

• *Temperature at Work* Last updated October 2010

This information sheet is intended for branches and members who are concerned about temperature in their place of work.

Temperature is certainly a health and safety issue. Too much heat can cause fatigue, extra strain on the heart and lungs, dizziness and fainting, or heat cramps due to loss of water and salt. Hot, dry, air can increase the risk of eye and throat infections. Above a blood temperature of 39°C/102°F there is a risk of heat stroke; collapse can occur above 41°C/106°F with symptoms of delirium and confusion. This condition can prove fatal and survivors may suffer from organ damage.

Tiredness and loss of concentration can also lead to an increased risk of accidents, such as burns.

Too much cold can mean chilblains, Reynaud's disease, white finger, or frost bite. The body keeps the blood supply to the extremities closed at lower temperature to conserve heat. Cold conditions can also lead to fatigue since the body uses energy to keep warm. There is an increased risk of accidents due to numb fingers, obstruction by protective clothing, and slipping on ice, etc. Extreme cold for long periods can lead to hypothermia, loss of consciousness, and eventually coma. If the body temperature drops below 18°C/64°F, the heart beat stops.

While these problems are caused mainly by extremes of temperature, less severe but wrong workplace temperature can cause discomfort, loss of concentration, irritability, and tiredness, etc.

WHAT IS AN ACCEPTABLE TEMPERATURE?

There are various informal guides to a safe working temperature. Generally, the acceptable area of comfort for most types of work lies between 16°C to 24°C/61°F to 72°F.

Acceptable temperatures for heavier types of work will be at the lower end of this range, while sedentary tasks may still be performed with reasonable comfort towards the opposite extreme.

The Chartered Institute of Building Services Engineers recommends the following temperatures for different working areas:

- Heavy work in factories - 13°C/55°F,
- Light work in factories - 16°C/61°F,
- Hospital wards and shops - 18°C/64°F, and
- Office and dining rooms - 20°C/68°F.

WHAT THE LAW SAYS - COLD

The Approved Code of Practice (ACOP) under the Workplace (Health, Safety and Welfare) Regulations 1992 (WHSWR 1992) states that work rooms should normally be at least 16°C/61°F for most types of work; and at least 13°C/55°F for work involving “severe physical efforts”.

Where maintaining these standards would be impractical, employers must provide a warm working station within a room where the overall temperature may be lower; using localised heating, draught exclusion and so on. Personal protective equipment should be a last resort.

Most of these additional steps only apply, however, where it is actually a part of the job that the workplace be kept cold e.g. in keeping food at below a certain level. They do not apply to general occupational temperatures, or workplaces in buildings made cold by the weather.

In more common circumstances, which apply to most UNISON members, the 13°C/55°F and 16°C/61°F are legally enforceable minimum requirements, and workers have the effective right to refuse to work where the workplace temperature is below them. There is usually an assumption that no action should be taken if the correct temperature is achieved within an hour of starting work.

An employer must provide a working environment which is, as far as is reasonably practical, safe and without risks to health. In addition, employers have to assess risks and introduce any necessary prevention or control measures.

What this means in practice – Cold

Where exposure to cold is unavoidable, workers must be provided with cold weather clothing. When the body is working the production of heat increases. To maintain a balance between heat production and heat loss, insulation must be decreased. Properly designed cold weather clothing allows the wearer to remove layers or open vents and let the excess heat escape. This prevents overheating which can be a serious problem in the cold: sweat accumulates in clothes and continues to evaporate during periods of rest, chilling the body.

The Personal Protective Equipment at Work Regulations 1992 (PPE 1992) describes processes and activities where thermal protective equipment should be used.

The Health and Safety Executive (HSE) has issued an information sheet with guidance on acceptable temperature levels where food chilling processes and handling are taken. The guidance sheet explains how employers can comply with both the Food Hygiene (Amendment) Regulations 1990 and 1991, and Regulation 7 of the WHSWR 1992.

The Food Regulations stipulate 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 themselves but not the workplace atmosphere.

Regulation 7 of the WHSWR 1992 states that the “temperature in all workplaces inside buildings shall be reasonable during working hours.” A ‘reasonable temperature’ is defined in the accompanying ACOP as that which provides reasonable comfort without special clothing and should normally be at least 16°C/61°F or at least 13°C/55°F where much of the work involves physical effort (such as repeated exertion to the extent that a temperature of 16°C would be uncomfortably warm). The ACOP stipulates that where maintaining these standards is impractical then employers must take all reasonable steps to achieve a comfortable temperature as close to them as possible.

The HSE guidelines say that the health and safety requirements of both sets of legislation can be met by “maintaining a ‘reasonable’ temperature of a least 16° (or at least 13°C if the work involves physical effort) throughout the workroom.”

This can be achieved by:

- enclosing or insulating the product, for example by using localised refrigerated enclosures such as enclosed chill hoppers or conveyers,
- keeping chilled areas as small as possible,
- pre-chilling the product, and
- exposing the product to workroom temperatures as briefly as possible.

