectors**
- **Gen'l ind. <u>was</u> "100" but construction <u>was</u> "250"**
- **Use of "Table 1" controls reduce compliance obligations**

Rule's compliance obligations: big picture

- **Employers must ensure exposure below PEL for all activities**
- **Basic premise of rule: specific engineering controls identified for many jobs/tasks/activities in "Table 1" – Construction only**
- **Other major obligations (guidance @ www.asphaltpavement.org/silica)**
  - ✓ **Document exposure if not following Table 1**
  - ✓ **Designate a "Competent Person"**
  - ✓ **Develop a written Exposure Control Plan**
  - ✓ **Update Hazard Communication**
  - ✓ **Maintain all appropriate records**

Table 1 entries – Controls identified for Construction

- Stationary masonry saws
- Handheld power saws
- Handheld power saws for fiber cement board
- Walk-behind saws
- Drivable saws
- Rig-mounted core saws or drills
- Handheld / stand-mounted drills
- Dowel drilling rigs for concrete
- Vehicle-mounted drilling rigs for rock and concrete
- Jackhammers and handheld powered chipping tools
- Handheld grinders for mortar removal (tuckpointing)
- Handheld grinders for other than mortar removal
- Walk-behind milling machines and floor grinders
- Small drivable milling machines
- Large drivable milling machines
- Crushing machines
- **Heavy equipment and utility vehicles to abrade or fracture silica materials**
- **Heavy equipment and utility vehicles for grading and excavating**

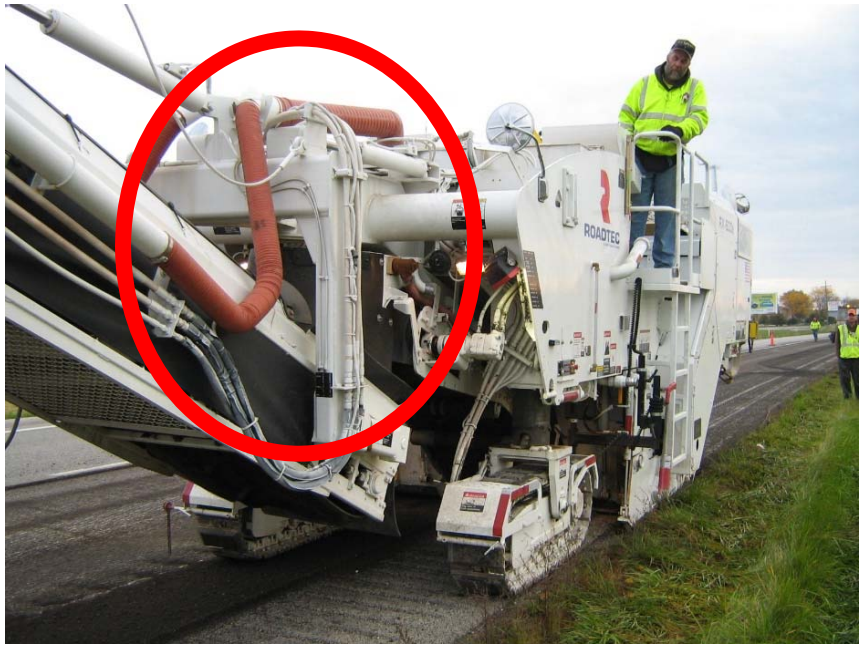
Table 1 controls vs. assessment

- **Table 1 controls generally involve equipment/activities with the following engineering controls:**
  - ✓ **water suppression**
  - ✓ **vacuum systems**
  - ✓ **enclosed cabs with HEPA filters**

- **If an employer chooses NOT to implement engineering controls:**
  - ✓ **must measure exposure**
  - ✓ **"Action Level" at ½ PEL**
  - ✓ **restrict access/dedicated clothes**
  - ✓ **medical monitoring / PPE / etc.**

