# Table 1: Task Based Protection

| **Equipment/task** | **Engineering and work practice controls** | **Required respiratory protection and minimum assigned protection factor (APF)** | |
| --- | --- | --- | --- |
| **≤4 hours/shift** | **>4 hours/shift** |
| Stationary masonry saws | Use saw equipped with integrated water delivery system that continuously feeds water to the blade | None | None |
|  | Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions |  |  |
| Handheld power saws (any blade diameter) | Use saw equipped with integrated water delivery system that continuously feeds water to the blade |  |  |
|  | Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions: |  |  |
|  | —When used outdoors | None | APF 10 |
|  | —When used indoors or in an enclosed area | APF 10 | APF 10 |
| Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less) | For tasks performed outdoors only:  Use saw equipped with commercially available dust collection system Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions | None | None |
|  | Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency |  |  |
| Walk-behind saws | Use saw equipped with integrated water delivery system that continuously feeds water to the blade |  |  |
|  | Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions: |  |  |
|  | —When used outdoors | None | None |
|  | —When used indoors or in an enclosed area | APF 10 | APF 10 |
| Drivable saws | For tasks performed outdoors only: |  |  |
|  | Use saw equipped with integrated water delivery system that continuously feeds water to the blade | None | None |
|  | Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions |  |  |
| Rig-mounted core saws or drills | Use tool equipped with integrated water delivery system that supplies water to cutting surface | None | None |
|  | Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions |  |  |
| Handheld and stand-mounted drills (including impact and rotary hammer drills) | Use drill equipped with commercially available shroud or cowling with dust collection system | None | None |
|  | 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 |  |  |
|  | Use a HEPA-filtered vacuum when cleaning holes |  |  |
| Dowel drilling rigs for concrete | 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 | APF 10 | APF 10 |
|  | Use a HEPA-filtered vacuum when cleaning holes |  |  |
| 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 |
| 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 |
| Handheld grinders for mortar removal (*i.e.*, tuckpointing) | Use grinder equipped with commercially available shroud and dust collection system | APF 10 | APF 25 |
|  | Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions |  |  |
|  | 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 |  |  |
| Handheld grinders for uses other than mortar removal | For tasks performed outdoors only:  Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface | None | None |
|  | Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions |  |  |
|  | OR |  |  |
|  | Use grinder 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 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: |  |  |
|  | —When used outdoors | None | None |
|  | —When used indoors or in an enclosed area | None | APF 10 |
| Walk-behind milling machines and floor grinders | Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface | None | None |
|  | Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions |  |  |
|  | OR |  |  |
|  | Use machine equipped with dust collection system recommended by the manufacturer | None | None |
|  | Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions |  |  |
|  | 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 |  |  |
|  | When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes |  |  |
| 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 | None | None |
|  | Operate and maintain machine to minimize dust emissions |  |  |
| Large drivable milling machines (half-lane and larger) | 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 |
|  | Operate and maintain machine to minimize dust emissions |  |  |
|  | 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 |
|  | Operate and maintain machine to minimize dust emissions |  |  |
|  | OR |  |  |
|  | Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant | None | None |
|  | Operate and maintain machine to minimize dust emissions |  |  |
| Crushing machines | 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) | None | None |
|  | Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions |  |  |
|  | Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station |  |  |
| 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 | 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 |
| 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  OR | None | None |
|  | When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab | None | None |