



GIG  
CYMRU  
NHS  
WALES

Bwrdd Iechyd Prifysgol  
Caerdydd a'r Fro  
Cardiff and Vale  
University Health Board

Reference Number: UHB 094

Version Number: 2

Date of Next Review: 19 Aug 2018

Previous Trust/LHB Reference Number:

Trust ref no 160

## Thermal Comfort Procedure

### Introduction and Aim

Over the last 2-3 years there has been a dramatic rise in the number of requests for comfort cooling to off set the effects of internal and solar heat gains. The former are mainly attributed to computers, printers, photocopiers, fax machines, water coolers, fridges, research equipment etc, all releasing heat to the internal environment.

Under the Health and Safety at Work etc Act 1974, employers must safeguard, so far as is reasonably practicable, the health, safety and welfare at work of employees. This includes providing a safe working environment without risk to health.

The Management of Health and Safety at Work Regulations 1999 require employers to assess the risks to workers and to take appropriate action to safeguard health and safety.

The Workplace (Health, Safety and Welfare) Regulations 1992 are the only piece of UK legislation that specifically addresses thermal comfort. They require:

- \* Workplaces to be adequately ventilated
- \* The temperature during working hours to be reasonable
- \* Thermometers to be provided in the workplace to measure temperatures.

Although the Regulations do not specify a minimum or maximum indoor workplace temperature, the accompanying Approved Code of Practice does recommend a minimum temperature of workrooms of at least 16°C (13°C if the work involves considerable physical effort). These temperatures do not apply to rooms where it would be unreasonable to maintain such temperatures, such as cold rooms or rooms open to the environment.

The Health and Safety Executive has also previously issued guidance entitled "Thermal Comfort in the Workplace – Guidance for Employers".

It stated that thermal comfort cannot be measured with a thermometer as it is affected by humidity as well as temperature. However, for most people, an acceptable zone of thermal comfort lies between 13°C and 30°C.

An organisation's health and safety risk assessment should address thermal comfort, and that employees or safety representatives should be asked whether they have any problems, such as difficulty in concentrating or gripping/handling equipment or loads.

There are six principal ways of controlling the thermal environment:

- Control the source - reduce/increase the temperature and/or insulate or clad the source of heat or cold;
- Control the environment - replace hot air with cold or increase air movement by ventilation or

Document Title: Thermal Comfort Procedure	2 of 13	Approval Date: 19 Aug 2015
Reference Number: UHB 094		Next Review Date: 19 Aug 2018
Version Number: 2		Date of Publication: 10 Oct 2015

air conditioning, or replace cold air with heated air;

- Separate the source of heat or cold from the worker - erect barriers, shield the work area or restrict access;
- Control operations - limit the time that workers are exposed to heat or cold and/or control the amount of work that the workers have to do;
- Protect the worker - provide suitable protective clothing and/or equipment;
- Monitor the worker - ensure adequate supervision is provided.

### Aim

- The aim of this document is to ensure the risks associated with thermal comfort are appropriately addressed.
- It is recognised that within finite resources such as finance and power consumption it is not possible to install air conditioning or air coolers in all affected areas, it is therefore the aim to ensure that these facilities are installed where they are of maximum benefit.
- To ensure that communication to affected staff is an essential requirement throughout the process.

### Objectives

- *Comply with the legal duties in relation to thermal comfort as follows*
  - *Health and safety at Work etc Act 1974*
  - *Management of Health and Safety at Work Regulations 1999*
  - *Workplace (Health, Safety and Welfare) Regulations 1992*
- *Effectively manage thermal comfort through the risk assessment process and appropriate control measures*

### Scope

This procedure applies to all of our staff in all locations including those with honorary contracts

<b>Equality Impact Assessment</b>	<i>An Equality Impact Assessment has been completed. The Equality Impact Assessment completed for the policy found there to be no impact.</i>
<b>Documents to read alongside this Procedure</b>	Health and Safety Policy Risk Management policy Risk assessment and risk register procedure Severe weather contingency plan: Heatwave Risk assessment for new and expectant mothers procedure Comfort cooling protocol
<b>Approved by</b>	Operational Health and Safety Group
<b>Accountable Executive or Clinical Board Director</b>	Director of Governance
<b>Author(s)</b>	Head of Health and Safety

Document Title: Thermal Comfort Procedure	3 of 13	Approval Date: 19 Aug 2015
Reference Number: UHB 094		Next Review Date: 19 Aug 2018
Version Number: 2		Date of Publication: 10 Oct 2015

	Health & Safety Advisor (Environmental)
<b><u>Disclaimer</u></b> <b>If the review date of this document has passed please ensure that the version you are using is the most up to date either by contacting the document author or the <a href="#">Governance Directorate</a>.</b>	

