Exhibit 2 - Silica Control Measures (Recalculated Table 1)

Required Engineering Controls and Respiratory Protection for Silica

The engineering controls and respiratory protection identified below shall be used as the selection basis for work practices, controls, and personal protective equipment (PPE). However, if controls and PPE other than these are used, then exposure assessments must be conducted to demonstrate compliance with American Conference of Government Industrial Hygienists (ACGIH) threshold limit values (TLVs) per OPP 650-11 Silica Exposure Prevention and Control. The IH must exercise good IH judgement to determine when to periodically conduct confirmatory sampling of tasks conducted under this Table. Key: APF = assigned protection factor. Use the highlighted links to OSHA fact sheets for equipment listed in this table.

Equipment/Use	**Photo of representative equipment**	**Engineering and work practice control methods** • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. • Operate and maintain machine to minimize dust emissions	**NREL Respiratory Protection** for compliance with ACGIH TLV of 25 µg/m^3 **Select column that corresponds to maximum length of time task is conducted (e.g. Task 1 for 5 hours of work. Work must begin in APF 10 respirator.**		
			<2 hr./ shift	2-4 hr./ shift	>4 hr./ shift
1 **Handheld and Stand-Mounted Drills** (including impact and rotary hammer drills) [Per 29 CFR 1926.1153 c.1. vii]		https://www.osha.gov/Publications/silica/OSHA_FS-3630.pdf Use drill equipped with commercially available shroud or cowling with dust collection system. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism Use a high-efficiency particulate air (HEPA)-filtered vacuum when cleaning holes. ■The shroud or cowling is intact and installed in accordance with the manufacturer's instructions ■ The hose connecting the tool to the vacuum is intact and without kinks or tight bends; ■The filter(s) on the vacuum are cleaned or changed in accordance with the manufacturer's instructions; and ■The dust collection bags are emptied to avoid overfilling.	None	None	APF 10
2 **Handheld Power Saws** (any blade diameter) [Per 29 CFR 1926.1153 c.1. ii]		https://www.osha.gov/Publications/silica/OSHA_FS-3627.pdf Use saw equipped with integrated water delivery system that continuously feeds water to the blade. ■An adequate supply of water for dust suppression is used; ■The spray nozzle is working properly to apply water at the point of dust generation; ■The spray nozzle is not clogged or damaged; ■All hoses and connections are intact. When used outdoors:	None	APF 10	APF 25
		When used indoors or in an enclosed area (outdoor requirements above apply as well):	APF 10	APF 25	APF 25
3 **Handheld Power Saws** for cutting fiber cement board (with blade diameter of 8 inches or less) [Per 29 CFR 1926.1153 c.1. iii]		https://www.osha.gov/Publications/OSHA3927.pdf For tasks performed outdoors only: Use saw equipped with commercially available dust collection system. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency. ■The shroud or cowling is intact and installed in accordance with the manufacturer's instructions; ■The hose connecting the tool to the vacuum is intact and without kinks or tight bends; ■The filter(s) on the vacuum are cleaned or changed in accordance with the manufacturer's instructions to prevent clogging; and ■The dust collection bags are emptied to avoid overfilling	None	None	APF 10

