



MILWAUKEE TOOL


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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 2915-DE HAMMERVAC™ Dedicated Dust Extractors 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
 2915-DE	50	60	12.5%	17 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"	7,400	4,163	1,850	1,041	666	463	340	260	206
	1-1/2"	4,933	2,775	1,233	694	444	308	227	173	137
	2"	3,700	2,081	925	520	333	231	170	130	103
	2-1/2"	2,960	1,665	740	416	266	185	136	104	82
	3"	2,467	1,388	617	347	222	154	113	87	69
	3-1/2"	2,114	1,189	529	297	190	132	97	74	59
	4"	1,850	1,041	463	260	167	116	85	65	51
	4-1/2"	1,644	925	411	231	148	103	76	58	46
	5"	1,480	833	370	208	133	93	68	52	41
	5-1/2"	1,345	757	336	189	121	84	62	47	37
	6"	1,233	694	308	173	111	77	57	43	34
	6-1/2"	1,138	640	285	160	102	71	52	40	32
	7"	1,057	595	264	149	95	66	49	37	29
	7-1/2"	987	555	247	139	89	62	45	35	27
	8"	925	520	231	130	83	58	42	33	26

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
	6-1/2"	23	13	6	3	2	1	1	1	1
	7"	21	12	5	3	2	1	1	1	1
	7-1/2"	20	11	5	3	2	1	1	1	1
	8"	19	11	5	3	2	1	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 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.

*** 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.