

Contents

1. Scope	1
2. Definitions, Terms, Acronyms	1
3. Policy.....	2
4. Responsibilities.....	2
5. Operational Arrangements.....	3
5.1. Measures to minimise occupational exposure to the sun	3
5.2. Sun Protective Equipment.....	4
5.3. Working in heat	5
5.4. Working in Heat Guidelines.....	6
5.5. Working in cold.....	6
6. References:.....	6
Attachment 1: Basic Thermal Comfort Risk Assessment for Outdoor Work.....	8
Attachment 2: Thermal Comfort Guide.....	9

1. Scope

This Standard applies to all persons under the direction of the University working or engaged in outdoor activities. For field work additional information can be found at the [Field Work](#) section of the OHS Manual.

2. Definitions, Terms, Acronyms

- Acclimatisation – period of adaption to different thermal working conditions
- Erythema - Reddening of the skin which can appear after as little as about 12 minutes exposure to bright midday summer sun
- Heat Illness – a heat induced illness that can cause serious injury
- Heat strain – the net physiological load resulting from heat stress
- Heat Stress – is the net heat load on the body from the ambient environment, clothing, PPE requirements and metabolic demands of work. Factors that influence heat stress include; muscular activity conductive and convective heat and radiant stress
- Heat Stroke – a failure of the body’s perspiration mechanism resulting in accelerating rise in body core temperature.
- Heat Wave – the Australia Bureau of Meteorology (BoM) defines this as a period of 3 days or more of unusually high maximum and minimum temperatures.
- Hydration – the process of absorbing and retaining water in the human body.
- Manager includes contract managers and academics-in-charge.
- Photosensitising substances – items that increase an individuals sensitivity to the sun, can be caused by ingesting, inhaling or coming into contact with such substances.
- Radiant Heat –is heat directly transmitted by infrared radiation from a heat source, and not by conduction or convection.
- Senior Managers include members of the Executive and Divisional Heads
- Sun Protection Factor (SPF) number is how long the sun's UV radiation would take to redden your skin when using the product exactly as directed versus the amount of time without any sunscreen
- Sunburn (Solar Erythema) The principal injury responsible for sunburn is direct damage to DNA by UVR, resulting in inflammation and apoptosis of skin cells. Sunburn inflammation causes vasodilation of cutaneous blood vessels, resulting in the characteristic erythema.

Outdoor Work Standard

- UPF (ultraviolet protection factor) The Australian Government test fabrics and award a UPF rating as outlined in the Australian/New Zealand Standard 4399:1996. The rating scale for UPF ranges from 15

Categories	UV Index
Low	UV Index of 1 – 2
Moderate	UV Index of 3 – 5
High	UV Index of 6 – 7
Very High	UV Index of 8 – 10
Extreme	UV Index of 11 and above

to 50+ in Australia. A fabric's UPF rating is based on how much UVR is transmitted through the fabric.

- UV - Ultra Violet
- UVR - Ultra-violet radiation
- UV Index Rating
- Worker – all staff and contractors/visitors/students under the direct control of University staff.

3. Policy

Deakin recognises that unprotected exposure to the sun is known to increase the risk of sunburn, eye damage, ageing of the skin and skin cancer. Outdoor work in extreme temperatures can lead to a range of other medical conditions including heat stress and hypothermia.

It is University policy that:

- [Senior Managers](#) must ensure that there is a safe system of work for their outdoor workers
- [Managers](#) must consider the risks associated with outdoor work by carrying a risk assessment and as needed implement appropriate control measures.
- Where the University provides protective equipment or measures the manager must ensure that equipment or measure is suitable, maintained, used appropriately and periodically reviewed.
- [Workers](#) under the control of the University must appropriately utilise protective measures and equipment provided by the University. Where protective equipment is provided by the worker, the worker is required to use that protective equipment in the course of their work as needed. Where the above is not done, the manager can suspend or terminate that activity and seek to apply relevant sanctions.

4. Responsibilities

For staff, the University is responsible for providing the resources for implementation of this Standard.

Faculties, Institutes and Divisions are responsible for ensuring a risk management system is in place to manage the risks of outdoor work.

[Managers](#) are responsible for undertaking risk assessments to ensure jobs, projects or tasks that could put at risk workers are identified and that individuals under their control understand the risks involved and the appropriate control measures. Where staff are involved this must be done in consultation with those staff and any health and safety representatives. Managers must ensure that the appropriate control measures are identified by a risk assessment and are implemented.

