



15 Aug 2012
OSHD/SPECS/OM/HS/01-2012

All construction companies

Circular on Managing Heat Stress in the Workplace

The current hot weather is expected to continue into the next few months and working in Singapore's hot and humid weather can put your workers at an increased risk of heat stress, especially so for workers who are not acclimatized to working in the hot weather. Heat stress, if not well controlled, puts workers at risk of developing heat stroke, an acute life-threatening condition that can be fatal if not promptly treated. In Dec 2010, an employer was fined \$20,000 for failing to take adequate measures to prevent a workplace fatality from heat stroke.

Duties under the Workplace Safety and Health Act and its Subsidiary Legislation

2. The Workplace Safety and Health Act places the responsibility on the employers to take reasonably practicable measures to ensure the health and safety of their employees at work. Under the Workplace Safety and Health (General Provisions) Regulations, the occupier of the workplace has to protect workers from excessive temperatures and harmful radiation.

3. Employers are also required under the WSH (Risk Management) Regulations to conduct risk assessment to address the safety and health risks in the workplace, including eliminating or reducing the risks of heat stress on workers. Where there are occurrences of heat stroke cases, the employers are to report such cases to the Ministry of Manpower (MOM) via <http://mom.gov.sg/iReport>

Measurements of Environmental Heat Stress

4. An environmental heat stress index is one of the indicators for risk of heat injuries and should be used in conjunction with other factors to assess overall risk. These include the Wet Bulb Globe Temperature (WBGT) and the Heat Stress Index.

Identification of Heat Stress

5. Supervisors must be trained to watch out for heat stress symptoms in workers and must do their part to remind workers of the need for hydration. Heat stroke must be suspected as one of the causes if a worker collapses at the workplace, without signs of external injury. Workers should also be reminded to report to their supervisors if they feel unwell, tired, dizzy or have headaches and painful cramps. They should be referred to the doctor for further checks.

Measures to reduce Heat Stress

6. Companies should take necessary measures to reduce the risk of heat stress to their workers. Such measures include:

a. Heat acclimatisation

Newly assigned workers, especially those who have come from a cooler climate must be acclimatised to the hot weather in Singapore to allow the body to slowly adapt to the hot environment. They would need at least one to two weeks to adjust to local weather conditions and the workload. They should not start working at the full workload in the hot environment upon arrival. Workers should undergo a 14-day heat acclimatisation (HA) programme in the first 2 weeks of employment. The HA comprises daily exposure to heat stress (working under hot environment) for up to 14 days. The HA takes the form of gradual increase in work duration under the hot environment, increasing from 2 hours per day to the full work duration over 14 days.

During the period of acclimatization, workers should be closely supervised and be given the flexibility to have more rest breaks and longer acclimatization period, if needed. Work targets should not be excessive. They should be monitored closely for symptoms of heat stroke and must report to their supervisors if they feel unwell during the period.

Acclimatization is lost during periods when there is no exposure to heat stress. Workers returning from a prolonged leave (more than one week) should be re-acclimatized. Workers returning from a prolonged illness should consult a doctor before going back to work – they should also be re-acclimatized.

b. Adequate water intake and drinking facilities

Workers should start the work day by ensuring that they are well hydrated and not thirsty. They should be encouraged to keep themselves hydrated all the time and supervised drinking or “water parades” can help ensure this. Employers should provide cool drinking water at convenient and accessible locations to facilitate hydration.

c. Work schedule and provision of mechanical aids

Heavy physical work or work under the sun should be scheduled to the cooler parts of the day (early morning or late afternoon) where possible. There needs to be adequate rest periods in between work periods. Under severe conditions, this duration of rest should be increased accordingly. Mechanical aids such as lifting equipment can be used to reduce physical workload.

d. Shaded areas for work and rest

Shaded areas should be provided for workers who spend significant time under the sun. Cool drinking water should be provided in the rest areas.

e. Clothing in outdoor environments

Workers should wear loose-fitting, light coloured clothing while working in the hot environment.

f. Worker training and reporting

All workers must be educated on the dangers of heat-related disorders. They should be told to report immediately to their supervisors if they are feeling unwell and brought to see a doctor. All workers should complete the Construction Safety Orientation Course (CSOC) before starting work. Workers should also work with their fellow workers and watch out for symptoms of heat stroke for each other.

g. Fitness to work

Worker should pass their pre-employment medical examinations and those who are ill should report to their supervisor before starting work.

Emergency First Aid

7. Workers suspected of succumbing to the heat should receive immediate first aid treatment which includes moving the worker to a shady area, removing the clothing, applying cool water to the skin and fanning to promote evaporative skin cooling. Ice packs may be placed under the armpits and groins to reduce the body temperature while awaiting the arrival of the ambulance. Heat stroke is a medical emergency and such workers should be sent to the nearest hospital with appropriate medical facilities.

Summary

8. Prevention is key to reducing heat-related disorders. By controlling the factors that contribute to heat stress, we can reduce the potential for harm. More details on managing heat stress are available in the WSH Council Guidelines on "Managing Heat Stress at the Workplace" available at: <https://www.wshc.sg/wps/portal/resources?action=detailedInfoStop&fInfoStopID=IS2010092700631>.

For clarifications, please contact Dr Yong Zhi Yong at Yong_Zhi_Yong@mom.gov.sg or at contact no: 6692 5072.



Dr Kenneth Choy
for Commissioner for Workplace Safety and Health
Occupational Safety and Health Division
Ministry of Manpower

Date of issue	Classification	Circular no
15 Aug 2012	Heat Stress	OSHD/SPECS/OM/HS/01-2012