Document Title: Thermal Comfort Procedure	4 of 13	Approval Date: 19 Aug 2015
Reference Number: UHB 094		Next Review Date: 19 Aug 2018
Version Number: 2		Date of Publication: 10 Oct 2015

<b>Summary of reviews/amendments</b>			
<b>Version Number</b>	<b>Date of Review Approved</b>	<b>Date Published</b>	<b>Summary of Amendments</b>
UHB 1	01/12/2011	31/01/2012	Revised document Supersedes previous Trust document reference no 160
UHB 2	19/08/2015	05/10/2015	Minor amendments to reflect changes in organisation

## Contents Page

1	<b>Definition</b>	6
2	<b>Method</b>	6
3	<b>Resources</b>	7
4	<b>Information</b>	7
5	<b>Implementation</b>	8
6	<b>References</b>	8
7	<b>Equality</b>	8
8	<b>Audit</b>	8
9	<b>Distribution</b>	8
10	<b>Review</b>	8

## Appendices

1	<b>Guidance for Manager on Thermal Comfort</b>	9
2	<b>Assessment of Thermal Comfort Risk</b>	12

Document Title: Thermal Comfort Procedure		Approval Date: 19 Aug 2015
Reference Number: 094		Next Review Date: 19 Aug 2018
Version Number: 2		Date of Publication: 05 Oct 2015

## 1. Definition

Thermal comfort is not easily defined, as it is dependent on a range of environmental and personal factors. However, thermal comfort may be defined as an environment, which ensures reasonable comfort for the majority of people in the workplace, for most people an acceptable zone of thermal comfort lies between 13°C and 30°C. This procedure relates to staff thermal comfort in the workplace.

## 2. Method

2.1 A sufficient number of thermometers should be available to enable temperatures to be measured throughout the workplace but need not be in each work area.

2.2 Where Staff, Managers or Safety Representatives within the area identifies an issue of thermal discomfort, the local manager should be approached to implement heat reduction/enhancement actions utilising the Thermal Comfort Guidance (Appendix 1). The following are intended to act as the trigger to indicate that a thermal comfort risk assessment may be necessary, and as such they are not prescriptive.

Air conditioned offices – are more than 10% of employees complaining of being too hot or too cold ?

Naturally ventilated offices – are more than 15 % of employees complaining of being too hot or too cold ?

All other indoor environments that may not have air conditioning – are more than 20 % of employees complaining of being too hot or too cold ?

2.3 The lowest temperature should normally be above 16 °C or 13°C where the work involves severe physical effort. Where these temperatures have not been reached the manager will be responsible for implementing improved heating arrangements in coordination with the relevant maintenance department.

2.4 If these above actions fail to adequately reduce the concern relating to heat reduction / enhancement, managers shall together with the staff complete a risk assessment utilising the available form (Appendix 2).

2.5 Assistance in this can be given by the Health and Safety Advisers and any further identified control measure within the manager's ability should be implemented. Any shortcomings outside of the manager's control shall be taken to the department and/or Directorate Manager.

2.6 If the conditions still persist the Health and Safety Adviser shall be contacted who will validate the assessment and arrange for an environmental survey and monitoring to be completed within the area by the Environmental Adviser.

2.7 The Health and Safety (Environmental) Adviser shall on completion of the survey report their findings back to the manager together with any further recommendations.

Document Title: Thermal Comfort Procedure		Approval Date: 19 Aug 2015
Reference Number: 094		Next Review Date: 19 Aug 2018
Version Number: 2		Date of Publication: 05 Oct 2015

- 2.8 Where the survey identifies conditions have equalled or exceeded 28°C for 50 % of the working day for 3 days or more, the Environmental Adviser shall pass the results to the Estates Department who shall initiate the Thermal Comfort Protocol.
- 2.9 The suitability of air conditioning or air-cooling will be considered by the Capital planning & Estates monthly health and safety meeting. The membership of this group consists of Estates Management, Staff Group and Specialists Environmental and Energy Advisers. The decision of the group will be communicated to:
- The Departmental Manager  
Relevant Health and Safety Committee  
And the local area
- 2.10 Where it is concluded that air cooling or air conditioning is appropriate it will be the responsibility of the Departmental Manager to identify funding and agree timescales for the modifications. Temporary portable heating and cooling equipment shall only be brought in when justified by risk assessment , through the estates maintenance department to ensure other risks are not introduced eg fire risks with heaters, legionella risks with cooling equipment. Under no circumstances can personal portable fan heaters or air conditioners be brought into the Health Board.

### 3. Resources

The resources required to implement this procedure with regard to assessment, monitoring and expertise are already available within the establishment.

Costs relating to installation of air cooling and air conditioning are to be identified from within the relevant applying department.

Departments or areas who have not identified sufficient funding to complete the required modification may bid for funding from the Capital Budget, subject to the completion of this procedure, and will be considered against other demands and constraints relating to use of these monies.