Equipment/Use	Photo of representative equipment	Engineering and work practice control methods • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. • Operate and maintain machine to minimize dust emissions	NREL Respiratory Protection for compliance with ACGIH TLV of 25 µg/m^3 Select column that corresponds to maximum length of time task is conducted (e.g. Task 6 for 5 hours of work. Work must begin in APF 10 respirator.		
			<2 hr./ shift	2-4 hr./ shift	>4 hr./ shift
4 Handheld Grinders for mortar removal (*i.e.*, tuckpointing) [Per 29 CFR 1926.1153 c.1.xi]		https://www.osha.gov/Publications/silica/OSHA_FS-3632.pdf Use grinder equipped with commercially available shroud and dust collection system. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism. ▪Ensure that the shroud is intact, encloses most of the grinding blade, and is installed in accordance with the manufacturer's instructions; ▪The hose connecting the tool to the vacuum is intact and without kinks or tight bends; ▪The filter(s) on the vacuum are cleaned or changed in accordance with the manufacturer's instructions; ▪The dust collection bags are emptied to avoid overfilling; ▪The blade is kept flush against the surface whenever possible; and ▪The tool is operated against the direction of blade rotation, whenever practical.	APF 10	APF 25	APF 50
5 Handheld Grinders for uses other than mortar removal [Per 29 CFR 1926.1153 c.1.xii]		https://www.osha.gov/Publications/silica/OSHA_FS-3628.pdf Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface. ▪Ensure that an adequate supply of water for dust suppression is used; ▪The spray nozzles are working properly and produce a pattern that applies water at the point of dust generation; ▪The spray nozzles are not clogged or damaged; and ▪All hoses and connections are intact. or use grinder equipped with commercially available shroud and dust collection system. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism. ▪Ensure that the shroud is intact and installed in accordance with the manufacturer's instructions; ▪The hose connecting the tool to the vacuum is intact and without kinks or tight bends; ▪The filter(s) on the vacuum are cleaned or changed in accordance with the manufacturer's instructions; and ▪The dust collection bags are emptied to avoid overfilling. For tasks performed outdoors only:	None	None	APF 10
		When used indoors or in an enclosed area (Above conditions for outdoor tasks apply as well):	None	APF 10	APF 25
6 Stationary Masonry Saws [Per 29 CFR 1926.1153 c.1. i]		https://www.osha.gov/Publications/silica/OSHA_FS-3631.pdf Use saw equipped with integrated water delivery system that continuously feeds water to the blade. ▪Ensure that an adequate supply of water for dust suppression is used; ▪The spray nozzle is working properly to apply water at the point of dust generation; ▪The spray nozzle is not clogged or damaged; and ▪All hoses and connections are intact.	None	None	APF 10

Equipment/Use	Photo of representative equipment	Engineering and work practice control methods • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. • Operate and maintain machine to minimize dust emissions	NREL Respiratory Protection for compliance with ACGIH TLV of 25 µg/m³ Select column that corresponds to maximum length of time task is conducted (e.g. Task 7 outdoors for 3 hours of work. Work must begin in APF 10 respirator.		
			<2 hr./ shift	2-4 hr./ shift	>4 hr./ shift
7 Jackhammers and Handheld Powered Chipping Tools [Per 29 CFR 1926.1153 c.1.x]		https://www.osha.gov/Publications/silica/OSHA_FS-3629.pdf Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact. ■Ensure that an adequate supply of water for dust suppression is used; ■The water sprays are working properly and produce a pattern that applies water at the point of dust generation; ■The spray nozzles are not clogged or damaged; and ■All hoses and connections are intact. When used outdoors:	None	APF 10	APF 25
		-When used indoors or in an enclosed area (conditions above for outdoor tasks apply).	APF 10	APF 25	APF 25
		Use tool equipped with commercially available shroud and dust collection system. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. ■Ensure that the shroud is intact and installed in accordance with the manufacturer's instructions; ■The hose connecting the tool to the vacuum is intact and without kinks or tight bends; ■The filter(s) on the vacuum are cleaned or changed in accordance with the manufacturer's instructions; and ■The dust collection bags are emptied to avoid overfilling. -When used outdoors.	None	APF 10	APF 25
		-When used indoors or in an enclosed area (conditions above for outdoor tasks apply).	APF 10	APF 25	APF 25
8 Walk-behind Saws [Per 29 CFR 1926.1153 c.1.iv]		https://www.osha.gov/Publications/silica/OSHA_FS-3633.pdf Use saw equipped with integrated water delivery system that continuously feeds water to the blade.: ■Ensure that an adequate supply of water for dust suppression is used; ■The spray nozzles are working properly to apply water at the point of dust generation; ■The spray nozzles are not clogged or damaged; and ■All hoses and connections are intact. When used outdoors:	None	None	APF 10
		When used indoors or in an enclosed area (conditions above for outdoor tasks apply).	APF 10	APF 25	APF 25
9 Walk-behind milling machines and floor grinders [Per 29 CFR 1926.1153 c.1.xiii]		https://www.osha.gov/Publications/OSHA3932.pdf Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface. ■Ensure that an adequate supply of water for dust suppression is used; ■The spray nozzles are working properly and produce a pattern that applies water at the point of dust generation; ■The spray nozzles are not clogged or damaged; and ■All hoses and connections are intact.	None	None	APF 10
		Use machine equipped with dust collection system recommended by the manufacturer. Dust collector must provide the air flow recommended by the manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. ■Ensure that the hose connecting the tool to the vacuum is intact and without kinks or tight bends; ■The filter(s) on the vacuum are cleaned or changed in accordance with the manufacturer's instructions to prevent clogging; and ■The dust collection bags are emptied to avoid overfilling. When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes.	None	None	APF 10

