

Health monitoring

Guide for crystalline silica



Contents

Introduction	3
Crystalline Silica.....	4
1. Health monitoring required for crystalline silica under the model WHS Regulations	5
2. Monitoring exposure to crystalline silica.....	6
Respiratory function tests	6
Chest X-ray	6
Other health monitoring methods including use of HRCT	7
Workplace exposure standard	7
Removal from work.....	7
Return to work	8
3. Final medical examination	8
4. Route of occupational exposure	9
5. Target organ/effect	9
6. Acute effects	10
7. Chronic effects	10
8. Carcinogenicity.....	10
9. GHS classification	11
Source documents.....	11
Section 1 – A copy of this section to be completed by the examining registered medical practitioner and provided to the PCBU.....	15
Section 2 – This section to be retained by the registered medical practitioner	18

Introduction

This guide is intended to be read by a registered medical practitioner with experience in health monitoring who is engaged by person conducting a business or undertaking (PCBU) to carry out or supervise health monitoring. It provides practical guidance to registered medical practitioners about requirements under the work health and safety (WHS) laws for health monitoring.

This guide applies to all workplaces covered by the WHS Regulations where health monitoring is required.

How to use this guide

This guide includes references to the legal requirements under the WHS Act and WHS Regulations. These are included for convenience only and should not be relied on in place of the full text of the WHS Act or WHS Regulations.

The words 'must', 'requires' or 'mandatory' indicate a legal requirement exists that must be complied with. The word 'should' is used in this guide to indicate a recommended course of action, while 'may' is used to indicate an optional course of action.

This guide provides information for those registered medical practitioners engaged by a PCBU to carry out or supervise health monitoring for workers. This guidance should be read in conjunction with the following:

- *Health monitoring guide for registered medical practitioners*
- *Health monitoring guides for hazardous chemicals*
- *Health monitoring guide for workers*
- *Health monitoring guide for persons conducting business or undertakings (PCBUs).*

Health monitoring under the WHS Regulations

In certain circumstances, the model WHS Regulations place duties on a PCBU to provide health monitoring to workers. These requirements arise if the worker is carrying out work with hazardous chemicals including lead and asbestos. In addition, the work being carried out must be the kind of work specified in the WHS Regulations. A PCBU has the duty to determine if health monitoring is required.

The WHS Regulations prescribe that health monitoring is carried out by or supervised by a registered medical practitioner with experience in health monitoring.

Crystalline Silica

Silica is silicon dioxide, a naturally occurring widely abundant mineral that forms the major component of most rocks and soils. There are non-crystalline and crystalline forms of silica. Crystalline silica is also known as free silica. Crystalline silica dust particles that are small enough to penetrate deep into the lung are termed respirable. Respirable crystalline silica may cause lung damage and disease. The non-crystalline form of silica does not cause this kind of lung damage.

The most common form of crystalline silica is quartz (CAS 14808-60-7). Crystalline silica is found in varying proportions in aggregates, mortar, concrete and stone. Granite contains 25 per cent to 40 per cent quartz, shales average 22 per cent and sandstones average 67 per cent quartz. Quartz is the major component of sand in locations like stream beds, beaches and deserts. Other polymorphs of silicon dioxide, including cristobalite (CAS 14464-46-1) and tridymite (CAS 15468-32-3) are less common.

An increase in the number of workers diagnosed with silicosis and progressive massive fibrosis has been linked to working with composite stone. Composite stone products can contain up to 97 per cent silica. The high amount of silica means that there is a very high risk of workers developing breathing problems and silicosis if they breathe in dust made from these products.

Work activities that may represent a high risk exposure

Under the model Work Health and Safety (WHS) Regulations, free silica (crystalline silica dioxide) is listed as a restricted hazardous chemical and must not be used for abrasive blasting at concentrations greater than one per cent without authorisation from a relevant WHS regulator.

Examples of work activities involving crystalline silica that require special attention when assessing exposure include:

- fabrication, installation, maintenance and removal of composite stone countertops
- excavation, earth moving and drilling plant operations
- clay and stone processing machine operations
- paving and surfacing
- mining, quarrying and mineral ore treating processes
- road construction and tunnelling
- construction labouring and demolition
- brick, concrete or stone cutting; especially using dry methods
- abrasive blasting (blasting agent must not contain greater than one per cent of crystalline silica)
- foundry casting
- angle grinding, jack hammering and chiselling of concrete or masonry
- hydraulic fracturing of gas and oil wells
- pottery and other ceramics industries
- crushing, loading, hauling and dumping of rock or muck, and
- clean-up activities such as sweeping or pressurised air blowing of dust.

Sources of non-occupational exposure

Silica is abundant in nature in multiple forms including quartz, cristobalite, tridymite and tripoli.

Non-occupational exposure to silica dust can occur around industrial sites (quartz crushing, agate grinding, ceramics, use of slate pencils, mining and milling of sand stones, silica flour milling) or from naturally occurring sources such as desert dust or sand.

1. Health monitoring required for crystalline silica under the model WHS Regulations

Collection of demographic, medical and occupational history

Records of personal exposure

Standardised respiratory questionnaire to be completed

Standardised respiratory function tests, for example, FEV₁¹, FVC² and FEV₁/FVC³

Chest X-Ray full PA view

NOTE: The term health monitoring is established under the model Work Health and Safety (WHS) laws. Health monitoring is a duty of a person conducting a business or undertaking (PCBU) when a significant risk to health or a significant risk of exposure is identified. It involves a registered medical practitioner with experience in health monitoring examining and monitoring the health of workers to see if exposure to hazardous chemicals at work is affecting worker's health.

The term health screening, used recently in relation to accelerated silicosis, is in reference to the process of case finding and diagnosis. While this screening has recently been focussed on workers in the stone industry, it does not have the same purpose and intent as health monitoring under the model WHS laws.

Health monitoring before starting work in a crystalline silica process

Symptoms of silicosis and progressive massive fibrosis may not appear for many years after exposure (workers may be diagnosed with these diseases and not present with any symptoms, even at the point of initial diagnosis), which is why health monitoring is critical. Health monitoring for crystalline silica may be required before the worker starts work so that a baseline can be established and any changes to the worker's health after commencing the work can be detected.