[Workers](#) who participate in outdoor activities controlled by the University must take reasonable care for their own health and comply with the safety recommendations implemented by their workplace and as described in this Standard. Specifically workers must:

- monitor for signs and symptoms of heat illness in themselves and others working around them and report to their manager if symptoms develop.
- advise their manager of any current medications being taken or applied or any pre-existing medical condition that may be adversely affected by outdoor work.

Outdoor Work Standard

Students, visitors, contractors and sub-contractors are to implement this Standard at their cost whilst working at the direction of the University or on University grounds.

[Workers](#) must follow their doctor's advice before working in hot conditions. Some medications includes sedatives, tranquillisers, antidepressants, amphetamines, antispasmodics, diuretics or medication for blood pressure. (This is not an exhaustive list and workers must read advice about their particular medication and outdoor work.). Medical advice may also be required for other medications such as antibiotics, some immunity suppressants and some acne treatments as they can increase an individual's sensitivity to sunlight.

5. Operational Arrangements

Reasonably practicable with respect to control measures should be determined in consultation with the staff (and their Health and Safety Representatives) carrying out the work in regards to:

- the nature of the work
- the severity of the potential harm to health and the degree of risk that exists
- the availability and suitability of ways to prevent or mitigate the risk
- whether the cost of preventing or mitigating the risk is prohibitive in the circumstances

5.1. Measures to minimise occupational exposure to the sun

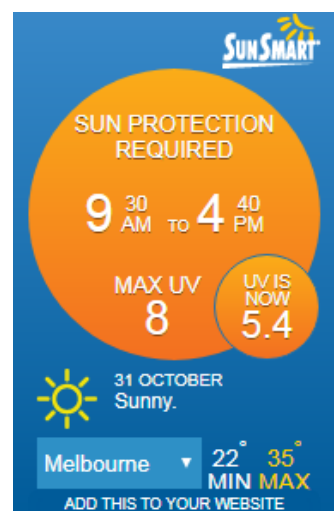
Managers when considering control measures as part of the risk assessment must consider the control hierarchy.

Control type	Description
Elimination	<ul style="list-style-type: none">• Carry out the work indoors.
Substitution	<ul style="list-style-type: none">• Reorganise or reschedule the work process or system of work to avoid or reduce peak heat and UV radiation exposure periods.• Carry out the work during the early morning or late afternoon.
Engineering	<ul style="list-style-type: none">• Shelter the task from direct sunlight with shade sails.• Relocated the task away from any reflective surfaces (eg. concrete, glass, metal, sand, water).
Administration	<ul style="list-style-type: none">• Rotate employee work tasks or vary their jobs to reduce exposure time.
Personal Protective Equipment	<ul style="list-style-type: none">• PPE is the lowest order control measure in the hierarchy of controls. PPE should only be considered when other higher order control measures are not reasonably practicable or to increase protection from the hazard.• Examples of PPE include sun protective work clothing, sun protective hats, sunglasses and sunscreen.

Outdoor Work Standard

Where work is required outdoors for **more than 20 minutes in 4 hours** when the [UV Index](#) is at **three or above (*)**, managers are required to:

- provide (staff only) and ensure use of appropriate sun protective equipment in line with SunSmart guidelines including:
 - [sun protective work clothing \(UPF 50+\)](#)
 - [sun protective hats \(UPF 50+\)](#)
 - [sunglasses](#)
 - [sunscreen \(SPF 50+\)](#)
- provide daily access to the [SunSmart UV Alert](#) (<https://www.sunsmart.com.au/uvalert/>). There are also apps available for phones
- provide training to enable workers to work safely in the sun
- ensure training is provided as part of induction for new workers concerning sun protection measures and their effective use
- ensure staff are provided with basic information to effectively examine their own skin.



(*) Generally in Victoria, the [UV index rating](#) is above three from September to May.

[Senior managers](#) are required to

- ensure managers and supervisors act as positive role models
- adopt sun protection practices during all outdoor social events and
- promote the use of sun protection measures 'off the job'.

Where practical the following arrangements by work areas will be made:

- consider applying window tinting to work vehicles
- modify reflective surfaces where possible.