### 4. Information

Line/Departmental Managers will ensure that they provide instruction to staff to ensure that they are aware of the Procedure for Thermal Comfort and of the corrective actions used.

All employees affected will be kept informed of the status of progress and of any identified ongoing control measures. They will be expected to co-operate with regard to complying with these controls and inform managers of any shortcomings in the arrangements.

Any enquiries regarding this procedure should be directed to: -  
Health and Safety Department ☎ 029 20744299 (UHW ext 44299)

Document Title: Thermal Comfort Procedure		Approval Date: 19 Aug 2015
Reference Number: 094		Next Review Date: 19 Aug 2018
Version Number: 2		Date of Publication: 05 Oct 2015

## 5. Implementation

The Operational Health and Safety Group will ensure, on behalf of the UHB, that this Procedure is implemented. This will be re-enforced within Clinical Boards by local health and safety arrangements.

## 6. References

The Health and Safety Executive guidance entitled “Thermal Comfort in the Workplace – Guidance for Employers”.  
Management of Health & Safety at Work Regulations 1999. Approved Code of Practice L21.  
Workplace (Health, Safety and Welfare) Regulations 1992. Approved Code of Practice L24. (second edition ) published 2013  
CIBSE Briefing 1: Keeping cool in a heatwave: top tips for facilities managers  
CIBSE Briefing 2: Keeping cool in a heatwave: top tips for building users  
BOHS Technical guide no 12: The Thermal Environment Second Edition & appendix to the second edition 2009  
HSE Website – temperature / thermal comfort  
Heat stress in the workplace – a brief guide, published by HSE 06/13

## 7. Equality

An equality impact assessment has been undertaken to assess the relevance of these guidelines on different groups specifically with regards to race, disability, gender, sexual orientation, religion/belief and Welsh language.

## 8. Audit

It will be necessary to ensure that Clinical boards /Directorates are adhering to the requirements of this procedure. This will be monitored via a number of different methods e.g. workplace inspections/audits.

## 9. Review

This procedure will be reviewed every 3 years or as often as is necessary to ensure continued compliance with risk management guidance and legislation. It may also be necessary to review it to ensure that technological developments to aid patient’s care and diagnosis are accounted for.

The Operational Health and Safety Group will review the Procedure.

## 10. Distribution

This Procedure will be distributed in accordance with the UHB distribution document, and will be available on the UHB Intranet.

## **APPENDIX 1**

### **Guidance for Manager on Thermal Comfort**

This guide provides managers with advice on how to ensure thermal comfort for employees during hot or cold weather. It covers most indoor workplaces, but does not address extreme conditions, such as:

- \* Work outdoors in hot/cold weather
- \* Work with hot processes
- \* Work in humid conditions, such as laundries
- \* Work in cold environments, such as cold stores
- \* Work, which requires special protective clothing to be worn.

Managers need to consider:

The environment - air temperature, radiant temperature, relative air humidity, ventilation, air movement, climatic and seasonal variations and building design.

The individual - the type of work being done; the amount/type of special or protective clothing/equipment worn; the age, sex, state of health and fitness of the individual; how long the individual is exposed to the heat/cold and special groups of people such as pregnant workers and young people.

The activity – will thermal comfort actions such as opening windows or doors breach confidentiality or dignity of patients or increase the personal safety risk?

Although a thermometer must be provided within the area, thermal comfort cannot be measured with a thermometer as it is affected by humidity as well as temperature. However, for most people, an acceptable zone of thermal comfort lies between 13°C and 30°C.

The UHB health and safety risk assessment should address thermal comfort. Staff or safety representatives should be asked whether they have any problems, such as difficulty in concentrating or gripping/handling equipment or loads.

This guide identifies six principal ways of controlling the thermal environment:

- \* Control the source - reduce/increase the temperature and/or insulate or clad the source of heat or cold.
- \* Control the environment - replace hot air with cold or increase air movement by ventilation or air conditioning, or replace cold air with heated air.
- \* Separate the source of heat or cold from the worker - erect barriers, shield the work area or restrict access.
- \* Control operations - limit the time that workers are exposed to heat or cold and/or control the amount of work that the workers have to do.
- \* Protect the worker - provide suitable protective clothing and/or equipment.

Document Title: Thermal Comfort Procedure		Approval Date: 19 Aug 2015
Reference Number: 094		Next Review Date: 19 Aug 2018
Version Number: 2		Date of Publication: 05 Oct 2015

- \* Monitor the worker - ensure adequate supervision is provided.

