

# Toolbox Talk on Dust Management

## Topic #1: Dust generation from cutting concrete kerbs, blocks and paving

**Potential Hazard:** Using a hand-held masonry saw to cut bricks, concrete blocks and similar materials without dust controls can result in exposures to significant airborne concentrations of dust, including respirable crystalline silica (RCS) for which there is a benchmark OELV of 0.1 mg/m<sup>3</sup>. Exposure to dust has the potential to impact upon human health (e.g. lung function), if controls are not followed.

<b>Eliminate Risks</b>	<ul style="list-style-type: none"> <li>• Limit the number of cuts during design/layout.</li> <li>• Get material cut off-site and delivered to correct size.</li> <li>• Use low quartz-containing materials.</li> <li>• Use lower energy equipment such as block splitters.</li> <li>• Set up dedicated areas for cutting activities (i.e. a well-ventilated space, remote from other workers).</li> </ul>
<b>Recommended Control Measures</b>	<ul style="list-style-type: none"> <li>• Adequate supply of water for dust suppression - as per manufacturer's instructions. In the absence of instructions, 0.5 litres of water per minute is recommended (i.e. an 8-litre container would be used in 16 minutes).</li> <li>• Where possible, use a low energy cutter or a block splitter.</li> <li>• Appropriate Respiratory Protective Equipment (RPE) such as FFP3 disposable masks or half mask respirators with a P3 filter.</li> <li>• Operation &amp; Maintenance of Equipment / RPE:             <ul style="list-style-type: none"> <li>○ Ensure water jets are working.</li> <li>○ Ensure adequate supply of water at appropriate flow rate.</li> <li>○ Replace worn cutting disks to reduce cutting time.</li> <li>○ Maintain hoses and bottles.</li> <li>○ Inspect and maintain re-usable RPE / use disposable RPE once.</li> <li>○ Workers to be trained in the correct operation of equipment and use of RPE.</li> </ul> </li> </ul>



<b>Poor Practice ☹️</b>	<b>Good Practice 😊</b>
<p>No dust suppression or use of RPE.</p> 	<p>Use of water suppression and RPE, and a block splitter.</p>  

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## Topic #2: Chasing concrete and raking mortar

**Potential Hazard:** Chasing concrete and raking mortar can produce very high levels of dust, including respirable crystalline silica (RCS) for which there is a benchmark OELV of 0.1 mg/m<sup>3</sup>. Those using or very close to the equipment will be at risk of dust inhalation, which has the potential to impact upon human health (e.g. lung function), if controls are not followed.

<b>Eliminate Risks</b>	<ul style="list-style-type: none"> <li>• On-tool extraction; use a specially-adapted grinder or chaser with on-tool extraction (of class M or H).</li> <li>• Use Respiratory Protective Equipment (RPE) such as FFP3 disposable masks or half mask respirators with a P3 filter.</li> </ul>
<b>Recommended Control Measures</b>	<ul style="list-style-type: none"> <li>• Eliminate the need for chasing at the design or planning stage.</li> <li>• Use a work method that limits the degree of chasing (e.g. use of cable conduits and cable trunking).</li> <li>• Confirm extraction flowrate is adequate for the job.</li> <li>• Hose connections to be tight-fitting and devoid of leaks.</li> <li>• Inspect and maintain re-usable RPE / use disposable RPE once.</li> <li>• Workers to be trained in the correct operation of equipment and use of RPE.</li> </ul>



<b>Poor Practice</b> 😞	<b>Good Practice</b> 😊
<p>Chasing concrete without on-tool extraction or RPE.</p> 	<p>Chasing with on-tool extraction and RPE.</p> 

# Toolbox Talk on Dust Management

## Topic #3: Cutting Roof Tiles

**Potential Hazard:** Cutting roof tiles without adequate controls may result in exposure to significant airborne concentrations of dust, including respirable crystalline silica (RCS) for which there is a benchmark OELV of 0.1 mg/m<sup>3</sup>. Those using the equipment (or near) will be at risk of dust inhalation, which has the potential to impact upon human health (e.g. lung function), if controls are not followed.

