

Construction Industry — Table 1

(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> <p><i>Control Methods-Water Integrated System</i></p>	None	None
<p>CONSTRUCTION INDUSTRY</p> <p>TABLE 1: SPECIFIED EXPOSURE CONTROL METHODS WHEN WORKING WITH MATERIALS CONTAINING CRYSTALLINE SILICA</p>			
Equipment/Task	Engineering Control (EC) and Work Practice (WP) Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (AFP)	

≈ 4 hours
per shift

	<p>With manufacturer's instructions to minimize dust emissions.</p> <ul style="list-style-type: none"> ○ Deliver water flow rates of at least 0.6 liters per minute or per manufacturer's instructions. Will need to have source of water either via water hook-up or water tank. ○ Adjust water flow to minimize dust. <p>Other considerations,</p> <ul style="list-style-type: none"> ○ Remove and properly dispose of dust-laden water before it dries to prevent re-entrainment of dust into the air. ○ Use a HEPA vacuum to clean up dried slurry. ○ To keep water from freezing, use heat tape to wrap tanks or use environmentally friendly anti-freeze additive. ○ When used indoors or an enclosed area, general or exhaust ventilation may be necessary to prevent the accumulation of airborne dust in the work area. <p>Training,</p> <ul style="list-style-type: none"> ○ How to conduct a pre-operative check. ○ Safe operating procedures. ○ Level of water flow required. ○ How water flow should be directed on the blade. ○ When to change dust laden water in the basin. ○ How to recognize signs that exposure controls need to be checked. 		
	<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 area.</p> <p><i>Control Methods-Water Integrated System</i></p>		

	<p>Before operating the handheld power saw [Add each tool make and model] to cut concrete, the employee must</p> <ul style="list-style-type: none"> ○ Examine saw blade for signs of cracks, de-bonding, or excessive wear. ○ Examine the water pump and tubing to ensure it is connected and not showing signs of leaking. ○ Ensure water supply is adequate and able to be delivered continuously. <p>While cutting concrete, the employee must</p> <ul style="list-style-type: none"> ○ Operate and maintain tool in accordance with manufacturer’s instructions to minimize dust emissions. ○ Deliver water flow rates of at least 0.6 liters per minute or per manufacturer's instructions. Will need to have source of water either via water hook-up or water tank. ○ Adjust water flow to minimize dust. <p>Other considerations,</p> <ul style="list-style-type: none"> ○ When used indoors or an enclosed area, general or exhaust ventilation may be necessary to prevent the accumulation of airborne dust in the work area. ○ Remove and properly dispose of dust laden water before it dries to prevent re-entrainment of dust into the air. ○ Use a HEPA vacuum to clean up dried slurry. ○ To keep water from freezing, use heat tape to wrap tanks or use environmentally friendly anti-freeze additive. <p>Training,</p> <ul style="list-style-type: none"> ○ How to conduct a pre-operative check. ○ Safe operating procedures. ○ Level of water flow required. ○ How water flow should be directed on the blade. ○ How to recognize signs that exposure controls need to be checked. 		
(iii) Handheld drills and stand-mounted drills (including impact	Use drill equipped with commercially available shroud or cowling with dust collection system.	None	None

<p>and rotary hammer drills)</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> <p><u>Control Methods-Dust Collection System</u></p> <p>Before operating the handheld drill [Add each tool make and model] to drill concrete, the employee must</p> <ul style="list-style-type: none"> ○ Examine drill bits for signs of excessive wear or damage. ○ Examine the shroud to ensure it is position correctly. ○ Ensure airflow is adequate and able to be delivered continuously. <p>While drilling concrete, the employee must</p> <ul style="list-style-type: none"> ○ Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. ○ Deliver air flow rates per manufacturer's instructions. ○ Ensure air flow is maintained during drilling. <p>Other considerations,</p> <ul style="list-style-type: none"> ○ Use a HEPA-filtered vacuum when cleaning holes. ○ When used indoors or an enclosed area, general or exhaust ventilation may be necessary to prevent the accumulation of airborne dust in the work area. <p>Training,</p> <ul style="list-style-type: none"> ○ How to conduct a pre-operative check. ○ Safe operating procedures ○ What air flow (cfm) is required. ○ How to operate tool to maximize air flow. ○ How to recognize signs that exposure controls need to be checked. 		
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<p>(iv) Dowel drilling rigs for concrete</p>	<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> <p><i>Control Methods-Dust Collection System</i></p> <p>Before operating the dowel drill { Add each tool make and model] to drill concrete, the employee must</p> <ul style="list-style-type: none"> ○ Examine dowel drill bits for signs of excessive wear or damage. ○ Examine the shroud to ensure it is positioned correctly. ○ Ensure airflow is adequate per manufacturer's recommendations. <p>While drilling concrete, the employee must</p> <ul style="list-style-type: none"> ○ Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. ○ Deliver air flow rates per manufacturer's instructions and ensure air flow is maintained during drilling. ○ Provide duct cleanout points. <p>Other considerations,</p> <ul style="list-style-type: none"> ○ Use a HEPA-filtered vacuum when cleaning holes. <p>Training,</p> <ul style="list-style-type: none"> ○ How to conduct a pre-operative check. ○ Safe operating procedures ○ What air flow (cfm) is required. ○ How to recognize signs that exposure controls need to be checked. 	<p>APF 10</p>	<p>APF 10</p>
<p>(v) Jackhammers and handheld powered chipping tools</p>	<p>Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact.</p>		

