

The case for a legally enforceable maximum temperature.

Introduction

Although high Temperatures are accepted as a health risk, with the exception of extreme temperatures, there is little recognition of the effect that high temperatures have on the body and the health of the individual. Heat is seen as being a cause of discomfort rather than illness and, as such has not been taken seriously by regulators.

The TUC believes that high temperature is a significant health issue and there is a need for both a maximum temperature, and enforcement action against employers who allow their workers to suffer from having to work in hot workplaces.

The effects of heat

It is usually accepted that people work best at a temperature between 16°C and 24°C, although this can vary depending on the kind of work being done. Strenuous work is better performed at a slightly lower temperature than office work. The Chartered Institute of Building Services Engineers recommends the following temperatures for different working areas:

- Heavy work in factories: 13°C
- Light work in factories: 16°C
- Hospital wards and shops: 18°C
- Offices and dining rooms: 20°C

If the temperature varies too much from this then it can become a health and safety issue. If people get too hot, they risk dizziness, fainting, or even heat cramps. In very hot conditions the body's blood temperature rises. If the blood temperature rises above 39 °C, there is a risk of heat stroke or collapse. Delirium or confusion can occur above 41°C. Blood temperatures at this level can prove fatal and even if a worker does recover, they may suffer irreparable organ damage.

However even at lower temperatures heat leads to a loss of concentration and increased tiredness, which means that workers are more likely to put themselves or others at risk. How we are affected by heat is also influenced by humidity and physical nature of the work. Other factors on how heat will affect someone are their degree of fitness, age and metabolism.

The US enforcement agency OSHA have produced a detailed list of the effects of heat stress. These are:

Results of Heat Stress	
Heat Disorder	Health Effects
Heat Fatigue	Signs include impaired performance of skills, mental concentration, or vigilance. Generally due to not being used to working in heat. No treatment except to remove the person from the heat before more

	serious conditions develop.
Heat Rashes	Most common problem. Prickly heat rash shows itself as red bumps normally where clothing is restrictive or chafes. As sweating increases the bumps begin to feel prickly. Prickly heat occurs in skin that is persistently wet from unevaporated sweat. Rash may become infected if not careful. In most cases heat rash will disappear when the individual returns to a cooler environment.
Heat Collapse	In a collapse or faint, the brain does not receive enough oxygen because blood pools in the extremities. The individual may lose consciousness. The onset of collapse is rapid and unpredictable. Move to cooler area, loosen clothing, give fluids.
Heat Cramps	Usually caused by performing hard physical labour in a hot environment. Cramps are caused by the lack of water - note: excess salt can build up in the body if water lost through sweating is not replaced; do not use salt pills. Thirst cannot be relied on as a guide to need for water. Water must be taken every 15 to 20 minutes in hot environments - avoid alcohol, coffee, tea, carbonated drinks (pop).
Heat Exhaustion	Signs are headache, nausea, dizziness, blurred vision, weakness, giddiness, thirst. Skin is damp and looks muddy or flushed. Fortunately, this condition responds readily to prompt treatment. Symptoms in heat exhaustion are similar to heat stroke - a medical emergency. People suffering from heat exhaustion should be removed from the hot environment, given fluids, loosen clothing, shower or sponge bath with cool water and rest in a cool place.
Heat Stroke	Occurs when the body's system of temperature regulation fails and body temperatures rise to critical levels. The condition is caused by a combination of highly variable factors and is difficult to predict. This is a medical emergency. Primary signs and symptoms of heat stroke are confusion, irrational behaviour, loss of consciousness, convulsions, hot dry skin, lack of sweating (usually), and an abnormally high body temperature. If body temperature is too high it causes death. The elevated metabolic temperatures caused by a combination of work load and environmental heat load are also highly variable and difficult to predict.

As well as these there is an increase in the likelihood of accidents due to reduced concentration; slippery, sweaty palms as well as an increase of discomfort of some personal protective gear which can result in reduced protection through inappropriate usage or non-usage. Heat can also aggravate other medical conditions and illnesses such as high blood pressure or heart disease due to increased load on the heart as well as interacting with, or increasing the effect of, other workplace hazards. In addition heat is associated with a reduced sperm count and can be dangerous during pregnancy.

The legal position

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. Unfortunately there is no maximum temperature for workers. The regulations which do exist are misunderstood, rarely heeded and impossible to enforce. This is in contrast to the minimum temperature which is recognised by workers and employers alike.

The Workplace (Health, Safety and Welfare) Regulations 1992 lay down particular requirements for most aspects of the working environment. Regulation 7 of these Regulations deals specifically with the temperature in indoor workplaces and states that: "During working hours, the temperature in all workplaces inside buildings shall be reasonable." What is "reasonable" however is not laid down.

The associated ACoP goes on to explain:

'The temperature in workrooms should provide reasonable comfort without the need for special clothing. Where such a temperature is impractical because of hot or cold processes, all reasonable steps should be taken to achieve a temperature which is as close as possible to comfortable.'