If this is not 'practicable', then the employer should provide a warm working station within a room where the overall temperature may be lower. This can be achieved by the provision of :

- local heating for the worker with minimum effect on the produce,
- insulated cleanable duckboards or other floor coverings if workers would otherwise have to stand for long periods on cold floors (unless special footwear is provided which prevents discomfort), and
- draught exclusion including fitting self-closing doors.

Where, despite the application of these measures a reasonable temperature cannot be maintained the employer should ensure that the individual is kept warm. This can be achieved by:

- providing suitable protective equipment (see the PPE 1992),
- providing suitable heated rest facilities and allowing workers ready access to them, or
- institute systems of work to minimise the length of time of exposure to uncomfortable temperatures and by job rotation, give workers the opportunity to go to heated areas.

WHAT THE LAW SAYS - HEAT

UNISON has been campaigning for a simple, legally enforceable, maximum temperature.

However, in the absence of one, UNISON members are not left unprotected. At the workplaces of all UNISON members, the employer must under the law provide a working environment which as far as is reasonably practicable, is safe and without risks to health, and which has welfare facilities (s2(2)(e) of the Health and Safety at Work Act 1974 (HSWA 1974)). Employers must assess risks and introduce prevention and control measures based on those assessments under the Management of Health and Safety at Work Regulations 1992 (MHSWR 1992).

During working hours, the temperature inside workplace buildings must be reasonable (Regulation 7 of WHSWR 1992). The ACOP to these regulations says that "all reasonable steps should be taken to achieve a comfortable temperature", for example:

- insulating hot pipes and equipment,
- providing air cooling plants,
- shading windows,
- siting workstations away from hot areas,
- using fans and increased ventilation in hot weather,
- providing local cooling at individual workstations, and
- as a last resort in unavoidably hot work areas, providing rest facilities and limiting the amount of time individuals spend in the heat.

Unfortunately there is no maximum temperature for workers although the Workplace (Health, Safety and Welfare) Regulations state the temperature inside workplace buildings must be 'reasonable'. In addition, the approved code of practice to these regulations states that 'all reasonable steps should be taken to achieve a comfortable temperature'. The TUC has called for a maximum temperature of 30°C (27°C for those doing strenuous work), so that employers and workers know when action must be taken, although employers should still attempt to reduce temperatures if they get above 24°C and workers feel uncomfortable.

The Code of Practice also says that:

- other factors such as protective clothing, physical activity, radiant heat, humidity, air movement, and the length of time a person is doing a job must all be taken into account when assessing what a "reasonable temperature" is,
- "methods of cooling must not produce harmful or offensive fumes, gases or vapours", and
- "a sufficient number of thermometers must be provided to enable workers to check temperatures in indoor workplaces".

Thermometers need not be provided in each workroom, but if the temperature in a particular workroom is uncomfortable, insist that the temperature in that room be measured.

Regulation 6 of WHSWR 1992 requires employers to provide "effective and suitable ventilation". To be effective, fresh air must be drawn in from outside and diluted with the warm humid air inside, creating movement and a sense of freshness without causing a draught. Humidity and ventilation must be at levels, which do not cause discomfort to or sore eyes.

Regulation 22 requires employers to provide an adequate supply of wholesome drinking water and cups, readily accessible and conspicuously marked.

- Heat from VDU's, etc. Equipment – The Display Screen Equipment Regulations 1992 require that "equipment belonging to any work stations shall not produce excess heat which could cause discomfort to operators or users".
- Manual Handling – Risk assessments carried out under the Manual Handling Operations Regulations 1992 require employers to take account of risks from various factors listed in Schedule 1, which includes hot and humid conditions.
- Wearing Protective Clothing in Hot Weather – The Personal Protective Equipment (PPE) at Work Regulations 1992 require employers to select PPE that is suitable for the risks, for the employees who will be using it, and for the working environment. So 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 thing available.
- Young Workers – must not be employed if they are likely to be exposed to extreme cold or heat (MHSWR 1992).
- Pregnant Workers – employers must specifically assess the risks to pregnant women, including extremes of heat (MHSWR 1992). The Health and Safety Executive's Guide on "New and Expectant Mothers at Work" says:
 - "When pregnant, women tolerate heat less well and may more readily faint or be more liable to heat stress. The risk is likely to be reduced after birth but it is not certain how quickly an improvement comes about". and

- “Breastfeeding may be impaired by the heat dehydration”.

To avoid the risks, the HSE says:

- “Pregnant workers should take great care when exposed to prolonged heat at work”, and
- “Rest facilities and access to refreshments would help”.
- Stress at Work – The HSE’s Guidance on “Stress at Work” says that poor physical working conditions including extremes of temperature contribute to stress.
- Temperature in Kitchens – the HSE’s Guidance on Health and Safety in Kitchen says:
 - “Because of the very nature of the cooking process, and the need to serve cooked food hot, high temperatures and humidity are not unusual in kitchens and serveries. Both can affect the health, comfort, and efficiency of kitchen staff. Ventilation, with sufficient air changes and adequate movement of air, is necessary to cool the workplace and counteract humidity.
 - Fume extraction alone may not be adequate to ventilate properly all parts of the kitchen and, if necessary, the servery. Additional extractor or circulation fans may be necessary. Air inlets should be carefully sited to make sure that there is air movement in all parts. In kitchens where the temperature or humidity is persistently high the advice of a ventilation engineer should be sought”.