Milling operations and controls

- All milling machines now have both "enhanced" water suppression AND vacuum controls; many since ~3 years ago
  - Water-spray allows milling only to 4-inches any pavement
  - Both controls allow milling to any depth <u>in asphalt only</u>
- Reasonably priced retrofits available for many models
- Some contractors now subbing-out full-depth milling
- "enhanced" water (+/- surf.)
- Small mills (skid-steer) require water suppression only + surfactant (detergent) [Table 1]
  - Enclosed cab as best practice



Brooming & sweeping controls

- Not as straight-forward
- Table 1: heavy equipment and utility vehicles that …..
  - ✓ abrade or fracture silica-containing material …
  - ✓ do NOT abrade or fracture
- <u>If abrading</u>: enclosed cab + water suppression (if grounds-crew present)
- <u>If not abrading</u>: water suppression *OR* enclosed cab when operator is only one engaged in activity

https://www.youtube.com/watch?v=SY49tv-WC5M

The next Table 1 entry is **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.** These include activities such as fracturing or abrading rock and soil; demolishing concrete or masonry structures; and loading, dumping, and removing demolition debris.

The operator must be in an enclosed cab. Modern heavy equipment already comes equipped with enclosed, filtered cabs that meet the requirements of Table 1. See the section on *Enclosed Cabs* for more information on how to make sure that the cab meets the requirements of the rule. When other employees are engaged in the task, water, dust suppressants, or both must also be applied as necessary to minimize dust emissions.

Respiratory protection is not required for heavy equipment operators and laborers who assist heavy equipment operators during demolition activities involving silica-containing materials or activities where silica-containing materials are abraded or fractured, regardless of the duration of the task.

NOTE: When the operator exits the enclosed cab and is no longer actively preforming the task, the operator is considered to have stopped the task. However, if other abrading, fracturing, or demolition work is performed by other heavy equipment and utility vehicles in the area while an operator is outside the cab, that operator is considered to be an employee "engaged in the task" and must be protected by the application of water and/or dust suppressants.

Excavator equipped with an enclosed cab and hoe-ram demolishing a concrete wall.

Photo courtesy of CPWR.

Heavy equipment and utility vehicles used for tasks such as grading and excavating do not involve demolition or the fracturing or abrading of silica. Tasks include earthmoving, grading, and excavating; other activities such as moving, loading, and dumping soil and rock; and dumping and grading of ballast in the railroad industry, which is generally subject to OSHA's Construction standards.

Employers have two control options when the operator is the only employee engaged in the task and one option when employees other than the operator are engaged in the task. The first option requires the equipment operator to operate the equipment within an enclosed cab when the operator is the only employee in the area. Most heavy equipment already comes equipped with enclosed, filtered cabs that meet the requirements of Table 1. See the section on *Enclosed Cabs* for more information on how to make sure that the cab meets the requirements of the rule.

The second option requires the application of water and/or dust suppressants as necessary to minimize dust emissions. Water must be applied at rates sufficient to minimize release of visible dust. The following scenarios are examples of when the employer must use water and/or dust suppressants as necessary to minimize dust emissions: (1) equipment for grading and excavating is not equipped with enclosed, pressurized cabs or (2) employees other than the operator are engaged in the task. If water or dust suppressants are applied as necessary to minimize visible dust, the employer need not provide an enclosed, filtered cab for the operator.

Respiratory protection is not required for work with heavy equipment when it is operated from within an enclosed cab, or when water or other dust suppressants are used, regardless of task duration.

Earthmoving using a dozer equipped with enclosed operator cab.

Photo courtesy of NIOSH.