<b>Eliminate Risks</b>	<ul style="list-style-type: none"> <li>• Eliminate or minimise roofing valleys.</li> <li>• Limit the number of cuts at design or planning stage.</li> <li>• Use low-quartz-containing materials such as natural fibre tiles.</li> <li>• Use low energy equipment such as hand-operated tile cutters.</li> <li>• Undertake cutting on the ground or on surrounding scaffolding in an area dedicated for cutting.</li> </ul>
<b>Recommended Control Measures</b>	<ul style="list-style-type: none"> <li>• Adequate supply of water for dust suppression - as per manufacturer's instructions. In the absence of instructions, 0.5 litres of water per minute is recommended (i.e. an 8-litre container would be used in 16 minutes).</li> <li>• Appropriate Respiratory Protective Equipment (RPE) such as FFP3 disposable masks or half mask respirators with a P3 filter.</li> <li>• Replace worn cutting disks to reduce cutting time.</li> <li>• Inspect and maintain re-usable RPE / use disposable RPE once.</li> <li>• Workers to be trained in the correct operation of equipment and use of RPE.</li> </ul>



<b>Poor Practice</b> ☹️	<b>Good Practice</b> 😊
<p>Cutting roof tiles without control measures.</p> 	<p>Cutting roof tiles with dust suppression.</p> 

# Toolbox Talk on Dust Management

## Topic #4: Scabbling or Grinding Concrete Floors with Hand-Held Tools

**Potential Hazard:** Scabbling or grinding concrete floors without dust controls can result in exposure to significant airborne concentrations of dust, including respirable crystalline silica (RCS) for which there is a benchmark OELV of 0.1 mg/m<sup>3</sup>.

<b>Eliminate Risks</b>	<ul style="list-style-type: none"> <li>• Specify architectural finishes that do not need scabbling.</li> <li>• Use (ultra) high-pressure water jetting.</li> <li>• Use chemical retarders &amp; pressure washing.</li> </ul>
<b>Recommended Control Measures</b>	<ul style="list-style-type: none"> <li>• Use a specially adapted hand-held scabbler or grinder with on-tool extraction (of class M or H).</li> <li>• Ensure the extraction flow rate is right for the work.</li> <li>• Appropriate Respiratory Protective Equipment (RPE) such as FFP3 disposable masks or half mask respirators with a P3 filter.</li> <li>• Workers to be trained in the correct operation of equipment and use of RPE.</li> </ul>

<b>Poor Practice ☹️</b>	<b>Good Practice 😊</b>
<p>Use of a hand-held scabbler without extraction.</p> 	<p>Use of a hand-held scabbler with extraction.</p> 

# Toolbox Talk on Dust Management

## Topic #5: Hand-held Breaker in Enclosed Space (Without Ventilation)

**Potential Hazard:** Operating equipment such as hand-held breakers without dust controls can result in exposure to significant airborne concentrations of dust, including respirable crystalline silica (RCS) for which there is a benchmark OELV of 0.1 mg/m<sup>3</sup>.

<b>Eliminate Risks</b>	<ul style="list-style-type: none"> <li>• Limit the amount of breaking at the design or planning stage.</li> <li>• Bursting, crushing, cutting, sawing or other techniques.</li> <li>• Remote controlled demolition.</li> <li>• Hydro demolition (using water).</li> </ul>
<b>Recommended Control Measures</b>	<ul style="list-style-type: none"> <li>• Use a hand-held breaker with on-tool extraction (of class M or H).</li> <li>• Ensure the extraction flow rate is right for the work.</li> <li>• Appropriate Respiratory Protective Equipment (RPE) such as FFP3 disposable masks or half mask respirators with a P3 filter.</li> <li>• Workers to be trained in the correct operation of equipment and use of RPE.</li> </ul>



<b>Poor Practice</b> ☹️	<b>Good Practice</b> 😊
<p>Use of a breaker without on-tool extraction.</p> 	<p>Use of a breaker with on-tool extraction.</p> 

# Toolbox Talk on Dust Management

## Topic #6: Drilling Small Diameter Holes in Concrete Floors, Walls & Ceilings

**Potential Hazard:** Operating equipment such as drills without adequate controls can result in exposure to significant airborne concentrations of dust, including respirable crystalline silica (RCS) for which there is a benchmark OELV of 0.1 mg/m<sup>3</sup>.