Initial discussions about a health monitoring program should include:

- possible health effects from exposure to crystalline silica
- how to recognise and report symptoms, and
- what is involved in the health monitoring program, for example the frequency of testing and the tests that may be needed, and
- recording any previous workplace or non-occupational exposure to silica.

An initial physical examination by the registered medical practitioner should place emphasis on the respiratory system, including baseline spirometry. The spirometry should be performed as a baseline and annually in accordance with appropriate quality guidelines, so that it may be used later for comparison.

A baseline chest X-ray should also be performed before a worker starts work in a crystalline silica process. Should this be required, it should be taken in a specialist radiology practice or hospital radiology department⁴. The X-rays should be read by an experienced radiologist who meets the reporting requirements and competencies of the Royal Australian and New Zealand College of Radiologists⁵ or is qualified as a B reader.

¹ Forced expiratory volume in one second

² Forced vital capacity

³ Respiratory ratio, or Tiffeneau index

⁴ The Royal Australian and New Zealand College of Radiologists recommends using a specialist radiology practice or hospital radiology department accredited under Diagnostic Imaging Accreditation Scheme (DIAS) for Medicare and meeting the quality criteria of the ILO⁴ classification, so it may be used later for comparison.

Depending on the past exposures and medical history, the registered medical practitioner may recommend carrying out further tests with a specialist in order to detect early stage silicosis.

During exposure to a crystalline silica process

2. Monitoring exposure to crystalline silica

Where workers are exposed, suspected of being exposed or are concerned about exposure to crystalline silica, the person conducting the business or undertaking (PCBU) has a duty to arrange a health monitoring appointment for the worker(s) with the registered medical practitioner.

Workers should undergo a medical examination annually. The medical examination should include:

- records of personal exposure
- physical examination
- standardised respiratory questionnaire and pulmonary function tests in accordance with appropriate quality guidelines, and
- chest X-Ray full posterior-anterior (PA) view (as indicated, see below).

Respiratory function tests

Respiratory function testing should be conducted in accordance with appropriate quality guidelines. Tests should be performed as a baseline and annually.

Individuals with progressive decreases in respiratory function beyond that normally associated with age should be reviewed more frequently or referred to an accredited respiratory physician with experience in occupational health.

Cigarette smoking can significantly exacerbate lung function loss attributable to silica dust exposure. The smoking history and status of the worker should be recorded and considered during the health monitoring program. Advice regarding the impact of smoking on the symptoms of disease should also be provided to the worker.

Chest X-ray

Chest X-rays should be carried out as a baseline measure. The frequency of follow up X-rays should be based on exposure levels.

X-rays should be taken in a specialist radiology practice or hospital department⁵. The X-rays should be read by a radiologist who meets the reporting requirements and competencies of the RANZCR⁵ or is qualified as a B reader.

For lower risk occupations and industries, a chest X-ray is recommended to be carried out every five years for the first 20 years of work. An abnormal X-ray, increased or prolonged exposure (above the exposure standard or greater than 20 year work history) may warrant X-rays on a more frequent basis (for example, three yearly). Where a worker has experienced very heavy exposure, annual X-rays may be warranted.

The WHS Regulations prescribe an X-ray as a minimum, but another type of health monitoring may be undertaken where the registered medical practitioner considers it is equal or better. For high risk occupations and industries, such as the composite stone industry, a

⁵ The Royal Australian and New Zealand College of Radiologists recommends using a specialist radiology practice or hospital radiology department accredited under Diagnostic Imaging Accreditation Scheme (DIAS) for Medicare and meeting the quality criteria of the ILO⁵ classification, so it may be used later for comparison.

high-resolution computed tomography (HRCT) should be considered. X-rays are less sensitive in detecting accelerated silicosis.

At a minimum, if not HRCTs, annual X-rays should be considered for high risk occupations and industries, such as the composite stone industry, rather than every five years.

NOTE: Registered medical practitioners should be aware of the potential for excessive X-rays where the worker has worked for multiple employers, particularly in the construction and mining industries.

Other health monitoring methods including use of HRCT

High-resolution computed tomography (HRCT) has been demonstrated to be more sensitive than X-rays in detecting early dust lung disease. Use of a HRCT scan of the chest (non-contrast) may be considered depending on the worker's history and levels of silica exposure. For high risk occupations or industries, such as the composite stone industry, HRCT should be considered instead of, or as an adjunct to, X-ray.

With the identification of rapidly progressive silicosis and advanced disease in high risk workers, notably those that work with composite stone, there may be a need to conduct more rigorous respiratory function testing. For example, incorporating measurement of the diffusing capacity of the lungs for carbon monoxide (DLCO). This is a more recent test that may not be available in regional and rural areas and may only be offered through specialist respiratory laboratories.

Workplace exposure standard

The workplace exposure limit for crystalline silica (all forms) is:

- eight-hour time weighted average (TWA) of 0.05 mg/m³.

A physical examination and respiratory function testing may be required if the results of air monitoring indicate frequent or potentially high exposure (for example, half of the TWA or above). The results of air (dust) monitoring should be provided to the registered medical practitioner to inform the frequency of testing.

Removal from work

There is evidence that disease may continue to progress even after exposure to crystalline silica dust has ceased. Where the results of a medical examination indicate the worker is displaying signs or symptoms of exposure to crystalline silica, the registered medical practitioner should consider recommending the worker be removed from crystalline silica-related work.

When removal from crystalline silica-related work is indicated the registered medical practitioner must provide the PCBU with the following recommendations:

- the worker should be removed from work with crystalline silica, and
- the PCBU should review control measures and carry out recommended remedial action.

Where recommended by the registered medical practitioner, the PCBU should ensure that:

- the control measures are reviewed and the recommended remedial actions are followed to minimise the exposure,
- the worker must be informed of the results of the health monitoring, and
- if the health monitoring report indicates that worker may have contracted a disease or illness, the PCBU must provide a copy of the health monitoring report to the WHS regulator.

