

Thermal Comfort

Ref:TCA/V01/16

EALING COUNCIL

Table of Contents

1. Introduction	3
2. Thermal Comfort Factors	3
3. Legal Requirements	5
4. Who is and is not affected by the Arrangement?.....	5
5. Responsibilities	5
6. Thermal Comfort for Schools	7
7. Risk Assessment.....	7
8. Working Outdoors	7
9. Sources of information and support:	8

Appendices:

- A – School Thermal Comfort Guidance
- B – Ealing Council hot weather advice
- C – Ealing Council cold weather advice
- D – Sample Risk Assessment thermal comfort in buildings
- E – Sample Risk Assessment Working in outdoor weather.

Review:

This document will be evaluated and reviewed at least every two years from the date it becomes live; or in the event of a change in legislation or need.

Author:	Patrick Howell
Job Title:	Health & Safety Officer (Schools)
Email:	howellp@ealing.gov.uk
Date of Issue:	June 2016
Review Date:	June 2018

Amendments:

Number	Description	Date

1. Introduction

Ealing Council so far as is reasonably practicable will provide a comfortable working environment without the need for special clothing or equipment. If reasonable comfort cannot be achieved because of hot or cold processes, all appropriate steps will be taken to achieve a temperature which is acceptable to the majority. The temperature in a workplace should normally be at least 16 degrees Celsius.

2. Thermal Comfort Factors

Thermal comfort is very difficult to define as you need to take into account a range of environmental, work-related and personal factors.

The term 'thermal comfort' describes a person's state of mind in terms of whether they feel too hot or too cold.

Environmental factors (such as humidity and sources of heat in the workplace) combine with personal factors (i.e. your clothing) and work-related factors (how physically demanding your work is) to influence your 'thermal comfort'.

Thermal comfort is not measured by room temperature alone. It should always be considered in relation to other environmental and personal factors. There are six basic factors to consider. These factors may be independent of each other, but together contribute to an employee's thermal comfort.

Environmental factors

1. Air temperature

This is the temperature of the air surrounding the body. It is usually given in degrees Celsius (°C).

2. Radiant temperature

Thermal radiation is the heat that radiates from a warm object. Radiant heat may be present if there are heat sources in an environment.

Radiant temperature has a greater influence than air temperature on how we lose or gain heat to the environment.

Examples of radiant heat sources include: the sun; fire; electric fires; ovens; kiln walls; cookers; dryers; hot surfaces, machinery, molten metals, etc.

3. Air velocity

This describes the speed of air moving across the employee and may help cool them. It assists in the co-operation of sweat. The change of state from liquid to gas requires the absorption of energy hence the cooling effect. However this may also cause over cooling.

Air velocity is an important factor in thermal comfort for example:

- Still or stagnant air in indoor environments that are artificially heated may cause people to feel stuffy. It may also lead to a build-up in odour
- Moving air in warm or humid conditions can increase heat loss through convection without any change in air temperature

- Physical activity also increases air movement, so air velocity may be corrected to account for a person's level of physical activity
- Small air movements in cool or cold environments may be perceived as a draught as people are particularly sensitive to these movements.

4. Humidity

Humidity is the quantity of water vapour (as a gas) dispersed in the air. This can be low or high.

Relative humidity is the ratio between the actual amount of water vapour in the air and the maximum amount of water vapour that the air can hold at that air temperature.

Relative humidity between 40% and 70% does not have a major impact on thermal comfort. In workplaces which are not air conditioned, or where the weather conditions outdoors may influence the indoor thermal environment, relative humidity may be higher than 70%.

In conditions of high humidity the evaporation of sweat from the skin will be reduced as will the cooling effect.

When non-breathable vapour-impermeable personal protective equipment (PPE) is worn, the humidity inside the garment increases as the wearer sweats because the sweat cannot evaporate. If an employee is wearing this type of PPE (e.g. asbestos or chemical protection suits etc) the humidity within the PPE will be high. Such activity cannot be sustained for long periods

Personal factors

5. Clothing insulation

Thermal comfort is very much dependent on the insulating effect of clothing on the wearer.

Wearing too much clothing or PPE may be a primary cause of heat stress even if the environment is not considered warm or hot.

If clothing does not provide enough insulation, the wearer may be at risk from cold injuries such as frostbite or hypothermia in cold conditions.

Clothing is both a potential cause of thermal discomfort as well as a control for it as we adapt to the climate in which we work. You may add layers of clothing if you feel cold, or remove layers of clothing if you feel warm. Many companies inhibit this ability for employees to make reasonable adaptations to their clothing as they require them to wear a specific uniform or PPE.

It is important to identify how the clothing contributes to thermal comfort or discomfort. By periodically evaluating the level of protection provided by existing PPE and evaluating newer types of PPE you may be able to improve the level of thermal comfort.

6. Work rate/metabolic heat

The more physical work you do, the more heat you produce. The more heat we produce, the more heat needs to be lost so we don't overheat.

A person's physical characteristics should always be borne in mind when considering their thermal comfort, as factors such as their size and weight, age, fitness level and gender can all have an impact on how they feel, even if other factors such as air temperature, humidity and air velocity are all constant.

3. Legal Requirements

Employers have a duty to safeguard the health and safety of their employees under Section 2 of the Health and Safety at Work etc. Act 1974 (HASWA) and assess the risks arising out of their work activities and working environment under regulation 3 of the Management of Health and Safety at Work Regulations 1999.

Section 3 of the HASWA places general duties on employers towards people other than their employees i.e. contractors and members of the public.

The Workplace (Health, Safety and Welfare) Regulations 1992 places a legal obligation on the council to provide a 'reasonable' temperature in the workplace where possible.