In respect of low temperatures, the ACoP is clear. They state "The temperature in workrooms should normally be at least 16 degrees Celsius unless much of the work involves severe physical effort in which case the temperature should be at least 13 degrees Celsius."

When it comes to high temperature there is no such clarity. The ACoP says "Where the temperature in a workroom would otherwise be uncomfortably high, for example because of hot processes or the design of the building, all reasonable steps should be taken to achieve a reasonably comfortable temperature." The ACoP goes on to lay down some very sensible ways in which this should be done.

There are also other regulations which employers have to comply with in hot conditions but again none of them mention the all elusive figure that is "Too high". These include:

- The Personal Protective Equipment at Work Regulations require employers to select protective equipment that is suitable for risks, for the workers using it, and for the working environment. This means that if personal protective equipment is being used in hot weather, whether inside or out, it must be designed to allow workers to keep as cool as possible.
- The Manual Handling Regulations require employers to take into account other factors including hot and humid conditions.
- The Display Screen Equipment Regulations require that 'equipment belonging to any workstations shall not produce excess heat which could cause discomfort to operators or users'.
- The Management of Health and Safety at Work Regulations specifically state that employers have to assess any risks to pregnant women from extremes of heat as pregnant women tolerate heat less well. The same regulations state that young workers must not be employed in situations where they are likely to be exposed to extremes of heat.

Enforcement

The difficulty with the present regulations is that, without a specific maximum figure, they are impossible to enforce unless a worker is seriously injured or killed by heat stress. Several safety representatives have reported that enforcement officers were unwilling to intervene when asked, and there is no evidence of any enforcement action in this area. According to the answer given to a written parliamentary question in 2009, from 1 April 2004 to 31 March 2008, the Health and Safety Executive took no prosecutions as a result of employers' failures to manage high temperatures in the workplace. Legal proceedings have however recently been initiated by HSE related to a workplace fatality in 2006-07 in which heat stress was implicated.

Is there a problem?

It is clear from reports from trade unions that high temperatures are a major problem. In 2008 (which had a particularly cold summer) high temperature was cited as a major hazard by 20% of safety representatives. In some sectors it was particularly high including central and local government, education and manufacturing. Often the biggest problem was in post-war buildings with a high glass content.

A recent survey of almost 6,000 teachers, school and college leaders and Health and Safety Representatives, found that 94% of respondents reported that they had worked in excessively high temperatures during the summer, with 42% doing so regularly.

The TUC also asked trade unions for examples of where members were exposed to excessive heat. Among the several hundred examples reported were the following:

- A union representative reported on a survey of twenty seven telephone exchanges. The temperatures ranged from the lowest at 21°C increasing to 36°C. The average reported temperature was 28.64°C and 76% of the buildings were over the WHO recommended standard.
- Another representative reported that the tissue culture and virology rooms they were working in reached 32°C last summer, which was made even more unbearable by the fact that the room was full of ethanol fumes.
- A union representative in a chicken factory reported that the high temperatures were leading to reports from the union members of both tiredness and dizziness because of the high temperatures. This was in a factory where there was a lot of hard physical activity.
- A secondary school in Birmingham has its ICT rooms on the top (2nd) floor. At least one of the rooms has two walls that are almost entirely glass. This room receives direct sunlight in summer for the most part of the school day. The safety representative reported that when external temperatures in summer exceed 22°C the room's temperature rises to 31/32°C and on occasions even higher. There is no air conditioning and whilst blinds keep out the sun they trap the heat generated by the 20 computers in the room.

In all these cases the union has tried to get improvements, but without legislative back up and support from the HSE or local authority inspectors progress is usually impossible. Where improvements are introduced it can take years to get them

agreed. One teacher in a school where temperatures often exceeded 30°C reported “Headaches were common place as was a general discomfort and malaise. Staff tried their best to find jobs that took them into fresh air. We had to go out and buy fans and eventually we got a water dispenser. The Local Authority were uninterested and we only got the improvements because our boss was also suffering and was a decent person.” In this case the improvement requested was as simple as blinds.

Unfortunately the actual health effects of extreme heat are difficult to quantify or prove as the main short term symptoms, dizziness, headaches and nausea are often also associated with other conditions and those who suffer from the effects of extreme heat rarely report it or record in accident books.

Given the fact that average temperatures are likely to increase over coming years as a result of global warming this is a problem that is likely to increase. It is also a problem that is usually relatively easy to resolve. Often simple steps, such as having windows that can be opened, fans, moving staff away from windows or sources of heat or installing ventilation or air-cooling will be effective. If there were a maximum temperature it would also help ensure that the issue of temperature was taken into account during the design stage for new buildings or during refurbishment.

What should be the maximum temperature?

As with noise there is a case for an action level and an absolute level. The TUC would wish to see an action level of 24°C which is the WHO recommendation for maximum temperature for working in comfort. At this point the employer should be required to take action to ensure the temperature does not go above this. In addition there should be an absolute maximum temperature of 30°C (27°C for those doing strenuous work), at which point workers should not have to work and an employer should be liable for prosecution. It should be stressed that this is intended as an absolute maximum rather than an indication that regular indoor work at just below 30°C would be acceptable.