OSHA Silica Rule Compliance Instructions

D0084 DustBuddie for Flatwork

- Compliant with Paragraph d, (2), (ii) Alternative Exposure Control Methods when used with objective data when cutting without water delivery. Objective data is included below. The DustBuddie for Flatwork requires a minimum rated airflow of 260 CFM. Use two Dustless HEPA Wet+Dry, Wet+Dry (see objective data for the Dustless HEPA Wet+Dry for dual vacuum objective data), DustDroid 300, or DustDroid 600 to collect dust. A HEPA vacuum is required for housekeeping.
- Table 1, Section (ii) requires an integrated water delivery system. Shroud can be used to collect slurry, but additional cleanup may be required afterwards. If using water for dust suppression, EPA forbids disposing of concrete slurry in storm drains. Use a Dustless Slurry Vac or Wet+Dry Vac to collect the slurry and a separating agent or allowing the concrete to settle out before draining the water. Dispose of the concrete dust in any dumpster. The Dustless Wunderbag can be used in the Wet+Dry Vac to filter the water.
- When cutting, keep the DustBuddie for Flatwork in contact with the ground. For best results cut forward, allowing the shroud to move over the cut. Use only for flatwork. For masonry blocks, stone, or similar materials, use the DustBull (D1765).
- Wear the personal protective equipment meeting the APF recommendation in the objective data. Always use eye and ear protection.

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Objective Test Data – D0084 DustBuddie for Flatwork (Gas-Powered Saws)

References: OSHA 29 CFR §1926.1153, Final Rule to Protect Workers from Exposure to Respirable Crystalline Silica (Silica Rule) (Construction Standard)

- Paragraph (b) Definitions, “Objective Data;”
- Paragraph (c) Specified exposure control methods, Table 1, (ii) (ii) Handheld power saws (any blade diameter)
- Paragraph (d) Alternative exposure control methods, (ii) Performance option.
- Terracon Project: 61167595 “Industrial Hygiene Exposure Assessment, Dustless Technologies” prepared by Terracon Consultants, Inc., dated March 30, 2017 in Price, UT

Objective data is a result of independent testing conducted by certified industrial hygienists from Terracon Consultants, Inc. in Midvale, Utah.

Methods of Compliance:

1. Fully compliant per Table 1 when used as directed using an integrated water delivery system:
   a. Paragraph (c) Specified exposure control methods, Table 1, section (ii)

Equipment / Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
hift	> 4 hours /shift		≤ 4 hours /s
(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.		
10	– When used outdoors.	None	APF
10	– When used indoors or in an enclosed area.	APF 10	APF

2. For all other tasks where a gas-powered (cutoff) saw is used to cut silica-containing materials, this documentation should be included in your written exposure control plan.
   a. Paragraph (d) Alternative exposure control methods, subparagraph (ii) Performance option
      i. Definition: 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 employer's current operations.
      ii. This has been interpreted to include manufacturer test data, which is detailed below.
3. Independent certified industrial hygienists from Terracon Consultants, Inc. conducted exposure tests on workers using saws to cut concrete. The conditions and tools used in the test were:
   a. Tool: Stihl TS410 gas-powered saw with a 14-inch diamond blade attached to a DustBuddie for Flatwork collection shroud. The shroud was connected to two Dustless Technologies HEPA Wet+Dry Vacuums

tethered together with a Y-connector through a 12.5-ft x 2-in hose. Each vacuum was rated at 130 CFM for a total rating of 260 CFM.

b. Task: 108 total linear feet of approximately 6-inch deep cuts in a concrete slab.
c. Work area and airflow: 10-ft x 10-ft x 8-ft outdoor open-topped enclosure with plastic sheeting on all walls.
d. Test equipment and methods: the respirable particulate and respirable crystalline silica samples were collected in accordance with National Institute for Occupational Safety and Health (NIOSH) Methods 0600 and 7500, respectively, using three-piece 37-mm cassettes, with pre-weighed 5.0-micrometer (µm), polyvinyl chloride (PVC) filters; a standard size-selecting aluminum cyclone was attached to the sample cassette. The sample was connected to an SKC AirChek™ 52 personal air sampling pump. The sampling train was calibrated at 2.5 liters per minute before sampling and post-calibrated after sampling using a BIOS DryCal® DCL-H primary standard calibrator.

4. Results of the test and recommendations for required APF are in the tables below. For clarity, the respiratory protection requirements table is formatted the same as Table 1. If conditions on your job are more favorable than those detailed in the tables below, this data can be used as objective data for compliance under Paragraph (d).

Respiratory Protection Requirements
March 7, 2017

Sample Number	Equipment / Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
			≤ 4 hours / shift	> 4 hours / shift
595-03	STIHL TS-410 Gas-powered saw equipped with a 14-inch diamond cutoff blade and a "DustBuddie for Flat Work" while cutting concrete slab (108 total linear feet)	Performed dry, outdoors in a 10' x 10' x 8' temporary room constructed of wooden 2" x 4" studs and polyethylene sheeting	APF 10	APF 25

5. The above table was based on the objective data in the table below.

Respirable Dust and Silica Exposure Assessment
Air Sampling Results
March 7, 2017

Sample #	Sample Type	Sample Information: Name Tool Work Done Dustless Attachment	Vacuum Air Flow	Sampling Period (Minutes)	Sample Volume (Liters)	Analyte	Results			Standard			UNITS
							Sample Results	Exposure if Conducted <4-hr/shift	Exposure if Conducted 8-hr/shift	OSHA AL TWA	OSHA PEL TWA	ACGIH TLV TWA	
595-03	PBZ	STIHL TS410 Gas-powered 14-inch circular saw linear cuts in concrete DustBuddie for flat work	51.04	120	306	Respirable Dust	4.4	2.2	4.4	5	5	3	mg/m³
						Respirable Silica	570	**285**	**570**	25	50	25	µg/m³

a. Key terms in the table
   i. PBZ – Personal Breathing Zone or where the collection point was located.
   ii. OSHA AL TWA – OSHA Action Level Time Weighted Average (set by the Silica Rule)
   iii. OSHA PEL TWA – OSHA Permissible Exposure Limits Time Weighted Average (set by the Silica Rule)
   iv. ACGIH TLV – American Conference of Governmental Industrial Hygienists Threshold Limit Value (not part of the Silica Rule)

6. The final table includes the silica content of the concrete used in this testing determined by test on a sample taken during the test.

Respirable Dust and Silica Exposure Assessment
Bulk Sampling Results
March 7, 2017

Sample #	Sample Date	Sample Type	Sample Information:	Analyte	Results	UNITS
					Sample Results	
595-01B	3/7/2017	Bulk	Bulk sample of concrete being cut during all sampled tasks	Total Silica	9.30%	percent

7. If your OSHA inspector or Competent Person requires more data than that contained in this document, please call Dustless Customer Service at (800) 568-3949.