

# Advice On Risk Control Measures For Working In Hazy Conditions

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Thursday, 20 June 2013



The haze levels in Singapore have reached a record high of PSI level 371 (1:00pm Thursday) and are now at levels which are regarded “Hazardous”. This is a serious situation which now requires employers to take action to protect the health and the safety of their employees.

The Ministry of Manpower (MOM) has urged employers to review the impact of unhealthy PSI levels on employees performing strenuous work outdoors. MOM has released guidelines for employers on protecting employees against the effects of haze.

Their recommendations may be summarised as follows:

1. Identify susceptible employee and reduce outdoor work
2. Determine criteria for stopping outdoor work
3. Improve efficiency of air cleaning devices
4. Ensure sufficient stock of disposable N95 respirators
5. All employees carrying out outdoor work must be provided with suitable respirators if the PSI level is above 300

[\(Read the document here\)](#)

IOM Singapore have received several enquiries from our clients about good control measures to protect their employees. We have developed this short note to assist employers to comply with the MOM recommendations by providing further information about good practice.

Employers should take the following steps;

# Carry out a Risk Assessment

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Proper risk assessment should be conducted to ascertain the potential risk to employees conducting various work activities during this period. The risk assessment should consider the risks to both health and safety. We advise employers to consider these points during risk assessment:

- Identify all work activities that are done outdoors. *For example, in a construction site work carried out in the structure in progress is still considered outdoors due to the lack of enclosure.*
- Identify any susceptible workers (workers with pre-existing lung or circulation problems). *Levels are now such that all workers need to be considered but susceptible workers will require additional levels of protection*
- Identify all work activities that may be affected by the reduced visibility. *For example, heavy lifting activities using tower cranes can become very dangerous due to the low visibility.*
- Evaluate indoor air quality of indoor workplaces. *While a workplace maybe within a building, the air quality really depends on the effectiveness of the ventilation and filtration systems.*
- Identify any other indirect risks arising from work activities and situations. *Employees commuting between residences and workplaces or employee who continues to work despite feeling slightly unwell.*

# Apply Risk Control Measures

After evaluating the risk, control measures to mitigate the risk must be applied. As with all risks a hierarchy of control approach should be used. Try to use the most effective controls.

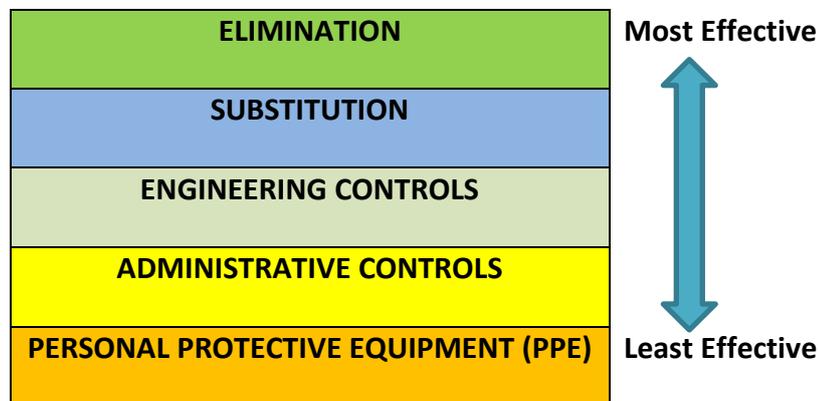


Figure 1 Hierarchy of Control

## ELIMINATION

Elimination of risk refers to the total removal of the worker's exposure to the hazards, effectively removing the possibility of accidents, incidents and ill health.

Examples:

- Cease all outdoor work (e.g. construction activity, delivery using motorcycle)
- Cease all activities that require good visibility (e.g. tower crane, road side work)

## SUBSTITUTION

This involves substituting a process or a product with a less hazardous process or product to mitigate the risk.

Examples:

- Change the method for outdoor work (e.g. delivery using cars instead of motorcycle)
- Change the work location (e.g. outdoor events can be host in multipurpose halls)
- Adjust the project schedule (e.g. reschedule the crane lifting for a later date, meanwhile concentrate the work force on other tasks)
- Replace the machinery/vehicle (e.g. ferry employee to workplace using buses instead of open trucks)

## ENGINEERING CONTROLS

Engineering controls are physical means that serve the workforce by reducing the likelihood of occurrence or severity of consequence of the hazard.

Examples:

- Installation of air cleaning devices in workplaces
- Improve efficiency of air cleaning devices for enhanced protection of indoor workers
- Improve seal on windows, doors and other openings in buildings and vehicles

## ADMINISTRATIVE CONTROLS

Administrative controls reduce exposure to a hazard by establishing procedures, work instructions and good communication channels.

Examples:

- Set criteria and empowering the employee to stop any work (e.g. (1) when PSI reaches above 100, susceptible employee should stop any outdoor work and rest, while other employee should be equipped with suitable respiration protection: e.g.(2) When levels reach above 300, all outdoor works to be ceased )
- Conduct a daily brief wellness survey on all employees to encourage ill-health reporting
- Provide training and briefing on risks of poor air quality (e.g. brief the employees to reduce outdoor activity, including personal lifestyles habits)
- Providing emergency and resuscitation equipment in workplaces and people trained to use them

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

This should be used only as a last resort, after all other control measures have been considered. Wearing respirator is not the safest way to continue working outdoors. Outdoor work should be avoided as much as possible under the current conditions.

### Use of respirator

The selection of a suitable respirator is important. Not all type of respirators gives good protection to the employees. In common with MOM we recommend use of N95 standard dust mask, or equivalent. Other types of masks may not provide that necessary levels of protection.

Take notes of these pointers:

- Proper training on the wearing of the mask is required
- Face-fit testing for all users are required
- Masks should be changed at least once a day (8-hours shift)
- Replace the mask with a new one when it gets wet or becomes so soiled that breathing becomes difficult
- Continuous wear time of mask should be less than 1 hour (allow rest time in between)

### How to properly wear a respirator

- 1 Place the mask over the head. One strap should go above the ears and the other strap below.
- 2 Adjust the straps on each side of the mask until it fits snugly against the face. Using both hands, pinch the nosepiece, at the bridge of the nose, to provide a good seal.
- 3 Place both hands over the front of the N95 respirator and inhale deeply. If air comes in from the sides, top or bottom this way, re-adjust the straps and nosepiece until no air leaks in from outside the mask.



## Review and ensure that control measures are being applied

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Control measures used should be reviewed to ensure that they are being properly applied. Employers, managers and supervisors have a duty to protect their employees' safety and health at work. During this time, employees are being exposed to higher levels of safety and health risk due to the haze. Hence, it is important for to carry out the proper risk assessment and to implement the appropriate measures.

Managers and supervisors should communicate these to all employees and ensure that all measures are applied.

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