



 **Quick guide to...**

Temperature at Work

Building Safe & Healthy workplaces



Two common questions members ask of Health and Safety representatives are

“What is the...minimum, or maximum, working temperature?”

The important point to understand is that something has prompted the member to ask this question and more likely than not it is because their work environment is or has in the past caused them to feel uncomfortable which they may have attributed to air temperature.

What is meant by Thermal Comfort?

The human body normally tries to maintain a core temperature of around 37°C to 37.5°C, this means that the environment around us can have varying effects on our body's ability to maintain (regulate) a state that does not cause us to become aware or concerned about feeling too hot or cold referred to as a state of thermal comfort

So how are Thermal Comfort and Temperature linked?

The Health and Safety Executive (HSE) have summed this up in the following way...

“Thermal comfort is not measured by room temperature, but by the number of employees complaining of thermal discomfort”¹

So, it is important to remember that room temperature alone is not an indicator of thermal comfort as we are all individuals, therefore one size (or temperature) does not fit all. The significant factor is that someone is feeling discomfort not necessarily what a thermometer says. Below we look at the different factors and what the law says.

Too much exposure to cold can cause the body to limit the blood supply to the extremities to keep the core body warm. This can lead to chilblains, Raynaud's disease, and white finger. Frostbite and permanent damage to the areas affected is a risk, as is fatigue since the body uses up energy to keep warm. There is also an increased risk of accidents due to numb fingers, obstruction by protective clothing, and slipping on ice. Extreme cold for long periods can lead to hypothermia, loss of consciousness, and eventually coma and the heart stopping.

Too much heat can make us feel tired and less energetic, cause muscle cramps, and place extra strain on the heart and lungs. Tiredness and loss of concentration can also lead to an increased risk of accidents.

Heat exhaustion can occur after being exposed to heat for a prolonged period of time. Symptoms include: very hot skin that feels 'flushed', heavy sweating, dizziness, extreme tiredness (fatigue), nausea (feeling sick), vomiting, a rapid heartbeat (tachycardia), confusion, and urinating less often and much darker than usual. If not treated by cooling and rehydration, it can lead to heatstroke.

¹<https://www.hse.gov.uk/temperature/thermal/>

Heatstroke/sunstroke, is much more serious, and occurs when the body's temperature becomes dangerously high due to excessive heat exposure. The body is no longer able to cool itself and starts to overheat. Symptoms include: **high temperature** (40°C or above), **heavy sweating that suddenly stops** (the body is so dehydrated it can no longer reproduce sweat), **a rapid heartbeat, rapid breathing** (hyperventilation), and **muscle cramps**.

It can also affect the nervous system, which can cause other symptoms such as: **confusion**, lack of co-ordination, fits (seizures), headache, **vertigo** (the sensation that you're moving or spinning when standing still), restlessness or **anxiety**, problems understanding or speaking to others, visual or audio **hallucinations**, and loss of consciousness. This condition can prove fatal and survivors may suffer organ damage.

Outdoor workers are also at risk from the sun, including- sunburn, premature ageing of the skin, and an increased risk of skin cancer from excessive exposure to the sun's rays. People who are fair-skinned, have red or fair hair, lots of freckles or moles, pale eyes, or skin that turns red or burns before tanning, are at greater risk, but all should avoid excessive exposure to the sun by covering bare skin.

While these health and safety issues are caused mainly by extremes of temperature, uncomfortable workplace temperatures can cause, loss of concentration, irritability, and tiredness, etc.

Individuals with certain illnesses (including heart and kidney disease, diabetes or asthma) or who are young, older, pregnant, or on medication may be at greater risk.

People experiencing hot flushes, caused by the menopause may also find workplace temperatures very uncomfortable.

UNISON MEMBERS AND OTHERS AT RISK.

Workplaces at greater risk from excessive heat include power stations, boiler rooms, kitchens, and laundries; plus those working outside. However, UNISON activists and members in other workplaces have reported problems.

Members working from home may also be experiencing difficulties especially with cold temperatures and heating costs.

