MANAGING RESPIRABLE CRYSSTALLINE SILICA ON CONSTRUCTION SITES
Case study conducted found

- Very little end user education and information within the study.
- Supplier information and knowledge conflicted with legislation and Australian standards

Outcome
The Paynters Journey

February 2016

- Struggled with compliance from subcontractors do to the same issues identified in 2016
- Very little end user education and information within the study.
- Supplier information and knowledge conflicted with legislation and Australian standards

February 2018

2018 Enforcement by the regulator began!

Where to from here?

Future
The Paynters Journey 2018

1. Formed a working group to identify key issues with achieving compliance

2. Develop an Action Plan

3. Delivery

Key issues identified:

- Subcontractor knowledge of RCS
- Subcontractor knowledge of tools and equipment available
- Subcontractor knowledge of tasks where exposure is likely

**Silica Dust Action Plan**

**Background**
Products widely used within the construction industry contain silica, some examples of these products are concrete, bricks, blocks, tiles, fibre cement sheeting, metal and cement. Health risks to workers become present when dust is generated from working with the products e.g. cutting, grinding, drilling, breaching. When workers are exposed to Respirable crystalline silica (RCS) they are at risk of chronic obstructive lung disease including chronic bronchitis and emphysema.

Manufacturers of these products have identified silica in their product Safety Data Sheets and the controls that are required to manage the risks associated with RCS.

To assist Paynters staff and subcontractors in managing the risks to workers, an action plan and an RCS Awareness Package has been developed.

**Action Plan**
1. Consult staff, HSEQ Committee subcontractors and suppliers
2. Develop a Silica Safety Alert
3. Develop a Risk Register for Trades
4. Develop a Silica Awareness Toolbox Talk including supplier’s extraction and PPE examples
5. Add Safety Alert, Risk Register and Toolbox Talk to Subcontract Order contract schedule item
6. HSEQ committee to review and approve Alert, Risk Register and Toolbox talk
7. Management to review and approve Alert, Risk Register and Toolbox talk
8. Deliver Training to Project teams and on site staff via team meetings and rooms
9. Site staff and HSEQ staff to deliver site toolbox talks
10. Monitor implementation and uptake by subcontractors over a 3 month education and awareness period.
11. Ensure compliance on site after 3 month education and compliance period
12. Formal review by HSEQ Committee after 6 months.

Should you required assistance and or Silica Dust please contact either myself or Amy Matthews at any time.

Regards
Daniel Curnoe
HSEQ Manager
PAYNTERS PTY LTD
The Paynters Journey 2018

**Action Plan**

1. Consult staff, HSEQ Committee subcontractors and suppliers
2. Develop a Silica Safety Alert
3. Develop a Risk Register for Trades
4. Develop a Silica Awareness Toolbox Talk including supplier’s extraction and PPE examples
5. Add Safety Alert, Risk Register and Toolbox Talk to Subcontract Order contract schedule item 1 - Other documents
6. HSEQ committee to review and approve Alert, Risk Register and Toolbox talk
7. Management to review and approve Alert, Risk Register and Toolbox talk
8. Deliver Training to Project teams and site staff via team meetings and zoom
9. Site staff and HSEQ staff to deliver site toolbox talks
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### Action Plan Item 2: Develop Safety Alert

**HEALTH & SAFETY – SILICA DUST**

**BACK GROUND:**

Silica is a commonly used hazardous chemical used in the manufacturing of various building products, these include but are not limited to:

- Fibre Cement Sheetings
- Bricks and Blocks
- Concrete
- Insulation
- Tiles
- Cements
- Render
- Share Screen tops
- Cement based products

The health risks to workers becomes present when dust is generated from activities such as cutting, grinding, drilling, painting. Workers exposed to silica dust are at risk of chronic obstructive lung disease (COLD) bronchitis and emphysema.

### CONTROLS:

To minimise the generation of silica dust the following controls are to be implemented:

- Where possible cut materials in a well-ventilated area away from workers not directly involved in the activity
- Use a dust and snap technique or shears if possible
- Use a dust extract system (where available)
- Where a localised cut is done, use a localised cut extraction device with a minimum of M class with HEP A filtered vacuum attachment
- Use a dust extraction device under the saw blade used to cut the material
- Dust should be minimized on the floor
- Clean (Wet/dry) work area progressively throughout the day and the end of each day

### NEVER:

- Dry cut or grind without the above list controls in place
- Use compressed air to remove dust, avoid using dry tools

*Note: Silica Dust is to be identified in the Safe Work Method Statement as a hazard and have appropriate controls referenced.*

### Action Plan Item 3: Develop Risk Register for Trades

**Activity step**

Break the activity down into steps. List the steps in this column.

**Hazards Identification**

Identify any potential hazards associated with each step – and any related risks. Detail the hazards and risks in this column, and enter the risk rating in the next column.

**Controls Implemented**

Decide what controls to use to eliminate or minimise the risks. Detail the controls in this column, and enter the revised risk rating in the next column. Note: If the risk rating is still 18-25, do not begin work.

