

GUIDANCE NOTE

HEALTH AND SAFETY AT WORK IN HOT WEATHER AND HOT ENVIRONMENTS

1. THE LAW

- 1.1 The Health and Safety at Work etc Act 1974 requires employers to provide their staff with, among other things, a safe and healthy working environment and safe systems of work.
- 1.2 The Work Place Health Safety and Welfare Regulations 1992 require that the workplace shall be maintained at a reasonable temperature and that a drinking water supply must be provided. Adequate provision must be made for ventilation by fresh or artificially purified air.
- 1.3 The Management of Health and Safety at Work Regulations 1999 require employers to assess the risk to health and safety of their employees arising out of the work activity including the environment in which it takes place to determine the precautions they need to take to protect employee's health and safety. There is no specific maximum temperature as what is "reasonable" will depend on the nature of the work carried on.

2. HAZARDS ASSOCIATED WITH HOT WORKING ENVIRONMENTS

- 2.1 At high temperatures e.g. 25°C and above, such as those potentially found in any work place on a summer's afternoon, the atmosphere can become heavy. Staff become sleepy and less aware of dangers to themselves. There is an increased risk of accidents due to slips, trips, falls, poor manual handling and injury from hand tools etc.
- 2.2 Thermal discomfort gives rise to reduced efficiency which can lead to poor decision making with resultant process errors
- 2.3 Heat Exhaustion can occur in sedentary as well as manual work. It occurs as a result of inadequate fluid intake to replace fluids lost by sweating. Fluid imbalance gives rise to nausea, light headedness and general weakness with an elevated temperature. If untreated it will lead to fainting and possibly heat stroke.
- 2.4 Heat Stroke -this is a life threatening condition where the body loses the ability to control its own temperature. It can arise from untreated heat exhaustion or due to conditions of high humidity. In very humid conditions sweat cannot evaporate from the skin so the body cannot cool itself effectively.

3. PERSONS LIKELY TO BE AT HIGH RISK

- 3.1 The following is a non-exhaustive list of persons likely to be at high risk of heat injury in hot weather or hot environments:-

Kitchen Staff
Process Workers
Maintenance Staff
Outdoor staff such as Gardeners
Staff using personal protective equipment e.g. breathing apparatus
+; respirators; impermeable protective over clothing

4. PRECAUTIONS

- 4.1 The best precaution is to avoid exposure to the hot environment altogether or if this is not reasonably practicable to reduce exposure to the minimum necessary to achieve the task:-
- 4.2 Do not go out in the sun. Change the time of day the job is done to a cooler time of day.
- 4.3 Provide frequent breaks in a cool environment away from the sun and sources of heat such as cooking equipment and other heating processes. The hotter the environment and/or more strenuous the work the more frequent and/or longer breaks should be.
- 4.4 If the working environment can be modified e.g. as in a building, then means of cooling and humidification or dehumidification should be provided. Air movement alone, e.g. by fans, may not provide adequate cooling if the external air is at a high temperature.
- 4.5 If the working environment cannot be modified then “refuges” should be provided where breaks can be taken e.g. provision of shaded areas, an air cooled/conditioned rest room.
- 4.6 Consideration should be given to enclosure/shielding of process which generate heat and discharge of hot air from processes to outside of the work area. If the hot process cannot be enclosed or shielded/ventilated then consideration should be given to protecting the operators control station.
- 4.7 Personal protective equipment should be specially designed for work in hot environments. e.g. light coloured loose fitting/absorbent over clothing. If the over-clothing has to be impermeable e.g. to protect against chemicals consideration should be given to the need for means of cooling.
- 4.8 A drinking water supply must be provided. Persons carrying out manual labour in a hot environment should drink 8 pints per day and a further pint for every hour worked. The importance of regular drinking of water should be stressed to staff.

5. FURTHER INFORMATION

- 5.1 Copies of relevant legislation can be obtained from:

*Health and Safety Executive Books Limited
P.O. Box 1999
Sudbury,
Suffolk
CO10 6FS*

- 5.2 Advice on ventilation in kitchens is contained in Health and Safety Executive Information Sheet Catering Sheet No. 10.

- 5.3 Further advice can be obtained from Enforcement Services at the following address:

*Food and Health and Safety Section,
Haringey Council,
Council Offices,
High Road,
Wood Green,
N.22 8LE,*

Tel No -020 8489 5558.

References

L24, Workplace Health, Safety and Welfare, (ISBN 0717604136 - available from HSE Books)

The HSE guidance publication, Thermal Comfort in the Workplace, seeks to define thermal comfort, and states:

'An acceptable zone of thermal comfort for most people in the UK lies roughly between 13°C (56°F) and 30°C (86°F), with acceptable temperatures for more strenuous work activities concentrated towards the bottom end of the range, and more sedentary activities towards the higher end.'

HSG194, Thermal Comfort in the Workplace, (ISBN 0717624684 -available from (HSE Books)

Extreme Hot Working Conditions

Appendix

The Human Body's response to heat

The human body attempts to maintain a constant body temperature of 37°C – at the core of the body.

To counter increased temperature the body will increase sweating to lose heat by evaporation off the skin, increase blood flow to the skin, may increase the rate of breathing.

The effect of High Temperatures on a human body will depend on a number of factors.

- The Air Temperature – measured by a normal thermometer
- Any Radiant Heat – e.g. from the sun or equipment
- Air Movement
- Relative Humidity – percentage of moisture in the air
- Clothing worn – the number of layers and thermal efficiency of clothing and where on the body worn
- Metabolic Rate – the individual's metabolic rate
- Personal Protective Equipment – e.g. respiratory protection may increase the effort of breathing
- Physical Activity – hard work or modest work increases the “heat” within the body
- Medical state of the individual and body mass –

Age

Gender

Acclimatisation

Skill

Hydrated state -percentage of liquid in the body

Possible medical conditions

Medication being taken and level of fitness

- Time exposed to temperature – both in total and short bursts and rest period

Determining maximum temperatures for workers.

It is not possible to determine a simple maximum temperature. To be able to calculate the effect on the body of high temperature all the above must be taken into account. The effect can only be calculated by reference to numerous codes of practice or prediction guides e.g. British Standards and by taking measurements over a period of time to register air temperature, radiation and relative humidity together with the other factors quoted above.