Members working shifts may also find it difficult to sleep in the day during prolonged periods of high temperatures (heatwaves), leading to fatigue and fatigue related safety risks.

WHAT UNISON MEMBERS HAVE TOLD US

One **UNISON health branch** reported that its members had to work in windowless clinics with a heating pipe running along the length of the floor. One recent summer saw staff and patients being sick because of the heat.

Another branch with members working in warehouses with mezzanine floors experienced soaring temperatures during hot summer spells with ventilation in the roof only providing a minimum of fresh air.

A housing branch found that increasing amounts of electronic equipment being introduced into poorly designed offices with either inadequate or no air conditioning were making it extremely uncomfortable and distressing for staff. On occasion they have had staff fainting in one particular office and being sent home - the temporary fix of free standing fans were clearly only circulating existing hot air.

WHAT IS AN ACCEPTABLE INDOOR TEMPERATURE?

Generally, the acceptable area of comfort for most types of work is between 16°C to 24°C. The Chartered Institute of Building Services Engineers recommends: 16°C for factories, 18°C for hospitals, and 20°C for offices. Heavy work in factories may make 13°C comfortable, whereas very sedentary work may still be performed with reasonable comfort around 24°C.

However, there are many factors which affect our sense of whether we feel too hot or cold (our thermal comfort) in addition to the temperature of the air, including: heat radiated from hot objects (e.g. pipes or machinery), the movement of air, humidity, clothing, and the rate of work or physical exertion required. For example some employees have reported feeling cold at 24°C because there was too much draft from the air conditioning.

UNISON supports the TUC call for a specific legal maximum temperature for indoor work of 30°C; or 27°C where the work is strenuous. At the moment there is no legally defined maximum. However, this proposed maximum would be intended to be the absolute maximum, so regular indoor work at or just below 30°C (or 27°C as applicable) would not be acceptable, and that employers should attempt to reduce temperatures if they went above 24°C or workers felt uncomfortable. The World Health Organisation recommends 24°C as the maximum temperature for working in comfort.

WHAT IS THE LAW ON INDOOR TEMPERATURE

General Duties

With no specific legal maximum, employers must under the law provide **a working environment which is so far as is reasonably practicable, safe, without risks to health, and which has adequate welfare facilities** (s2(2)(e) of the Health and Safety at Work Act (HSWA)). So far as is reasonably practicable means the limit at which to achieve something better becomes grossly disproportionate to the benefits.

Employers must assess the risks to employees health and safety from their work and take measures of prevention and control to avoid (where reasonably practicable) or otherwise minimise potential harm (the Management of Health and Safety at Work Regulations (MHSWR)). The requirement to risk assess for potential hazards from too high or too low temperature, ventilation, and exposure to the sun is the same as for any other hazard. For more information, refer to UNISON's guidance on risk assessments. a

Requirements under Acts or regulations must be complied with, sometimes without any limit, but often 'so far as is reasonably practicable'. This means that employers do not have to take measures to avoid or reduce a risk if they are technically impossible or if the time, trouble or cost of the measures would be grossly disproportionate to the risk.

Requirements under Approved Codes of Practice (ACoPs - see below) offer practical examples of good practice. They give advice on how to comply with the law by, for example, providing a guide to what is 'reasonably practicable' or 'suitable and sufficient', and have a special legal status. If employers are prosecuted for a breach of health and safety law, and it is proved that they have not followed the ACoP, a court can find them at fault unless they can show that they have complied with the law in some other way.

Ventilation – Regulation and ACoP

Regulation 6 of the Workplace (Health, Safety, and Welfare) Regulations (WHSWR) requires effective and suitable ventilation of enclosed workplaces with sufficient quantities of fresh or purified air.

The Approved Code of Practice (ACoP) states that ventilation should replace stale, hot, or humid air at a reasonable rate. Ventilation can be by windows or other openings, or mechanical systems where necessary. However, workers should not be exposed to uncomfortable draughts, so with mechanical systems it may be necessary to control the direction or speed of the air flow, or if necessary, re-site or screen workstations. Mechanical systems must be checked, cleaned, tested, and maintained to ensure they do not contaminate the air. Inlets for taking fresh air into the building should filter the air where necessary and must not be positioned where they may take in contaminated air, such as near flues.