<b>Eliminate Risks</b>	<ul style="list-style-type: none"> <li>• Limit the amount of breaking at the design or planning stage.</li> <li>• Bursting, crushing, cutting, sawing or other techniques.</li> <li>• Remote controlled demolition.</li> <li>• Hydro demolition (using water).</li> </ul>
<b>Recommended Control Measures</b>	<ul style="list-style-type: none"> <li>• Use a drill with on-tool extraction (of class M or H), integrated cassette or generic dust caps.</li> <li>• Carry out thorough examination and testing on extraction system as required.</li> <li>• \consider Respiratory Protective Equipment (RPE) such as FFP3 disposable masks or half mask respirators with a P3 filter.</li> <li>• RPE will also be needed in addition to on-tool extraction with longer-duration drilling work (greater than 15-30 minutes in one day).</li> <li>• Workers to be trained in the correct operation of equipment and use of RPE.</li> </ul>

<b>Poor Practice ☹️</b>	<b>Good Practice 😊</b>
<p>Use of a drill without on-tool extraction.</p> 	<p>Use of a drill with integrated cassette.</p> 

# Toolbox Talk on Dust Management

## Topic #7: Dry Coring

**Potential Hazard:** Dry coring can only be used on ‘softer’ materials (e.g. bricks). For ‘denser’ materials, such as concrete and granite, wet coring must be used. Operating equipment such as a core drill without adequate controls can result in exposure to significant airborne concentrations of dust, including respirable crystalline silica (RCS) for which there is a benchmark OELV of 0.1 mg/m<sup>3</sup>.

<b>Eliminate Risks</b>	<ul style="list-style-type: none"> <li>• Limit the number of holes during design/planning.</li> <li>• Well-designed and maintained equipment significantly reduces dust and lasts longer between replacement and maintenance.</li> <li>• Use sharp drill bits; they produce less dust than poorly-maintained bits.</li> <li>• Use compatible equipment.</li> </ul>
<b>Recommended Control Measures</b>	<ul style="list-style-type: none"> <li>• Use on-tool extraction (of extraction class M or H). Flow should be at least so high that no dust is visible.</li> <li>• Respiratory Protective Equipment (RPE) such as FFP3 disposable masks or half mask respirators with a P3 filter should be used for long duration work greater than 15-30 minutes in one day.</li> <li>• Workers to be trained in the correct operation of equipment and use of RPE.</li> </ul>


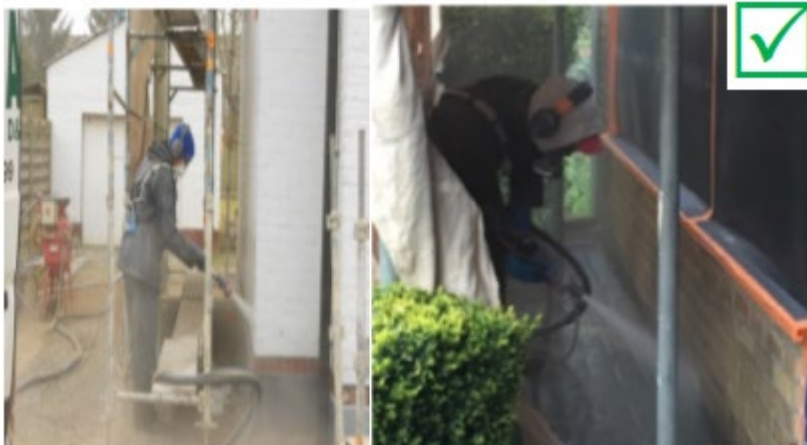
<b>Poor Practice</b> ☹️	<b>Good Practice</b> 😊
Use of a hand-held corer without extraction/RPE. 	Use of dust extraction on the core drill and RPE. 

