**Self-assessment Tool for Manufacturers**

Managing Respirable Crystalline Silica (RCS) Dust Exposure in **Manufacturing of Construction Elements**

**Purpose**

The purpose of this self-assessment tool is to help the manufacturing industry assess compliance with the [***Managing Respirable Crystalline Silica Dust Exposure in Construction and Manufacturing of Construction Elements Code of Practice 2022***](https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice/managing-respirable-crystalline-silica-dust-exposure-in-construction-and-manufacturing-of-construction-elements-code-of-practice-2022) (the COP).

From 1 May 2023, Workplace Health and Safety Inspectors will be undertaking audits of construction sites and workplaces manufacturing construction elements. This tool will help manufacturers of construction elements prepare for the audits.

The tool will guide you through a review of the effectiveness and suitability of your processes and controls to manage the risk of exposure to **respirable crystalline silica** (RCS).

The following resources are also available on the website:

* Frequently asked questions
* Task guides
* Films and videos.

Complete this self-assessment tool for tasks undertaken with materials that potentially could create a risk of exposure to RCS. There is a risk of exposure to RCS when undertaking tasks that involve materials containing 1% or more crystalline silica and that generate RCS or make RCS airborne.

Consult with your **workers** and **Health and Safety Representatives** as you complete the self-assessment tool.

**Background**

Working with materials that contain crystalline silica can make or generate a dangerous dust called RCS. **The workplace exposure standard is 0.05 milligrams per cubic metre averaged over an eight-hour period (8-hour time weighted average (TWA)).**

Tasks such as cutting, sawing, grinding, drilling, polishing, scabbling and crushing using materials that contain 1% or more of crystalline silica can generate RCS. Other tasks like dry sweeping or using compressed air can also disturb settled dust containing RCS and make it airborne.

Materials containing crystalline silica may include cement, concrete, aggregates, pre-cast, fibre cement sheeting, bricks, tiles, blocks, pylons, pavers, mortar, asphalt, sand, stone, wall panels and geosynthetics.

RCS is dangerous because:

* it is easy to breathe in RCS
* RCS is too small to see under normal lighting conditions
* RCS can stay in the air for hours after becoming airborne
* ongoing exposure to RCS can lead to lung diseases including silicosis and lung cancer.

**Abbreviations**

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| --- | --- |
| **Acronym** |  |
| **COP** | *Managing Respirable Crystalline Silica Dust Exposure in Manufacturing of Construction Elements Code of Practice 2022* |
| **HSR** | *Health and safety representative* |
| **PCBU** | *Person conducting a business or undertaking* |
| **RCS** | *Respirable crystalline silica* |
| **RPE** | *Respiratory protective equipment* |
| **TWA** | *Time weighted average* |
| **WES** | *Workplace exposure standard* |
| **WHS Act** | *Work Health and Safety Act 2011* |
| **WHS Reg** | *Work Health and Safety Regulation 2011* |

**PART 1 – MATERIALS AND CONSULTATION**

|  | **Questions** | **Legislative References** |
| --- | --- | --- |
|  | Who supplied the materials/products that potentially contain crystalline silica being used in the tasks? |  |
|  | Who selected the materials/products that potentially contain crystalline silica being used in tasks? |  |
|  | Have you obtained information on the crystalline silica content of the materials being used? | WHS Act 23- 25  WHS Reg 344  COP 3.3, 3.4, 5.1 & 5.2 |
|  | What is the crystalline silica content of the materials/products? | WHS Act 23(4), 25(3)  WHS Reg 34, 351(1)  COP 1.1, 1.4, 3.2 – 3.4, 5, 5.1 & 5.2 |
|  | If the crystalline silica content of any material/product used in the tasks is less than 1%, did you deliberately choose that material/product to control the RCS risk? |  |
|  | Do you provide information to customers about:   * The designed use of the substance/element * Results of any testing or analysis, including any hazardous properties * Any conditions or controls that are required to ensure the substance is without risks to health and safety when used as designed? | WHS Act 23(4) (5)  COP 3.2 |
|  | Do you have a document that identifies sources of RCS and the controls used (either an RCS dust control plan or included in another document like a WHS risk management plan)? | WHS Reg 34, 351  COP 3.2.1 |
|  | Did you consult with workers when preparing the document that identifies sources of RCS and the controls? | WHS Act 49 (1) (a)  COP 3.2.1 |
|  | Have you consulted with workers, HSRs and other PCBUs at the workplace that may be affected by the RCS dust? | WHS ACT 46, 47, 48(2) & 49  COP 4.1 & 4.2 |