Equipment/Use	Photo of representative equipment	Engineering and work practice control methods • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. • Operate and maintain machine to minimize dust emissions	NREL Respiratory Protection for compliance with ACGIH TLV of 25 µg/m³ Select column that corresponds to maximum length of time task is conducted (e.g. Task 11 for 5 hours of work. Work must begin in APF 10 respirator.

			<2 hr./ shift	2-4 hr./ shift	>4 hr./ shift
10 **Drivable Saws** [Per 29 CFR 1926.1153 c.1. v]		https://www.osha.gov/Publications/OSHA3928.pdf For tasks performed outdoors only: Use saw equipped with integrated water delivery system that continuously feeds water to the blade. ■Ensure that an adequate supply of water for dust suppression is used; ■The spray nozzles produce a pattern that applies water at the point of dust generation; ■The spray nozzles are not clogged or damaged; and ■All hoses and connections are intact.	None	None	APF 10
11 **Rig-mounted Core Saws or Drills** [Per 29 CFR 1926.1153 c.1. vi]		https://www.osha.gov/Publications/OSHA3929.pdf Use tool equipped with integrated water delivery system that supplies water to cutting surface. ■Ensure that an adequate supply of water for dust suppression is used; ■The spray nozzles produce a pattern that applies water at the point of dust generation; ■The spray nozzles are not clogged or damaged; and ■All hoses and connections are intact.	None	None	APF 10
12 **Dowel Drilling Rigs for Concrete** [Per 29 CFR 1926.1153 c.1. viii]		https://www.osha.gov/Publications/OSHA3930.pdf For tasks performed outdoors only: Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes. ■Ensure that the shroud is intact and installed in accordance with the manufacturer's instructions; ■The hose connecting the tool to the vacuum is intact and without kinks or tight bends; ■The filter(s) on the vacuum are cleaned or changed in accordance with the manufacturer's instructions; and ■The dust collection bags are emptied to avoid overfilling.	APF 10	APF 25	APF 25
13 **Vehicle-mounted Drilling Rigs for Rock and Concrete** [Per 29 CFR 1926.1153 c.1.ix]		https://www.osha.gov/Publications/OSHA3931.pdf Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector. ■Ensure that the shroud or hood is intact and installed in accordance with the manufacturer's instructions; ■The hose connecting the tool to the vacuum is intact and without kinks or tight bends; ■The filter(s) on the vacuum are cleaned or changed in accordance with the manufacturer's instructions; and ■The dust collection bags are emptied to avoid overfilling or:	None	None	APF 10
		Operate from within an enclosed cab and use water for dust suppression on drill bit. ■ Ensure that an adequate supply of water for dust suppression is used; ■The spray nozzles are working properly and produce a pattern that applies water on the discharge point from the dust collector; ■The spray nozzles are not clogged or damaged; and ■All hoses and connections are intact.	None	None	APF 10

Equipment/Use	**Photo of representative equipment**	**Engineering and work practice control methods** • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. • Operate and maintain machine to minimize dust emissions	**NREL Respiratory Protection** for compliance with ACGIH TLV of 25 µg/m^3 **Select column that corresponds to maximum length of time task is conducted (e.g. Task 14 for 5 hours of work. Work must begin in APF 10 respirator.**