# Toolbox Talk on Dust Management

## Topic #8: Abrasive Pressure Blasting

**Potential Hazard:** One of the main hazards in abrasive pressure blasting is exposure to dust. The amount of dust depends on the blasting equipment, blasting material used and material being blasted. RCS dust can be generated by using abrasives containing crystalline silica (e.g. sand). Blasting surfaces that contain crystalline silica (e.g. concrete, sandstone, bricks), especially dry abrasive pressure blasting, can result in exposure to significant airborne concentrations of RCS for which there is a benchmark OELV of 0.1 mg/m<sup>3</sup>.

<b>Eliminate Risks</b>	<ul style="list-style-type: none"> <li>• Use a less hazardous surface preparation method such as ‘steam cleaning’.</li> <li>• Use silica-free abrasive material.</li> </ul>
<b>Recommended Control Measures</b>	<ul style="list-style-type: none"> <li>• Use wet or vacuum blasting methods that generate minimal RCS dust levels.</li> <li>• Temporary enclosure should be used for abrasive blasting in the open air for buildings and other fixed structures. Use barriers and curtain walls to isolate the blasting operation. Certain enclosed working places may also need general mechanical ventilation.</li> <li>• Exclusion/restricted zones should be used to protect workers and other persons in the vicinity from exposure to RCS dust. Warning signs should be located so that they are clearly visible before anyone enters the area.</li> <li>• Use appropriate Respiratory Protective Equipment (RPE). RPE will depend on the concentration of RCS, blasting equipment used and length of work. In the case of dry abrasive pressure blasting an effective blasting helmet (i.e. air-fed) must cover the wearer’s head, neck and shoulder to protect the wearer from rebounding abrasive material.</li> <li>• Perform clean-up using wet methods or HEPA-filtered vacuuming M or H class to minimize the accumulation of dust.</li> <li>• Train workers in the correct operation of equipment and in use of RPE.</li> <li>• Inspect and maintain blasting equipment including hoses.</li> <li>• Inspect and maintain re-usable RPE.</li> </ul>

<b>Poor Practice</b> 😞	<b>Good Practice</b> 😊
Dry abrasive blasting without dust suppression or on-tool extraction.	Wet abrasive blasting i.e. Water suppression with RPE ( <i>Note this hearing protection utilised is incorrect!</i> ).
	



# Toolbox Talk on Dust Management

## Topic #9: Removing small rubble, dust and debris

**Potential Hazard:** Site housekeeping measures can result in the generation of dust. Dry sweeping and use of compressed air can result in high levels of dust, including respirable crystalline silica (RCS) for which there is a benchmark OELV of 0.1 mg/m<sup>3</sup>. Where practicable, accumulated dust should be removed using high efficiency filter vacuum methods or by wet cleaning.

<b>Eliminate Risks</b>	<ul style="list-style-type: none"> <li>• Limit waste materials during design/planning.</li> <li>• Identify waste generation and cleaning frequency during planning stage.</li> <li>• Consider general arrangements to stop dust being created in the first place by adopting the correct dust controls when making rubble/debris.</li> </ul>
<b>Recommended Control Measures</b>	<ul style="list-style-type: none"> <li>• Damping down and using a brush, shovel and bucket for minor/small amounts.</li> <li>• Rake, shovel and bucket/wheelbarrow to remove larger pieces in bigger areas.</li> <li>• Remove dust using high-efficiency particulate filter vacuum methods (vacuum attachments fitted to an H or M Class extraction unit).</li> <li>• Replace dry sweeping with an industrial dust/water vacuum cleaner or use wet sweeping, removing water and debris with a squeegee.</li> <li>• Where possible, thoroughly wet the dusty materials or waste before transporting or handling.</li> <li>• Covered chutes and skips where needed.</li> <li>• Use appropriate Respiratory Protective Equipment (RPE) depending upon location duration and type of work.</li> <li>• Avoid the use compressed air for cleaning.</li> <li>• Carry out thorough examination and testing on extraction system as required.</li> <li>• Inspect and maintain re-usable RPE / use disposable RPE just once.</li> <li>• Workers should be trained in the correct operation of the vacuum cleaner, particularly in the handling of dust bags or collector and use of RPE.</li> </ul>