Where practical the following procedures will be followed by managers:

- provide shaded areas or temporary shade where possible
- encourage workers to move jobs to shaded areas where possible
- identify and minimise contact with [photosensitising substances](#)
- provide indoor areas, which as far as is practicable are air conditioned or shaded outdoor areas for rest/meal breaks
- schedule outdoor work tasks to occur when levels of solar UVR are less intense, such as earlier in the morning , later in the afternoon or on another day (review forecast)
- schedule indoor/shaded work tasks to occur when levels of solar UVR are strongest, such as the middle part of the day
- encourage workers to rotate between indoor/shaded and outdoor tasks to avoid exposing any one individual to solar UVR for long periods of time
- ensure access to drinking water to support good hydration.

5.2. Sun Protective Equipment

Protective clothing - Long sleeves, a collar and long loose trousers increase the sun protection of clothing. Fabrics with a ultra violet protection factor (UPF)of 50+ (on the label) are recommended. Close weave fabrics as well as dark coloured fabrics such as greens, blues and reds inhibit UV light penetration, however this needs to be balanced against heat absorption. The ultra violet protection factor is a more reliable guide.

Head protection - A hat with a broad brim (minimum 7.5cm, preferably 10-12cm) and a close weave should be worn to shade both the face and back of the neck. If a hardhat is required it should include a flap and/or have

Outdoor Work Standard

a brim added. Legionnaire hats which have flap to cover the neck are more suitable when work involves a lot of bending. The flap should meet with the peak to protect the side of the face, ears and neck. (Baseball hats are not suitable)

Sunglasses - Workers required to work outdoors shall be provided with glasses that give protection to UV radiation and comply with AS/NZS 1067. A wraparound style will reduce UVR entering the eye from the side of the face. Some workers may need extra eye protection from flying objects or glare. In this case, choose specialist safety sunglasses to meet AS/NZS 1337.1. Prescription glasses—either clear or tinted—are not tested against AS/NZS 1067:2003 but may still provide protection against solar UVR. Fit-overs are recommended for prescription glasses as few are close fitting and wraparound in style.

Sunscreen shall be a broad-spectrum (protecting against UVA and UVB) with a rating of SPF 50+, water resistant and should be applied to dry skin at least 20 minutes prior to sun exposure. The amount of sunscreen to apply can vary with product: always read the application instructions. Sunscreen should be reapplied at least every 2 hours unless otherwise specified by the product. Zinc cream will provide extra protection for lips, ears and nose and gel-based or alcohol-based sunscreens should be chosen if handling tools. Sunscreen should be kept in a cool place below 30°C in easily accessible places like tearooms and site offices. Sunscreen has an expiry date, therefore stock should be checked regularly and replaced as required.

5.3. Working in heat

A worker who becomes ill while working in the heat can experience heat stroke, fainting, heat exhaustion, cramps, rashes and fatigue. Signs and symptoms of heat illness include feeling sick, nauseous, dizzy or weak. Clumsiness, collapse and convulsions may also be experienced as a result of heat illness. **Workers with these signs or symptoms need to seek immediate medical attention.** Heat stress can become heat stroke which can be fatal.

Where work is required outdoors in temperatures above 30 C, managers must provide workers with information, instruction and training on recognising heat-related illness and on accessing first aid. Adequate supervision of workers is also required. Advice can be sought from [Health, Wellbeing and Safety](#) (HR) or your local OHS officer.

The risk associated with heat can be minimised by modifying workload. This may include:

- rescheduling work so the hot tasks are performed during the cooler part of the day
- doing the work at a different location at a lower temperature
- reducing the time spent doing hot tasks (eg job rotation)
- providing extra rest breaks in a cool area
- using mechanical aids to reduce physical exertion.

Where practical where temperatures are over 25 C, the following procedures will be followed by managers:

- Ensuring good hydration is the best way to minimise the risk heat stress
- Keep supplies of cool water always within reach
- Encourage workers to drink at least 2 glasses of water every hour preferably a cup of water (about 200 mL) every 15 to 20 minutes
- Discourage heavy use of soft drinks or caffeinated drinks
- Encourage workers to check the colour of their urine, a light pale straw colour is best, if urine is dark yellow or orange they are at risk.

Outdoor Work Standard

5.4. Working in Heat Guidelines

All heat stress scales have limitations. Many scales assume healthy acclimatized workers. Most people need three to four days [acclimatisation](#) to work in higher temperatures. The first day or so of work at higher temperatures presents the highest risk.