Temperature – Regulation and ACoP

Regulation 7 of WHSWR requires the temperature of workplaces inside buildings to be reasonable. They should also be adequately insulated where necessary, taking into account the type of work, and to avoid excessive effects on temperature from sunlight. Methods of heating or cooling must not allow fumes, gas, or vapour into the workplace if likely to cause injury or be offensive. Sufficient thermometers should be provided to allow employees to tell the temperature in any inside workplace.

The ACoP to this regulation states that the temperature should provide reasonable comfort without the need for special clothing. If hot or cold processes or access to outside mean this is not possible, all reasonable steps should be taken to achieve a temperature as close as possible to comfortable. Temperature readings should be taken close to workstations, at working height, and away from windows. Normally the temperature should be at least 16°C, unless the work involves rigorous physical effort, when the minimum is 13°C. However, other factors mean (heat radiated from hot objects, the movement of air, humidity, clothing, and the rate of work or physical exertion) mean these temperatures may not be comfortable.

Where maintaining these standards would be impractical because of food or other processes/ products that must be kept cold, or rooms that need to be open to the outside; employers should apply the following measures as appropriate: enclosing or insulating the product (e.g. localised refrigerated enclosures including hoppers or conveyers), pre-chilling the product, keeping chilled areas as small as possible, exposing the product to workroom temperatures as briefly as possible, insulated duckboards or other floor coverings where workers have to stand for long periods (unless special footwear is provided which prevents discomfort), and draught exclusion including baffles and self-closing doors.

Where the temperature in a workroom is uncomfortably high, because of for example, hot processes or building design, then employers must take all reasonable steps to achieve a comfortable temperature. Steps might include: insulating hot plant or pipes, providing air-cooling plant, shading windows, and positioning workstations away from places subject to radiant heat.

If a reasonable workroom temperature cannot be achieved, local heating or cooling should be provided. The temperature in toilets and rest areas should be reasonable. Changing rooms and shower rooms should not be cold.

Temporary heating and cooling should be provided where employees are required to work in normally unoccupied rooms such as store rooms, if other than for short periods.

Thermometers should be available at suitable locations in every part of the workplace (but not necessarily every room) and should not be placed near radiant heat sources or in front of windows.

Suitable protective clothing and rest facilities should be provided where local heating or cooling does not give reasonable comfort. Where practical, systems of work such as task rotation should ensure that any individual worker is only exposed to an uncomfortable temperature for a limited time.

OTHER LAWS TO CONSIDER

Regulation 22 of WHSWR requires employers to provide an adequate supply of wholesome drinking water and cups (unless a water jet/fountain makes cups unnecessary), readily accessible at suitable places, and conspicuously marked with a sign if necessary for health and safety (to distinguish it from water which is not of drinking quality).

The Personal Protective Equipment (PPE) at Work Regulations (see UNISON's separate guidance on the Health and Safety Six Pack or the PPE Regulations) require employers to consider the work environment such as the weather if the work is outside or if there is heating on inside. So adequate protective clothing should be provided where exposure to cold is unavoidable and a hazard.

However, when the body is working the production of heat increases. To maintain a balance between heat production and heat loss, insulation must be decreased. Well designed cold weather clothing allows the wearer to remove layers or open vents and let the excess heat escape. This prevents overheating, and also chilling which can be a serious problem in the cold. Sweat can accumulate in poorly designed clothing and continues to evaporate during periods of rest, making the body cold.

Where PPE has to be used in hot weather, it should be designed to allow workers to keep as cool as possible. Workers should not just be expected to use the cheapest available option.

PPE must be provided by law free of charge to employees – they cannot be charged for its supply for use at work or be asked for a deposit.

Food safety regulations cover the temperatures at which certain foods must be maintained in the interests of public health. They apply to the control of the temperature of the food itself but not the workplace atmosphere. The Health and Safety Executive (HSE) clearly states that it is possible for employers to comply with both the need to keep food chilled and without risk to employees (see the section on "Temperature – Regulation and ACoP" above).