	-When used outdoors.		
		None	APF 10
	-When used indoors or in an enclosed area.		
		APF 10	APP 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.		
	-When used indoors or in an enclosed area.	None	APF 10
	<u>Control Methods-Water Integrated System</u>	APP 10	APP 10

	<ul style="list-style-type: none"> ○ If jackhammer or chipper is retrofitted with a water spray, ensure flow rate of not less than 12 ounces of water per minute. <p>Other considerations,</p> <ul style="list-style-type: none"> ○ When used indoors or an enclosed area, general or exhaust ventilation may be necessary to prevent the accumulation of airborne dust in the work area. <p>Training,</p> <ul style="list-style-type: none"> ○ How to conduct a pre-operative check. ○ Safe operating procedures ○ What air flow (cfm) is required. ○ How to recognize signs that exposure controls need to be checked. <p>OR</p> <p><u>Control Methods-Dust Collection System</u> Before using a jackhammer or powered chipping tool [Add each tool make and model] to jackhammer and chip concrete, the employee must,</p> <ul style="list-style-type: none"> ○ Examine the jackhammer or chipping tool to ensure it is not excessively mushroomed or splintered. ○ Examine the shroud to ensure it is position correctly. ○ Ensure airflow is adequate per manufacturer's recommendations. <p>While jackhammering or chipping,</p> <ul style="list-style-type: none"> ○ Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. ○ Deliver air flow rates per manufacturer's instructions and ensure air flow is maintained during operation. ○ Provide duct cleanout points. <p>Other considerations,</p> <ul style="list-style-type: none"> ○ Do not empty collected concrete dust on the ground. Use covered receptacle. ○ Do not clean cartridge filters with compressed air. ○ When used indoors or an enclosed area, 		
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	<p>general or exhaust ventilation may be necessary to prevent the accumulation of airborne dust in the work area.</p> <p>Training,</p> <ul style="list-style-type: none"> ○ How to conduct a pre-operative check. ○ Safe operating procedures ○ What air flow (cfm) is required. ○ How to recognize signs that exposure controls need to be checked. 		
(vi) Handheld grinders for mortar removal (i.e., tuckpointing)		APF 10	APF 10

	<ul style="list-style-type: none"> ○ Ensure air flow is maintained during drilling. <p>Other considerations,</p> <ul style="list-style-type: none"> ○ When used indoors or an enclosed area, general or exhaust ventilation may be necessary to prevent the accumulation of airborne dust in the work area. <p>Training,</p> <ul style="list-style-type: none"> ○ How to conduct a pre-operative check. ○ What air flow (cfm) is required. ○ How to operate tool to maximize air flow. ○ How to recognize signs that exposure controls need to be checked. 		
		None	None

