

**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 |
| (i) Stationary masonry saws | <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 |
| (ii) Handheld power saws (any blade diameter) | <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> | | |
| | <p>– When used outdoors.</p> <p>– When used indoors or in an enclosed</p> | <p>None</p> <p>APF 10</p> | <p>None</p> <p>APF 10</p> |
| (iii) Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less) | <p>For tasks performed outdoors only:</p> <p>Use saw equipped with commercially available 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.</p> | None | None |

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| | | ≤ 4 hours /shift | > 4 hours /shift |
| (iv) Walk-behind saws | <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"> – When used outdoors. – When used indoors or in an enclosed area. | <p>None</p> <p>APF 10</p> | <p>None</p> <p>APF 10</p> |
| (v) Drivable saws | <p>For tasks performed outdoors only:</p> <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> | <p>None</p> | <p>None</p> |
| (vi) Rig-mounted core saws or drills | <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> | <p>None</p> | <p>None</p> |

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| | | ≤ 4 hours /shift | > 4 hours /shift |
| (vii) Handheld and stand-mounted drills (including impact and rotary hammer drills) | <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 |
| (viii) Dowel drilling rigs for concrete | <p>For tasks performed outdoors only:</p> <p>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.</p> <p>Use a HEPA-filtered vacuum when cleaning holes.</p> | APF 10 | APF 10 |

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| | | ≤ 4 hours /shift | > 4 hours /shift |
| (ix) Vehicle-mounted drilling rigs for rock and concrete | 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 Operate from within an enclosed cab and use water for dust suppression on drill bit. | None | None |

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| | | ≤ 4 hours /shift | > 4 hours /shift |
| (x) Jackhammers and handheld powered chipping tools | Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact. | | |
| | – When used outdoors. | None | APF 10 |
| | – When used indoors or in an enclosed area. | APF 10 | APF 10 |
| | OR | | |
| | Use tool equipped with commercially available shroud and dust collection system. | | |
| | Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. | | |
| | 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. | | |
| | – When used outdoors. | None | APF 10 |
| | – When used indoors or in an enclosed area. | APF 10 | APF 10 |

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| | | ≤ 4 hours /shift | > 4 hours /shift |
| (xi) Handheld grinders for mortar removal (i.e., tuckpointing) | <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 |
| (xii) Handheld grinders for uses other than mortar removal | <p>For tasks performed outdoors only:</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> | None | None |

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| | | ≤ 4 hours /shift | > 4 hours /shift |
| | <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"> – When used outdoors. – When used indoors or in an enclosed area. | <p>None</p> <p>None</p> | <p>None</p> <p>APF 10</p> |

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| | | ≤ 4 hours /shift | > 4 hours /shift |
| (xiii) Walk-behind milling machines and floor grinders | <p>Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface.</p> <p>Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.</p> <p>OR</p> | None | None |
| | <p>Use machine equipped with dust collection system recommended by the manufacturer.</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 manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism.</p> <p>When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes.</p> | None | None |

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| | | ≤ 4 hours /shift | > 4 hours /shift |
| (xiv) Small drivable milling machines (less than half-lane) | Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions. | None | None |

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| | | ≤ 4 hours /shift | > 4 hours /shift |
| (xv) Large drivable milling machines (half-lane and larger) | <p>For cuts of any depth on asphalt only:</p> <p>Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust.</p> <p>Operate and maintain machine to minimize dust emissions.</p> | None | None |
| | <p>For cuts of four inches in depth or less on any substrate:</p> <p>Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust.</p> <p>Operate and maintain machine to minimize dust emissions.</p> | None | None |
| | <p>OR</p> <p>Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant.</p> <p>Operate and maintain machine to minimize dust emissions.</p> | None | None |

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| (xvi) Crushing machines | <p>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).</p> <p>Operate and maintain machine in accordance with manufacturer’s instructions to minimize dust emissions.</p> <p>Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station.</p> | None | None |
| (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 | <p>Operate equipment from within an enclosed cab.</p> <p>When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions.</p> | None | None |

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