Return to work

Should a worker be removed from crystalline silica-related work, they must not return until the registered medical practitioner has:

- assessed them as medically fit, and
- made a recommendation to the PCBU that the worker can return to remediated crystalline silica-related work.

The assessment from the registered medical practitioner should consider:

- the clinical condition of the worker
- the resolution of symptoms, and
- remediation of the circumstances that led to the symptoms if possible.

The PCBU should provide advice to the registered medical practitioner about workplace monitoring undertaken and that the control measures and all recommended remedial actions are in place (for example through a revised risk assessment). The PCBU should ensure that the worker is returned to remediated work only after PCBU has received formal notification from the registered medical practitioner.

At termination of work in a crystalline silica process

3. Final medical examination

A final medical examination should be carried out by the registered medical practitioner and may include:

- medical history
- physical examination
- spirometry
- referral for another chest X-ray or CT.

The choice of imaging modality for the final medical examination should be consistent with the most recent form of imaging the worker had under the health monitoring program.

Workers with health conditions or continuing symptoms due to crystalline silica exposure should be advised to seek continuing medical examinations as organised by the registered medical practitioner supervising the health monitoring program.

A health monitoring report from the registered medical practitioner should be provided to the PCBU as soon as practicable after the completion of the monitoring program, and at regular intervals for longer term or ongoing health monitoring processes. The report must include:

- the name and date of birth of the worker
- the name and registration number of the registered medical practitioner
- the name and address of the PCBU who commissioned the health monitoring
- the date of the health monitoring
- any test results that indicate whether or not the worker has been exposed to a hazardous chemical
- any advice that test results indicate that the worker may have contracted an injury, illness or disease as a result of carrying out the work that triggered the requirement for health monitoring
- any recommendation that the PCBU take remedial measures, including whether the worker can continue to carry out the type of work that triggered the requirement for health monitoring, and
- whether medical counselling is required for the worker in relation to the work that triggered the requirement for health monitoring.

Potential health effects following exposure to crystalline silica

4. Route of occupational exposure

The primary route of crystalline silica exposure is via inhalation.

5. Target organ/effect

The target organs and potential effects of crystalline silica exposure include:

Table 1 Target organs and potential effects of crystalline silica exposure

Target organ	Effect
Lungs	<ul style="list-style-type: none"> • Silicosis – acute, accelerated, chronic, PMF • Lung cancer • Chronic obstructive pulmonary disease • Tuberculosis
Kidneys	<ul style="list-style-type: none"> • Renal disease
Autoimmune	<ul style="list-style-type: none"> • Scleroderma • Rheumatoid arthritis • SLE • Sarcoidosis

Airborne crystalline silica can bioaccumulate in the lungs and cause disease of the respiratory system. There is no clear 'no observable adverse effects level' (NOAEL) demonstrated for crystalline silica. Risks to health are occurring at levels previously thought to be acceptable. Limitations in technology make it difficult to determine a NOAEL if it occurs at very low levels of exposure.

Large bioaccumulated loads of crystalline silica in the lung substance (or lung parenchyma) can cause a build-up of connective tissue, termed silicosis, a specific form of pneumoconiosis. Silicosis is an irreversible and progressive condition. Early silicosis may have no untoward effects. However, severe forms can result in poor gas exchange, difficulty in breathing and death. Evidence suggests crystalline silica interacts with other respiratory hazards, like tobacco smoke, to cause airway diseases. Smokers are more susceptible to the long term effects of silica dust exposure.

Silicosis requires prolonged exposure to substantial airborne quantities of respirable crystalline silica to develop. Four clinical patterns of diffuse lung disease may be seen with silicosis:

- simple nodular silicosis
- progressive massive fibrosis
- accelerated silicosis, and
- acute silicosis or silicoproteinosis.

Factors thought to influence the potential for respirable crystalline silica to cause silicosis include:

- polymorphic types of crystalline silica with cristobalite, tridymite and quartz appearing more reactive and cytotoxic than coesite and shishovite
- the presence of other minerals (e.g. aluminium containing materials), reduces the toxic effect of quartz; however, this may only be a temporary effect

- the total surface area of individual particles; smaller particle size fractions would be expected to cause more lung damage than larger size fractions, and
- freshly fractured versus 'aged' surfaces; increased cytotoxicity occurs when crystalline silica particles are cleaved into smaller fragments with reactive free radical species forming on the surface of the particles; there is an 'aging' process where free radical activity decays with time; this occurs slowly in air but rapidly in water.

6. Acute effects

Acute silicosis occurs after a short exposure to very high levels of silica when the alveolar spaces fill with a lipid and proteinaceous exudate. This may occur after exposure in underground work or enclosed spaces where respiratory protection is not worn. Working with composite stone containing high amounts of crystalline silica also has been linked to cause acute silicosis.

Acute silicosis causes rapidly progressive dyspnoea and death, usually within months of onset.

Workers with acute silicosis may be expected to have a largely restrictive functional abnormality with gas exchange abnormalities.

7. Chronic effects

Simple silicosis is the most common pattern with a profusion of small rounded opacities less than one centimetre in diameter throughout the lung fields but predominantly in the upper lobes of the lung. Hilar lymph nodes may be prominent and calcification can be seen. Pulmonary function is usually well preserved. As silicosis progresses, the individual nodules enlarge and coalesce in a transition to progressive massive fibrosis.

Progressive massive fibrosis occurs as individual lesions conglomerate to form larger masses (more than one centimetre) and emphysema develops in lung tissue as the conglomerate shrinks through fibrosis. Substantial impairment of pulmonary function occurs.

Accelerated silicosis is rare but can develop within two to five years with intense exposure to crystalline silica dust.

Exposure to silica at levels that appear not to cause overt silicosis can cause chronic bronchitis and chronic obstructive airways disease. An increased susceptibility to tuberculosis occurs in workers with established silicosis. Epidemiological studies have revealed an excess prevalence of autoimmune disease like scleroderma, rheumatoid arthritis and systemic lupus erythematosus.

In the last 10 years several studies have linked crystalline silica with renal disease, particularly glomerulonephritis.

8. Carcinogenicity

The respirable fraction of quartz has been classified as a category 1A carcinogen according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) as it has been shown to cause cancer in humans.