			<2 hr./ shift	2-4 hr./ shift	>4 hr./ shift
14 Small Drivable Milling Machines (less than half-lane) [Per 29 CFR 1926.1153 c.1.xiv]		https://www.osha.gov/Publications/OSHA3933.pdf Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant. Ensure that: ▪An adequate supply of water for dust suppression is used; ▪The spray nozzles are working properly and produce a pattern that applies water at the point of dust generation; ▪The spray nozzles are not clogged or damaged; and ▪All hoses and connections are intact.	None	None	APF 10
15 Large Drivable Milling Machines (half-lane and larger) [Per 29 CFR 1926.1153 c.1.xv]		https://www.osha.gov/Publications/OSHA3934.pdf For cuts of any depth on asphalt only: Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust.	None	None	APF 10
		For cuts of four inches in depth or less on any substrate: Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust.	None	None	APF 10
		For cuts of four inches in depth or less on any substrate: Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant. Or use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions	None	None	APF 10
16 Crushing machines [Per 29 CFR 1926.1153 c.1. xvi		https://www.osha.gov/Publications/OSHA3935.pdf Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyers, sieves/sizing or vibrating components, and discharge points). OSHA: <4hr- none; >4hr- none Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote-control station. Ensure that: ▪ Nozzles are located upstream of dust generation points and positioned to thoroughly wet the material; ▪The volume and size of droplets is adequate to sufficiently wet the material (optimal droplet size is between 10 and 150 µm); and ▪Spray nozzles are located far enough from the target area to provide complete water coverage but not so far that the water is carried away by wind.	None	None	APF 10

Equipment/Use	**Photo of representative equipment**	**Engineering and work practice control methods** • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. • Operate and maintain machine to minimize dust emissions	**NREL Respiratory Protection** for compliance with ACGIH TLV of 25 µg/m^3 **Select column that corresponds to maximum length of time task is conducted (e.g. Task 18 for 5 hours of work. Work must begin in APF 10 respirator.**		
			<2 hr./ shift	2-4 hr./ shift	>4 hr./ shift

17 **Heavy Equipment and Utility Vehicles** used to abrade or fracture silica-containing materials (*e.g.*, hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials [Per 29 CFR 1926.1153 c.1.xvii]		https://www.osha.gov/Publications/OSHA3936.pdf Operate equipment from within an enclosed cab. When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions	None	None	APF 10
18 **Heavy Equipment and Utility Vehicles** for tasks such as grading and excavating but not including: Demolishing, abrading, or fracturing silica-containing materials [Per 29 CFR 1926.1153 c.1. xviii]		https://www.osha.gov/Publications/OSHA3937.pdf Apply water and/or dust suppressants as necessary to minimize dust emissions or	None	None	APF10
		When the equipment operator is the only worker engaged in the task operate equipment from within an enclosed cab.	None	None	APF10