Exposure assessment: all activities

- OSHA requires exposure assessment when using non-controlled equipment or when activity not Table 1 specified
  - (short duration) brooming, flaggers, truck drivers
- Employer must understand employee 8-hr TWA exposure
  - low PEL still allows elevated exposure for short durations
- Measuring airborne silica requires an IH and results lag
- OSHA allows alternative methods of exposure assessment
- Use of "real-time" dust monitor and silica content
- Aggregate silica content varies but dust exposures can be large and PEL low
- Rule of thumb: ~ 10% airborne silica

https://eco-rentalsolutions.com/product/equipment-rental/tsi-8534-handheld-dusttrak-drx/

Exposure example: uncontrolled brooming

- Relevant if brooming not considered Table 1
- Short duration, uncontrolled, or <u>non-specified activities</u>
  - Dry saw cutting, truck drivers, drilling
- RCS should remain below Action Level of 25 µg/m^3
- Direct-read dust monitors can be helpful in understanding potential exposures over short durations
  - 10% airborne silica content is good rule-of-thumb
- Should be part of Exposure Control Plan and reviewed by Competent Person
- <u>Some type of exposure assessment required ... but</u>
- Can rely on "obj. data"/survey

Competent Person; HazCom; Recordkeeping

- **Designate a Competent Person who "can identify existing and foreseeable respirable … silica hazards; is authorized to promptly eliminate or minimize silica hazards; [and] has the knowledge and ability to implement the written exposure control plan"**
- **CP duties include regular job site/equipment inspections;**
- **CP doesn't need to remain on jobsite but does need authority to take prompt corrective action; recommend a crew chief, foreprsn**
- **Comply with OSHA's HazCom Standard: train workers on activities/tasks resulting in exposure, workplace protections, etc.**
- **Maintain records for 30 + years per Standard (29 CFR 1910.1200)**
  - **Air monitoring & objective data, medical records, MSDS, etc.**
  - **Procedures used to restrict access, when necessary to limit exposures (employee rotation/scheduling, signage)**

Develop a Written Exposure Control Plan

- **Employer must develop an exposure control plan that can be implemented by the Competent Person**
  - **can be generic (not project-specific)**
- **Plan must contain the following information:**
  - ✓ **Description of tasks involving exposure to respirable silica**
  - ✓ **Engineering controls, work practices, and respiratory protection for each task (e.g., water spray while brooming)**
  - ✓ **Housekeeping measures used to limit exposure**
  - ✓ **Procedures used to restrict access, when necessary to limit exposures (employee rotation/scheduling, signage)**
- **NAPA guidance/examples at www.asphaltpavement.org/silica**

Written Exposure Control Plan for Roadway Milling

Company: XYZ Asphalt Paving Inc. **Date:** Sept. 23, 2017

Person Completing the Plan, Title: Guy Incognito, Paving Superintendent

Competent Person: Guy Incognito

Job site/location: All road (re)construction projects where existing asphalt pavement surfaces will be milled using a half-lane or larger coplaner mill.

Description of Task: Road mills with both an enhanced water suppression and vacuum ventilation system, as identified in Section 1926.1153, Table 1(xv) ("Table 1"), will be used to scarify and mill existing asphalt roadway at a depth of between 2 and 8 inches.

(Routine task, new task, Indoors/outdoors, task found on Table 1?)

- ☐ **Part 590, 1910.1053 General Industry (References Table 1)**
  – review necessary? **Y** or **N**
- ☑ **Part 690, 1926.1153 Construction (Includes Table 1)**
  - review necessary? **Y** or **N**

Engineering Controls: Roadway mills will have both enhanced water suppression and vacuum ventilation systems consistent with those listed in Table 1.

Work Practices: Roadway milling operations typically involve between two and four individuals: an equipment operator and generally one or more grounds crew. Equipment is checked periodically, per manufacturers' specification, and maintained in good working order. Individuals not part of the activity but who may sample material or check on the equipment do not require additional precautions because Table 1 controls are in place and are protective of individuals with the highest exposure potential.

Respiratory protection: N/A

(e.g., Use respirator with APF = 10 the entire time the task is being performed — See Table 1)

See Part 451 — Respiratory Protection rule (1910.134) for information on selection, training, and fit-testing requirements, as well as proper use instruction for respirators (i.e., no facial hair interfering with the respirator sealing surface).

