MILWAUKEE TOOL

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To Whom It May Concern,

Milwaukee®, in partnership with Industrial Hygiene Sciences, LLC, has conducted testing on the Milwaukee M18™ FUEL™ 3-in-1 Backpack Vacuum (0895-20) with the kitted HEPA Filter (49-90-1961) paired with the M18™ FUEL™ 7’ / 9” Large Angle Grinder (2785-20), 2” Diamond Long Dry Core Masonry Bit (48-17-0020), and SDS Max Dust Extraction Attachment (5317-DE). Results show that the user will be below the Permissible Exposure Limit (PEL) as described by OSHA 29 CFR 1926.1153 when using the above combination, assuming it is used in accordance with manufacturer’s instructions. Testing results and procedures are outlined below:

Unit Tested	Average # of Cores Drilled	Average Sample Duration	% Silica (Quartz) in Sample	Average Respirable Crystalline Silica Concentration (µg/m³)	OSHA PEL in 1926.1153 (µg/m³)
	24	60 minutes	12.4%	4.94 µg/m³ TWA	50 µg/m³

Additional Test Information

- All coring was performed using a Milwaukee M18™ FUEL™ 3-in-1 Backpack Vacuum (0895-20) with the M18™ FUEL™ 7’ / 9” Large Angle Grinder (2785-20), 2” Diamond Long Dry Core Masonry Bit (48-17-0020), and SDS Max Dust Extraction Attachment (5317-DE).
- In each trial, 24 two-inch cores were drilled horizontally into 12 concrete cinder blocks.
- The cinder blocks were standard size; 1900 PSI concrete mounted in an upright fixture.
- After every 8 cores drilled, the Vacuum Tank was emptied, and the HEPA Filter was knocked out into a bin.
- A new HEPA filter was used for each new trial.
- The Vacuum was turned to high speed.

Sample Method

- Samples were collected on 3 piece 37 mm diameter preweighed PVC filter mounted in a BGI GK2.69 respirable dust sampler, run at 4.2 lpm and connected to a GilAir Plus air sampling pump. The flow rate through the sampling train was measured using a Mesa Labs Defender 520 calibrator before and after each Trial. A field blank was submitted with the batch of samples.
- The samples and blank 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).
- Work was performed in a room with no outside ventilation. The room door was closed. An ambient air cleaner with HEPA filtration was used between each trial to clean the air.

TWA Calculation

- 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, including, but not limited to, the ventilation and air flow patterns in the space where the work is done, the condition of the dust extractor boot, the positioning of the boot on the chisel, clogging of the air intake of the boot, the silica content of

the concrete, the presence of other respirable silica dust generating activities in the area, and vacuum maintenance could affect actual user exposures

*A 2” Diamond Dry Core bit reflects the dust generating application used in this test, the table below suggest other bit sizes, based on volume of dust, would also be compliant when using the Milwaukee M18™ FUEL™ 3-in-1 Backpack Vacuum.

Details on how to properly implement as a part of a complete exposure plan are outlined below*:

Maximum Number of Holes per Day**

Core Diameter

Core Depth	1”	1.5”	2”	2.5”	3”	3.5”	4”	4.5”	5”
1”	2,573	1,592	1,153	904	743	631	548	484	434
2”	1,286	796	576	452	371	315	274	242	217
3”	857	530	384	301	247	210	182	161	144
4”	643	398	288	226	185	157	137	121	108
5”	514	318	230	180	148	126	109	96	86
6”	428	265	192	150	123	105	91	80	72
7”	367	227	164	129	106	90	78	69	62
8”	321	199	144	113	92	78	68	60	54
9”	285	176	128	100	82	70	60	53	48
10”	257	159	115	90	74	63	54	48	43
11”	233	144	104	82	67	57	49	44	39
12”	214	132	96	75	61	52	45	40	36
13”	197	122	88	69	57	48	42	37	33
14”	183	113	82	64	53	45	39	34	31
15”	171	106	76	60	49	42	36	32	28

*These calculations are offered for reference and are calculated values based on previously recorded test data and represent a full workday of the tested application

** 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.

It is the responsibility of the user to operate the tool in accordance with manufacturer’s instructions. For the latest listings of approvals, visit milwaukeetool.com. For technical or service assistance, contact Milwaukee Customer Service at 1-800-729-3878.