**PART 2 – TASK AND CONTROLS USED ARE LISTED IN APPENDIX 4** **OF THE CODE OF PRACTICE**

If the task is included in Appendix 4 of the Code of Practice, and you are using the controls identified for that task in Appendix 4, answer the questions in Part 2. If the task is not listed in Appendix 4, or you are not using the controls listed for the task, go to Part 3.

|  | **Questions** | **Legislative References** |
| --- | --- | --- |
|  | Is the task being performed in accordance with the controls outlined in Appendix 4? | WHS Act 19 (3)(C)  WHS Reg 351(1)  COP 2.1 & Appendix 4 |
|  | When integrated water suppression is used as a control, is the equipment used in accordance with Appendix 4?  Check for the following:   1. It is used at the point where dust is generated 2. It adequately suppresses dust 3. The IP rating is correct 4. It supplies a consistent water flow and adequate water pressure 5. It is maintained in accordance with manufacturer’s instructions 6. Workers are trained on how to prepare, use, and clean it. | WHS Act 19(1), 19 (3)(f)  WHS Reg 37, 39, 213 & 351(1)  COP 7.4.1, 8.4 & 12 |
|  | When on-tool dust extraction is used as a control, is the equipment used in accordance with Appendix 4?  Check for the following:   1. It is used in accordance with the manufacturer’s instructions 2. It is attached to H Class/M Class vacuum units (except where Appendix 4 provides other options) 3. It adequately controls RCS 4. Where on-drill extraction is fitted directly to the tool, it incorporates a HEPA filter 5. Workers are trained on how to prepare, use, and clean it 6. It is maintained in accordance with the manufacturer’s instructions 7. When appropriate, a sacrificial board is used to further control RCS exposure. | WHS Act 19 (1), 19 (3)(f)  WHS Reg 37, 39, 213 & 351(1)  COP 7.4.2 & 8.4 |
|  | When local exhaust ventilation (other than vacuums) is used as a control, is the equipment used in accordance with Appendix 4?  Check for the following:   1. It captures the dust before it reaches the air a worker is breathing 2. It is regularly maintained and tested for efficiency (in accordance with section 213 WHS Regulation). | WHS Reg 37, 40(e), 213 & 351(1)  COP 7.4.2 |

**PART 3 – TASKS AND CONTROLS USED ARE NOT LISTED IN APPENDIX 4 OF THE CODE OF PRACTICE**

If you are not using the controls listed in Appendix 4 of the Code of Practice for a task included in Appendix 4, or the task is not included in Appendix 4, answer the questions in Part 3. Note, if you are using controls in Appendix 4 of the Code of Practice for a task included in Appendix 4, you do not need to go through these questions.