<table>
<thead>
<tr>
<th>STEP</th>
<th>Activity step</th>
<th>Hazards Identification</th>
<th>Controls Implemented</th>
<th>Person responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Demolition</td>
<td>Removable asbestos</td>
<td>Use wet cutting methods for brick/block, tile, stone and concrete.</td>
<td>SSS Demolition Supervisor</td>
</tr>
</tbody>
</table>

**Initial risk rating**

| 22H   |

**Revised risk rating**

<p>| 18-25 |</p>
<table>
<thead>
<tr>
<th>STEP</th>
<th>Activity step</th>
<th>Hazards Identification</th>
<th>Controls Implemented</th>
<th>Person responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Break the activity down into steps. List the steps in this column.</td>
<td>Identify any potential hazards associated with each step – and any related risks. Detail the hazards and risks in this column, and enter the risk rating in the next column.</td>
<td>Decide what controls to use to eliminate or minimise the risks. Detail the controls in this column, and enter the revised risk rating in the next column. Note: If the risk rating is still 18-25, do not begin work.</td>
<td>Concrete Supervisor</td>
</tr>
<tr>
<td></td>
<td><strong>Concreting</strong></td>
<td>Respirable crystalline silica dust (RCS) Uncontrolled movement of concrete slurry</td>
<td>22H - Use wet cutting methods for cutting concrete. • Capture concrete slurry and dispose of appropriately. • Remove all excess concrete from area whilst wet and place into skip bin. • Install on-tool extraction devices. • Bag cement based debris/dust prior to disposing in skip bin. • Wear Respiratory Protective Equipment (Particulate/Supplied Air/Powered Air) and ensure fit testing has been undertaken within the previous twelve months. Fit testing to be undertaken on the exact make and model of respirator worn. • NO DRY SWEEPING (of immediate work area). • Use H-Class or M-Class vacuum with HEPA filter to remove dust during housekeeping.</td>
<td>15S</td>
</tr>
<tr>
<td>Formwork</td>
<td>Respirable crystalline silica dust (RCS)</td>
<td>22H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
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<td>---------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drilling into concrete slab/masonry products.</td>
<td>• Install on-tool extraction devices.</td>
<td><strong>8</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stripping Formwork components.</td>
<td>• Bag cement based debris/dust prior to disposing in skip bin.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning Formwork components.</td>
<td>• Exclude other trades from stripping area. Monitor weather conditions during stripping process and use water misting system where required.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patching concrete.</td>
<td>• Set up separate area away from other trades to clean formwork components.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General site housekeeping.</td>
<td>• Where work area cannot be completely isolated, utilise air scrubbers.</td>
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<tr>
<td></td>
<td>• Ensure dustless grinders are utilised for concrete patching tasks.</td>
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<td></td>
<td>• Wear Respiratory Protective Equipment (Particulate/Supplied Air/Powered Air) and ensure fit testing has been undertaken within the previous twelve months. Fit testing to be undertaken on the exact make and model of respirator worn.</td>
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RESPIRABLE CRISTALLINE SILICA DUST (RCS)

TOOLBOX TALK

RCS – WHAT IS IT?
Crystalline Silica (Quartz) is a common mineral found in most rocks, sands and clays; products such as concrete, mortar, brick, blocks, pavers, tiles, natural and composite stone benchtops; cement-based materials such as fibre-cement sheeting and autoclaved-aerated concrete.

Dust containing respirable crystalline silica (RCS) is generated by high-energy processes such as cutting, sawing, grinding, drilling, polishing, scabbling and crushing of silica-containing materials.

RCS particles are so small they cannot be seen under ordinary lighting and stay airborne long after larger particles have settled to the ground – the small particle size means it is easily inhaled deep into the lungs.

WHAT ARE SOME HEALTH EFFECTS OF RCS?
- Silicosis usually follows exposure to RCS over many years, but extremely high exposures across the short-term can cause it to develop rapidly.
- Exposure to RCS has been linked to lung cancer, renal cancer and chronic obstructive pulmonary disease.

HOW CAN WE MANAGE EXPOSURE?
- **Control the risks** – Eliminating exposure to RCS is the most effective control measure for managing the risk of work related illness.

  - **Stopping or reducing the dust** – Order the right sized products to avoid cutting/preparation on site; use fibre cement sheers instead of circular saws; avoid dry sweeping and instead try vacuuming dust and silica debris using an M or H-class vacuum cleaner; bag waste materials prior to disposing into the skip bin; locate bins outdoors; use water misting systems to keep waste materials damp where possible.

  - **Control the dust** – Install on-tool extraction devices such as a local exhaust ventilation system that fits directly on to the tool OR a dust trap shroud; Use water suppression or wet cutting methods; fully enclose work processes with floor to ceiling plastic sheeting; use suitable respiratory protective equipment that you have been fit tested for within the previous twelve months.
VAUCOMS (CAB-GRADE & M-CLASS)

M80 & M160-M Class Wet & Dry Vacuum
(From £178.00)

M80 & M160-M Class Wet & Dry Vacuum
(£125.00 – Trade Tools)

Metallic ASR 5571 M-Class Vacuum
(£304.00 – Trade Tools)

Swallow 56L Construction Dust Extractor M-Class
(£315.00 – Trade Tools)

SPECIALISED FIRE PROOF BLADES

ENGULF WORK AREA

FIRE RETARDANT SUIT SYSTEM

FIRE PROOF AIR SCRUBBER
Available for hire from Remied Solutions
Ph: 0403 676 335

RESPIRATORS

Disposable
HEM.-Face reusable (from £10)


ENGULFMENT OF SOCIAL MEDIA PROTECTION

Proper face including bristles, mustache, whiskers and stubble will stop a reaper from seeing properly. Workers who are required to wear tight-fitting respirators, must be seen through a good seal of the respirator to the face.

E50 HEALTH AND SENSIBLE
Ph: 0403 641 474
E/G: 3443 0004
Action Plan Item 5: Add Safety Alert, Risk Register and Toolbox material to Subcontract order

ACTION PLAN ITEMS:

6. HSEQ committee to review and approve Alert, Risk Register and Toolbox talk

7. Management to review and approve Alert, Risk Register and Toolbox talk

8. Deliver Training to Project teams and site staff via team meetings and zoom

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Questions
THANKYOU