Housekeeping: Milled surfaces are brushed using power brooms (see Power Brooming Activity), which employ continuous water suppression. Remaining material not broomed is removed using a pick-up machine similar to a small front-end loader (see Pick-Up Activity)

Procedures Used to Restrict Access to Work Area: NIOSH has published findings indicating it is unlikely for milling activities employing Table 1 measures to regularly exceed the PEL; therefore, it is unlikely others entering the work activity space will similarly be exposed to

"Construction" Silica Rule Summary

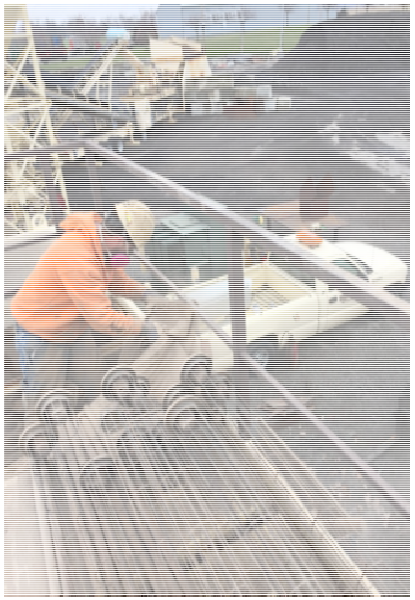
- **Compliance for construction activities are now enforceable**
- **Compliance activities are the employer's responsibility; rely on common sense; understand/oversee role of consultant**
- **Requires employer identification of job-task exposure**
- **Milling Partnership successful: eliminated need for respirators**
  - **Mills will require controls (new or retrofit @ ~ $12-15k)**
  - **Small mills (skid-steer) only require water suppression**
- **Power brooms will likely need water suppression/enclosed cab**
  - **If Table 1 applicable or exposure assessed**
  - **NAPA working to provide control information to OSHA**
- **Identify company's "competent person(s)" … crew foreperson**
- **Develop an Exposure Control Plan for all activities**

General Industry Silica Rule

- **Compliance for asphalt plants by June 2018**
- **Requirements identical to Construction Rule except:**
  - **No "Table 1" for industrial activities**
- **Requires employer identification of job-task exposure**
  - **Exposure assessment and documentation of control**
  - **Chipping drum flights, baghouse maintenance, crushing / moving aggregate and RAP, QA lab aggregate screening, cleaning plant equip, sweeping/brooming, haul roads**
- **NAPA will solicit industry for task-specific exposure info**
  - **Individual facilities can still rely on "objective data" / survey**
- **Use of real-time dust monitors will be helpful**