<b>Poor Practice ☹️</b>	<b>Good Practice 😊</b>
<p>Removal of rubble using dry sweeping.</p> 	<p>Removal using high-efficiency filter vacuum.</p> 

# Toolbox Talk on Dust Management

## Topic #10: Bench-top Masonry Saw

**Potential Hazard:** Operating a bench saw without appropriate suppression can result in high levels of dust, including respirable crystalline silica (RCS) for which there is a benchmark OELV of 0.1 mg/m<sup>3</sup>.

<b>Eliminate Risks</b>	<ul style="list-style-type: none"> <li>• Get material cut off-site and delivered to correct size.</li> <li>• Use low quartz-containing material.</li> <li>• Use lower-energy equipment like block splitters.</li> <li>• Limit the number of cuts during design/layout.</li> <li>• Set up dedicated areas away from other workers for cutting activity</li> </ul>
<b>Recommended Control Measures</b>	<ul style="list-style-type: none"> <li>• Adequate supply of water for water suppression in line with manufacturer’s instructions. In the absence of a prescribed rate in the manual, use a minimum of 0.5 litres per minute (i.e. an 8-litre container would be used in 16 minutes).</li> <li>• Use Respiratory Protective Equipment (RPE) such as FFP3 disposable masks or half mask respirators with a P3 filter.</li> <li>• Ensure maintenance of control equipment &amp; respiratory protective equipment (RPE):             <ul style="list-style-type: none"> <li>○ Confirm water jets are working effectively.</li> <li>○ Ensure adequate supply of water and appropriate flow rate.</li> <li>○ Replace worn cutting disks to reduce cutting time.</li> <li>○ Maintain hoses and bottles.</li> <li>○ Inspect and maintain re-usable RPE / use disposable RPE just once.</li> <li>○ Workers should be trained in the correct operation of the equipment and use of RPE.</li> </ul> </li> </ul>

<b>Poor Practice</b> ☹️	<b>Good Practice</b> 😊
<p>Insufficient water suppression and RPE</p> 	<p>Use of water suppression and RPE</p> 

# Toolbox Talk on Dust Management

## Topic #11: Sanding of Walls

**Potential Hazard:** Sanding of walls may result in exposure to significant airborne concentrations of dust, including respirable crystalline silica (RCS) for which there is a benchmark OELV of 0.1 mg/m<sup>3</sup>. Exposure depends on the material sanded and the method and tool used (e.g. dry wall sanding with a block sander). Different tools can be used for sanding operations including: ventilated sander, pole sander, wet sponge and block sander.

<b>Eliminate Risks</b>	<ul style="list-style-type: none"> <li>• Adopt dust-free sanders with on-tool ventilation systems.</li> <li>• Reduce the number of workers in the area where sanding operations take place.</li> <li>• Use signals to prevent unnecessary workers from entering the area where sanding operations are ongoing.</li> </ul>
<b>Recommended Control Measures</b>	<ul style="list-style-type: none"> <li>• On-tool extraction using an M or H class extraction unit.</li> <li>• Wet sanders and ventilated pole sanders may be an alternative option.</li> <li>• Respiratory Protective Equipment (RPE) such as FFP3 disposable masks or half mask respirators with a P3 filter should be used and maintained as follows:             <ul style="list-style-type: none"> <li>○ Make sure the extraction flow rate is right for the work.</li> <li>○ Hose connections should be tight-fitting and secure without leaks.</li> <li>○ Carry out thorough examination and testing on hoses and extraction system as required.</li> <li>○ Inspect and maintain re-usable RPE / use disposable RPE just once.</li> <li>○ Workers should be trained in the correct operation of the equipment and use of RPE.</li> </ul> </li> </ul>