Several work related exposure studies indicate crystalline silica is a potential human carcinogen. There is strong evidence people with many forms of pulmonary fibrosis, including silicosis, have an increased risk of developing lung cancer. A number of epidemiological studies from around the world have shown an increased risk for lung cancer among workers exposed to crystalline silica.

9. GHS classification

The following GHS classification for the respirable fraction of quartz has been taken from Safe Work Australia's Hazardous Chemicals Information System.

Hazard category

Specific target organ toxicity (repeated exposure) – category 1
(causes damage to organs through prolonged or repeated exposure)

Carcinogenicity – category 1A

Source documents

ACOEM (American College of Occupational and Environmental Medicine) 2011. Spirometry in the Occupational Health Setting - 2011 Update, ACOEM.

AIOH (Australian Institute of Occupational Hygienists Inc) 2009. AIOH Position Paper: Respirable Crystalline Silica and Occupational Health Issues, AIOH.

CDC (Centers for Disease Control and Prevention), Department of Health and Human Services 1990. Current Trends Silicosis: Cluster in Sandblasters – Texas, Morbidity and Mortality Weekly Review (MMWR) 39(25): 433-437.

WorkCover NSW. Chemical analysis branch handbook, 9th Edition, Workplace and biological monitoring exposure analysis.

David F, Steven N 2007. COPD and the workplace. Is it really possible to detect early cases Occupational Medicine 57(2): 82-84.

Esswein EJ, Breitenstein M, Snawder J, Kiefer M and Sieber WK 2013. Occupational exposure to respirable crystalline silica during hydraulic fracturing. J. Occup Environ Hyg 10: 347-56.

Fishwick D and Naylor S 2007. COPD and the workplace. Is it really possible to detect early cases? Occupational Medicine 57: 82-84.

ILO (International Labour Organization) 2011. Guidelines for the Use of the ILO International Classification of Radiographs of Pneumoconioses Revised Edition 2011. Geneva.

Health and Safety Executive 2010. Health surveillance in Silica Exposed Workers, Health and Safety Executive, London.

Hendrick D, Burge P, Beckett W and Churg A 2002. Occupational Disorders of the Lung: Recognition, Management, and Prevention, WB Saunders, London.

IARC (International Agency for Research on Cancer) 2012. Monographs on the Evaluation of Carcinogenic Risks to Humans - Arsenic, Metals, Fibres and Dusts 100(14).

Kirby T 2019. Australia reports on audit of stone cutters. Lancet 393: 861

Kramer M R, Blanc PD, Fireman E, et al. 2012. Artificial stone silicosis: disease resurgence among artificial stone workers. Chest 142: 419-424.

Kusaka Y, Hering KG 2005. International Classification of HRCT for Occupational and Environmental Respiratory Diseases. Springer.

Leso V. et al 2019. Artificial Stone Associated Silicosis: A Systematic Review. Int. J. Environ. Res. Public Health 16 (4): 568.

Medical Research Council Committee on Research into Chronic Bronchitis 1986. MRC Questionnaire on Respiratory Symptoms, Medical Research Council.

Rosenman K 2012. Michigan State University, Recommended Screening Protocol for Silica Exposed Workers.

NTP (National Toxicology Program) 2000. Silica, Crystalline (Respirable Size), 9th Report on Carcinogens, United States Department of Health and Human Services, Public Health Service, North Carolina.

RACP (Royal Australasian College of Physicians) 2018. Accelerated Silicosis: Overview.

RANZCR (Royal Australian and New Zealand College of Radiologists), Register of Clinical Radiologists for CWP Screening. Respiratory Disease Committee of the IUAT (International Union Against Tuberculosis) 1986. IUAT Bronchial Symptoms Questionnaire, International Union Against Tuberculosis.

Queensland Department of Natural Resources and Mines 2016. Review of Respiratory Component of the Coal Mine Workers' Health Scheme— Final Report.

Safe Work Australia 2013. Workplace Exposure Standards for Airborne Contaminants.

Safe Work Australia. Hazardous Chemicals Information System.

TSANZ (Thoracic Society of Australia and New Zealand) 2017. Standards for the Delivery of Spirometry for Coal Mine Workers, Queensland Health Guideline for Adult Spirometry Document Number QH-GDL-386:2012.

Steenland K 2005. One Agent, Many diseases: Exposure-Response Data and Comparative Risks of Different Outcomes Following Silica Exposure. *American Journal of Industrial Medicine* 48(1): 16-23.

Occupational Safety and Health Administration 2016. OSHA's Final Rule to Protect Workers from Exposure to Respirable Crystalline Silica. United States Department of Labor.

World Health Organisation/International Program on Chemical Safety 2000. Concise International Chemical Assessment Documents 24: Crystalline Silica, Quartz, WHO, Geneva.

Zosky GR, Hoy RF, Silverstone EJ, Brims FJ, Miles S, Johnson AR, Gibson PG and Yates DH 2016. Coal workers' pneumoconiosis: an Australian perspective. *Med. J. Aust.* 204 (11): 414-418.

Composite stone silicosis

Barber CM, Fishwick D, Seed MJ, Carder M, van Tongeren M 2018, Artificial stone-associated silicosis in the UK. *Occup. Environ Med* 75: 541.

Bartoli D, Banchi B, di Benedetto, F, Farina GA, Iaia TE, Poli C, Romanelli M, Scancarello G, Tarchi M 2012. Silicosis in employees in the processing of kitchen, bar and shop countertops made from quartz resin composite. Provisional results of the environmental and health survey conducted within the territory of USL 11 of Empoli in Tuscany among employees in the processing of quartz resin composite materials and review of the literature. *Ital. J. Occup Environ Hyg* 3: 138–143.

Frankel A, Blake, L, Yates D 2015. Complicated silicosis in an Australian worker from cutting engineered stone countertops: An embarrassing first for Australia. *Eur. Resp. J.* 46:1144.

Friedman GK, Harrison R, Bojes H, Worthington K, Filios M 2014. Centers for Disease Control and Prevention (CDC). Notes from the field: Silicosis in a countertop fabricator— Texa. *MMWR Morb. Mortal Wkly Rep* 64:129–130.

