Cool it!

A TUC guide for trade union activists on dealing with high temperatures in the workplace.

TUC

Contents

Section one
Introduction 3

Section two
The legal position 4

Section three
The scale of the problem. 6

Section four
Advice for safety representatives Indoor work 8

Section five
Advice for safety representatives Outdoor work 10

Section one

Introduction

High temperatures can be a major problem in the workplace. It can be an issue in some places, like foundries, all year round, and in others during the summer months when outside temperatures soar.

When the temperature rises too much 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. High temperatures mean 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. Workers at greater risk of heat stress include those who are 65 years of age or older, are overweight, have heart disease or high blood pressure, or take medications that may be affected by extreme heat. In addition high temperatures are associated with a reduced sperm count and can be dangerous during pregnancy.

Scientific studies confirm that indoor temperature can significantly impact on productivity and the best performing 'comfort zone' lays between 22° C and 25° C. When the temperature went above that productivity fell. By 28° C there was already a 5% decrease, and the higher the temperature the lower the output.

At the same time working in the sun can, for many people, increase their risk of skin cancer, while the glare from the sun can be a problem for drivers and those working on roofs where roof lights can blend into the surrounding roof in bright sunlight.

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

Section two

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, and the risk from high (or low) temperatures, and of skin cancer due to exposure to the sun, should always be considered in any risk assessment,

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. However even if the temperature is slightly below that, employers should still attempt to reduce temperatures if they get above 24°C and workers feel uncomfortable

The Approved Code of Practice to the Workplace Regulations gives examples of what employers must do to ensure a reasonably comfortable temperature for indoor workers. This includes:

- Insulating hot plants or pipes
- Providing air cooling plants
- Shading windows
- Sighting workplaces away from places subject to radiant heat

Where this is not sufficient, it states that employers must install local cooling systems, increase ventilation, or fans. The code of practice also says that other factors, such as protective clothing, physical activity, radiant heat, humidity, air movement, and length of time of a person doing a job must all be taken into account when assessing what a 'reasonable temperature' is.

In addition, the Code of Practice requires employers to provide a suitable number of thermometers to enable workers to check temperatures in indoor workplaces.

The regulations require employers to provide 'effective and suitable ventilation', but safety representatives should ensure this is not achieved simply by opening doors, which may be acting as fire doors.

There is also guidance to the regulations that say that protection from the excessive effects of the sun in buildings can be achieved by introducing shading and using reflective materials. Some examples of the measures which can achieve this, either in isolation or in combination, are:

- introducing awnings;
- internal or external louvered blinds;
- using dense vegetation, eg trees to provide shading;
- use of anti-reflective glazing, eg by using films or upgrading glazing;

- introducing overhangs or recesses to windows;
- reducing unnecessary glazing on the sides of the building receiving the most sunshine;
- improving the overall thermal mass of the building by using energy-efficient materials which allow heat to be stored and released at cooler times of the day.

The guidance even says that employers should consider heat when commissioning the design and construction of a new building and consider minimising solar effects by suitable positioning, type of glazing and the materials used.

Although the Workplace (Health, Safety and Welfare) Regulations only apply to indoor workplaces, that does not mean that employers do not also have a duty to employers working outside. All employers have a general duty to protect the health and safety of the workforce under the Health and Safety at Work Act, and also to assess and control risks from working in hot temperatures, or exposure to the sun, under the Management of Health and Safety at Work regulations. This includes drivers where working in a very hot cab can make the person more likely to have an accident.

Many outdoor workers, in particular agricultural workers, may be employed through agencies. Where this happens both the agency and the employer will have a legal duty to protect the worker.

There are also other regulations which employers have to comply with in hot conditions. 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. This means that when groups such as refuse collectors have to wear special padding to protect themselves from injury from sharps, the trousers are designed to ensure that they are still as comfortable in hot weather 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.

The HSE have two very useful tools on their website that every employer with a heat issue should use. One is a "thermal comfort checklist"and the other is a "heat stress checklist".