|  | **Questions** | **Legislative References** |
| --- | --- | --- |
|  | Have controls been implemented in accordance with the hierarchy of control (elimination, substitution, isolation, engineering)? | WHS Reg 36, 351(1)  COP 2.2, 6.2, 7.1 - 7.4 |
|  | Could you have eliminated the risk of RCS by changing either the task or material being used? |  |
| **SUBSTITUTION**  Substitution as a control measure will ordinarily require other means to manage the risk e.g. engineering controls.  If you are using substitution to control the risk: | | |
|  | Has a material/product been replaced with a material/product with a lower silica content? | WHS Reg 36, 351(1)  COP 7.2 |
|  | Has the process been substituted with a lower risk process? |
| **ISOLATION**  Isolation as a control measure will ordinarily require other means to manage the risk e.g. engineering controls.  If you have used isolation to control the risk: | | |
|  | How have workers been separated from the hazard and work areas? | WHS Act 19(1), 19(3)(a)  WHS Reg 36, 351(1)  COP 7.3 |
| **ENGINEERING** | | |
|  | When integrated water suppression is used as a control, is the equipment used as follows?   1. It is used at the point where dust is generated 2. It adequately suppresses dust 3. The IP rating is correct 4. It supplies a consistent water flow and adequate water pressure 5. It is maintained in accordance with manufacturer’s instructions 6. Workers are trained on how to prepare, use, and clean it.   *The above points may not apply where a system has been designed by a competent person using the results of air monitoring.* | WHS Act 19(1), 19(3)(f)  WHS Reg 37, 39, 213 & 351(1)  COP 7.4.1, 8.4 & 12 |
| 1. . | When on-tool dust extraction is used as a control, is the equipment used as follows?   1. It is used in accordance with the manufacturer’s instructions 2. It is attached to H Class/M Class vacuum units (except where Appendix 4 provides other options) 3. It adequately controls RCS 4. Where on-drill extraction is fitted directly to the tool, it incorporates a HEPA filter 5. Workers are trained on how to prepare, use, and clean it 6. It is maintained in accordance with the manufacturer’s instructions. 7. When appropriate, a sacrificial board is used to further control RCS exposure.   *The above points may not apply where a system has been designed by a competent person using the results of air monitoring.* | WHS Act 19(1), 19 (3)(f)  WHS Reg 37, 39, 213 & 351(1)  COP 7.4.2 & 8.4 |
|  | When local exhaust ventilation (other than vacuums) is used as a control, is the equipment used as follows?   1. Does it capture the dust before it reaches the air a worker breathes 2. Is it regularly maintained and tested for efficiency (in accordance with WHS Reg 213).   *The above points may not apply where a system has been designed by a competent person using the results of air monitoring.* | WHS Reg 37, 40(e), 213 & 351(1)  COP 7.4.2 |
|  | Have you confirmed the effectiveness of the control measures being used?  *Effectiveness must be determined through statistically valid exposure data. Data can be obtained from:*   * *The manufacturer* * *Industry associations* * *An occupational hygienist* | WHS Reg 37, 49, 50, 351(1)  COP 2.2, 8, 8.1, 9.1, 9.3, 9.3.1, 11, 11.1 & 11.2 |

**PART 4 – AIR MONITORING**

You should be undertaking air monitoring if:

* The work or task you are undertaking is not included in Appendix 4
* The work or task you are undertaking is included in Appendix 4, but you are not using the controls for the task recommended in Appendix 4
* The controls you are using for the task are not included in Appendix 4 and you do not have statistically valid exposure data for the controls used and the work being undertaken.

If you have been undertaking air monitoring, answer these questions.

|  | **Questions** | **Legislative References** |
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|  | Was the air monitoring overseen by a certified occupational hygienist or someone with a recognised equivalent qualification? | COP 9.2 |
|  | Do you have a report from a certified occupational hygienist that includes the results of the air monitoring and recommendations? | WHS Reg 50(2)  COP 9.4, Appendix 6 |
|  | Have RCS workplace exposure standards been exceeded for any workers? |  |
|  | Have all the recommendations been implemented? | WHS Act 19(1)  WHS Reg 38, 351(1) |
|  | Are the air monitoring results readily available to workers? | WHS Reg 50(2)(b)  COP 9.4 |

**PART 5 - NEARBY WORKERS**

|  | **Questions** | **Legislative References** |
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|  | Are controls in place to manage the risk of secondary exposure to RCS for workers and other people nearby? (Controls could include a well-ventilated area (where practicable), appropriate signage, and exclusion zones.) | WHS Act 19(1) & (2)  WHS Reg 40(e)49, 299,351, 353  COP 5.3, 7.3 & 8.1 |