NREL Guidance for Drywall Work		NREL allows drywall sanding up to 5 hours per day without the use of respirators as long as engineering controls (sanders equipped with HEPA vacuums) are used. 1. OSHA Silica PEA "OSHA has data indicating that an alternative PEL of 25 µg/m3 has already been achieved in several industries (e.g. asphalt paving products, dental laboratories, mineral processing, and paint and coatings manufacturing in general industry, and drywall finishers and heavy equipment operators in construction). In these industries, airborne respirable silica concentrations are inherently low because either small amounts of silica containing materials are handled or these materials are not subjected to high energy processes that general large amounts of respirable dust. " 2. NIOSH HHE 2019 Drywall Sanding –"The RCS exposure of the employee using the power sander was well below all relevant OELs." However, the TLV for respirable dust would be exceeded at exposure times exceeding 360 minutes. 3. OSHA Interpretative Letter July 25, 2019 '**Question 9:** Drywall and drywall joint compound frequently contain only trace amounts of silica (frequently less than 1 percent). Is work on or with such materials covered by the standard? **Response:** The RCS standard does not include an exemption based on the silica content of materials used. However, OSHA anticipates that employee exposures will typically remain below 25 µg/m^3 as an 8-hour TWA when working with drywall or sanding joint compound that contains crystalline silica only as a trace contaminant, provided that the sanding is performed in isolation from other silica-generating tasks. Therefore, these tasks will generally be excluded from the scope of the standard per 29 CFR 1926.1153(a). However, employers should be aware that exposures *could* reach or exceed 25 µg/m^3 as an 8-hour TWA in situations where employees are working with drywall or sanding joint compound for long periods of time in very dusty conditions. In such cases, employers must comply with the silica standard, including paragraph (d) ("alternative exposure control methods"), which requires employers to assess and limit the silica exposures of affected employees. See 29 CFR 1926.1153(d). OSHA notes that dry sanding joint compound can potentially generate high levels of nuisance dust. Employers conducting such activities must implement control measures as necessary to limit employee exposure to nuisance dust. See 29 CFR 1926.55 Appendix A, *Particulates not otherwise regulated*." 4. NREL sample results – 4 samples using Full Circle Dust-Free Sanding System and a Magna Mt800 Sand & Kleen Hand Sander System with a hose attachment and a HEPA-filtered vacuum during sanding activities. Three samples <LOD 206-274 minute samples. One sample 16.7 ug/m3 8-hr TWA for 207 minute sample. TWA would have been exceeded if work was longer aprox. 300 min. All samples for respirable crystalline silica (RCS). 5. NREL RAIL sample results – 5 samples <LOD (4) to 2 ug/m3 (1) 8 hr TWA RCS. Employees utilized power sanders equipped with a Bosch GAS20-17A, 300 CFM "HEPA-Ready" vacuum	None	None	> 5 hr
NREL Guidance for Mixing Concrete and Grout		<u>Respirable Silica Exposure – Required Engineering Controls, Work Practices and Housekeeping:</u> 1. Use wet methods as described below: • Wet the internal drum/pan first • Place bag inside drum/pan • Wet down the bag inside the drum/pan • Open the bag with a knife and mist the bag while removing the bag/packaging from the drum/pan • Continually mist and wet the contents while mixing 2. Operate and maintain tools in accordance with manufacturer's instructions to minimize dust emissions. 3. Dust containing silica on work surfaces/equipment must be cleaned up using wet methods or HEPA equipped vacuum. 4. When using a vacuum, ensure all dust has been pulled from the hose by turning the hose up vertically and shaking it while the vacuum is still running. 5. Use of compressed air or dry sweeping for removing dust and debris containing silica is **prohibited**. Dispose of used vacuum bags/silica contained dust in a closed sealed container. 6. **Time Limitations:** Not to exceed 8 hours in one workday. 7. **Quantity Limitations:** Workers must not exceed 420 lbs. (dry weight) of Quikrete or equivalent.	None < 420 lbs.	None < 420 lbs	None < 420 lbs

When implementing the control measures specified in the table, each employer shall:
For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust;

For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust;
For measures implemented that include an enclosed cab or booth, ensure that the enclosed cab or booth:
Is maintained as free as practicable from settled dust;
Has door seals and closing mechanisms that work properly;
Has gaskets and seals that are in good condition and working properly;
Is under positive pressure maintained through continuous delivery of fresh air;
Has intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0 µm range (*e.g.*, MERV-16 or better); and
Has heating and cooling capabilities.

Multiple Tasks Performed on the Same Day

Where a worker performs more than one task on the table during a shift, and the total duration of tasks combined is greater than 4 hours, the required respiratory protection for each task is the respiratory protection specified for greater than 4 hours per shift. If the total duration of tasks in the table combined is between 2-4 hours, the required respiratory protection for each task is the respiratory protection specified for 2-4 hours. If the total duration of tasks in the table combined is less than 2 hours, the required respiratory protection for each task is the respiratory protection specified for less than 2 hours per shift.

