



# OSHA 1926.1153 General Industry Standard ACGIH TLVs Respirable Silica Dust Exposure

## OBJECTIVE TEST 3 DATA

Ultra Early Entry™ Concrete Sawing Indoors with one Husqvarna Soff-Cut® 4000 saw operator and one finisher pushing a Husqvarna T 8600 P dust collector

Husqvarna Construction Products performed monitoring of Ultra Early Entry™ sawing to assess operator and the surrounding environment's exposure to respirable dust and silica. The test used a Soff-Cut 4000 saw operator along with a Husqvarna T 8600 P dust collector pushed by a concrete finisher in accordance with OSHA's Respirable Crystalline Silica Standard.

Under testing conditions, Ultra Early Entry™ cuts made during the Green Zone™ are below OSHA's PELs, OSHA ALs and ACGIH TLVs. See below for a synopsis of the test. To access the original third party objective data test results, please visit [www.husqvarnacp.com/us/silica](http://www.husqvarnacp.com/us/silica).

Testing was performed under the following outdoor conditions:

- Cutting inside a building that had a full roof and approx. 90% of the walls completed
- 3,980 lineal feet of control joints spaced on 15 foot centers with a 2 inch depth of cut
- Application was a slab on grade pour that had a surface area of 30,000 square feet and was 8 inches thick
- Personal samples collected from two concrete finishers
  - Personal samples were taken from air pumps and cyclones mounted on the operator and concrete finisher. The air pump was clipped on a pants pocket and the cyclone was clipped on a shirt collar.
- Air sampling for respirable dust and silica was performed using air sampling pumps and chemical-specific sampling media. A cyclone was also used to capture the respirable fraction of the dust for silica and respirable dust samples. The cassette and cyclone were affixed to the Husqvarna Soff-Cut 4000 saw in order to determine levels of respirable dust and silica closest to the blade.
  - Pumps were pre-calibrated and calibration was also verified after the sampling was complete.
  - Samples were analyzed by Galson Laboratories, Inc., which is accredited by the American Industrial Hygiene Association (AIHA).

### TEST 3 RESULTS

Area/Position	Time (min)	Cristobalite Result <sup>1</sup>	Quartz Result <sup>2</sup>	Respirable Dust Result <sup>3</sup>	Tridymite Result <sup>4</sup>
Area (affixed to the saw)	180	LDL	14.6 µg/m <sup>3</sup>	.21 mg/m <sup>3</sup>	LDL
Concrete Finisher - Cutting	180	LDL	LDL	LDL	LDL
Concrete Finisher - Pushing Collector	180	LDL	LDL	.09 mg/m <sup>3</sup>	LDL

<sup>1</sup> OSHA Standard: 25 µg/m<sup>3</sup> AL and 50 µg/m<sup>3</sup> PEL; ACGIH TLV Standard: 25 µg/m<sup>3</sup>

<sup>2</sup> OSHA Standard: 25 µg/m<sup>3</sup> AL and 50 µg/m<sup>3</sup> PEL; ACGIH TLV Standard: 25 µg/m<sup>3</sup>

<sup>3</sup> OSHA Standard: 5 mg/m<sup>3</sup>; ACGIH TLV Standard: 3 mg/m<sup>3</sup>

<sup>4</sup> OSHA Standard: 25 µg/m<sup>3</sup> AL and 50 µg/m<sup>3</sup> PEL

LDL = Lower Detection Levels

### PERSONAL SAMPLES

The sample results were below the respective OSHA PELs, OSHA ALs, and ACGIH TLVs on the day of the sampling.

- *NOTE: If the operator has the same exposure levels found during the three hour sampling period for eight hours, his/her sampling for quartz would have been above the OSHA AL and ACGIH TVL standards, but below OSHA PEL. Even though this is not typically the case, please keep this in mind when operators are cutting for more than three hours.*

### AREA SAMPLES

Area samples were below the respective OSHA PELs, OSHA ALs and ACGIH TLVs on the day of the sampling.

*These test results are meant to give contractors an example of Ultra Early Entry OSHA PEL results. Job sites, weather and other conditions will vary and have an effect on exposure levels. If you have any questions, please contact your local OSHA division or [www.osha.gov/silica](http://www.osha.gov/silica).*