



# Respirable Silica and Dust Exposure

## Indoor Concrete Sawing

### Husqvarna X150 Soff Cut Saw with a HEPA Filtered CDC Larue 500 Series Pulse-Bac Vacuum

Monitoring to assess the operator’s exposure to respirable silica and dust during indoor operation of a Husqvarna X150 Soff Cut Saw connected to a CDC Larue 500 Series Pulse-Bac Vacuum (Xtractor System). The following results were obtained on the day of monitoring:

Sample Time	Sample Volume	Respirable Dust Result <sup>1</sup>	Quartz Result <sup>2</sup>	Cristobalite Result <sup>2,3</sup>	Tridymite Result <sup>2,4</sup>
290 minutes	495.9 liters	<0.10 mg/m <sup>3</sup>	<0.010 mg/m <sup>3</sup>	<0.010 mg/m <sup>3</sup>	<0.020 mg/m <sup>3</sup>

<sup>1</sup> OSHA Standard: 5 mg/m<sup>3</sup> PEL  
<sup>2</sup> OSHA Standard: 0.25 mg/m<sup>3</sup> AL and 0.50 mg/m<sup>3</sup> PEL  
<sup>3</sup> Cristobalite is high temperature polymorphs of silica and relatively rare  
<sup>4</sup> Tridymite is a high temperature polymorphs of silica, rarely found in nature and rarely reported in the workplace

The monitoring results were below the respective Occupational Safety and Health Administration (OSHA) Action Level (AL) and OSHA Permissible Exposure Limit (PEL) for silica (quartz, cristobalite, tridymite) and the OSHA PEL for respirable dust. Since the monitoring results are below the AL and PELs, additional sampling to further determine exposure is not required for the tested equipment.

Variations on the job site conditions, weather, vacuum connection, equipment maintenance, and operators experience may affect exposure levels. Adjacent activities may also increase exposure levels.

The OSHA Table 1 of the Respirable Crystalline Silica in Construction Regulation 29 CFR 1926.1153 states when walk-behind saws are operated indoors and an alternative dust control method (rather than water is used to control dust, the contractor must show that worker exposures will remain below the OSHA AL and OSHA PEL under all foreseeable conditions. Though respirable dust is not in the Respirable Crystalline Silica Regulation, the sample was also analyzed for comparison to the OSHA PEL.

Monitoring was conducted in the Construction Labors Training Center located at 2180 Old Hwy 8 NW, New Brighton, MN 55112 on September 2017. The sample was analyzed using NIOSH 7500 (silica) and NIOSH 0600 (respirable dust) analytical methods by Maxxam Analytics, a laboratory accredited by the American Industrial Hygiene Association (AIHA).

If you have any questions or would like to review the third-party objective data report, please contact **Esch Construction Supply, Inc. located 561 Phalen Blvd, in St. Paul, MN 55130**. Information regarding silica exposure is available at <https://www.osha.gov/silica/SilicaConstructionRegText.pdf>.