García Vadillo C, Gómez JS, Morillo JR 2011. Silicosis in quartz conglomerate workers. *Arch. Bronconeumol* 47: 53.

Hoy R 2017. Artificial stone associated silicosis with rapid lung function decline. *Eur Resp J* 50: 484.

Jimenez AL, Hidalgo Molina A, Morales Morales, Conde Sanchez MA, Sanchez Romero I, Perez Alonso A, Cordoba Doña JA 2017. Rapid clinical progression of silicosis in quartz conglomerate workers in Southern Spain *Eur Resp J* 50: 483.

Kirby T 2019. Australia reports on audit of stone cutters. *Lancet* 393: 861.

Kramer MR, Blanc PD, Fireman E et al 2012. Artificial stone silicosis: disease resurgence among artificial stone workers. *Chest* 142: 419-424.

Leso V et al 2019. Artificial Stone Associated Silicosis: A Systematic Review. *Int J Environ Res Public Health* 16(4): 568.

Martínez C, Prieto A, García L, Quero A, González S, Casan P 2010. Silicosis: A disease with an active present. *Arch. Bronconeumol* 46: 97–100.

Matar E, Frankel A, McCowan Blake LK, Silverstone EJ, Johnson AR, Yates DH 2017. Complicated silicosis resulting from occupational exposure to engineered stone products. *Med J Aust* 206: 385–386.

Paolucci V, Romeo R, Sisinni AG, Bartoli D, Mazzei MA, Sartorelli P 2015. Silicosis in Workers Exposed to Artificial Quartz Conglomerates: Does It Differ From Chronic Simple Silicosis? *Arch Bronconeumol* 51: 57–60.

Pavan C, Polimeni M, Tomatis M, Corazzari I, Turci F, Ghigo D, Fubini B 2016. Editor's Highlight: Abrasion of Artificial Stones as a New Cause of an Ancient Disease. Physicochemical Features and Cellular Responses. *Toxicol Sci* 153: 4–17.

Pérez-Alonso A, Córdoba-Doña JA, García-Vadillo C 2015. Silicosis: Relevant differences between marble workers and miners. *Arch Bronconeumol* 51: 53–54.

The Royal Australian and New Zealand College of Radiologists (2019). *Imaging of Occupational Lung Disease, Version 1.*

Ronsmans S, Decoster L, Keirsbilck S, Verbeken EK, Nemery B 2018. Artificial stone-associated silicosis in Belgium. *Occup Environ Med.*

Shtraichman O, Kramer MR 2017. Artificial stone silicosis: The Israel epidemic, current view. *Harefuah* 156: 517–521.

Shtraichman O, Blanc P, Ollech J, Fridel L, Fuks L, Fireman E, Shitrit D, Kramer M 2014. Outbreak of autoimmune disease in a silicosis cluster linked to high-silica content artificial stone. *Eur Res J* 44: 4545.

Health monitoring assessment and report

Crystalline Silica

This health monitoring report is a confidential health record and must not be disclosed to another person except in accordance with the Work Health and Safety (WHS) Regulations or with the consent of the worker.

There are two sections. Complete both sections and all questions as applicable.

Section 1 A copy of this section should be forwarded to the person conducting the business or undertaking (PCBU) who has engaged your services

Section 2 This should be retained by the registered medical practitioner. It may contain confidential health information. Information that is required to be given to the PCBU should be summarised in Section 1.

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

Section 1 – A copy of this section to be completed by the examining registered medical practitioner and provided to the PCBU

Person conducting a business or undertaking (PCBU)

Company/organisation name: Click here to enter text.

Site address: Click here to enter text.

Suburb: Click here to enter text.

Postcode: Click here to enter text.

Site Tel: Click here to enter text.

Site Fax: Click here to enter text.

Contact Name: Click here to enter text.

Other businesses or undertakings engaging the worker N/A
(include a separate section for each PCBU)

Company/organisation name: Click here to enter text.

Site address: Click here to enter text.

Suburb: Click here to enter text.

Postcode: Click here to enter text.

Site Tel: Click here to enter text.

Site Fax: Click here to enter text.

Contact Name: Click here to enter text.

Worker details (tick all relevant boxes)

Surname: Click here to enter text.

Given names: Click here to enter text.

Date of birth: Click here to enter a date.

Sex: Male Female

Address: Click here to enter text.

Suburb: Click here to enter text.

Postcode: Click here to enter text.

Current job: Click here to enter text.

Tel (H): Click here to enter text.

Mob: Click here to enter text.

Date started employment: Click here to enter a date.

Employment in crystalline silica risk work (tick all relevant boxes)
(information provided by the PCBU)

New to crystalline silica work

New worker but not new to crystalline silica work

Current worker continuing in crystalline silica work

Worked with crystalline silica since: Click here to enter a date.

Risk assessment completed: Yes No

Work environment assessment (tick all relevant boxes)
(information provided by the PCBU)

Date of assessment: Click here to enter a date.

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

Crystalline silica industry or use

- Excavation/earth moving
- Clay/stone processing
- Mining
- Abrasive blasting
- Natural or composite stone cutting
- Refractory bricks
- Drilling plant
- Paving/surfacing
- Construction
- Foundry casting
- manufacturing/installing stone bench tops
- Other (specify): [Click here to enter text.](#)

Other chemicals the worker may be exposed to: [Click here to enter text.](#)

Controls

Respirator use	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Respirator type	Click here to enter text.	
Local exhaust ventilation	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Overalls/work clothing	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Laundering by employer	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Wash basins and showers (with hot and cold water)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Wet handling methods	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other please specify		

Health monitoring results

Chest X-ray

Date	Results	Recommended action and/or comment
	<input type="checkbox"/> Normal <input type="checkbox"/> Abnormal	
	<input type="checkbox"/> Normal <input type="checkbox"/> Abnormal	
	<input type="checkbox"/> Normal <input type="checkbox"/> Abnormal	
	<input type="checkbox"/> Normal <input type="checkbox"/> Abnormal	

Spirometry

Date	Yes	No	Recommended action and/or comment
	<input type="checkbox"/>	<input type="checkbox"/>	Spirometry quality acceptable?
	<input type="checkbox"/>	<input type="checkbox"/>	Spirometry normal?
	<input type="checkbox"/>	<input type="checkbox"/>	Spirometry quality acceptable?
	<input type="checkbox"/>	<input type="checkbox"/>	Spirometry normal?

