

GUIDANCE DOCUMENT

WORK ENVIRONMENT



WORK IN THE SUN AND HEAT



OCCUPATIONAL HEALTH AND SAFETY AUTHORITY (MALTA)

Working in the sun, especially if it is for a long period of time, can have negative effects due to the heat or the sun's rays. This short guide can be useful for both workers and employers or self-employed persons as it contains information on the risks from working in the sun and heat, and how to avoid or reduce them.

WORKING IN THE HEAT



The workers' ability to do their job well can be affected by cold or heat. One of the important conditions in the workplace is to have a comfortable temperature, usually between 20 and 25°C. Of course, the temperature varies depending on the season we are in and so there are a number of measures that can be taken to address this problem.

In addition to heat generated in the workplace by machines and other equipment that may be in use, heat, as well as cold, can enter the workplace through two main channels:

- **Directly:** from windows, doors, etc. Sometimes the excess heat is generated by steam or exhaust from engines;
- **Indirectly:** heat entering the workplace from the roof, walls and floor. The brighter the sun, the hotter these become during the day and this heat enters the workplace.

There are a number of measures that employers can take to reduce the amount of heat entering the workplace (for indoor work). These include:

- ensuring that the exterior walls are as smooth as possible and painted with light-coloured paint so that the heat is reflected;
- improving the way heat is reflected from the roof;
- improving wall and ceiling insulation;



- as far as possible ensuring that the workplace is as shaded as possible by natural means (such as trees, etc.) or by shades on windows, doors, etc. Here it is important for safety reasons that these shades do not block entrances and, or exits.

WHAT ARE THE RISKS OF WORKING IN EXCESSIVE HEAT?

SAFETY

- Extreme fatigue and dizziness
- Sweaty hands
- Fogging of Safety Goggles
- Burns
- Lack of vigilance
- Higher irritability

HEALTH

- Heat stress / strain
- Heat cramps
- Heat exhaustion / heat stroke
- Heat rash
- Fainting



Body temperature is regulated to remain roughly the same. This ability of the body to maintain the same temperature can be affected by many factors including the environment, the amount of physical activity that the individual does as well as the clothes he wears. When this control of the body temperature starts to fail it is called 'heat stress'.

People who work in the sun or in an environment where the temperature is high can be at risk of heat stress which can easily lead to work-related illnesses or incidents. Heat stress can cause heat stroke, heat exhaustion, cramps and skin rashes.



High temperatures can lead to an increased risk of incidents due to, for example, sweat-soaked hands, foggy safety goggles and people who may feel dizzy because of the heat. Burning of the skin can be caused by accidental contact with hot objects or steam.



Work involving high temperatures, high heat sources, high humidity or considerable physical activity all have the potential to cause heat stress. Not only the environment, but also workers who wear protective clothing that is impermeable or semi-impermeable are at risk of heat stress.

When calculating the ambient temperature, it is important to consider the Wet Bulb Globe Temperature (WBGT) index. This is the most effective and accepted way to measure the heat stress that workers are exposed to in the workplace, particularly in the industrial sector. This index looks at the natural temperature of the 'wet bulb' (t_{nw}), the globe temperature (t_g) and the air temperature (t_a) and compares them with standard values.

WHAT ARE THE DANGERS FROM THE SUN?



The main problem comes from the so-called ultraviolet or UV rays in short. UV rays can cause immediate damage to the skin, such as sunburn, blistering and peeling of the skin. But even a little redness is a sign of skin damage.

In the long run, too much sun can burn and peel off the skin. But the most serious danger is a much greater chance of developing skin cancer.



(A) UVA AND UVB RAYS

There are two types of UV rays that can be dangerous: UVA and UVB.



UVA rays penetrate deeper into the skin and damage the middle section of our skin (the so-called 'dermis'). As the dermis controls how elastic the skin is, excessive UVA rays lead to increased wrinkles and faster skin aging.

UVB rays are absorbed by the upper part of the skin (epidermis) and cause us to tan but also burn.

Both UVA and UVB rays can increase the chance of developing skin cancer. Therefore, when we get sunburnt, we are putting ourselves at greater risk.

Certain types of medicine, contact with some chemicals used in the workplace (such as paints, wood preservatives, tar and pitch) and contact with some plants, can make your skin more sensitive to the sun. Your occupational physician or family doctor can give you better advice.

Another danger from sun exposure is eye damage and an increased risk of cataracts. In fact, figures released by the World Health Organization (WHO) show that, of the 15 million people who suffer from cataracts each year, 3 million are caused by the sun.

(B) UV INDEX

The UV index is a way of measuring the level of UV radiation. Figures range from 0 upwards - the higher this index, the greater the risk of sun damage.



The UV index is an important way to raise awareness of the risks of long-term exposure to UV radiation and how to recognise when we need to take protective measures. This index was developed by the WHO, the United Nations Environment Program and the World Meteorological Organization.



SOURCE: WHO

WHO IS AT RISK?

UV radiation is considered a workplace hazard for those workers who work outside as they are more exposed to these rays. These workers include:

- farmers
- builders and people working in construction
- people working on the beaches or near swimming pools
- gardeners
- postal workers
- services workers working outdoors
- outdoor sellers
- and other people who spend long periods of time outside.



If your workplace is not in the sun but there is a lot of heat and humidity, you may still have problems due to humidity. These workers include those who work:

- in a kitchen
- on farms
- in a laundry





- near ovens
- in foundries
- other places where high temperatures are generated.

There are certain types of workers who are more vulnerable than others and should therefore be given special attention. Amongst these we find women who are pregnant, those who have just given birth or those who are breastfeeding their babies.

