

# INDOOR THERMAL COMFORT AND VENTILATION GUIDELINES



## 1. Introduction

It is recognised that in some indoor workplaces the temperature and air quality are less than ideal. Some staff and students may suffer discomfort as a result. A person's perception of thermal comfort is affected by air temperature, air movement (speed), humidity, clothing, activity level (ie the amount of physical work done), mean radiant temperature (the average temperature of the walls, floor windows, etc) and many other factors. These guidelines provide some information about what can be done locally to improve comfort levels in warm indoor areas. This information is supplementary to the [Air Conditioning – Policy and Procedures](#).

## 2. Hot Conditions

There is a significant difference between thermal discomfort and heat stress. There are very few work environments at this University that could give rise to heat stress. However there may be some environments that create discomfort for some staff and students.

## 3. Possible Health Effects

There are no known health effects from thermal discomfort. However, extremes in air temperature may have adverse effects on productivity and job efficiency due to slower work rates, increased numbers of errors and absenteeism. People who are pregnant, overweight, unfit, dehydrated or unwell will tend to feel the heat more.

## 4. How to Minimise the Effects of Heat

1. Wear the loosest possible clothing
2. Ensure that clothing is sufficient to prevent sunburn if working outdoors
3. Drink cool water at frequent intervals
4. Try to increase air movement to allow evaporation of sweat, by opening windows and doors or using mechanical aids such as fans and air conditioners
5. Use blinds, curtains and solar film to decrease radiant heat
6. Rotate jobs or take frequent rest breaks
7. Avoid standing for long periods
8. Negotiate with local management for staff and students to take breaks in cooler areas or transfer some work to cooler areas
9. Negotiate to alter working hours so that work can be done in the cooler parts of the day

Under Section 8, Part 2 of the Occupational Health and Safety Act 2000: Duties relating to health, safety and welfare at work, (1)(c) states that an employer is responsible for "ensuring that systems of work and the working environment of the employees are safe and without risks to health". Further under (1)(e) the employer must provide "adequate facilities for the welfare of the employees at work". If productivity is low and distress levels are high due to thermal discomfort, then it may be appropriate for the Head of School/Director to suspend work until conditions improve.

Temperatures above 38°C are considered extreme for all except the lightest sedentary activity. Temperatures between 30 and 38°C are likely to be extreme for performing heavy or moderate physical activities. Temperatures between 26 and 30°C may be considered extreme when performing heavy physical activities. In deciding whether to suspend work or not, Directors/Heads of School should consider factors such as temperature, humidity, radiant heat, level of physical activity and safety-critical tasks such as operating machinery or handling chemicals, as well as pressure to meet deadlines. Individual needs such as medical conditions should also be taken into account.

**Further information:** WorkCover Code of Practice: [Work in Hot or Cold Environments](#).

## **5. Facilities Management Assistance**

In order to improve indoor thermal comfort, concerned staff and students should raise the matter with their supervisor for attention. Several matters need to be considered by the users when assessing this type of discomfort and typical questions to be asked are:

1. Is there ventilation or air conditioning? Is it ON? If so, and the operation appears faulty, or it won't switch ON, submit a Maintenance Request to Facilities Management. Be aware that some systems are activated by motion sensors and may take a while to improve conditions, and that some facilities are fresh air ventilation only and will not be able to 'condition' the air. Excessive opening of windows or doors in air-conditioned spaces can severely impair the control of temperature and humidity.
2. If other means of ventilation or temperature control - windows, fans, curtains, etc - are inadequate then Facilities Management (Service Desk ext.16500) can provide assistance in reviewing the possibility of improvements.

All requests will be considered within the Air Conditioning Policy.

## **6. References**

Department of Employment and Industrial Relations, Working Environment Branch, *Office Design at Work - A general guide*, AGPS, Canberra, 1983

WorkCover Authority of NSW, *Work in Hot or Cold Environments*, 2001

Occupational Health and Safety Act 2000

*Public Service Association, PSA Heat Policy*, November 2000

WorkCover Authority of NSW, *Health and Safety in the Office*, 1993