Other Tests

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

Date	Test	Normal	Abnormal
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Other comments on health monitoring results (e.g. any advice about injury, illness or disease):

Recommendations (by registered medical practitioner) (tick all relevant boxes)

Further/additional health monitoring for worker

- This is the final health monitoring report
- Repeat health assessment in [Click here to enter text.](#) month(s) / [Click here to enter text.](#) week(s)
- Counselling required
- Medical examination by registered medical practitioner. On [Click here to enter a date.](#)
- Referred to Medical Specialist (occupational/respiratory/dermatology/other). On [Click here to enter a date.](#)

Specialist's name: [Click here to enter text.](#)

Recommendations to PCBU

- The worker is suitable for work with crystalline silica
- Review workplace controls
- Biological monitoring results indicate unacceptably high exposure levels
- The worker should be removed from work with crystalline silica. On [Click here to enter a date.](#)
- The worker is fit to resume work. On [Click here to enter a date.](#)

Additional comments or recommendations: [Click here to enter text.](#)

Registered medical practitioner (responsible for supervising health monitoring)

Name: [Click here to enter text.](#)

Signature:

Date: [Click here to enter a date.](#)

Tel: [Click here to enter text.](#)

Fax: [Click here to enter text.](#)

Registration Number: [Click here to enter text.](#)

Medical Practice: [Click here to enter text.](#)

Address: [Click here to enter text.](#)

Suburb: [Click here to enter text.](#)

Postcode: [Click here to enter text.](#)

Only a copy of the above part (section 1) to be forwarded to the PCBU.

The below part (section 2) is to be retained by the registered medical practitioner.

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

Section 2 – This section to be retained by the registered medical practitioner

Person conducting a business or undertaking (PCBU)

Company/organisation name: Click here to enter text.

Site address: Click here to enter text.

Suburb: Click here to enter text.

Postcode: Click here to enter text.

Site Tel: Click here to enter text.

Site Fax: Click here to enter text.

Contact Name: Click here to enter text.

Other businesses or undertakings engaging the worker

Company/organisation name: Click here to enter text.

Site address: Click here to enter text.

Suburb: Click here to enter text.

Postcode: Click here to enter text.

Site Tel: Click here to enter text.

Site Fax: Click here to enter text.

Contact Name: Click here to enter text.

Worker details (tick all relevant boxes)

Surname: Click here to enter text.

Given names: Click here to enter text.

Date of birth: Click here to enter a date.

Sex: Male Female Pregnant/breastfeeding

Address: Click here to enter text.

Suburb: Click here to enter text.

Postcode: Click here to enter text.

Current job: Click here to enter text.

Tel (H): Click here to enter text.

Mob: Click here to enter text.

Date started employment: Click here to enter a date.

Past employment history

Have you ever worked in any of the following jobs?

If you answered 'yes' to any of the questions, please advise if you experienced any symptoms such as cough, shortness of breath, wheeze or asthma when working.

	Nature of work	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Comments (all 'yes' answers)
1	Excavation/earth moving	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
2	Drilling Plant	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
3	Clay/stone processing	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
4	Paving/surfacing	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
5	Mining	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

	Nature of work			Comments (all 'yes' answers)
6	Construction	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
7	Abrasive blasting	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
8	Foundry casting	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
9	Natural or composite stone cutting	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
10	Manufacturing or installing composite stone	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
11	Working with refractory bricks – furnace linings	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
12	Other (please specify)	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.

Past occupational exposure

For initial examination, please complete details for the four dustiest jobs listed above by duplicating this page as many times as is required

1.	Job title:	Click here to enter text.
2.	Length of time working in this job:	Click here to enter text.
3.	Job description: Include information on silica work tasks and the length of exposure that may impact health of the worker.	
	What type of work tasks do you perform in this job? For example: <ul style="list-style-type: none"> - Shaping e.g. with powered hand tools - Sawing e.g. with bridge saw - Polishing/finishing - General labouring - Maintenance - Cleaning the tools, surfaces and/or work space etc. 	Click here to enter text.
	How many days per week do you work in this job?	Click here to enter text.
	How many hours per day have you spent on doing dusty tasks or near someone else doing dusty tasks <u>since starting this job</u> ?	Click here to enter text.
4.	Silica description: Include information on type of silica that the worker might be exposed.	
	What type of silica do you work with in this job? For example: <ul style="list-style-type: none"> - Composite stone 	Click here to enter text.

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

<ul style="list-style-type: none"> - Naturals - Granite - Shale - Aggregates, mortar and concrete etc. - Refractory bricks - Other (please specify) 	
<p>5. Controls used at the workplace: <i>Include information on control methods used during tasks.</i></p>	
<p>Are there any automations or computerised machines for cutting, grinding or drilling work?</p>	<p>Click here to enter text.</p>
<p>Does your work involve dry cutting or wet cutting work?</p>	<p>Click here to enter text.</p>
<p>Are there any local exhaust ventilations in the room or equipment fitted with local exhaust ventilation or water suppression or dust collection systems?</p> <p>For example ventilation:</p> <ul style="list-style-type: none"> - On the tools - At the bench - In the ceiling - Open window/door etc. 	<p>Click here to enter text.</p>
<p>How the dust is cleaned up, for example special vacuum cleaner or specialised cleaners?</p>	<p>Click here to enter text.</p>
<p>Are there any other ways dust is controlled at your workplace?</p>	<p>Click here to enter text.</p>
<p>Do you think the ways to control dust are good enough at your workplace? Are the controls well maintained?</p>	<p>Click here to enter text.</p>
<p>6. Administrative controls used at the workplace: <i>Include information if any administrative controls are in place to provide extra protection.</i></p>	
<p>Do you work in shift rotations or modifying your cutting sequences in this job?</p>	<p>Click here to enter text.</p>
<p>Are there any restricted area policies or limited entry policies to go in to the areas where tasks with more dust are done?</p>	<p>Click here to enter text.</p>
<p>Are there any maintenance programs and entry log for equipment and personal protective equipment (PPE)?</p>	<p>Click here to enter text.</p>
<p>7. Personal protective equipment (PPE) used at the workplace: <i>Include information on PPE used.</i></p>	

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

Do you wear a respirator or mask at work?	Click here to enter text.
If yes, what type of respirator or mask do you use? For example: - Paper/disposable - Half face - Full face etc.	Click here to enter text.
Is it fit tested for you? When was your last fit test?	Click here to enter text.
Do you use any other PPE (e.g. goggles, ear plugs etc.) at this workplace?	Click here to enter text.
8. Other relevant information:	Click here to enter text.
9. Doctor's comments, if required:	Click here to enter text.