WHAT YOU SHOULD DO IF YOU ARE AN EMPLOYER

1. Ensure that a **risk assessment** is carried out. It is your responsibility to assess all risks, including for those workers who work in the heat and sun. If, as an employer you consider yourself sufficiently competent, you can do this exercise yourself, with the involvement of the workers. If not, you will need to engage a competent person who must also involve the workers.

2. **Involve workers** in this risk assessment exercise, and consult them on where there may be problems in this regard and the prevention and protection measures that may be taken.



3. Take **all necessary measures**, including administrative and technical measures, and provide protective equipment, materials and products.
4. **Consult** with workers or their representatives. Listen to their opinion when introducing sun or heat safety initiatives.



5. Ensure adequate **ventilation** in the workplace by opening windows and making sure air bricks, doors, etc. are not blocked.
6. Make use of **spot cooling**, i.e. reduce the temperature in particular areas, for example, by using fans. It is important that the fans are placed correctly, so that they are not installed behind heat generating machines, or other heat sources.
7. Use localized **ventilation systems** to remove heat exhaust as close as possible to the source.
8. Where possible increase the **number of breaks** from work.
9. Introduce a **job rotation system** so that the same workers are not always working in the heat.
10. Ensure that workers have access to **safe drinking water** and can drink from it as required.
11. It is important to know the **humidity level** in the workplace (particularly inside factories). If a factory is very hot and humid, workers will be at great risk of harming their health.
12. It must always be ensured that in the workplace there is **adequate fresh air**, removal of stale air or air containing dust, chemicals, etc.
13. Include sun and heat **protection advice** in health and safety training. Inform workers about the need to protect themselves from the sun and heat. Inform them that when they are tanned, they have already damaged their skin.
14. As far as possible, **distribute the work done** outside in a way that is not done when the sun is at its peak.



15. Ensure that there is **adequate supervision** so that the measures taken are complied with.

16. **Encourage workers** to stick to the points we are mentioning. Tell the workers that they have an obligation to cooperate with you in this regard.



17. **Danger money** (a sum of money that a worker is given to work in a hazardous environment) is **NEVER justified**. You cannot pay workers a sum of money to work in the sun instead of taking the necessary measures.

These measures also apply to the self-employed persons.

HOW DOES THE COMPANY PROFIT?

- Better informed and healthy workers.
- Less sick leave than those exposed to the sun or high temperatures.
- Reduces the risk of workers suffering from skin cancer due to prolonged sun exposure.
- Improvement in industrial relations between employers and employees due to increased participation and consultation.

WHAT CAN I DO TO PROTECT MYSELF?

Be more careful if you usually get suntanned quickly, if you spend a lot of time outside, or if you have fair skin, a lot of freckles or skin blemishes. In order to prevent these rays from harming you, consider:

Administrative measures: There are a number of administrative measures you can take, including outdoor work being planned in a way that is not done when the temperature is very high or changes in working time (for example starting earlier in the morning). One should also always check the UV index regularly from the various media sources.



Technical measures: If possible, make use of different equipment such as tents, sun screens/shades or a large umbrella. Also ensure that there is adequate ventilation in the workplace.

Wear suitable clothing: Lightweight clothes, especially cotton, are best. Don't stay bare chested, even if you don't tan quickly. Wear long trousers instead of shorts.

Wear a hat: A wide-brimmed hat is best as it protects the neck, ears, eyes, hips, nose and scalp. The helmet offers some protection as well. You can also use a hat with a flap at the back to cover the neck, especially if you have to lean forward during work.



Wear sunglasses: Glasses do not have to cost tens of Euros, but it is important that they block between 99% and 100% of UVA and UVB rays. Read the label before you buy it.

Sunscreen: Although hats and other clothing offer the best protection from the sun, suntan lotion with a high Skin Protection Factor can add protection. It is important, however, to follow the instructions on the product on how often and after how long you should apply it. To apply this cream once only is NOT enough.



There may also be instances where the sunscreen may need to be applied more frequently, such as in situations where a worker rubs his exposed areas of skin against other external objects, or when the skin to which sunscreen has been applied becomes contaminated with dust (as during construction activities). Thus such a measure is often not cost effective, hence other administrative and or technical measures may be preferred.

Do not stay in the sun: UV rays are strongest between 10 am and 4 pm. Do not stay in the sun during these hours as much as possible.

Drink: Drink plenty of fluids regularly and before you get thirsty. Reduce coffee and alcohol and large amounts of sugar.

Light meals: Eat light snacks before you start work.

Rest: Pause for a while regularly and stay in the shade.

Medicine: Check with your doctor if the medicine you are taking may harm you if you stay in the sun.

Check your skin: Check the skin for increases in freckles or new blemishes. Also take care of any moles that grow or swell, or appear for the first time, especially around the nose and eyes or at the back of your hands. If you experience any of these symptoms, talk to your doctor or occupational physician, and explain to them that you work outdoors. Most of these symptoms are nothing but it is always better to check. So do not hesitate to visit the doctor.



Remember: avoiding a hazard is the best preventive measure that can be taken.

REFERENCES

In these guidelines references have been made to various ILO, HSE, WHO and OHSa publications.



FURTHER INFORMATION

For further information one may contact OHSa on:

Occupational Health and Safety Authority

Address: 17, Triq Edgar Ferro, Pietà PTA 1533, Malta

Tel No: 21247677

Contact in case of emergency after office hours: 99496786

Email: ohsa@gov.mt

Website: www.ohsa.org.mt

Facebook: @ohsamalta

Download the free mobile App **BSafe@Work**