	<p>greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism.</p> <p>-When used outdoors.</p> <p>-When used indoors or in an enclosed area.</p> <p><u>Control Methods — Water Integrated System</u></p> <p>Before operating [Add tool make and model] to grind concrete, the employee must</p> <ul style="list-style-type: none"> ○ Examine grinder disk for signs of cracks, de-bonding, or excessive wear. ○ Examine the water pump and tubing to ensure it is connected and not showing signs of leaking. ○ Ensure water supply is adequate and able to be delivered continuously. <p>While grinding concrete, the employee must</p> <ul style="list-style-type: none"> ○ Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. ○ Deliver water flow rates of at least 0.6 liters per minute or per manufacturer's instructions. Will need to have source of water either via water hook-up or water tank. ○ Adjust water flow to minimize dust. <p>Other considerations,</p> <ul style="list-style-type: none"> ○ When used indoors or an enclosed area, general or exhaust ventilation may be necessary to prevent the accumulation of airborne dust in the work area. ○ Remove and properly dispose of dust-laden water before it dries to prevent re-entrainment of dust into the air. ○ Use a HEPA vacuum to clean up dried slurry. ○ To keep water from freezing, use heat tape to wrap tanks or use environmentally friendly anti-freeze additive. <p>Training,</p> <ul style="list-style-type: none"> ○ How to conduct a pre-operative check. ○ Safe operating procedures. 	<p>None</p> <p>None</p> <p>None</p>	<p>None</p> <p>APF 10</p>
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	<ul style="list-style-type: none"> ○ Level of water flow required. ○ How water flow should be directed on the blade. ○ How to recognize signs that exposure controls need to be checked. <p>OR</p> <p><u>Control Methods — Dust Collection System</u></p> <p>Before operating the handheld grinder [Add each tool make and model] to grind concrete, the employee must</p> <ul style="list-style-type: none"> ○ Examine grinder disk for signs of cracks, de-bonding, or excessive wear. ○ Examine the shroud to ensure it is position correctly. ○ Ensure airflow is adequate and able to be delivered continuously. <p>While grinding concrete, the employee must</p> <ul style="list-style-type: none"> ○ Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. ○ Ensure tool is operated in a way that keeps the shroud in complete contact with the concrete surface. ○ Ensure 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 air flow is maintained during drilling. <p>Other considerations,</p> <ul style="list-style-type: none"> ○ When used indoors or an enclosed area, general or exhaust ventilation may be necessary to prevent the accumulation of airborne dust in the work area. <p>Training,</p> <ul style="list-style-type: none"> ○ How to conduct a pre-operative check. ○ Air flow (cfm) required. ○ How to operate tool to maximize air flow. ○ How to recognize signs that exposure controls need to be checked. 		
(viii) Walk-behind	Use machine equipped with integrated water	None	None

<p>milling machines and floor grinders</p>	<p>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> <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 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> <p><u>Control Methods — Water Integrated System</u></p> <p>Before operating the walk-behind milling machine and floor grinder [Add tool make and model] to mill and grind concrete, the employee must</p> <ul style="list-style-type: none"> ○ Examine grinder disk for signs of cracks, de-bonding, or excessive wear. ○ Examine the water pump and tubing to ensure it is connected and not showing signs of leaking. ○ Ensure water supply is adequate and able to be delivered continuously. Will need to have source of water either via water hook-up or water tank. <p>While milling and grinding concrete, the employee must</p> <ul style="list-style-type: none"> ○ Operate and maintain tool in accordance 	<p>None</p>	<p>None</p>
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	<p>with manufacturer's instructions to minimize dust emissions.</p> <ul style="list-style-type: none"> ○ Deliver water flow rate per manufacturer's instructions. Adjust water flow to minimize dust. <p>Other considerations,</p> <ul style="list-style-type: none"> ○ When used indoors or an enclosed area, general or exhaust ventilation may be necessary to prevent the accumulation of airborne dust in the work area. ○ Remove and properly dispose of dust-laden water before it dries to prevent re-entrainment of dust into the air. ○ Use a HEPA vacuum to clean up dried slurry. ○ To keep water from freezing, use heat tape to wrap tanks or use environmentally friendly anti-freeze additive. <p>Training,</p> <ul style="list-style-type: none"> ○ How to conduct a pre-operative check. ○ Safe operating procedures. ○ Level of water flow required. ○ How to recognize signs that exposure controls need to be checked <p>OR</p> <p><u>Control Methods — Dust Collection System</u></p> <p>Before operating the walk-behind milling machine and floor grinder [Add each tool make and model] to mill and grind concrete, the employee must</p> <ul style="list-style-type: none"> ○ Examine grinder disk for signs of cracks, de-bonding, or excessive wear. ○ Examine the shroud to ensure it is position correctly. ○ Ensure airflow is adequate and able to be delivered continuously. <p>While milling and grinding concrete, the employee must</p> <ul style="list-style-type: none"> ○ Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. ○ Ensure tool is operated in a way that 		
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	<ul style="list-style-type: none"> ○ keeps the shroud in complete contact with the concrete surface. ○ Ensure airflow per manufacturer's instructions ○ Have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism. ○ Ensure air flow is maintained during drilling. <p>Other considerations,</p> <ul style="list-style-type: none"> ○ When used indoors or in an enclosed area, use se a HEPA-filtered vacuum to remove loose dust in between passes. ○ When used indoors or an enclosed area, general or exhaust ventilation may be necessary to prevent the accumulation of airborne dust in the work area. <p>Training,</p> <ul style="list-style-type: none"> ○ How to conduct a pre-operative check. ○ Air flow (cfm) required. ○ How to operate tool to maximize air flow. ○ How to recognize signs that exposure controls need to be checked. 		
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