Please duplicate this section (this page and the last page) as many times as is required to report on as many workplaces as is necessary.

Non-occupational exposure history

- 1 Do you have any hobbies that involve exposure to silica dust? No Yes [Click here to enter text.](#)
Examples: pottery, stonework

General health questionnaire (tick all relevant boxes)

Do you have or have you ever had:

			Comments (all 'yes' answers)
1	Did you suffer any incapacity lasting two weeks or longer in the last two years	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
2	Have you ever had any operations or accidents or been hospitalised for any reason	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
3	Are you currently being treated by a doctor or other health professional for any illness or injury	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

Comments (all 'yes' answers)

4	Are you currently receiving any medical treatment or taking any medications. Please detail.	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
---	---	-----------------------------	------------------------------	---------------------------

Specific health questions (tick all relevant boxes)

Do you have or have you ever had:

Comments (all 'yes' answers)

1	Itchy eyes, runny or congested nose	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
---	-------------------------------------	-----------------------------	------------------------------	---------------------------

2	Chest pains or irregular heartbeats or suffered from rheumatic fever	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
---	--	-----------------------------	------------------------------	---------------------------

3	High blood pressure	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
---	---------------------	-----------------------------	------------------------------	---------------------------

4	Asthma, wheezing, or bronchitis now or in the past	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
---	--	-----------------------------	------------------------------	---------------------------

5	Any other lung or respiratory conditions (emphysema, pneumonia or sinusitis)	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
---	--	-----------------------------	------------------------------	---------------------------

6	Allergies, hay fever, or allergic bronchitis	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
---	--	-----------------------------	------------------------------	---------------------------

7	Kidney or bladder disease	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
---	---------------------------	-----------------------------	------------------------------	---------------------------

8	Tuberculosis	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
---	--------------	-----------------------------	------------------------------	---------------------------

9	Any form of cancer	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
---	--------------------	-----------------------------	------------------------------	---------------------------

10	An injury or operation affecting your chest?	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
----	--	-----------------------------	------------------------------	---------------------------

11	Heart disease (including heart attack, heart surgery, murmurs, angina)	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
----	--	-----------------------------	------------------------------	---------------------------

12	Bronchitis	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
----	------------	-----------------------------	------------------------------	---------------------------

13	Pneumonia	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
----	-----------	-----------------------------	------------------------------	---------------------------

14	Pleurisy	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
----	----------	-----------------------------	------------------------------	---------------------------

15	Any chest illness during past three years that has kept you from your usual activities for as much as a week?	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
----	---	-----------------------------	------------------------------	---------------------------

If no go to Q18

16	Did you bring up more phlegm than usual in any of these illnesses?	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
----	--	-----------------------------	------------------------------	---------------------------

17	Have you had more than one illness like this in the past three years?	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
----	---	-----------------------------	------------------------------	---------------------------

18	Arthritis, or painful or swollen joints	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
----	---	-----------------------------	------------------------------	---------------------------

19	Autoimmune conditions (lupus erythematosus, scleroderma, sarcoidosis)	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
----	---	-----------------------------	------------------------------	---------------------------

20	Skin problems	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
----	---------------	-----------------------------	------------------------------	---------------------------

21	Anxiety and/or depression	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
----	---------------------------	-----------------------------	------------------------------	---------------------------

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

Comments (all 'yes' answers)

22 Any other significant health conditions No Yes [Click here to enter text.](#)

Registered medical practitioner to provide comments for any 'Yes' responses (reference Question number):

No	Comment
	Click here to enter text.
	Click here to enter text.
	Click here to enter text.
	Click here to enter text.
	Click here to enter text.

Respiratory questionnaire (tick all relevant boxes)

			Details
Cough and Phlegm			
		<input type="checkbox"/> No <input type="checkbox"/> Yes	
1	Do you usually cough first thing in the morning	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
2	Do you usually cough during the day or at night, or in winter?	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
	<i>If no go to Q9</i>		
3	Do you cough like this on most days for as much as three months of the year	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
4	Do you usually bring up phlegm from your chest first thing in the morning	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
5	Do you usually bring up phlegm from your chest at any other time of the day or night	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
	<i>If no go to Q9</i>	<input type="checkbox"/> No <input type="checkbox"/> Yes	
6	Do you bring up phlegm like this on most days for as much as three months each year	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
7	In the past three years have you had a period of increased cough and phlegm lasting for three weeks or more	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
8	If Yes, have you had more than one such period	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
Breathlessness and wheezing			
9	Do you get short of breath when hurrying on level ground or walking up a slight hill	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
	<i>If no go to Q13</i>		