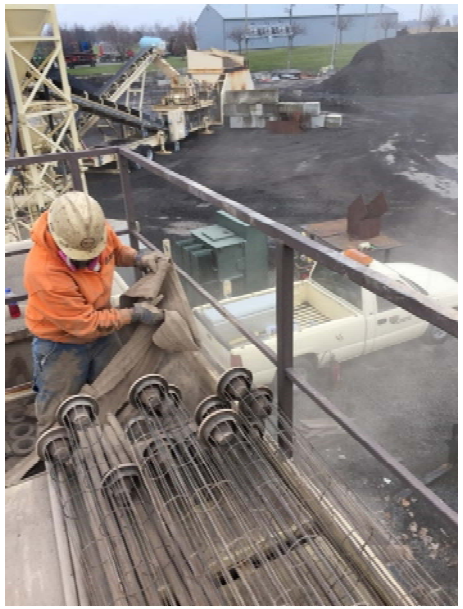
Asphalt Plant - Baghouse Maintenance

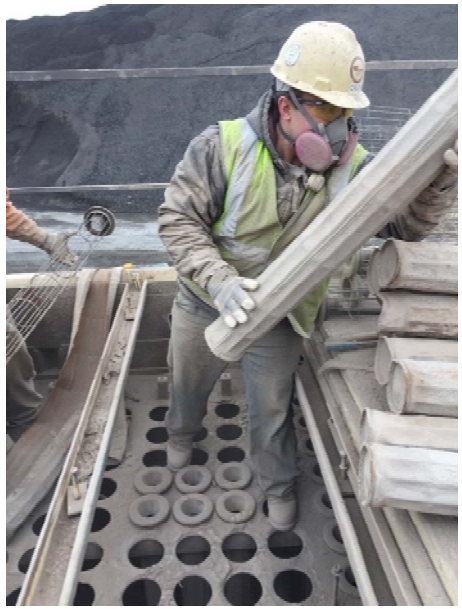
- **Task:** Team members pulled / replaced baghouse bags.
- **Results:** Median: 422.6 µg/M3
- **Additional Information:**
  - Approx. 96 bags were pulled.
  - Only natural ventilation used during this test.



Asphalt Plant - Baghouse Maintenance

- **Task:** Team members pulled / replaced baghouse bags.
- **Results:** Median: 20.1 µg/M3
- **Additional Information:**
  - Approx. 90 bags were pulled / replaced.
  - The baghouse exhaust fan was turned on low for duration of work.





Asphalt Plant - Chipping In Drum

Scenario 1

- **Task:** Team members chipping material buildup from asphalt drum.
- **Results:** Median: 679 µg/m^3
- **Additional Information:**
  - Team members working from ladders.
  - Utilizing pneumatic chipping hammers w/out source capture controls.

Asphalt Plant - Chipping In Drum

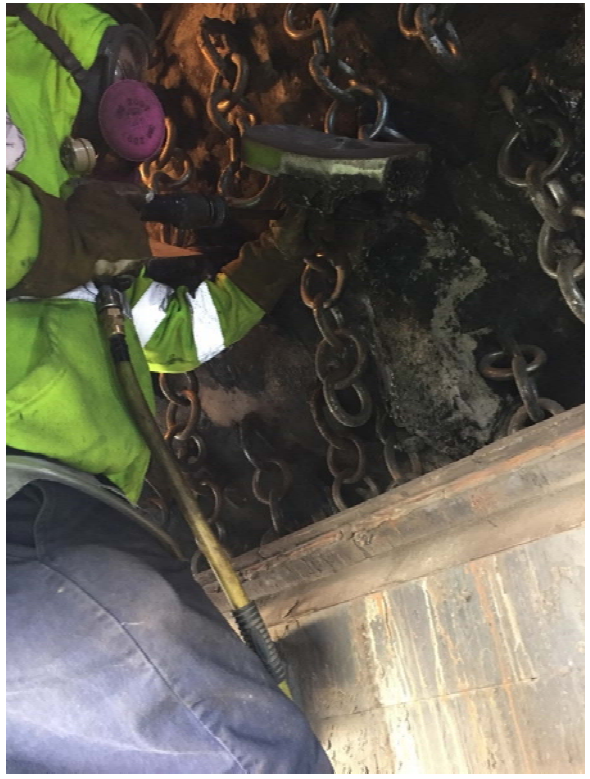
Scenario 2

- **Task:** Team members chipping material buildup from asphalt drum.
- **Results:** Median: 135.95 µg/M3
- **Additional Information:**
  - Team members working from elevated platform.
  - Utilizing pneumatic chipping hammers w/out source capture controls.

Asphalt Plant - Chipping In Drum

Scenario 3

- **Task:** Team members chipping material buildup from asphalt drum.
- **Results:** Median: 85.1 µg/M3
- **Additional Information:**
  - Team members working from elevated platform.
  - Exhaust fan on low pulling air into the drum and baghouse.
  - Utilizing pneumatic chipping hammers w/out source capture controls.



Asphalt Plant - Chipping In Drum

Scenario 4

- **Task:** Team members chipping material buildup from asphalt drum.
- **Results:** 48.4 – 400.8 µg/M3
- **Additional Information:**
  - Team members working from elevated platform.
  - Exhaust fan on low pulling air into the drum and baghouse.
  - Utilizing electric chipping hammer and pneumatic chipping w/out source capture controls.

