

Guideline for Prevention of Heat Stroke and other Heat-induced Accidents on Construction Site

Introduction

Construction works conducted under high temperature and high humidity are likely to cause heat stroke and other heat-induced accidents to workers. Summer days are hot and humid in Hong Kong. Past accident statistics showed that the frequency of construction accidents, in general, were higher in hot months than in other months. Workers engaged in construction work are at risk of having heat stroke and other heat-induced accidents if appropriate preventive measures are not taken. This guideline lists out some appropriate measures that should be taken by contractors and workers to prevent heat stroke and other heat-induced accidents happening on construction sites.

2. By adopting effective measures to control the occupational hazards in a hot environment, it not only can ensure the safety and health of workers, but also benefit the organization by:

- (a) reducing occupational injuries and adverse effects on workers' health;
- (b) enhancing work enthusiasm and decreasing absenteeism; and
- (c) increasing work efficiency and productivity.

Risk Factors

3. The risk factors for heat stroke and other heat-induced accidents include:

- (a) high temperature;
- (b) high humidity (because it hinders sweat evaporation);
- (c) poor ventilation;
- (d) high radiant heat load, such as exposure to direct sunlight;
- (e) heavy manual activities; and
- (f) wearing clothing that hinders sweat evaporation and heat dissipation.

It is pertinent that consideration should be given to all the above factors and not only rely on a single factor (such as temperature) in assessing the

risk of heat-induced accidents. In addition, workers engaged in construction work for the first time are more likely to have heat stroke because their bodies have not yet adapted to the hot working environment.

Symptoms of Heat Stroke

4. Common symptoms include:
- Thirst, fatigue, lethargy;
 - Nausea and headache;
 - Fainting and transient loss of consciousness;
 - Clammy skin and paleness; and
 - Weak and rapid pulse, and even muscle cramps.

A Safe and Healthy System of Work

5. Contractors should formulate a safe and healthy system of work to safeguard workers against heat stroke and other heat-induced accidents. An effective system should include:

(a) Work Environment

- Increase air flow by using appropriate ventilation or air conditioning system.
- Avoid working under direct sunlight and set up temporary sunshade whenever possible.

(b) Work Arrangement

- Avoid working in the hot environment for prolonged periods of time. Take heed of weather report and all or most of the work should, as far as reasonably practicable, be rescheduled to:
 - Cooler periods in the daytime, such as early morning; and
 - Cooler places, such as covered or shaded area.
- Minimize physical demand by using mechanical aids at work.
- Make arrangement for workers to rest in a cool or shady place during very hot periods.
- Allow workers to take regular breaks or rotate to other worksites within the working day to reduce their exposure in the hot environment.

(c) Supply of cool potable water

- Provide cool potable water for workers at all times during work.
- Encourage workers to take plenty of water or other appropriate beverages to replenish the fluid and electrolytes lost through sweating.

(d) Suitable Clothing

- Light-coloured clothing minimizes heat absorption and enhances heat dissipation.
- Loose-fitting clothing enhances sweat evaporation, but clothing that is too loose may be entangled in the moving parts of machines.
- Clothing made of natural materials can enhance heat dissipation.
- The broad edge of helmet can avoid direct sunlight on the face, neck and back.

(e) Workers' Health

- Special attention should be paid to any report of workers suffering from symptoms of heat stroke. Workers should be trained to observe their body responses. Whenever there are any symptoms of heat stroke, they should inform their supervisors and take appropriate actions immediately.
- Some workers may have difficulties in adapting to the hot working environment because of their health condition or the effects of drugs. Contractors should take this into account and consider the recommendations of the workers' attending doctors when assigning work to these workers.

Last but not least, the key to preventing heat stroke and other heat induced accidents is educating the site management as well as workers on the hazards of working in hot environment and the benefit of implementing proper controls and work practices.