



# Checklist for Risk Assessment of Outdoor Work under High Air Pollution Levels

## Introduction

The Air Quality Health Index (AQHI) System, launched by the Environmental Protection Department (EPD), aims to communicate air pollution information to the public. Under the system, when the AQHI is at the “Very High” category, employers of outdoor workers performing heavy manual work are advised to assess the risk and take appropriate preventive measures to protect the health of their employees; and when the AQHI is at the “Serious” category, employers of all outdoor workers are advised to assess the risk and take appropriate preventive measures to protect the health of their workers. The health risk of air pollution to outdoor workers depends not only on the pollution level, but also on a multitude of factors including the work location, work nature, work duration and health condition of the workers concerned.

In accordance with the Occupational Safety and Health Ordinance (Cap. 509) and Factories and Industrial Undertakings Ordinance (Cap. 59), employers have a duty to ensure, so far as reasonably practicable, the safety and health of their employees at work. Such duty includes the provision and maintenance of systems of work that are, so far as reasonably practicable, safe and without risks to health.

To assist employers in assessing the risk of outdoor work under high air pollution levels, the Labour Department has produced this checklist, setting out a number of relevant factors that should be taken into account in the assessment. **The list of factors merely serves as a reference and should not be construed as exhaustive.** In using the checklist, employers should also consider other factors that are relevant to the nature of work of their employees and the particular circumstances of their workplaces, as appropriate. Employers may appoint a person who is familiar with the outdoor work process and has basic knowledge of the health effects of air pollution, AQHI and occupational safety and health to conduct the risk assessment. Based on the findings and recommendations of the assessment, employers should then take appropriate preventive measures as necessary, examples of which are given for reference.

## **Factors to be considered in Assessing the Risk of Outdoor Work under High Air Pollution Levels**

### **General / Roadside AQHI Category**

- Is the General / Roadside AQHI for the district where the outdoor work is to be / being performed at the “Very High” or “Serious” category?

## **Workload and work arrangement**

- Does the outdoor work involve significant physical exertion (e.g. handling heavy loads or work equipment, involving fast bodily movements, wearing special clothing like costumes or heavy protective clothing, etc)?
- Does the outdoor work need to be performed for long hours, particularly in areas with heavy traffic?
- Could mechanical aids, additional manpower or other means be provided, as appropriate, to reduce the physical exertion of the workers?
- Could the intensity and pace of the work be suitably reduced as far as reasonably practicable?
- Could administrative control measures (e.g. rescheduling outdoor work involving significant physical exertion to another time of the day or another day, arranging job rotation between outdoor and indoor work or scheduling suitable rest breaks in indoor places) be arranged for the workers, where reasonably practicable?

## **Exposure to other air contaminants**

- Are the workers liable to be exposed to significant levels of air contaminants from a particular source while performing the outdoor work (e.g. working near a diesel engine)?

## **Workers' health condition**

- Do any of the outdoor workers have existing heart or respiratory illness (such as coronary heart or other cardiovascular diseases, asthma, chronic bronchitis and chronic obstructive airway disease), and are therefore more susceptible to the health risk of air pollution?
- Is there any medical advice regarding the workers' fitness to work outdoors under high air pollution levels?

## Examples of Preventive Measures

Under high air pollution levels, employers should take appropriate preventive measures having regard to the results of risk assessments, such as reducing outdoor physical exertion of the workers, and reducing the time of their stay outdoors, especially in areas with heavy traffic. Respiratory protection should only be considered in exceptional circumstances where prolonged outdoor work is unavoidable, and all the practicable preventive measures taken could not minimize the risk. Nevertheless, workers having doubt about their fitness to wear respirators should seek medical advice. Examples of general and specific measures are given below:-

### General Measures

- Take heed of information on the prevailing AQHI category.  
Example: Develop action plans for high air pollution levels. Take heed of the prevailing and forecast AQHI category in taking / planning preventive measures.
- Outdoor workers, in particular those with existing heart or respiratory diseases, should seek advice from a medical doctor if they are in doubt of their health condition or feel chest or breathing discomfort. They should inform their employers of the medical advice so that suitable work arrangements could be worked out.  
Example: Take into account the health status of the workers when assigning outdoor work.
- Provide adequate information, instruction, training and supervision on preventive measures against air pollution to outdoor workers.  
Example: Arrange briefings for outdoor workers on the health effects of high air pollution levels and work arrangements under such situations. Remind workers to seek medical advice if they have doubts about their fitness to perform outdoor work under high air pollution levels.

## Specific Measures

- **Reschedule low-priority outdoor work to another time of the day or another day as far as practicable.**  
Example: Reschedule outdoor cleaning work in housing estates to a time period when the forecast AQHI category is below “Very High” .
- **Minimize outdoor work in areas with heavy traffic as far as practicable.**  
Example: Arrange roadside construction work or pedestrian cleaning work to be performed when traffic is light or medium.
- **Arrange for job rotation between outdoor work and indoor work.**  
Example: Arrange security guards to work outdoors and indoors alternately to minimize their exposure to high air pollution levels.
- **Reduce the weight of loads being handled at one time, especially heavy loads.**  
Example: Adjust the quantity of goods to be delivered manually at one time to avoid handling heavy loads.
- **Provide mechanical aids or powered machinery to reduce physical exertion and shorten the duration of outdoor work.**  
Example: Use roller conveyor / electric lifter for transporting heavy goods.
- **Provide additional manpower for heavy manual work to be done by a team.**  
Example: Arrange for team lifting and transporting of heavy goods.
- **Reduce the pace of outdoor work.**  
Example: Allow more time for completion of outdoor construction work.
- **Schedule suitable rest breaks for outdoor workers.**  
Example: Arrange for a 10-15 minute break in a half-day for outdoor workers, especially those performing heavy manual work.

- Arrange for outdoor workers to take rest breaks / meals in indoor places if practicable.

Example: Allow outdoor cleaning workers to take rest breaks / meals in indoor places.

- Provide vehicle transport to replace prolonged outdoor walking.

Example: Arrange vehicle to transport workers from site office to their workplaces.

- Take into account the medical advice given to outdoor workers with existing heart or respiratory illnesses in assigning outdoor work to them, particularly heavy manual work.

Example: Follow the medical advice of avoiding outdoor heavy manual work when the AQHI category is “Very High” or above in assigning work to the worker concerned.

## **Enquiries**

If you wish to enquire about this checklist or require advice on occupational health and hygiene issues, please contact the Occupational Safety and Health Branch of the Labour Department through:

Address : 15/F., Harbour Building, 38 Pier Road, Central, Hong Kong

Telephone : 2852 4041

Fax : 2581 2049

E-mail : [enquiry@labour.gov.hk](mailto:enquiry@labour.gov.hk)

For information on the AQHI, please refer to relevant publications produced by EPD or visit its website at [www.epd.gov.hk](http://www.epd.gov.hk).

## **Complaints**

If you have any complaints about unsafe workplaces and practices, please call the Labour Department’s occupational safety and health complaint hotline on 2542 2172. All complaints will be treated in the strictest confidence.