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

			Details
10	Do you get short of breath walking with other people of your own age on level ground	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
11	Do you have to stop for breath when walking at your own pace on level ground	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
12	Have you at any time in the last 12 months been woken at night by an attack of shortness of breath	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
Wheezing and Chest Tightness			
13	Have you had attacks of wheezing or whistling in your chest at any time in the last 12 months	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
14	Have you ever had attacks of shortness of breath with wheezing	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
15	If Yes, was your breathing absolutely normal between attacks	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
16	If you run or climb stairs rapidly do you ever		
	a) cough	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
	b) wheeze	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
	c) get tight in the chest	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
17	Is your sleep ever broken by		
	a) wheeze	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
	b) difficulty breathing	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
18	Do you ever wake up in the morning (or from sleep if you are a shift worker) with		
	a) wheeze	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
	b) difficulty in breathing	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
19	Do you ever wheeze		
	a) if you are in a smoky room	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
	b) if you are in a very dusty place	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
20	If yes to either Q 17, Q 18, Q 19 - are your symptoms better		
	a) at weekends	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
	b) when you are on holidays	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
Smoking			
21	Do you or did you smoke more than one cigarette/day; a cigar/week; two oz. pipe tobacco/month)	<input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
<i>If no proceed to General health assessment</i>			
22	Do (did) you inhale smoke	<input type="checkbox"/> No <input type="checkbox"/> Yes	If yes, indicate: <input type="checkbox"/> Slightly <input type="checkbox"/> Moderately <input type="checkbox"/> Deeply

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

		Details
23	How old were you when you started smoking regularly	Click here to enter text.
24	Do (did) you smoke manufactured cigarettes <input type="checkbox"/> No <input type="checkbox"/> Yes	Click here to enter text.
<i>if no go to Q29</i>		
25	How many cigarettes do (did) you smoke per day on weekdays	Click here to enter text.
26	How many per day on weekends	Click here to enter text.
27	Do (did) you smoke plain or filtered cigarettes	Click here to enter text.
28	What brands do (did) you usually smoke	Click here to enter text.
29	Do (did) you smoke hand rolled cigarettes <input type="checkbox"/> No <input type="checkbox"/> Yes	
<i>If no go to Q32</i>		
30	How much tobacco do (did) you usually smoke per week in this way	Click here to enter text.
31	Do (did) you put filters in these cigarettes <input type="checkbox"/> No <input type="checkbox"/> Yes	
32	Do (did) you smoke a pipe <input type="checkbox"/> No <input type="checkbox"/> Yes	
<i>If no go to Q34</i>		
33	How much tobacco do (did) you usually smoke per week in this way	Click here to enter text.
34	Do (did) you smoke cigars <input type="checkbox"/> No <input type="checkbox"/> Yes	
<i>If no go to Q36</i>		
35	How many of these do (did) you usually smoke per week in this way	Click here to enter text.
36	If you are a present smoker have you been cutting down in the past year <input type="checkbox"/> No <input type="checkbox"/> Yes	
37	If you are a past smoker when did you give up smoking altogether	Click here to enter text.

Registered medical practitioner to provide comments for any 'Yes' responses (reference Question number):

Click here to enter text.

General health assessment (if applicable)

Height – without shoes: Click here to enter text. cm **Weight:** Click here to enter text. kg

BP: Click here to enter text. / Click here to enter text. mmHg

Urinalysis

Blood: Normal Abnormal

Protein: Click here to enter text.

Sugar: Click here to enter text. No Yes

Referred for further testing:

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

Cardiovascular system			Medical comments (for all yes/abnormal)
Blood pressure	<input type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	Click here to enter text.
Heart rate	<input type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	Click here to enter text.
Heart sounds	<input type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	Click here to enter text.
Murmurs present	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Evidence of cardiac failure/oedema	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Respiratory system			Medical comments (for all abnormal)
Breathing normal and regular in character	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Auscultation normal	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Signs of past/present respiratory disease	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.

Spirometry

At least three technically acceptable manoeuvres should be obtained with the highest and second highest FEV₁ and FVC within 0.15 L (within 0.100 L for those with an FVC of equal to or less than 1.0 L)⁶. Use best result for FEV₁ and FVC, even if from different tests.

	Actual		Normal /Predicted Values*		% Predicted
	Pre	Post <i>If required</i>	Average	LLN	
FEV₁	Click here to enter text. L	Click here to enter text. L	Click here to enter text. L	Click here to enter text. L	Click here to enter text. %
FVC	Click here to enter text. L	Click here to enter text. L	Click here to enter text. L	Click here to enter text. L	Click here to enter text. %
FEV₁/FVC	Click here to enter text. %	Click here to enter text. %	Click here to enter text. %	Click here to enter text. %	Click here to enter text. %

GLI normative/predicted values to be used

Spirometry Quality	No	Yes	
Minimum of 3 attempts	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
Two best FEV ₁ within 150 mL	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
Two best FVC within 150 mL	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
Spirometry quality acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
Spirometry normal?	<input type="checkbox"/>	<input type="checkbox"/>	Click here to enter text.
Printed report attached	<input type="checkbox"/>	<input type="checkbox"/>	

⁶ Miller MR, Hankinson J, et al, 'Standardisation of spirometry', Series 'ATS/ERS Task Force: Standardisation of Lung Function Testing', Brusasco V, Crapo R, Viegi G (eds), Number 2 in this series, Eur Respir J, vol. 26, pp 319-338, 2005. <http://www.thoracic.org/statements/resources/pfet/PFT2.pdf>.

This form contains confidential information and must not be disclosed to another person except in accordance with the Work Health and Safety Regulations or with consent of the worker

Chest X-ray

X-rays should be taken in a specialist radiology practice or hospital department. The X-rays should be read by a radiologist who meets the reporting requirements and competencies of the RANZCR⁵ or is qualified as a B reader.

Date of last X-ray: [Click here to enter text.](#)

Meets quality criteria? Yes No

X-ray reported as: [Click here to enter text.](#)

ILO Classification: [Click here to enter text.](#)

Respirator fit

			Medical comments (for all abnormal)
Facial hair	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Facial deformity	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Dental deformities	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Fit test report attached	<input type="checkbox"/> No	<input type="checkbox"/> Yes	Click here to enter text.
Change in above since last fit test	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Click here to enter text.

Comments: [Click here to enter text.](#)

Registered medical practitioner (responsible for supervising health monitoring)

Name: [Click here to enter text.](#)

Date: [Click here to enter a date.](#)

Tel: [Click here to enter text.](#)

Fax: [Click here to enter text.](#)

Registration Number: [Click here to enter text.](#)

Medical Practice: [Click here to enter text.](#)

Address: [Click here to enter text.](#)

Suburb: [Click here to enter text.](#)

Postcode: [Click here to enter text.](#)