Department of **Local Government, Industry Regulation and Safety**

GOVERNMENT OF WESTERN AUSTRALIA

WorkSafe Western Australia

How to manage airborne contaminant risks in construction

Work health and safety (WHS) laws require you, as the person conducting a business or undertaking (PCBU), to eliminate and minimise risks to the health and safety of your workers as much as you reasonably can.

To manage the risk of harm to your workers in the construction industry, you must first identify when and where they may be exposed to airborne contaminants. For more information read our information sheet on *How to identify airborne contaminant hazards in construction*.

Working with airborne contaminants such as dusts, gases, fumes, mists or vapours? Put in place control measures to eliminate or manage your workers' exposure to airborne contaminants that can cause harm.

How to manage or control the risks

Once identified, the hierarchy of control measures can be used to manage risks. The hierarchy of control measures are:

Elimination

The most effective way to manage a risk is to completely remove the hazard from your workplace. This means eliminating the generation of airborne contaminants.

If this is not possible, you must minimise the risks of workers' exposure to airborne contaminants as much as you reasonably can. This could include:

- removing the need to cut concrete by precasting it into concrete construction panels
- using an element connection system instead of relying on welding to minimise vapours and fumes.

Substition

Substitution controls involve replacing products and materials with ones that are less hazardous. Examples of replacing products and materials in construction may include:

- using score and snap fibre cement sheeting instead of using a circular saw
- using battery operated power tools such as chain saws to reduce exposure to petrol fumes
- replacing high toxicity paints, glues, and varnishes with lower toxicity or non-toxic alternatives
- suggesting to clients they choose engineered stone with a lower silica content
- replacing asbestos-containing materials with non-asbestos materials.



Isolation

Isolation controls place barriers or distance between a hazard and your workers. Physical barriers that remove the worker from contact with airborne contaminants are the most effective. Isolation controls include:

- restricting access and isolating work processes which generate dusts, fumes, mists and vapours within an enclosed room. Restrict access to the room, use a suitable ventilation system and ensure all workers within the space are wearing appropriate personal protective equipment (PPE) and or respiratory protective equipment (RPE)
- creating physical barriers and exclusion zones around tasks and between workers to prevent workers breathing in airborne contaminants
- distancing work processes from other workers, such as when using concrete grinders
- using suitably filtered positive pressure cabins on earthmoving plant
- having a separate room or area away from the work area for other tasks such as changing or eating
- separate animal waste storage areas from general work areas
- having a room or area away from the work area for changing and eating.



Engineering

Engineering controls use physical devices to change the characteristics of a task. In the construction industry, applying engineering controls will depend on the tasks your workers carry out. Engineering controls in construction can include using:

- water when cutting, drilling, and grinding concrete materials to minimise dusts becoming airborne
- plant that is designed to cut and completely encapsulate airborne contaminants
- power tools fitted with local exhaust ventilation or dust extraction systems
- industrial vacuum cleaners with appropriate filtration during clean-up of dusts – that are appropriately rated for the material being collected and can help to clean up waste water/slurry that needs to be disposed of correctly
- nozzles that limit the spray direction of chemicals to avoid the workers' breathing zone.



Administrative

Administrative controls provide additional protection after you have implemented substitution, isolation, and engineering controls.

Administrative controls may include:

- shift rotation policies to minimise the time workers spend in an exposure area
- laundering contaminated work clothes at work
- designated areas for changing out of PPE and dusty work clothes
- decontamination procedures for asbestos removal or asbestos-related work
- policies for storing, cleaning, and maintaining equipment
- signs to alert workers to a potential hazard
- safe work method statements (SWMS) which are required for certain tasks
- policies and procedures for keeping work areas clean.

Administrative (continued)

You must have administrative policies in place and instruct and train your workers (and retain records of training) to help them understand and manage the risks of exposure to airborne contaminants that can cause harm. You also need to supervise your workers to make sure they understand and follow your administrative policies, control measures and procedures.

Personal protective equipment

You should never rely solely on PPE, including respiratory protective equipment (RPE). PPE and RPE should only be used to supplement higher-level control measures, or when no other safety measures are available. It is important to make sure the PPE and RPE:

- is suitable for the task and to protect against the risk
- fits the worker who will be wearing it
- is clean and in good working order
- is stored appropriately.

You also need to provide training on using and maintaining PPE and make sure workers are using it correctly. Depending on the risk, RPE may have to be fit tested by a competent person such as an occupational hygienist. You can search for occupational hygienists near you on the Australian Institute of Occupational Hygienists' website.