The Display Screen Equipment (DSE) Regulations state that equipment at work stations shall not produce excess heat which could cause discomfort to operators or users (again see UNISON's separate guidance on the Health and Safety Six Pack or the DSE Regulations for further information).

Risk assessments carried out under the **Manual Handling Operations Regulations (MHOR)** require employers to take account of risks from various factors when manual handling including hot or humid conditions (see UNISON's separate guidance on the Health and Safety Six Pack or the MHOR for further information).

The Management of Health, Safety, and Welfare Regulations (MHSWR) state that employers will not employ young persons for work where there is a risk to health from extreme cold or heat, except where it is necessary for their training, they will be supervised by a competent person, and any risks will be reduced to the lowest reasonably practicable level (see UNISON's separate guidance on the Health and Safety Six Pack or the MHSWR for further information).

The MHSWR Regulations also state that employers must specifically assess the risks to pregnant workers, including extremes of heat or cold.

WORKING OUTDOORS

The **WHSWR do not apply** to outdoor workplaces or working outdoors, but employers still have the general duties to ensure health and safety under the HSWA 1974; and duties to assess and control risks from work under the MHSWR. These legal requirements cover both working outside in the cold and in the sun and/or heat (see the section above on “General Duties” and UNISON’s separate guidance on risk assessment).

WHAT THIS MEANS IN PRACTICE

Employers must conduct **risk assessments** and prevent so far as reasonably practicable or otherwise control the risks to workers health and safety, including exposure to excessive heat, cold or the sun. There are a number of **steps** which **can be taken, some temporary or** to deal with particularly unusual weather, other situations perhaps reoccurring may require **more permanent solutions**.

Employers must **take into account individuals who may be more vulnerable to harm**, (including pregnant workers, young workers, workers experiencing the menopause and those with health conditions that can be made worse by extremes of temperatures. This consideration might apply to extent of exposure allowed, and also to giving some workers more frequent rest breaks or allowing them to leave work early. For workers covered by the Equality Act, the employer needs to make reasonable adjustments. (More information on this can be found in the UNISON resources section at the end).

Whatever thermometers read, **if people are complaining** of the heat or cold indoors, then common sense says that it is too hot or cold and something should be done. The effect of heat on the body will depend on the weight, age, and sex of a person, and the work they are doing. The HSE believes that a minimum of 80% of workers occupying a building should find the temperature comfortable.

Employees can be surveyed about temperature, humidity, and air movement taking into their workload, and the time of year.

Personal protective equipment which should be the last resort, where used to protect from the cold, should not just be the cheapest available. Several layers and adaptable clothing (unzipable vents, breathable materials, etc) will allow workers to lose body heat as they get warmer with vigorous work. When selecting personal protective clothing to protect from other hazards, employers must make sure that it is appropriate for the indoor or external temperatures, especially if the clothing is extensive, the work is vigorous, or it is hot in the workplace.

Dress codes or uniforms should be relaxed and/or adaptable for the weather, including several layers so some can be removed, natural or breathable materials rather than just the cheaper man-made materials, and possibly shorts and short-sleeves (but remember about the risk of exposure to too much sunlight - see above) and allowing the removal of tights, ties, and jackets.

If the work is outside during hot and/or sunny weather, working hours should be adapted or the work altered to minimise exposure to the sun or heat - possibly avoiding or shortening work outside during the hottest part of the day or providing shade for this work.

There should be frequent periods of rest in a cool shaded place, and cool clean water should be provided for frequent drinks - it is important to replace water lost through sweating.

Sun protection creams, long sleeves, clothes with close weaves and wide brimmed hats may also help as may job rotation, where workers take it in turn to do a particular job (thereby reducing any workers individual exposure).

Inside when it is too hot, ventilation can be improved by providing fans (but note that they are ineffective at cooling air when it is above 27°C) or portable air cooling cabinets, and opening and shading windows. Job rotation, frequent rest breaks in a cool place, and cool clean water may also be appropriate; as may taking the hottest rooms out of use during extreme periods of temperature.