Basis for NREL Adopted Respiratory Protection APF

The NREL Adopted APF modifies the OSHA APF for compliance with the ACGIH TLV of 25 µg/m3. OSHA PEL is used to back calculate the maximum concentration associated with the controls listed – time, respirator, or time and respirator. Choose the concentration associated with the same controls when performing the calculation to achieve 25 µg/m3.

*For tasks where OSHA did not restrict exposure duration (time) or require respirators, assumed maximum concentration is 50 µg/m3. This applies to row one tasks only (green row) Equations reflect control for time first (divide by 4 or 2), then a second division for respirator. **NOTE: Select column that corresponds to maximum length of time task is conducted for determining respirator requirements. (e.g. Task 6 for 5 hours of work. Work must begin in APF 10 respirator).** For example, **do not** begin work under ≤ 2 hours/shift requirements then if work takes more than 2 hours select the respirator requirement for the ≤ 4 hours/shift and continue working.

Note:
Division by 2 accounts for 4-hour exposure duration versus the PEL based 8-hr exposure.
Division by 4 accounts for 2-hour exposure duration
Division by 10, 25, or 50 accounts for the respirator APF reduction.

OSHA PEL = 50 µg/m3			ACGIH TLV = 25 µg/m3			OSHA Table 1 Tasks
≤ 4 hours/shift	> 4 hours/shift		≤ 2 hours/shift	≤ 4 hours/shift	> 4 hours/shift	
None*	None*		None	None	APF 10	3, 4, 5, 12 outdoors, 1, 6, 7, 8 outdoors, 9, 13, 14, 15, 16, 17, 18
50 µg/m3	**50 µg/m3**		50/4=12.5	50/2=25	50/10 = 5	
None (time only)	APF 10 (respirator only)		None	APF 10	APF 25	2 outdoors, 10 outdoors, 12 indoors/enclosed,
100/2=50 **100 µg/m3**	500/10=50 **500 µg/m3**		100/4=25	100/2=50 500/2/10=25	500/10=50 500/25=20	
APF 10 (time & respirator)	APF 10 (respirator only)		APF 10	APF 25	APF 25	2 indoors/enclosed, 4 indoors/enclosed,

1000/2/10 = 50 **1000 µg/m3**	500/10=50 **500 µg/m3**		1000/4/10=25	1000/2/10=50 APF 10 not protective enough 1000/2/25=20	500/10=50 500/25=20	8 indoors, 10 indoors/enclosed
APF 10 (time and respirator)	APF 25 (respirator only)		APF 10	APF 25	APF 50	11
1000/2/10=50 **1000 µg/m3**	1250/25=50 **1250 µg/m3**		1000/4/10=25	1000/2/10=50 1000/2/25=20	1250/25=50 1250/50=25	

In the Preamble to 29 CFR1925.1153 in the Federal Register Vol 81, No 58 (pages 16461-16463), OSHA discussed the adequacy of use of 29 CFR 1925.1153c.1 Table 1 for compliance with the OSHA Action Level of 25 µg/m3. The OSHA table does not ensure compliance with 25 µg/m3. The OSHA Action Level and the ACGIH TLV are both 25 µg/m3, thus this comparison is appropriate to be used for U.S. Department of Energy (DOE)-mandated ACGIH TLV. To address the lower TLV value, when OSHA's Table 1 provided an APF, NREL has reduced the exposure time or increased the APF value as necessary to ensure that the 25 µg/m3 TLV is not exceeded. For instance, if the OSHA Table 1 listed APF=10, NREL set the APF=25-50 to ensure that the TLV is not exceeded. When OSHA listed "None" for 8-hours, NREL may have adopted APF=10 as needed. NREL added the <2 hour/shift column to allow safe exposure without respiratory protect when possible.

Table Implementation Examples

1. Task 2 Handheld Power Saws (any blade diameter, outdoors) 3 hrs. and then Task 1 Handheld and Stand-Mounted Drills 2 hrs. = Start work in APF 10 respirator and worker must continue to wear APF for remainder of the day 5 hrs. total. WHY? Because worker has already received exposure of 25 ug/m3 (TLV) after 2 hrs. of Task 2 so even though Task 1 doesn't require APF 10 until >4 hrs. daily 8-hr. TWA has been met.