Section three

The scale of the problem

It is clear from reports from trade unions that high temperatures are a major problem. In the 2016 TUC safety representatives survey, 16% of safety representatives cited high temperatures as one of their top concerns. 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 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 had tried to get improvements, but without legislative back up and support from the HSE or local authority inspectors, progress is usually impossible. 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. Safety representatives who have reported problems with heat to the enforcement authority have said they were unwilling to intervene when asked, and there is no evidence of any enforcement action in this area.

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.

◘ LEGAL PROTECTION NEEDED

Trade unions want to see a legal maximum temperature for indoor work of 30°C (27°C for those doing strenuous work), so that employers and workers know when action must be taken. 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.

There should also be a new legal duty on employers to protect outside workers by providing sun protection, water, and to organise work so that employees are not outside during the hottest part of the day.

However these will only help if there is proper inspection and enforcement of the workplace.

Section four

Advice for safety representatives Indoor work

Heat is one of the biggest causes of complaint to safety representatives during the summer. However, the air temperature which you can measure from a thermometer is only one part of what safety representatives have to take into account. Humidity, heat sources, clothing, any breeze or wind, can all have an effect on how heat affects someone. In addition, the effects of heat vary depending on the weight and age of a person.

It is possible to get a more accurate assessment of the situation in the workplace using a wet bulb globe thermometer or an electronic equivalent, which measures humidity. The comfort range for humidity is between 40% and 70%.

However, most union health and safety representatives will not have access to sophisticated monitoring equipment and the best rule of thumb in deciding if it is too hot, is whether or not your members feel comfortable. If they don't, then something should be done to protect them.

The following check-list gives some ideas of what a health and safety representative might want to suggest to an employer if there are problems about heat or humidity. However, before you approach their employer, you may wish to find out from your members where the worst problems are, what times of the day are worst, and what the causes are.

Measures that might want to be considered could include:

- ☑ Introducing a properly designed air conditioning system into the building: In some buildings this is not possible, either because of the age or type of the building, or because of planning restrictions. A properly maintained air conditioning system is a very effective way of reducing temperatures. However, air conditioning systems do use a very high level of power and other, more environmentally friendly, solutions should also be considered.
- ☑ Relaxing dress codes: Often there is no reason why employers have to insist on workers wearing ties, tights, or jackets for work. The issue is whether or not the clothing is acceptable in the context of the job a person does. For instance, insisting that security guards and porters wear a uniform, with a jacket, in the heat of the summer sun is clearly unnecessary and inappropriate.
- ☑ Redesigning the work area: Often simply moving people away from windows, or reducing heat gain by installing reflective film or blinds to windows can be a very effective way of keeping a workplace cooler.
- ☑ Install fans or natural ventilation: Providing fans or windows that open can also help workers feel cooler, however both these become less effective at higher temperatures.

Portable air-cooling cabinets are also available, which are more effective.

- ☑ Allowing staff to be more flexible in their working arrangements: Often staff have to travel to work in overcrowded trains or buses. Allowing them the flexibility to finish either earlier or later can help, as can allowing them more frequent rest breaks.

If none of these measures are sufficient to reduce the level of heat, and staff are still uncomfortable, then the employer should ensure that a competent heating and ventilation engineer is employed to survey the workplace and recommend a permanent solution to the problem.

Workers in some indoor situations such as some factories, mines, boiler rooms, kitchens and laundries are at even more risk of heat stress or dehydration. The employer should always seek professional advice on both reducing heat and protecting workers in these situations, and workers should be given information about avoiding heat stress and dehydration, and on how to recognise early symptoms.

Section five

Advice for safety representatives Outdoor work

Skin cancer is the most commonly diagnosed cancer in the UK. There are around 100,000 new cases of skin cancer every year in this country, with over 2,500 deaths. The vast majority of these cases are caused by exposure to sunlight and it is estimated that 90% of all skin cancer deaths could be prevented if people properly controlled their exposure to the sun's UV radiation. It is not known how many of these are a result of outside working, although research for the HSE suggested that 4.5% of cases were work related.