The wet-bulb globe temperature (WBGT) is a type of apparent temperature used to estimate the effect of temperature, humidity, wind speed (wind chill), and visible and infrared radiation (usually sunlight) on human health. The WBGT is used with [workload as a guide](#) to whether heat stress may be a risk. Due to its complexity WBGT can be very different to ambient temperature. WBGT temperature can be viewed on the [Bureau of Meteorology website](#) for most areas of Victoria.

Please see [Attachment 1: Basic Thermal Comfort Risk Assessment for Outdoor Work](#)

[Attachment 2: Thermal Comfort Guide](#) provides a guide to thermal comfort.

5.5. Working in cold

Hypothermia occurs when the body's temperature falls below 35 °C. A person doesn't have to be in sub zero temperatures to risk hypothermia – it only requires the environmental temperature to be less than the body temperature and a person will “donate” heat to the atmosphere. If the heat generated by the body – and people are constantly generating heat through metabolic processes and muscle movements – is less than that lost to the environment, then their temperature will begin to fall.

Where hypothermia is a risk, managers must provide workers with information, instruction and training on recognising hypothermia and on accessing first aid. Adequate supervision of workers is also required:

The risk associated with hypothermia can be minimised by modifying work. This may include:

- rescheduling work
- doing the work at a different location at a higher temperature
- reducing the time spent doing tasks in cold, windy or wet conditions (eg job rotation)
- providing extra rest breaks in a warm area
- providing clothing and protection.

6. References:

- SafeWork Australia: [Guidance note for the protection of workers from the ultraviolet radiation in sunlight](#) (2008)
- SafeWork Australia: [Guide for managing the risks of working in heat](#) (2017)
- WorkSafe Victoria: [Working in Heat](#)
- BetterHealth: [Heat stress and heat-related illness](#)
- BetterHealth: [Hypothermia](#)
- Queensland Government: [Heat Stress \(Basic\) Calculator](#) (This assessment tool can be used as a basic guide and/or training tool to help identify and manage risks of heat related illness.)
- Sunsmart: [Workplaces](#)
- Bureau of Meteorology: [About UV and sun protection times](#)
- Bureau of Meteorology: [Thermal Comfort observations](#)
- ARPANSA: [Labelling sun protection clothing](#)
- U.S. Occupational Safety and Health Administration: [Heat Stress](#)

Outdoor Work Standard

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Outdoor Work Standard

Attachment 1: Basic Thermal Comfort Risk Assessment for Outdoor Work

It is important to note that this assessment is to be used as a guide only. A number of factors are not included in this assessment such as employee health condition and the use of high levels of PPE (particularly impermeable suits). In these circumstances experienced personnel should carry out a more extensive assessment.

Criteria	For each row choose the applicable statement and enter the score in the score column (1, 2 or 3)			Score
	1	2	3	
Hot surfaces	Contact neutral	Hot on contact	Burn on contact	
Exposure period	< 30 min	30 min - 2 hours	> 2 hrs	
Confined space	No		Yes	
Task complexity	Simple	Moderate	Complex	
Climbing, ascending, descending	None	Moderate	Significant	
Distance from cool rest area	<50 Metres	50-100 Metres	>100 Metres	
Distance from drinking water	<30 Metres	30-50 Metres	>50 Metres	
Clothing (permeable)	Single layer (light)	Single layer (mod)	Multiple layer	
Understanding of heat strain risk	Training given		No training given	
Air movement	Windy	Some wind	No wind	
Resp. protection: (-ve pressure)	None	Half Face	Full Face	
Acclimatization	Acclimatised		Unacclimatised	
Total A			Total (add scores)	
	2	4	6	
Work Rate (B)	Light	Moderate	Heavy	
Add A and B			Total A + B = C	

WGBT temperature can be viewed on the [Bureau of Meteorology website](#) for most areas of Victoria.