If the above controls do not guarantee thermal comfort, the following factors may have to be considered:

- \* Building design and layout - if correct this will effectively ensure thermal comfort, for example enclosing loading/unloading areas will protect workers from the cold during winter months.
- \* Air movement - this may be achieved by using small personal fans, large oscillating fans, exhaust fans, etc. Large fans may cause considerable noise and care must be taken to ensure draughts do not result.
- \* Air-conditioning - dependent on their size, these units can control air temperature, humidity and air movement.
- \* Evaporative cooling - these units produce a moderate reduction in air temperature and increase humidity.
- \* Thermal insulation - various materials, such as loose fills, foams, rock wool and boards, can be used as a barrier to heat flow and heat loss. They are, however, only effective where there is a temperature difference between the inside and outside of the building or between two areas inside a building.

There are various steps that a manager can take to ensure thermal comfort:

#### Hot weather

- \* Insulate hot plant or pipes.
- \* Provide fans.
- \* Make sure that windows can be opened.
- \* Shade windows with blinds or use reflective film to reduce the heating effect of the sun
- \* Place workstations away from direct sunlight and places/plant that radiate heat.
- \* Provide further facilities such as cold water and allow adequate breaks to enable workers to obtain cold water and cool down.
- \* Limit exposure to high temperatures and introduce flexible working practices.
- \* Relax formal dress codes but ensure, where appropriate, personal protective equipment/clothes are provided and used.

#### Cold weather

- \* Provide adequate heating or local heating.
- \* Separate cold products or cold areas from where people are working.

Document Title: Thermal Comfort Procedure		Approval Date: 19 Aug 2015
Reference Number: 094		Next Review Date: 19 Aug 2018
Version Number: 2		Date of Publication: 05 Oct 2015

- \* Reduce draughts.
- \* If workers have to stand for long periods on cold floors, provide insulated duckboards, other suitable flooring or special footwear.
- \* Provide suitable protective clothing.
- \* Introduce work systems to limit exposure to a cold environment.
- \* Allow adequate breaks to enable employees to get hot drinks or warm up in heated areas.

Where a reasonably comfortable temperature cannot be achieved throughout a room, localised heating/cooling should be provided. If thermal comfort cannot be achieved by localised heating/cooling, further action should be taken, including the provision of air conditioning in line with the UHB protocol.

Document Title: Thermal Comfort Procedure		Approval Date: 19 Aug 2015
Reference Number: 094		Next Review Date: 19 Aug 2018
Version Number: 2		Date of Publication: 05 Oct 2015

Appendix 2

Assessment of Thermal Comfort Risk

<b>Primary Location</b>	
<b>Exact Location</b>	
<b>Reported by</b>	
<b>Date</b>	
<b>Duration of problem</b>	
<b>Is the problem seasonal?</b>	

<b>Previous actions/history</b>	<b>Previous actions at Dept/Division level</b>
Monitoring/ Previous reports	

<b>Risk Factors</b>	<b>Existing Control Measures</b>
<b>Temperature</b>	<b>Work practice changes</b>
< 24 °C	Flexi working
24-28 °C	Ability to Leave area
28-30 °C	Relaxation of Dress code
> 30 °C	Frequency of Breaks increased
<b>Humidity high</b>	<b>Move work area from direct sunlight</b>
<b>Confidentiality risk if vented</b>	<b>Area Aspects</b>
<b>Patient Area</b>	<b>Windows can be opened</b>
<b>Aged /Pregnant persons</b>	<b>Access to Drinking water</b>
<b>No of persons effected</b>	<b>Area to cool off available</b>
<b>Patient risk from Air Con</b>	<b>Solar Film on windows</b>
<b>Type of area</b>	<b>Blinds</b>

Document Title: Thermal Comfort Procedure		Approval Date: 19 Aug 2015
Reference Number: 094		Next Review Date: 19 Aug 2018
Version Number: 2		Date of Publication: 05 Oct 2015

		<b>Ventilation Natural</b>	
<b>Mechanical Air Changes</b>		<b>Fans available</b>	
<b>Heat gain from Windows</b>		<b>Estates Aspects</b>	
<b>Heat gain from Mechanical</b>		<b>Shielding from heat source</b>	
<b>Heat gain from Crowding</b>		<b>Hot pipes/plant isolated</b>	
<b>Work Type</b>		<b>Local Control of Air Con/Cooling</b>	
<b>Light – Sitting</b>		<b>Cooling Systems Serviced</b>	
<b>Medium – Patient Care</b>		<b>Ventilation Mechanical</b>	
<b>Heavy - Theatre, Maintenance</b>		<b>Air Cooling</b>	
<b>Need to wear Special PPE</b>		<b>Air Conditioning</b>	

<b><i>Comments /Initial Assessment of risk (also, if heat gain is from equipment state type and how many)</i></b>			
<b>Completed by:</b>		<b>Date</b>	

<b><i>Environmental Unit Assessment/ Monitoring</i></b>

<b>Recommendations</b>

<b>HSEU Use</b>	
<b>Completed By:</b>	<b>Passed to</b>
<b>Date :</b>	<b>Date :</b>