

# Bricklayer

## HAZARDS AND RISKS

Bricklayers can be frequently exposed to high levels of dusts through many regular tasks. Mixing cement and mortar; emptying or disposing of cement bags; cutting, sawing and drilling through bricks; and sweeping/cleaning floors and blockwork can all generate airborne dust which is easily inhaled. Close-up work, such as brick marking and carving, can also mean the worker is breathing very near to a dust source.

### Dust & respirable crystalline silica (RCS)

Construction dust is a general term for dust typically found on a construction site; the risk to health depends on the actual composition of the dust as well as the level of exposure to it. The highest risk to a bricklayer's health is likely to be from breathing in silica dust. Silica occurs in many types of stone, including concrete and brick. Inhaling fine silica dust (respirable crystalline silica or RCS) over time can lead to serious lung diseases, including fibrosis, silicosis, chronic obstructive pulmonary disease (COPD) and lung cancer. These diseases cause permanent disability and early death; over 230 workers die every year from cancer caused by exposure to silica dust. Breathing in any dust can lead to lung irritation, asthma and other acute and chronic respirable conditions.

### Exposure levels

Exposure to RCS varies according to the silica content of the material being worked. Concrete typically has a high proportion (silica content of between 25-75%), as does brick which contains around 30-40% silica. Dry cutting/sawing without dust extraction is likely to produce the highest levels of airborne brick/stone dust. Wet working has been shown to reduce exposure levels by up to 91%. Exposure levels are also affected by the frequency and duration of the work.

## CONTROL OPTIONS

### Elimination/prevention

Use pre-cut bricks/blocks and ready mixed concrete where possible.

### Engineering controls

- Cutting  
Use on-tool dust extraction where use of block splitters/wet sawing is not possible.
- Cleaning  
Use vacuum cleaners fitted with a HEPA filter wherever possible for cleaning.

### Safe working methods

- Block cutting  
Use block splitters to eliminate dust.  
Use wet saws for cutting.  
Carry out cutting in well-ventilated areas.
- Mixing cement  
Mix dry cement in a well-ventilated area.  
Carefully empty and dispose of cement bags to minimise dust release.
- Cleaning  
Clean up regularly using vacuums or wet cleaning; avoid dry sweeping or use of compressed air to remove dust from clothing.

### PPE

- Risk assess the tasks and also refer to Australian Standard AS/NZ 1715 for RPE guidance.
- Respiratory protective equipment (RPE) must be worn for brick cutting and cement mixing. The RPE should be a minimum of a P2 rated disposable dust mask.
- Consider higher levels of protection for extended periods and higher dust levels.

### Preferred control methods

- Use of pre-cut materials and ready-mixed concrete.

## MANAGING THE RISK

### Training & communication, supervision, maintenance & testing of controls and air

**monitoring\*** are all vital aspects of managing the risk, in addition to health surveillance which can be a requirement in certain circumstances.

See our introductory [Respiratory Health Hazards in Construction Fact Sheet Series: Overview](#) for more information about what things to consider and implement.

### Air monitoring\*

Air monitoring is a specialist activity. It may be needed as part of a risk assessment, as a periodic check on control effectiveness and to assess compliance with relevant WES, or where there has been a failure in a control (for example if a worker reports respiratory symptoms). A qualified Occupational Hygienist can ensure it is carried out in a way that provides meaningful and helpful results.

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## WORKPLACE EXPOSURE STANDARDS (WES) & EXPOSURE LEVELS

| Agent or substance            | Control/Exposure Limit             | Exposure Levels   |
|-------------------------------|------------------------------------|---|
| Wood dust - Soft wood         | 5 mg/m <sup>3</sup> (8 hours TWA)  |   |
| Wood dust - certain hard wood | 1 mg/m <sup>3</sup> (8 hours TWA)  |   |
| RCS                           | 0.05mg/m <sup>3</sup> (8 hour TWA) | Exposure to RCS varies according to the silica content of the material being worked. Concrete typically has a high proportion (silica content of between 25-75%), as does brick which contains around 30-40% silica. Dry cutting/sawing without dust extraction is likely to produce the highest levels of airborne brick/stone dust. Wet working has been shown to reduce exposure levels by up to 91%. Exposure levels are also affected by the frequency and duration of the work. |

### Further information

- Construction dust leaflet: [www.hse.gov.uk/pubns/cis36.pdf](http://www.hse.gov.uk/pubns/cis36.pdf)
- Construction dust: Cutting paving blocks, kerbs and flags: [www.hse.gov.uk/construction/healthrisks/hazardous-substances/cutting-paving-blocks-kerbs-and-flags.htm](http://www.hse.gov.uk/construction/healthrisks/hazardous-substances/cutting-paving-blocks-kerbs-and-flags.htm)
- Silica dust: [www.hse.gov.uk/construction/healthrisks/cancer-and-construction/silica-dust.htm](http://www.hse.gov.uk/construction/healthrisks/cancer-and-construction/silica-dust.htm)