



# MILWAUKEE TOOL

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7/15/2024

## 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 M18 FUEL™ Overhead Rotary Hammer w/ Integrated Dust Extraction. Results show that the 3311-20 M18 FUEL™ Overhead Rotary Hammer w/ Integrated Dust Extraction 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
3311-20 	30	60	15%	15 µg/m³ TWA	50 µg/m³ over an 8 hour period

- All drilling was performed overhead using a Milwaukee M18 FUEL™ Overhead Rotary Hammer w/ Integrated Dust Extraction
- 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 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 15’9” x 16’9” x 13’6”
- 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 HAMMERSERVAC™ Dedicated Dust Extractor.

- Details on how to properly implement the 3311-20 as part of a completed exposure plan are outlined below\*:

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

	3/16"	1/4"	3/8"	1/2"	5/8"
Hole Depth					
1"	3,933	2,213	983	553	354
1-1/2"	2,622	1,475	656	369	236
2"	1,967	1,106	492	277	177
2-1/2"	1,573	885	393	221	142
3"	1,311	738	328	184	118
3-1/2"	1,124	632	281	158	101

**Frequency of Need to Empty Dust Box\*\*\***

	3/16"	1/4"	3/8"	1/2"	5/8"
Hole Depth					
1"	100	56	25	14	9
1-1/2"	67	38	17	9	6
2"	50	28	13	7	5
2-1/2"	40	23	10	6	4
3"	33	19	8	5	3
3-1/2"	29	16	7	4	3

It is the responsibility of the user to operate the tool in accordance with manufacturer’s instruction. For the latest listings of approvals, visit [milwaukeetool.com](http://milwaukeetool.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.