The Personal Protective Equipment Regulations 2002 and the Personal Protective Equipment at Work Regulations 1992 (as amended)

School Premises Regulations 2012

Section 7 of the HASWA requires all employees

“(a) To take reasonable care for the health and safety of himself and of other persons who may be affected by his acts or omissions at work and

(b) As regards any duty or requirement imposed on his employer or any other person by or under any of the relevant statutory provisions, to co-operate with him so far as is necessary to enable that duty or requirement to be performed or complied with.”

Section 8 of the HASWA also requires employees:

“Not to interfere with or misuse things provided pursuant to certain provisions. No person shall intentionally or recklessly interfere with or misuse anything provided in the interests of health, safety or welfare in pursuance of any of the relevant statutory provisions.”

The council expects high standards of conduct and performance of all employees. Where employees fail to adhere to such standards or compliance with these and other policy and arrangements, formal action could be initiated in accordance with the relevant council policy and procedure. A possible outcome for serious or persistent breach includes dismissal.

Failure to comply with the legislation detailed in the paragraphs above may render Ealing Council liable to criminal prosecution and unlimited fines in certain circumstances.

4. Who is and is not affected by the Arrangement?

This arrangement applies to the following:

- All Employees of Ealing Council
- All 'Maintained' schools in Ealing i.e. (Community, Community Special, Voluntary-Controlled, Maintained Nursery Schools and Pupil Referral Units/Study Centres.).

These arrangements do not apply to, but may be adopted by; Voluntary-Aided and Foundation Schools.

5. Responsibilities

The responsibilities of key individuals throughout the council for managing health, safety and welfare are detailed below.

The Chief Executive

The chief executive has overall responsibility for health and safety throughout the organisation.

Executive Directors

The executive directors are primarily responsible to the chief executive for the implementation and effective management of the council's health and safety policy. They are responsible for delegating specific health and safety roles and responsibilities to nominated officers.

Director Level Managers and Head teachers of Community Schools

Director level or equivalent managers, including head teachers of community schools are responsible for ensuring risk management is in place for the premises and activities they are responsible for.

General level management responsibilities

This level of responsibility will include: Service heads, managers, supervisors and team leaders, who will have defined health and safety responsibilities for work activities, they must ensure:

- During working hours, the temperature in all workplaces inside buildings shall be reasonable.
- The workplace is adequately thermally insulated where it is necessary, having regard to the type of work carried out and the physical activity of the persons carrying out the work; and excessive effects of sunlight on temperature shall be avoided.
- A method of heating or cooling shall not be used which results in the escape into a workplace of fumes, gas or vapour of such character and to such extent that they are likely to be injurious or offensive to any person.
- A sufficient number of thermometers shall be provided to enable persons at work to determine the temperature in any workplace inside a building.

All Staff

All staff must comply and co-operate with the management team to provide a reasonable level of thermal comfort without the need for special clothing.

All staff have a duty of care for themselves and to act sensibly during extreme weather and follow guidelines issued by the council and others including the wearing of PPE as well as following the control measures as set out in the risk assessments.

Corporate health and safety

The corporate health and safety team provide advice, training, support and monitoring of arrangements as appropriate.

Contractors

Contractors employed by or working in partnership with the council have a similar responsibility to their employees and must demonstrate compliance with the Workplace (Health, Safety and Welfare) Regulations 1992.

6. Thermal Comfort for Schools

The advice from the Department of Education in relation to the Schools Premises Regulations 2012, states the Workplace (Health, Safety and Welfare) Regulations 1992 covers the health, safety and welfare needs of most spaces in schools, this includes heating and thermal comfort. See guidance for schools in Appendix A.

7. Risk Assessment

Risk assessment for general workplace activities and environmental factors will cover thermal comfort in accordance with L24 the Approved Code of Practice for the Workplace (Health, Safety and Welfare) Regulations 1992.

For task based risk assessments whereby extremes of temperature may be a significant or contributory factors thermal comfort will be taken into consideration as part of the control measures.

See sample risk assessment templates for working in both hot and cold weather conditions.

8. Working Outdoors

When working outdoors the effects of the weather can potentially have a serious impact on an employee's health if the risks have not been considered or properly managed. This impact may be immediate or it may occur over a long time period.

When working outdoors the weather can have influence an individual's effectiveness and this is not readily managed using just engineering controls. In these circumstances some of the most effective ways of managing these environments are to introduce some simple administrative controls for example:

Cold environments

- Ensure the personal protective equipment issued is appropriate
- Provide mobile facilities for warming up, and encourage the drinking of warm fluids such as soup or hot drinks
- Introduce more frequent rest breaks
- Consider delaying the work – can it be undertaken at warmer times of the year without compromising on safety?
- Educate workers about recognising the early symptoms of cold stress

Hot environments

- Reschedule work to cooler times of the day
- Provide more frequent rest breaks and introduce shading to rest areas
- Provide free access to cool drinking water
- Introduce shading in areas where individuals are working
- Encourage the removal of personal protective equipment when resting to help encourage heat loss

- Educate workers about recognising the early symptoms of heat stress

9. Sources of information and support:

Corporate Health and Safety

corporate_health_and_safety@ealing.gov.uk

[L24 Approved Codes of Practices \(ACoPs\) Workplace \(Health, Safety and Welfare\) Regulations 1992](#)

[HSE - Thermal Comfort Checklist](#)

[HSE - Heat Stress in the Workplace - A brief guide.](#)

[Thermal Comfort Guidance for Schools in Hot Weather](#)

[Thermal Comfort Guidance Code Of Practice Schools, Nurseries and Children's Centres](#)

[Department for Education - Advice on standards for school premises](#)

Ealing Council - [Emergency Planning](#) - Cold weather advice for employees

Info on the Severe Weather Forum and Severe Weather Plan – Contact the Emergency Management Team