OSHA's Electronic Reporting of Injury Logs

- Requires electronic submittal of injury logs for certain sized (25 / 250) and risk-classified "establishments"
  - "High Risk" includes construction and manufacturing (NAICS)
  - 2016 data collection site closed on Dec. 31
- Determining allocation of employees to "establishment" is key

SPECIAL REPORT

NAPA

NATIONAL ASPHALT PAVEMENT ASSOCIATION

5100 Forbes Boulevard, Lanham, MD USA 20706-4407

TF: 888.468.6499 PH: 301.731.4748 FX: 301.731.4621

www.asphaltpavement.org

Electronic Reporting of Injury and Illness Data for Asphalt Plants and Road Construction Crews

The Occupational Safety and Health Administration (OSHA) Final Rule "Improve Tracking of Workplace Injuries and Illnesses" (81 Fed. Reg. 29624) revises recordkeeping and reporting regulations so that employers in certain industries are required to submit electronically the OSHA injury and illness data they are already required to track and keep. The final rule explains who must submit electronically, how often, and which records to submit.

AC Tank Inspection Standards

- **EPA revised SPCC Rule in 2009; required tank inspection program**
- **NAPA published general SPCC guidance in 2011 and industry-specific tank inspection guidance in 2014 based on AC tank risk**

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- **In 2016, EPA "asked" NAPA to participate with Steel Tanks Institute (STI) in developing a "consensus-based" standard**
- **STI's SP-001 "Thermoplastics" appendix published in Jan 2018**
  - **Provides relief vs. NAPA guidance**
  - **But requires a "certified" inspector**

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- STI's SP-001 "Thermoplastics" appendix published Jan 2018
  - Provides relief vs. NAPA guidance
  - But requires a "certified" inspector
- **Inspection frequency based on containment type and tank size**
  - **If CRDM - periodic inspection only**
  - **If not, periodic for small tanks**
  - **> 30,000 gal: "external" inspection by certified inspector @ 35 yrs**
  - **Terminal tanks @ 5 / 10 yrs**

Trucking "Hours of Service" (HOS)

- inTERstate vs. inTRAstate
- NAPA petition for relief granted by FMCSA on Jan 26
  - Transportation of asphalt and related materials
  - E.g., dump trucks, equip haulers, water/distributor trucks
  - 30-min break NOT required; short haul on-duty extended to 14
- Electronic logging required Dec. 18; excluded under short-haul
  - If driver NOT required to keep written RODS, no need for ELD
- Understand/review other exemptions for HoS requirements

Trucking "Hours of Service" Guidance

http://www.asphaltpavement.org/PDFs/EH&S/SR-216v2-Cutting_Through_HoS_Confustion.pdf

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NATIONAL ASPHALT PAVEMENT ASSOCIATION
5100 Forbes Boulevard, Lanham, MD USA 20706-4407
TF: 888.468.6499 PH: 301.731.4748 FX: 301.731.4621
www.asphaltpavement.org

Cutting Through Trucking "Hours of Service" Confusion: Electronic Logging Devices and the 30-Minute Break

Federal Motor Carrier Safety Administration (FMCSA) Hours of Service (HoS) regulations continue to affect the transport of asphalt pavement mixture and construction equipment by commercial trucks. Truck drivers and the companies that employ drivers are required to comply with a several FMCSA HoS regulations, including upcoming requirements for electronic logging devices (ELDs) and mandatory 30-minute rest breaks for drivers, under some circumstances. This Special Report updates the version of SR-216 originally published in September 2016.

Background

FMCSA HoS regulations are directly applicable only to interstate commerce where a vehicle crosses state lines; however, the majority of state transportation agencies also use these rules to regulate intrastate commercial driving within their state. Because each state has its own

WZS: Programs and Projects

- NAPA extensively partnering with ARTBA on WZS issues
- PSA-type WZS impact video debuts at NAPA's Annual Meeting
- Launching contractor online training at WoA "Safety Pavilion"
- Working with stakeholders / DOTs to identify best practices
- Continue to advocate DOT project "safety contingency funds"
- NAPA Care Benevolent Fund

Thank-you / Questions?