



# MILWAUKEE TOOL


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5/4/2018

## 29 CFR 1926.1153

### Milwaukee® OSHA® Compliance Solutions

To Whom It May Concern,

Milwaukee®, in partnership with Industrial Hygiene Sciences, LLC, has conducted testing on the Milwaukee SDS Plus DUST TRAP™ Drilling Shroud. Results show that the 48-03-3035/3135 SDS Plus DUST TRAP™ Drilling Shroud is below the Permissible Exposure Limit (PEL) as described by OSHA 29 CFR 1926.1153 when used without a dust extractor, assuming it is used in accordance with manufacturer’s instructions. Testing results and procedures are outlined below:

Unit Test	Average Holes Drilled	Average Sample Duration (Minutes)	Average % Silica (Quartz) in Sample	Average Respirable Crystalline Silica Concentration (µg/m³)	OSHA PEL in 1926.1153
48-03-3035 	39	61	9.43	40	50 µg/m³ over an 8 hour period

- All drilling was performed overhead using a Milwaukee 2715-22 M18 FUEL™ 1-1/8” SDS Plus Rotary Hammer\* and a Milwaukee 48-03-3035/3135 SDS Plus DUST TRAP™ Drilling Shroud.
- The vacuum port was tightly sealed with the vacuum port plug and no dust extractor or vacuum was used during testing.
- The hole size was 5/8” in diameter and 3” deep.\*
- Test procedure included both the drilling of holes and a method of emptying the dust shroud:
  - The dust shroud was emptied every hole.
  - The dust shroud was knocked out lightly into a bucket placed on the ground next to the drilling location.
- Concrete blocks were poured from a 5000 PSI concrete mix.
- The room size was 12’9” x 26’5” x 8’.
- The room surfaces were wiped down between trials to ensure accurate measurements
- Samples were analyzed using OSHA ID-142 by the Wisconsin Occupational Health Laboratory, an AIHA Accredited laboratory. The sampling method used meets the definition of respirable crystalline silica in 1926.1153 (a) and Appendix A of the OSHA Respirable Crystalline Silica Standard (1926.1153).
- The Time Weighted Average (TWA) was calculated assuming zero exposure to respirable crystalline silica for the non-sampled portion of a 480 minutes (8 hour) shift. Longer exposure times, assuming that the dust exposures would be similar to those collected in these trials, would likely result in higher TWAs. Factors that would affect actual user exposures include, but are not limited to, the ventilation and air flow patterns in the work space, the presence of other respirable

\*\*A 5/8” drill bit reflects the highest dust generating application, suggesting that other bit sizes would also be compliant when using the Milwaukee 48-03-3035/3135 SDS Plus DUST TRAP™ Drilling Shroud.

silica dust generating activities in the area, the frequency of and method used to empty the extractor, and the number and depth of the holes drilled.

- Overhead drilling results in the higher potential exposure to silica dust than other drilling orientations, such as drilling downward or horizontal. Since these positions will result in equal or lower TWA's, the maximum number of holes stated below for an 8-hour shift are representative.
- Details on how to properly implement the 48-03-3035/3135 as a part of a complete exposure plan are outlined below\*:

### **Maximum Number of Holes per Day\*\***

		Hole Diameter						
		3/16"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"
Hole Depth	1"	1,200	675	300	169	108	75	55
	1-1/2"	800	450	200	113	72	50	37
	2"	600	338	150	84	54	38	28
	2-1/2"	480	270	120	68	43	30	22
	3"	400	225	100	56	39	25	18
	3-1/2"	343	193	86	48	31	21	16
	4"	300	169	75	42	27	19	14
	4-1/2"	267	150	67	38	24	17	12
	5"	240	135	60	34	22	15	11
	5-1/2"	218	123	55	31	20	14	10
6"	200	113	50	28	18	13	9	

It is the responsibility of the user to operate the tool in accordance with manufacturer's instructions. For the latest listings of approvals, visit [milwaukee.com](http://milwaukee.com). For technical or service assistance, contact Milwaukee Customer Service at 1-800-729-3878.

\* These calculations are offered for reference and are calculated values based on previously recorded test data.

\*\* The user must drill the same number or fewer holes than those listed above for the given application in order to be considered compliant with the objective data clause of 29 CFR 1926.1153 OSHA regulation on crystalline silica dust.