
Temperature at Work

Although there is no legal maximum working temperature set out in law, the law is very clear in the following respect: "During working hours, the temperature in all workplaces inside buildings shall be reasonable". There is plenty of guidance available as to what reasonable temperatures may be (see below). The law defines minimum temperatures in an approved code of practice (ACOP) as a clearly unambiguous - 13 degrees C for strenuous work and 16 degrees C generally. The same ACOP requires temperatures to be reasonably comfortable regardless of whether it is in a hot or cold environment, and employers are expected to take steps to achieve this, even if processes add to the problem.

Unite wants legal maximum temperatures set out in the ACOP as 27 degrees C for strenuous work and 30 degrees C generally. This indicates the kind of temperatures that should trigger action to reduce the effects of high temperatures at work.

Heat at Work

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, and breathing problems such as asthma and rhinitis. Above a blood temperature of 102 degrees F there is a risk of heat stroke; collapse can occur above 106 degrees F with symptoms of delirium and confusion. Such temperatures are rare, but can be reached in hot workplaces in paper mills, on particular processes and confined spaces generally. Most of the effects of heat at work are not so serious, but they can still cause problems.

The police report that heat waves bring in their wake outbursts of violence, often directed at people working with the public. The loss of concentration brought on by the heat doesn't just slow you down, it can lead to accidents. Having to work (and travel) in hot weather pushes-up people's stress levels, making all the health effects of stress at work more likely - stomach problems, disrupted sleep patterns and heart disease. People who work in the heat are already at increased risk of heat exhaustion when the outside temperature goes up. People working with almost any machinery are at risk.

The Law

At present, there are fairly explicit temperature levels set on minimum temperatures, but not on maximum temperatures.

The ACOP lies within the Workplace Health Safety and Welfare Regulations, which require that during working hours the temperature in all workplaces inside buildings is reasonable. Employers are under a general duty to look after the health and safety of their staff under the Health and Safety at Work etc Act 1974 (HASAWA). The Management of Health and Safety at Work Regulations 1999 require employers to make a suitable assessment of the risks to the health and safety of their employees.

These general duties cover temperatures and include providing adequate controls to comply with the law, which is to ensure indoor temperatures are reasonably comfortable.

Key points

- Employers should provide a 'reasonable' temperature in the workplace
- Employers should have a risk assessment for the health and safety of their employees to assess and control risks in the workplace. The workplace temperature is a potential hazard that employers should address
- Employers will need to include in any assessment the risks of outdoor working

The law requires thermometers to be available to enable workers to check the temperature. There are various informal guides to safe working temperatures, and generally, the acceptable zone of thermal comfort for most types of work lies between 16 degrees C - 24 degrees C (about 61 - 72 F). Acceptable temperatures for heavier types of work are concentrated 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 recommend the following temperatures:

- heavy work in factories 13 degrees C
- light work in factories 16 degrees C
- offices or dining rooms 20 degrees C

What the law says about cold

The Approved Code of Practice under the Workplace (Health, Safety and Welfare) Regulations 1992 states that workrooms should normally be:

- at least 16 degrees C for most types of work; and
- at least 13 degrees C for work involving "severe physical effort".

These levels are legally enforceable minimums, and workers have the effective right to refuse to work when the workplace temperature is below them. Unions should reach agreements with employers on these matters. It is normally accepted that no action should be taken if the correct temperature is achieved within an hour of starting work.

What reps should expect

Unite believes that workers should be protected from having to work in uncomfortably hot conditions in the same way as they are protected from the cold. For most workers, the main reason for heat exposure at work is high temperatures due to the weather, inadequate ventilation and so on. The general duties of health and safety law mean that some precautions can and must be taken.

Work which necessarily involves heat at work should be minimised, or workers' contact with it reduced (for example by enclosing the hot operation, by use of remote control devices etc.). Workers whose exposure to heat cannot be reduced should be provided with adequate breaks and facilities to cool them down, including personal cooling equipment or cooling air flows. In many cases more breaks than normal will be needed. They should be taken in cool areas. Cool drinks should also be provided.

Controlling Heat Hazards

There are a number of basic approaches to tackling heat hazards at work. All involve reducing exposure by keeping heat away from workers. The source of the heat can be isolated. For example, fuel for boiler furnaces can be fed in by machine. Automation can be used for some very hot work. Sources of the heat can be insulated. But insulation must be properly designed and many insulation materials create hazards of their own. Controlling heat loss can also prevent waste and may save money.

Radiant heat can be screened by using heat reflecting shields, or water cooled heat-absorbing panels. Heat from sunlight can be shaded through large windows or glass roofs, by blinds or whitewash. To cool hot air and regulate humidity, ventilation systems can be used. Finally if there is no other way of controlling the heat then work breaks and job rotation can be used.

In some circumstances protective clothing can be used but this should be regarded as a last resort or a temporary measure. It can be cumbersome, uncomfortable, ineffective and can cause accidents. Thick clothing made from insulation materials can temporarily prevent heat getting through to your body. Aluminised suits and aprons give greater protection against radiant heat. Otherwise lighter clothing is better since it allows the body to be cooled by air currents and sweating.