	1	2	3	4	Score
Wet Bulb Globe Temperature (WBGT) (D)	< 24 C	> 24 – 27	> 27 – 30	> 30	
FINAL SCORE				Total C X D	

Work Rate	Description
Light work:	Sitting or standing to control machines; hand and arm work assembly or sorting of light materials
Moderate work:	Sustained hand and arm work such as hammering, handling of moderately heavy materials
Heavy work	Pick and shovel work, continuous axe work, and carrying loads up stairs

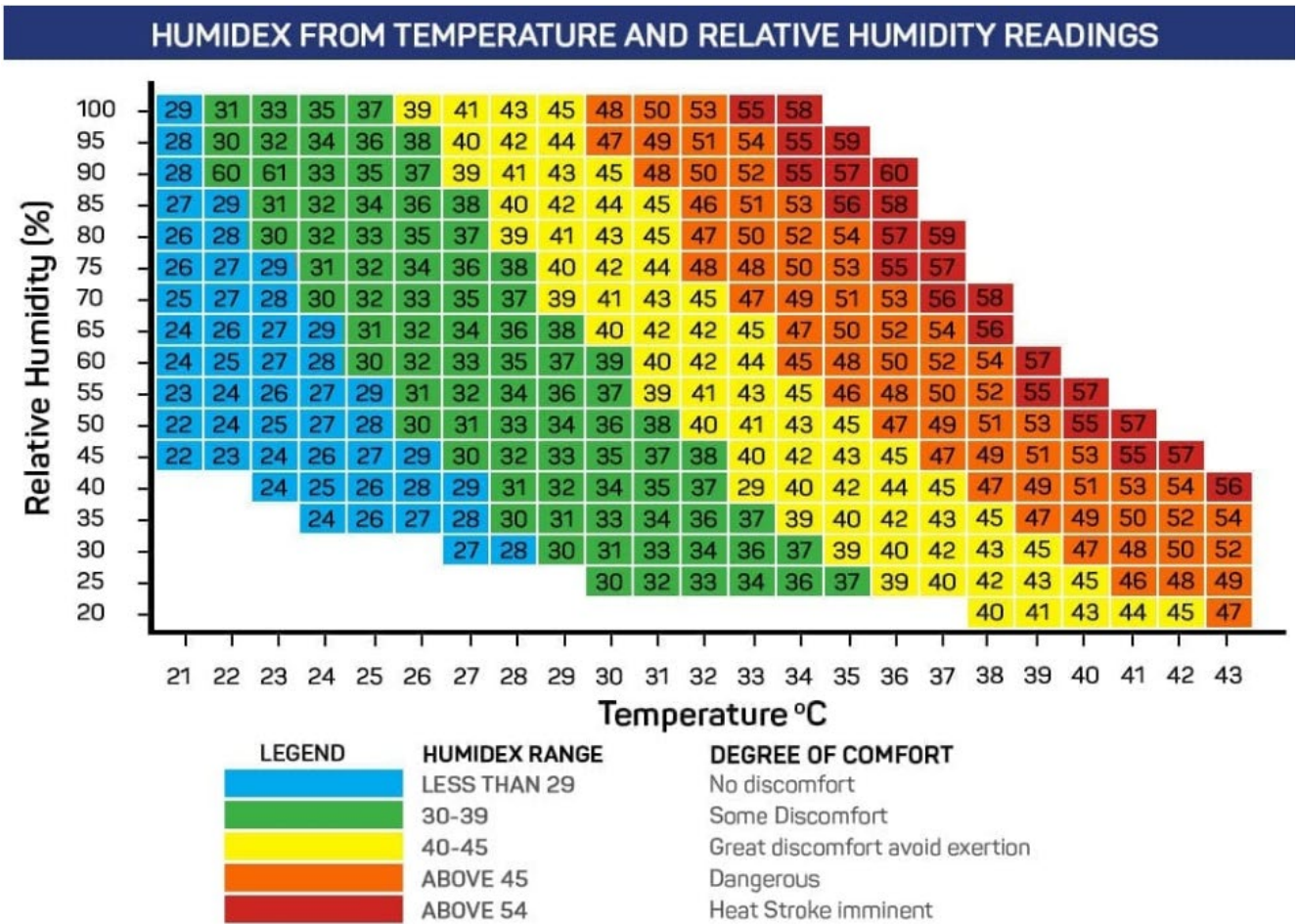
If the total is **less than 28** then the risk due to thermal conditions are low to moderate.

If the total is **28 to 60** there is a potential of heat-induced illnesses occurring if the conditions are not addressed. Further analysis of heat stress risk is required and 'general control' measures should be considered (refer to Section [5.3](#)).

If the total **exceeds 60** then the onset of a heat-induced illness is very likely and action should be taken as soon as possible to implement controls. . Please contact [Health, Wellbeing and Safety](#) (HR) or your local OHS officer.

Outdoor Work Standard

Attachment 2: Thermal Comfort Guide



Reference: Occupational Cancer Canada: [Heat Risk Assessment Guide](#)