In the longer term, it might be necessary to consider installing fixed **permanent ventilation** such as air conditioning), and ensuring it is properly maintained and serviced so it does not break down in the middle of a heat wave. Ventilation should not leave workers with an uncomfortable draft, so with mechanical systems air flow speed or direction may needed to be altered, or work stations moved or screened.

Where it is too cold inside, the employer must meet at least the legal minimum unless impractical because of food, other cold processes or products, the need for being open to the outside. **In this case**, employers should take steps to keep the product but not the workplace cold (enclosing, insulating or pre-chilling the product, keeping chilled areas small, exposing the product to workroom temperatures just briefly, insulated floors or special footwear, draught exclusion including baffles and self-closing doors. If the inside workplace is too cold, then rest breaks somewhere warm will be appropriate, as may job rotation.

It might be necessary to get a **competent heating and ventilation engineer** to do a **full survey** of the workplace temperatures, humidity, air movement, and current heating and ventilation systems - so that a permanent solution can then be recommended.

Jobs or work areas can be re-designed to remove staff from the source of heat as much as possible, for example: reducing heat gain via windows by reflective film or blinds, insulating hot pipes and equipment, etc, possibly by reducing window area, and if necessary moving desks and workstations away from windows.

Staff who may still be at risk from exposure to excessive heat, cold, or sun should be **trained and/or given information** on what to look out for (both exposure risks and symptoms) and what steps to take to avoid these or if they occur

NEGOTIATING ADVICE

Branches should negotiate agreements on temperature with their employers. They should however, first **identify the problems**. This can be done by:

- surveying members,
- asking members to check and report thermometer readings in their workplace,
- ensuring that heating and cooling systems are included in workplace inspections, and
- checking accident books.

Specific problems should then be identified and **raised with the employer with a view to getting action**. This could include both short term and long term (possibly structural) changes. The HSE states that administrative controls such as changing working patterns tend to be short term, more costly, and less effective than engineering controls which offset their higher initial cost by less downtime, increased productivity, and therefore can be cheaper in the long run.

The minimum under the law should be the starting point for any negotiations. This includes the minimum temperature, requirements for ventilation, and the steps outlined in the ACoP (see the section above: “What is the law on indoor temperature”).

However, the law is open to much interpretation especially as regards higher temperatures. But, employers still have general duties to ensure health and safety, and to risk assess and prevent or control exposure to hazards, which might include any of the steps outlined not just in the ACoP but also in the above section “What this means in practice.”

The joint agreement sought with the employer should include:

- a minimum workplace temperature;
- a maximum workplace temperature;
- a definition of what is meant by “reasonable and adequate” when considering steps to be taken, both short term and long term, taking into account: the building, the number of people, the equipment used, and the work undertaken;
- a planned response to sudden changes in the weather; and
- what will happen when the minimum or maximum temperatures are not maintained;
- relaxing dress and uniform codes in the summer and/or improving the quality of the materials used;
- Extra breaks for night shift workers who may be suffering from lack of sleep in the day and subsequent fatigue during heatwaves.
- redesigning work areas;
- allowing staff to be more flexible in their working arrangements and
- Making workplace adjustments for staff who may be more vulnerable to extremes of heat or cold.

Health and safety representatives should ensure that their employer has done **an adequate risk assessment** and taken measures of control to ensure that no worker suffers from heat or sunstroke, excess of sun exposure, dehydration, or heat stress; or from excessive exposure to the cold.

If a branch requires some specific advice on negotiating on workplace temperature they should **contact their regional officer**

UNISON Resources

[The Health and Safety 'Six Pack'](#)

[Risk Assessment – A guide for UNISON safety reps](#)

[Menopause is a workplace issue](#)

[Reasonable Adjustments – Bargaining Guide](#)

FURTHER INFORMATION AND ADVICE

The HSE's website on temperature - <http://www.hse.gov.uk/temperature/index.htm>.

The TUC website - <http://www.tuc.org.uk/workplace-issues/guides-workers/working-extremes-temperature-hot-or-cold>.

The TUC WorkSmart website - www.worksmart.org.uk.