<b>Poor Practice</b> ☹️	<b>Good Practice</b> 😊
<p>Use of a pole sander without extraction.</p> 	<p>Use of a pole sander with extraction.</p> 

# Toolbox Talk on Dust Management

## Topic #12: Sanding of Concrete Floors

**Potential Hazard:** Use of a grinding machine on concrete floors without adequate controls can result in exposure to significant airborne concentrations of dust, including respirable crystalline silica (RCS) for which there is a benchmark OELV of 0.1 mg/m<sup>3</sup>. Concrete floors can be polished using wet or dry methods. Wet polishing uses water to cool the diamond abrasives and eliminate grinding dust, but it creates a slurry that must be removed. A combination of the dry and the wet methods can be used.

<b>Eliminate Risks</b>	<ul style="list-style-type: none"> <li>• Reduce the number of workers in the area where sanding operations occur.</li> <li>• Use signals to prevent unnecessary workers from entering the area where sanding operations are ongoing.</li> </ul>
<b>Recommended Control Measures</b>	<ul style="list-style-type: none"> <li>• Use on-tool extraction on all grinding / sanding machines of M or H class extraction units.</li> <li>• Wet methods are an alternative to dry methods.</li> <li>• Respiratory Protective Equipment (RPE) such as FFP3 disposable masks or half mask respirators with a P3 filter should be used and maintained as follows:             <ul style="list-style-type: none"> <li>○ Make sure the extraction flow rate is right for the work.</li> <li>○ Hose connections should be tight-fitting and secure without leaks.</li> <li>○ Carry out thorough examination and testing on hoses and extraction systems as required.</li> <li>○ Inspect and maintain re-usable RPE / use disposable RPE just once.</li> <li>○ Workers should be trained in the correct operation of the equipment and use of RPE.</li> </ul> </li> </ul>


<b>Poor Practice ☹️</b>	<b>Good Practice 😊</b>
<p>Sanding concrete floors without tool extraction.</p> 	<p>Sanding concrete floors with on-tool extraction.</p> 

# Toolbox Talk on Dust Management

## Topic #13: Utility Vehicle Demolition

**Potential Hazard:** Studies show that using a utility vehicle (e.g. Bobcat) for demolition work can result in exposure to significant airborne concentrations of dust, including respirable crystalline silica (RCS) for which there is a benchmark OELV of 0.1 mg/m<sup>3</sup>. Utility vehicles are used for multiple purposes including the operation of demolition equipment (hammering or cutting equipment) and for transport of construction and demolition materials and waste.

<b>Eliminate Risks</b>	<ul style="list-style-type: none"> <li>• Use remote-controlled demolition machine.</li> <li>• Use low dust generating techniques (e.g. use of demolition shears).</li> <li>• Enclosure/segregation of the work site.</li> <li>• Limit the number of people that have access to the work site.</li> </ul>
<b>Recommended Control Measures</b>	<ul style="list-style-type: none"> <li>• The cabin should be fitted with in-cab ventilation with suitable filtration and kept clean.</li> <li>• Wetting of the material at the demolition location before work starts.</li> <li>• Wetting of the demolition debris before loading and transportation.</li> <li>• Consider Respiratory Protective Equipment (RPE) for workers close to the demolition site.</li> <li>• Utility vehicles to be maintained as per manufacturer’s instructions.</li> <li>• Workers should be trained in the correct operation of the equipment and use of RPE when used.</li> <li>• Inspect and maintain re-usable RPE, use disposable RPE just once.</li> </ul>

<b>Poor Practice</b> ☹️	<b>Good Practice</b> 😊
<p>Use of mobile operating equipment without in-cab ventilation, and in near proximity to persons without RPE.</p> 	<p>Use of remote controlled utility vehicle.</p> 