



## OSHA Silica Rule Compliance Instructions

### D4000 DustBuddie for Worm Drive Saws

- Compliant with Table 1, Section (iii), cutting fiber-cement board (with blade diameter of 8 inches or less).
- Compliant Table 1, Section (ii) when using with 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.
- 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 Worm Drive Saws requires a minimum rated airflow of 125 CFM. Use the vacuums in the table below to collect dust. A HEPA vacuum is required for housekeeping.
- Wear the personal protective equipment meeting the APF recommendation in Table 1 or the objective data. Always use eye and ear protection.



**Objective Test Data – D4000 DustBuddie for Worm Drive Saws**

*Innovating Dust Control Solutions*

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

- Paragraph (c) Specified exposure control methods, Table 1,
  - o (iii) Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less)
  - o (ii) Handheld power saws (any blade diameter)
- Paragraph (d) Alternative exposure control methods, (ii) Performance option.
- Respirable Particulate 8441/45373 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 for cutting fiber-cement board with a circular saw:
  - a. Paragraph (c) Specified exposure control methods, Table 1, section (iii)

Equipment / Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours /shift	> 4 hours /shift
(iii) Handheld power saws for cutting fiber-cement board (with a blade diameter of 8 inches or less)	<p>For tasks performed outdoors only:</p> <p>Use power equipment with commercially available dust collection system.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency.</p>	None	None

2. For all other tasks where a worm drive 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 worm drive saws to cut concrete. The conditions and tools used in the test were:
  - a. Tool: Skil Mag 77LT 7-inch saw equipped with a 7.25-inch diameter blade connected to a Dustless Technologies HEPA Wet+Dry (D1606) Vacuum rated at 130 CFM.
  - b. Task 1: cutting 1/2-inch deep cuts in concrete (186 total linear feet). Performed dry for 2 hours.
  - c. Task 2: cutting 1-inch deep cuts in concrete (16 total linear feet). Performed dry for 2 hours.
  - d. Room and airflow: 21' x 21.3' x 10' indoor room with the entry door and an opposite window open to the stairwell and warehouse areas.
  - e. 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-gram NTA' filters; a standard size-selecting aluminum cyclone was attached to the sample cassette. The sample was connected to a flow rate of 30 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).
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	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	
5	3	mg/m <sup>3</sup>						Respirable Dust	0.33	0.17	0.33	5	
50	25	µg/m <sup>3</sup>				73.3	122	308	Respirable Silica	91	46	91	25
595-05	PBZ	Skil saw MAG 77, 7 1/4-inch Worm Drive Circular Saw or 7 1/4-inch Circular Saw deep cuts (~1-inch depth) DustBuddle for worm drive circular saws	73.3	120	299	Respirable Dust	<0.17	0.09	<0.17	5	5	3	mg/m <sup>3</sup>
						Respirable Silica	45	23	45	25	50	25	µg/m <sup>3</sup>

**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
595-01	Skil saw MAG 77, 7 1/4-inch Worm Drive Circular Saw or 7 1/4-inch Circular Saw equipped with a "DustBuddle for Worm Drive Circular Saws" while cutting 1/2-inch deep cuts in concrete (186 total linear feet)	Performed dry, in a 21' x 21.3' x 10' room indoor room with the entry door and an opposite window open to the stairwell and warehouse areas	None	APF 10
595-05	Skil saw MAG 77, 7 1/4-inch Worm Drive Circular Saw or 7 1/4-inch Circular Saw equipped with a "DustBuddle for Worm Drive Circular Saws" while cutting 1-inch deep cuts in concrete (16 total linear feet)	Performed dry, in a 21' x 21.3' x 10' room indoor room with the entry door and an opposite window open to the stairwell and warehouse areas	None	None

- 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 require more data than that contained in this document, please call Dustless Customer Service at (800) 568-3949.