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™ 12 Gallon Dual-Battery Wet/Dry Vacuum Kit (0930-22) with HEPA filter (49-90-1977) paired with the M18™ FUEL™ 7" / 9" Grinder (2785-20) with a 7" Diamond Premium Blade (49-93-7020) and Cutting Dust Shroud (49-40-6120). 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:

Units Tested	Average Sample Duration	Average Feet Cut	% Silica (Quartz) in Sample	Average Respirable Crystalline Silica Concentration (µg/m³)	OSHA PEL in 1926.1153 (µg/m³)
	60 minutes	33.33 ft	17.33%	7.1 µg/m³ TWA	50 µg/m³

- All cutting was performed using a Milwaukee M18™ FUEL™ 12 Gallon Dual-Battery Wet/Dry Vacuum Kit (0930-22) paired with the M18™ FUEL™ 7" / 9" Grinder (2785-20) with a 7" Diamond Premium Blade (49-93-7020) and Cutting Dust Shroud (49-40-6120).
- Each trial consisted of multiple 1 ¼" deep cuts through a 4' X 4' X 8" concrete block.
- Concrete blocks were poured from a 5000 PSI concrete mix.
- A new HEPA filter was used for each new trial.
- The Vacuum was turned to low speed.
- There was no cleaning of the filter or emptying of the tank during the trial.
- Work was performed in an enclosure with no outside ventilation. Ambient air cleaner with HEPA filtration was used between each trial.
- Samples were collected on a 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 TSI 4146 Calibrator before and after each Trial. A field blank was submitted with each day's set of samples.
- 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, including, but not limited to, the ventilation and air flow patterns in the space where the work is done, how the tool is used, how sharp the blade is, the user's technique, the silica content of the cement board, how many cuts are made, the presence of other respirable silica dust generating activities in the area, and vacuum maintenance could affect actual user exposures.

* 1 ¼” deep cutting reflects the dust generating application used in this test, the table below suggest other cutting distances and depths, based on volume of dust, would also be compliant when using the Milwaukee M18™ FUEL™ 12 Gallon Dual-Battery Wet/Dry Vacuum.

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

Maximum Number of Feet Cut per Day**

Blade Width

Cut Depth	7/64”	1/8”	5/32”	11/64”	3/16”
0.5”	670	586	469	426	391
0.75”	447	391	312	284	260
1”	335	293	234	213	195
1.25”	268	234	187	170	156
1.5”	223	195	156	142	130
1.75”	191	167	134	121	111
2”	167	146	117	106	97
2.25”	149	130	104	94	86

*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 cut the same amount or less than the amount 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.