However, outside workers are not just at risk from skin cancer. Exposure to the sun can blister and burn the skin and cause premature ageing. Working in hot weather also leads to the possibility of dehydration and heat stress. This can lead to fatigue, muscle cramps, rashes, fainting, and in severe cases a loss of consciousness.

Employers have always argued that they cannot control exposure to the sun and that it is up to individual workers what they wear. They also claim that it is unfair and impractical to ask workers to cover up in very hot weather. This is not true. In practice there is a lot employers can do, but measures must be introduced with the full involvement of the workers and their health and safety representatives.

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

Simply telling workers they must cover up or wear sunscreen is not going to be effective in itself unless there is also a campaign to explain the dangers to the workforce. It is important that employers realise that reducing exposure is not about putting responsibility onto the worker, but looking at the working practices.

Among things employers can do to reduce the risk are:

- ☑ Changing working practices so that less outside work needs to be done either in the hottest months or the hottest time of the day (11:00-15:00). Often it is possible to organise work in summer so that the tasks that require the employees to be outside can be done either in the mornings or late afternoon, or on cloudy days.
- ☑ Provide canopies, sheeting, or similar covering over open areas such as building sites where people are working. Also provide shaded areas for breaks.
- ☑ There should be regular breaks for workers, especially if they are outdoors in the heat.
- ☑ Staff should always be able to have access to cool fresh water. It is important to replace water lost through sweating, so employers should always

provide a regular supply of fresh water for all outdoor workers.

- ☑ Provide information and guidance on avoiding exposure to harmful UV radiation both as part of induction and on an on-going basis. The Health and Safety Executive has produced a useful leaflet giving advice on outdoor worker and sun protection (see information and resources). Given the high proportion of outdoor workers who are recent migrants consideration should be given to ensuring that training information and advice is available in other languages.
- ☑ Make sure that any protective clothing is lightweight, long-sleeved and comfortable, but at the same time dense enough to prevent UV rays from getting through. It should also allow body heat to escape. This will encourage workers to wear it. The employer can also encourage workers to remove it when resting to help encourage heat loss if it is safe to do so.
- ☑ Provide lightweight brimmed hats for all outdoor workers where safety helmets are not required.
- ☑ Where work is required to be done outdoors in sunny weather, employers should provide dispensers with sunscreen and workers should be encouraged to apply it regularly on any exposed areas. Sunscreen should have a sun protection factor of at least 20 and preferably 30 but also give protection against UVA radiation (some don't).
- ☑ Employers should be encouraged to provide occupational health screening programmes which should include checking for the signs of skin cancer. Outdoor workers should also be given information on how to recognise the early signs of skin cancer as some kinds of skin cancer are easily treated and all types are less likely to be fatal if treated early on.

These measures will be most effective if the workforce are involved in the decisions, in particular on types of protective clothing and sun-screen provided. The arguments for change must be given in a way that shows that these measures are intended to help keep employees healthy, prevent cancer and keep cool.

If employees are ignoring safety advice it is usually for a reason. Where workers continue to work without tops, hats and sunscreen on the hottest days then perhaps what has been provided is just not suitable or there has not been enough training on the issue.

Safety representatives can also circulate material on the risks of skin cancers from the websites of organisations such as Cancer Research UK or the HSE.

◘ DRIVING

Heat stress can also be a problem for workers who drive as part of their job. This is particularly dangerous as any driver suffering from fatigue, giddiness, or fainting, is clearly a major risk to both themselves and other people.

Employers should provide cars, vans or lorries with air conditioning, or, if a driver is likely to be stuck in traffic for any length of time, make sure they are not driving in very hot weather.

Find out more

For more information about health and safety, go to:
www.tuc.org.uk/workplace-issues/health-and-safety

The HSE has useful advice at:
www.hse.gov.uk/temperature

The Workplace Regulations can be found here:
www.hse.gov.uk/pubns/priced/l24.pdf

Your union may well be able to assist you if you have a problem with temperature that you cannot resolve locally.

TUC