



MILWAUKEE TOOL

13135 West Lisbon Road • Brookfield WI 53005 • 262-781-3600

3/10/2022

29 CFR 1926.1153

Milwaukee® OSHA® Compliance Solutions

To Whom It May Concern,

Milwaukee®, in partnership with the Industrial Hygiene Sciences, LLC, has conducted testing on the Milwaukee SDS Plus HAMMERVAC™ Dedicated Dust Extractors. Results show that the 2912-DE HAMMERVAC™ Dedicated Dust Extractor are below the Permissible Exposure Limit (PEL) as described by OSHA 29 CFR 1926.1153 assuming they are used in accordance with manufacturer’s instructions Testing results and procedures are outlined below:

Unit Tested	Average Holes Drilled	Average Sample Duration (Minutes)	Average % Silica (Quartz) in Sample	Average Respirable Crystalline Silica Concentration (µg/m³)	OSHA PEL in 2912.1153
 <p>2912-DE</p>	50	62	13%	26.3 µg/m³ TWA	50 µg/m³ over an 8 hour period

- All drilling was performed overhead using a Milwaukee Rotary Hammer and a Milwaukee HAMMERVAC™ Dedicated Dust Extractor.
- The hole size was 5/8” in diameter and 4 ½” deep.*
- Test procedure included both the drilling of holes and a method of emptying the dust box:
 - The dust box on the extractor was emptied every 3 holes
 - The dust box and filter were emptied by being connected to a dust extraction system
- Concrete blocks were poured from a 5000 PSI concrete mix.
- The room size 10ft x 16ft x 16ft
- 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 the 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 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.

*A 5/8” drill bit reflects the highest dust generating application, suggesting that other bit sizes would also be compliant when using the Milwaukee 2915-DE HAMMERVAC™ Dedicated Dust Extractor.

- Details on how to properly implement the 2915-DEAs part of a completed 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"	1"	1-1/8"
Hole Depth	1"	4,700	2,644	1,175	661	423	294	216	165	131
	1-1/2"	3,133	1,763	783	441	282	196	144	110	87
	2"	2,350	1,322	588	330	212	147	108	83	65
	2-1/2"	1,880	1,058	470	264	169	118	86	66	52
	3"	1,567	881	392	220	141	98	72	55	44
	3-1/2"	1,343	755	336	189	121	84	62	47	37
	4"	1,175	661	294	165	106	73	54	41	33
	4-1/2"	1,044	588	261	147	94	65	48	37	29
	5"	940	529	235	132	85	59	43	33	26
	5-1/2"	855	481	214	120	77	53	39	30	24
6"	783	441	196	110	71	49	36	28	22	

Frequency of Need to Empty Dust Box***

		Hole Diameter								
		3/16"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/8"
Hole Depth	1"	150	84	38	21	14	9	7	5	4
	1-1/2"	100	56	25	14	9	6	5	4	3
	2"	75	42	19	11	7	5	3	3	2
	2-1/2"	60	34	15	8	5	4	3	2	2
	3"	50	28	13	7	5	3	2	2	1
	3-1/2"	43	24	11	6	4	3	2	2	1
	4"	38	21	9	5	3	2	2	1	1
	4-1/2"	33	19	8	5	3	2	2	1	1
	5"	30	17	8	4	3	2	1	1	1
	5-1/2"	27	15	7	4	2	2	1	1	1
6"	25	14	6	4	2	2	1	1	1	

It is the responsibility of the user to operate the tool in accordance with manufacturer's instruction. For the latest listings of approvals, visit milwaukeeetool.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.

*** The dust box needs to be emptied out at or before the numbers specified above in order to be considered compliant with the objective data clause of 29 CFR 1926.1153 OSHA regulation on crystalline silica dust.