Safety Rep Action

The Approved Code of Practice to the Workplace (Health, Safety and Welfare) Regulations states 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; and
- using fans and increased ventilation in hot weather.

As a first step, Safety Reps should raise with their employers the problems created by high temperatures at work. Unite expects employers to consult Safety Reps about measures to reduce the temperature. Before serious problems relating to heat actually arise, it would be sensible for companies and reps to agree a policy on how to deal with hot weather. Where there is no such agreement, and Unite members are subjected to unbearably hot conditions, reps should press employers to meet the law and follow the steps set out above.

What if You Work Outside

The general duties under the HASAWA and the Management Regulations apply to outdoor workers such as rail track and construction workers, with the latter further protected under The Construction Design and Management regulations 2015. This law requires where necessary to ensure the health or safety of persons at work on a construction site that is outdoors, the construction site must, so far as is reasonably practicable, be arranged to provide protection from adverse weather. This will include hot and cold conditions incorporating heat stress and exposure to sunlight particularly Ultra violet radiation. Too much sunlight can cause skin damage including sunburn, blistering and skin ageing and in the long term can lead to an increased risk of skin cancer.

Advice to Safety Reps on protective measures in Hot Weather

- Regular and more frequent rest breaks
- Provide adequate facilities and free access to cool fresh drinking water
- Ensure agreements are in place to cover suspension of work in high temperatures. Agree a cut-off point this will be variable, depending on where the work is taking place.
- Check work rate – the harder someone works the more body heat they generate
- Provide mechanical aids where possible to reduce the work rate.
- Provide shaded rest areas at appropriate places
- Ensure rest areas have engineering controls for cooling such as air conditioning
- Reschedule work to cooler times of the day
- Regulate the length of exposure to hot environments by
- Provide specialised PPE which can incorporate personal cooling systems or breathable fabrics.
- Allow workers to acclimatise to their environment and identify which workers are acclimatised or assessed as fit to work in hot conditions.
- Identify employees who are more susceptible to heat stress because of an illness, condition or medication that may contribute to the early onset of heat stress, e.g. pregnant women or those with heart conditions. You may need advice from an occupational health professional.
- Monitor the health of workers at risk. Where a residual risk remains after implementing as many control measures as practicable, you may need to monitor the health of workers exposed to the risk. You should then seek advice from an occupational health professional.
- Provide training for your workers, especially new and young employees, telling them about the risks of heat stress associated with their work, what symptoms to look out for, safe working practices and emergency procedures.

Typical example of a heat stress situation

Someone wearing protective clothing and performing heavy work in hot and humid conditions could be at risk of heat stress because:

- sweat evaporation is restricted by the type of clothing and the humidity of the environment
- heat will be produced within the body due to the work rate and, if insufficient heat is lost, core body temperature will rise
- as core body temperature rises the body reacts by increasing the amount of sweat produced, which may lead to dehydration
- heart rate also increases which puts additional strain on the body
- if the body is gaining more heat than it can lose the deep body temperature will continue to rise
- eventually it reaches a point when the body's control mechanism itself starts to fail

The symptoms will worsen the longer someone remains working in the same conditions.

Useful Links

- HSE <http://www.hse.gov.uk/temperature/index.htm>
- Worksmart <https://worksmart.org.uk/health-advice/where-you-work/summer-heat/there-maximum-temperature-workplaces>
- ACAS <http://www.acas.org.uk/index.aspx?articleid=5791>

HSE Thermal comfort checklist

This table will help you carry out a basic thermal comfort risk assessment.

Factor	Description	Yes
Air temperature	Does the air feel warm or hot?	
	Does the temperature in the workplace fluctuate during a normal working day?	
	Does the temperature in the workplace change a lot during hot or cold seasonal variations?	
Radiant temperature	Is there a heat source in the environment?	
	Is there any equipment that produces steam?	
	Is the workplace affected by external weather conditions?	
Humidity	Are your employees wearing PPE that is vapour permeable?	
	Do your employees complain that the air is too dry?	
	Do your employees complain that the air is too humid?	
Air movement	Is cold or warm air blowing directly into the workspace?	
	Are employees complaining of draught?	
Metabolic rate	Is work rate moderate to intensive in warm or hot conditions?	
	Are employees sedentary in cool or cold environments?	
PPE	Is PPE being worn that protects against harmful toxins, chemicals, asbestos, flames, extreme heat, etc?	
	Can employees make individual alterations to their clothing in response to the thermal environment?	
	Is respiratory protection being worn?	
What your employees think	Do your employees think that there is a thermal comfort problem?	

Read the descriptions for each thermal comfort factor, and tick the appropriate box. If you tick two or more "Yes" boxes there may be a risk of thermal discomfort and you may need to carry out a more detailed risk assessment.

From: <http://www.hse.gov.uk/temperature/assets/docs/thermal-comfort-checklist.pdf>