HEAT AND OUTDOOR WORKERS

The WHSWR 1992 do not apply to outdoor workplaces, but employers still have general duties to ensure health and safety under the HSWA 1974; and duties to assess and control risks from work in hot temperatures under the MHSWR 1992.

Outdoor workers exposed to high temperatures for long periods are at risk from sunstroke, sunburn, and heat exhaustion. Sun or heat stroke is more likely when heavy physical work is being done.

To avoid these effects: working hours should be kept short; clothing, including protective clothing, should not be tight and restricting, and should allow body heat to escape; plenty of rest periods in a cool place should be taken; and cool, clean water should be provided for frequent drinks. It is important to replace water lost through sweating.

Exposure to excessive sunlight can cause skin rashes or skin burns. Ultraviolet radiation in sunlight can also cause skin cancer. Fair-skinned people who do not develop a suntan quickly, are most at risk. Avoid excessive exposure to sun by covering bare skin with lightweight material and taking frequent rest breaks in the shade. Sun protection creams may also help.

What this means in practice – Heat

Whatever thermometers read, if most people are complaining of the heat, common sense says that it is too hot and something must be done immediately. Note that the effect of heat on the body will also depend on the weight and age of a person.

You should also remember that air temperature is only a rough guide because humidity, wind speed, radiant heat sources, clothing, etc. all have an effect, which an ordinary thermometer does not take into account. It is possible to get a more accurate assessment using a wet bulb global thermometer or electronic equivalent, which measures humidity. The comfort range for humidity is between 40% and 70%.

There are many steps which employers may take to assess risk and provide more comfortable working during hot weather. These include:

- carrying out a survey which takes account of temperature, humidity, air movement and workload (carried out at the hottest part of the day, and the hottest part of the year);
- providing adequate ventilation, fans, and windows that can be opened (but above 27°C/80°F fans are ineffective at cooling the air);
- providing portable air cooling cabinets, which may reduce the air temperature by up to 6°C/11°F;
- providing properly designed ventilation, air conditioning will be most effective, and ensuring it is properly maintained so it does not break down in the middle of a heat wave;
- re-designing the job or work area to isolate staff from the source of heat as much as possible, for example:
 - reducing heat gain via windows by reflective film or blinds, and by reducing window area, and
 - moving desks and workstations away from windows;
- getting a competent heating and ventilation engineer to do a full survey of temperatures, heat stress, and ventilation systems etc, and then to recommend a permanent solution to problems. Engineers should be registered with an authoritative body such as the Chartered Institute of Building Services.
- training and information for relevant staff in recognising heat stress symptoms;
- allowing staff to dress appropriately for hot weather, e.g. allowing ties, tights or jackets to be removed or shorts to be worn;
- if it is impossible to provide a comfortable air temperature, or as a temporary measure until a permanent solution is put in place, reducing staff exposure to hot work. This can be done through frequent rest breaks in a cool area where cold drinks are provided, job rotation, or altering work during the hottest part of the day;
- giving priority to pregnant women and those with medical conditions for rests and early leave from work; and
- taking the hottest rooms out of service is another temporary measure.

NEGOTIATING ADVICE

Branches need to negotiate agreements on temperature with their employers. First however, they must identify the problems. This can be done by:

- surveying members,
- 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 employers with a view to getting action. In the short term, this could include mobile air conditioning units and heaters, but in the long term some structural alterations may be necessary to resolve the problem.

Then seek a joint agreement with the employer. This should include:

- a definition of a minimum temperature,
- a definition of a maximum temperature,
- a definition of “reasonable and adequate” taking into account: the building, the number of people, the equipment used, and the jobs 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 codes in the summer
- redesigning work area
- allowing staff to be more flexible in their working arrangements
- introducing air conditioning system.

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

For outside workers, this is likely to involve issuing workers with sunscreen and hats. The employer should also ensure that any protective clothing is light and suitable. Staff should always be able to have access to fresh water and regular breaks. Ideally, employers should organise work so that employees are not outside during the hottest part of the day.

FURTHER INFORMATION AND ADVICE

UNISON's guide, *The Health and Safety 'Six Pack'*, Stock No. 3837 includes chapters on the six main health and safety regulations (which includes those mentioned within this information sheet) and is available from the UNISON's Communications Dispatch.

There is very useful advice on the working environment and welfare chapter 5 of the TUC's guide to health and safety, *Hazards at Work*. Each Branch has two copies of this publication.

The TUC 'Work smart' website contains a lot of practical information and advice for workers on temperature and hot weather. Go to www.worksmart.org.uk.

The Health and Safety Executive have some excellent advice on working in hot environments. Go to www.hse.gov.uk/temperature

In addition the HSE have produced guidance for employers, entitled *Thermal Comfort in the Workplace*. This is available from HSE books (Tel: 01787 881165)

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