2. Reverse of above: Task 1 Handheld and Stand-Mounted Drills 2 hrs. and then Task 2 Handheld Power Saws (any blade diameter, outdoors) 3 hrs. Start work in APF 10 respirator and worker must continue to wear APF for remainder of the day 5 hrs. total. WHY? Because worker received 50 % of dose towards 8-hr TWA for Task 1 (2 hrs.) and 100% of dose from 2 hrs. of work at Task 2 so worker would be overexposed (> 100% of 8-hr TWA) by hour 4.

3. Task 8 Walk-behind Saws (outdoors) 3 hrs. and then 3 hrs. Task 18 Heavy Equipment and Utility Vehicles (only worker in enclosed cab). 3 hrs. of Task 8 out of 4 hrs. allowed w/o respirator = ¾ =.75 (75% dose) + Task 18 3 hrs. = 3 hrs. of Task 18 out of 4 hrs. allowed w/o respirator = ¾ =.75 (75% dose) + 75% Task 8 = 150% so need to start workday in APF 10.

4. Task 7 Jackhammers and Hand-Held Powered Chipping Tools (indoors) 1 hr. and then Task 8 Walk-behind Saws (indoors) 1 hr. 1 hr. of Task 8 out of 2 hrs. allowed with APF 10 respirator =1/2 =.5 (50% dose) + Task 8 1 hrs. = 1 hr. of Task 8 out of 2 hrs. allowed with APF 10 respirator =1/2 =.5 (50% dose) + 50% Task 8 = 100% so need to start work day in APF 10 and wear until completion of both tasks.

5. Task 2 Handheld Power Saws (any blade diameter, outdoors) ¾ hrs. and then Task 2 Handheld Power Saws (any blade diameter, indoors) ¾ hrs. Start work in APF 10 respirator.

6. Task 2 Handheld Power Saws (any blade diameter, outdoors) 1.9 hrs. and then Task 2 Handheld Power Saws (any blade diameter, indoors) 1 hr. Start work in APF 25 respirator. Why? Because 1.9 hrs. Task 2 outdoors = 1.9/2 = 0.95 + Task 2 indoors 1 hr = ½ = 0.5 + 1.9 = 2.4

Work Tasks not Included in the NREL Silica Control Measures Table

For tasks not listed in the NREL Silica Control Measures Table, or where it is not possible to fully implement the engineering controls, work practices, and respiratory protection described, respiratory protection and exposure assessment is required unless exposure will remain below the TLV under foreseeable circumstances. Employers must develop and implement a written exposure control plan. Plan(s) are specific to the tasks performed. This is completed by the ESH POC for workers and completed by subcontractors for subcontracted work. The ESH POC reviews and accepts the subcontractor plan. An exposure control plan template is available to subcontractors through the NREL ESH – Subcontractors Documents website. The plan contains at least the following elements incorporated in the Construction Subcontractor Safe Work Permit (for NREL work incorporated into the construction SWP/SOP):

- A description of the tasks in the workplace that involve exposure to respirable crystalline silica
- A description of the engineering controls, administrative controls, work practices, and respiratory protection used to limit worker exposure to respirable crystalline silica for each task
- A description of the housekeeping measures used to limit worker exposure to respirable crystalline silica
- A description of the procedures used to restrict access to work areas, when necessary, to minimize the number of workers exposed to respirable crystalline silica and their level of exposure, including exposures generated by other employers or sole proprietors.

- A description of the engineering controls, administrative controls, work practices, and respiratory protection used to limit worker exposure to respirable crystalline silica for each task
- A description of the housekeeping measures used to limit worker exposure to respirable crystalline silica
- A description of the procedures used to restrict access to work areas, when necessary, to minimize the number of workers exposed to respirable crystalline silica and their level of exposure, including exposures generated by other employers or sole proprietors.