

**TABLE 1:  
Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica**

| Equipment/Task  | Engineering and Work Practice Control Methods   | Required Respiratory Protection and Minimum Assigned Protection Factor (APF) |                  |
|---|---|--|------------------|
|   |   | ≤ 4 hours /shift   | > 4 hours /shift |
| <b>(i) Stationary masonry saws</b>  | <p>Use saw equipped with integrated water delivery system that continuously feeds water to the blade.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p>   | None   | None             |
| <b>(ii) Handheld power saws (any blade diameter)</b>  | <p>Use saw equipped with integrated water delivery system that continuously feeds water to the blade.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <ul style="list-style-type: none"> <li>• When used outdoors.</li> <li>• When used indoors or in an enclosed area.</li> </ul>  | None<br>APF 10   | None<br>APF 10   |
| <b>(iii) Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less)</b> | <p>For tasks performed <u>outdoors only</u>:</p> <ul style="list-style-type: none"> <li>• Use saw equipped with commercially available dust collection system.</li> <li>• Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</li> <li>• Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency.</li> </ul> | None   | None             |
| <b>(iv) Walk-behind saws</b>  | <p>Use saw equipped with integrated water delivery system that continuously feeds water to the blade.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions:</p> <ul style="list-style-type: none"> <li>• When used outdoors.</li> <li>• When used indoors or in an enclosed area.</li> </ul>  | None<br>APF 10   | None<br>APF 10   |

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| <b>(v) Drivable saws</b>   | <p>For tasks performed <u>outdoors only</u>:</p> <ul style="list-style-type: none"> <li>• Use saw equipped with integrated water delivery system that continuously feeds water to the blade.</li> <li>• Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</li> </ul>   | None   | None             |
| <b>(vi) Rig-mounted core saws or drills</b>  | <p>Use tool equipped with integrated water delivery system that supplies water to cutting surface.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p>  | None   | None             |
| <b>(vii) Handheld and stand-mounted drills (including impact and rotary hammer drills)</b> | <p>Use drill equipped with commercially available shroud or cowling with dust collection system.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>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.</p> <p>Use a HEPA-filtered vacuum when cleaning holes.</p> | None   | None             |
| <b>(viii) Dowel drilling rigs for concrete</b>   | <p>For tasks performed <u>outdoors only</u>:</p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>   | APF 10   | APF 10           |

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| <b>(ix) Vehicle-mounted drilling rigs for rock and concrete</b> | 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.   | None   | None             |
|   | OR<br><br>Operate from within an enclosed cab and use water for dust suppression on drill bit.  | None   | None             |
| <b>(x) Jackhammers and handheld powered chipping tools</b>      | Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact: <ul style="list-style-type: none"> <li>• When used outdoors.</li> <li>• When used indoors or in an enclosed area.</li> </ul>  | None<br>APF 10   | APF 10<br>APF 10 |
|   | OR<br><br>Use tool equipped with commercially available shroud and dust collection system.<br><br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.<br><br>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: <ul style="list-style-type: none"> <li>• When used outdoors.</li> <li>• When used indoors or in an enclosed area.</li> </ul> | None<br>APF 10   | APF 10<br>APF 10 |

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|   |  | ≤ 4 hours /shift   | > 4 hours /shift |
| <b>(xi) Handheld grinders for mortar removal (i.e., tuckpointing)</b> | <p>Use grinder equipped with commercially available shroud and dust collection system.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>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.</p>  | APF 10   | APF 25           |
| <b>(xii) Handheld grinders for uses other than mortar removal</b>     | <p>For tasks performed <u>outdoors only</u>:</p> <p>Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>OR</p> <p>Use grinder equipped with commercially available shroud and dust collection system.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>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:</p> <ul style="list-style-type: none"> <li>• When used outdoors.</li> <li>• When used indoors or in an enclosed area.</li> </ul> | None   | None             |
|   |  | None   | None             |
|   |  | None   | APF 10           |

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|  |   | ≤ 4 hours /shift   | > 4 hours /shift |
| <b>(xiii) Walk-behind milling machines and floor grinders</b>      | Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface.<br><br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.  | None   | None             |
|  | OR<br><br>Use machine equipped with dust collection system recommended by the manufacturer<br>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.<br><br>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.<br><br>When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes. | None   | None             |
| <b>(xiv) Small drivable milling machines (less than half-lane)</b> | Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant.<br><br>Operate and maintain machine to minimize dust emissions.  | None   | None             |

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|  |  | ≤ 4 hours /shift   | > 4 hours /shift |
| <b>(xv) Large drivable milling machines (half-lane and larger)</b> | For cuts of any depth on asphalt only:<br><br>Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust.<br><br>Operate and maintain machine to minimize dust emissions.   | None   | None             |
|  | For cuts of four inches in depth or less on any substrate:<br><br>Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust.<br><br>Operate and maintain machine to minimize dust emissions.   | None   | None             |
|  | OR<br><br>Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant.<br><br>Operate and maintain machine to minimize dust emissions.  | None   | None             |
| <b>(xvi) Crushing machines</b>                                     | 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).<br><br>Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions.<br><br>Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote-control station. | None   | None             |

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|  |  | ≤ 4 hours /shift   | > 4 hours /shift |
| <b>(xvii) 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</b> | Operate equipment from within an enclosed cab.   | None   | None             |
|  | 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             |
| <b>(xviii) Heavy equipment and utility vehicles for tasks such as grading and excavating but not including: Demolishing, abrading, or fracturing silica-containing materials</b>                                       | Apply water and/or dust suppressants as necessary to minimize dust emissions.  | None   | None             |
|  | When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab.                     | None   | None             |