**PART 6 – RESPIRATORY PROTECTIVE EQUIPMENT (RPE)**

|  | **Questions** | **Legislative References** |
| --- | --- | --- |
|  | Is there a requirement for RPE to be worn under Appendix 4 of the COP or because of air monitoring data? | WHS Act 19(1)  WHS Reg 36, 351(1)  COP 2.2, 6.2, 7.6 & Appendix 4 |
|  | Have you provided the RPE? | WHS Reg 44(2)  COP 7.6 |
|  | What type of RPE is used? | WHS Reg 44(3)  COP 7.6.1 |
|  | Does the RPE meet the Minimum Protection Factor for the task (e.g. MPF10, MPF50)? | COP 7.6.1, Appendix 4 |
|  | Have workers been trained and received instruction on the proper use of RPE and the maintenance of re-useable RPE? | WHS Reg 44(4)  COP 7.6.3 & 12 |
|  | Is the RPE being used by the workers? | WHS Reg 44(3)(c), 46(2)  COP 7.6 |
|  | Has each worker been fit tested for the make and model of RPE they will use:   1. by a person qualified to undertake fit testing 2. using an appropriate qualitative or quantitative method 3. following the manufacturer’s requirements? | WHS Reg 44(3)  COP 7.6.2 |
|  | Are records of the fit testing available? | COP 7.6.2 |
|  | Has the worker undertaken a fit-check each time a fit-tested respirator is used? | WHS Reg 44(3)(a)(ii) & 46(2)  COP 7.6.2 |
|  | Does the worker have any facial hair that could compromise the seal? | WHS Act 19(3)(c), 44(3)(a)(ii)  COP 7.6.2 |
|  | Is re-useable RPE stored and maintained in accordance with the manufacturer’s instructions? | WHS Reg 44(3)(b), 213  COP 7.6.3 & 8.4 |

**PART 7 – CLEAN UP AND DISPOSAL**

|  | **Questions** | **Legislative References** |
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|  | Is there a system of work in place to clean-up RCS waste generated from the task and when applicable, a procedure to clean up wet slurry before it becomes RCS dust? | WHS Act 19(3)(c)  WHS Reg: 315(a)  COP 8, 8.1 & 8.2 |
|  | Where a vacuum is used to clean up, is it a minimum of Class H/Class M as outlined in Appendix 4 of the COP? | WHS Act 19(1)  COP 8.1, Appendix 4 |
|  | Do the disposal work practices effectively manage exposure to RCS dust (e.g. when placing waste in bins etc)? | WHS Act 19(3)(c)  WHS Reg: 315(a), 351(1)  COP 8.1 |
|  | Are adequate procedures in place to ensure workers can clean excess RCS dust from their clothes? | WHS Act 19(3)(c)  WHS Reg 41(1)  COP 8.3 |

**PART 8 – HEALTH MONITORING**

The 30-day trigger for health monitoring referred to in the COP has been met when on 30 days or more in 12 months, the worker has done tasks that involve materials that contain crystalline silica and generate RCS, or disturb RCS, and the worker should have worn RPE for those tasks based on the COP.

You must ensure health monitoring is provided to a worker if any of the following conditions are met:

* The worker has met the 30-day trigger for RPE use
* You are reasonably certain the worker will meet the 30-day trigger for RPE use over a 12-month period
* The worker performs or has performed work for you that would require RPE, based on the COP and you have not kept records.

Information on when health monitoring is required is included in COP 10.1, 10.1.1, and Appendix 4.

If health monitoring of workers is required, answer the following questions.

|  | **Questions** | **Legislative References** |
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|  | Are records kept to determine if there is a requirement for any workers to undertake health monitoring? This includes when it is uncertain if the 30-day trigger will be reached. | WHS Act 19(3)(g)  COP 10.1, 10.1.1, Appendix 4, Appendix 5 |
|  | Has health monitoring been undertaken and do you have the health monitoring records available? | WHS Reg 368, 374(1), 378(1)  COP 10.2 |
|  | If any recommendations have been made following health monitoring, have the recommendations been implemented? | WHS Reg 352(b)(iii)  COP 10.3 |
|  | Have the workers been given their health monitoring records? | WHS Reg 375  COP 10.2 |
|  | Are workers consulted on health monitoring? | WHS Act 47, 48 & 49  WHS Reg 369 |
|  | Were HSRs involved in health monitoring discussions? |  |