

## **B. PERFORMANCE STANDARDS**

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### **B6. THERMAL STRESS**

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#### **1.0 Scope**

This Standard addresses both workplace heat stress and cold stress. It covers high temperature conditions generated by the industrial process or the mining environment, temperatures exacerbated by hot weather, and extreme cold weather conditions, that can pose a risk to health and safety of employees and contractors.

#### **2.0 Programme Design**

- 2.1 Where risk assessment indicates the need, a documented thermal stress management programme must be in place such that:
- (a) It complies with all relevant requirements in the A Standards;
  - (b) Workplace thermal stress levels (temperature, air movement, humidity, etc.) are adequately characterised and described;
  - (c) Activities (work level, etc.) and conditions (clothing, health, etc.) that have the potential to exacerbate thermal stress effects are identified and adequately characterised and described;
  - (d) Hot areas or activities where employees have experienced excessive fatigue, muscle cramp, dehydration, dizziness and other symptoms of heat stress are identified and described;
  - (e) Cold areas or activities where employees have experienced pain or loss of feeling in extremities, frostbite, severe shivering, excessive fatigue and other symptoms of cold stress are identified and described; and
  - (f) Control measures, including training and clear documented work procedures, are in place to minimise thermal stress levels and protect employees and contractors from adverse exposure.
- 2.2 Where a risk of thermal stress is determined, an appropriately qualified person, in consultation with employees must conduct monitoring surveys on site.
- 2.3 Medical examinations, as per Standard A5, must include information about the operator's physiological and biomedical aspects, and an interpretation of job fitness provided for defined extreme thermal conditions and job activities.

#### **3.0 Measurement Techniques**

- 3.1 Detailed heat stress assessment of identified tasks or jobs must be tiered to:
- (a) Commence with the use of a simple heat stress index as a screening tool; then, if necessary
  - (b) Use rational heat stress indices in an iterative manner to determine the 'best' control methods for alleviating potential heat stress; then

- (c) Undertake physiological monitoring when exposure times are calculated to be less than 30 minutes, or where high level PPE that limits heat loss must be worn.
- 3.2 Detailed cold stress assessment of identified tasks or jobs must be conducted according to current appropriate guidelines, incorporating a cold stress index, to determine the 'best' control methods for alleviating potential cold stress.

### **4.0 Exposure Controls & Treatment**

- 4.1 Where relevant, elimination or substitution must be considered.
- 4.2 Exposure controls must include:
- (a) An acclimatisation period for new workers and those returning from extended leave or sickness;
  - (b) Training in the recognition of signs and symptoms of heat or cold stress, emergency procedures and preventative measures;
  - (c) Protective observation (buddy system or supervision); and
  - (d) A requirement for self-paced working.
- 4.3 The following exposure controls must be considered:
- (a) Work / rest regimes based on the interpretation (by an expert) of measurements conducted, and job rotation;
  - (b) Suitable rest areas with a provision of cool drinking water and cool conditions for high temperatures, or provision of warm drinks and warm conditions for cold temperatures;
  - (c) Selection of appropriate clothing or other PPE for extreme temperature conditions; and
  - (d) The use of engineering controls.
- 4.4 Where thermal stress is assessed to be a risk, the site must develop a suitable emergency response plan.