وزارة العمل
Ministry of Labour
State of Qatar • دولة قطر

April 2023

Heat Stress Legislation in Qatar

A GUIDE FOR EMPLOYERS

Ministry of Labour

Overview

In May 2021, the Ministry of Administrative Development, Labour and Social Affairs (ADLSA)[1] of Qatar introduced a new Ministerial Decision (No. 17) to set working hours and other measures to protect workers from heat stress. The new Ministerial Decision repeals the Ministerial Decision No. 16 of 2007. The main changes introduced with the new legislation are:

1. The extension of the prohibited hours of work in outdoor workplaces (where workers are exposed to weather conditions such as solar radiation, humidity and heat) from 01 June to 15 September, starting from 10 am, until 3.30 pm.
2. The obligation for employers to prepare a risk assessment to mitigate the risk of heat stress.
3. The responsibility of the principal contractor to coordinate prescribed heat stress mitigation measures when two or more employers undertake activities simultaneously at one work site and their obligation to collaborate.
4. The adoption of the wet-bulb globe temperature (WBGT) index to assess and monitor the level of occupational heat stress. All work must stop work if the WBGT rises beyond 32.1 °C throughout the year.
5. Specification of requirements concerning information and training of workers and safety and health staff, provision of drinking water, shaded rest areas and adequate personal protective equipment.
6. The introduction of mandatory annual health check-ups to diagnose and manage chronic diseases that may contribute to the risk of heat stress.
7. The right of workers to remove themselves from specific situations when they have a reason to believe that heat stress is a threat to their safety or health.

The Guide for employers on Heat Stress Legislation, which is a non-binding document, builds on the information published by ADLSA in 2019 and aims to provide further support to employers in Qatar on how to protect workers from heat stress in a hot environment while maintaining operations.

The evidence-based and practical solutions proposed in the Guide will help to mitigate the risk of heat stress at the workplace, in line with the national legislation and international best practice.

1 In October 2021, the Ministry of Administrative Development, Labour and Social Affairs (ADLSA) was restructured into different ministries, including the Ministry of Labour and the Ministry for Social Development and Family.

Contents

1. FAQs on the new legislation

What is heat stress?

When a person performs hard physical work, the body produces high amounts of heat which must be relieved to the environment to maintain a stable body temperature. It does this mainly by producing sweat on the skin so that it can be evaporated, and by sending more blood to areas that are cooler, such as the skin, the arms, and the legs. If the person is performing work in a hot environment, it is a lot more difficult to get rid of the heat that is being produced internally. If the body cannot get rid of excess heat, its core temperature rises and the heart rate increases. As the body continues to store heat, the person begins to lose concentration and has difficulty focusing on a task, may become irritable or sick, and often loses the desire to drink water. The next stage is most often fainting and even death if the person is not rapidly cooled down.

Can heat-related illnesses be prevented?

YES! The best ways to reduce the risk of heat-related illnesses include work practices such as allowing self-pacing of work, drinking water often, wearing appropriate clothing, making the work environment cooler through air conditioning and ventilation, providing shaded rest areas, and performing annual health check up.

Is the employer responsible for protecting the health of workers?

YES! Employers are responsible for providing healthy and safe workplaces. Employers should identify hazards and take measures to remedy problems before they cause an accident or disease. Employers should include all prevention actions in their risk assessment. [Labour Law, Articles 99 to 107 and Ministerial Decision No. 17 of 2021, Article 4]

When is work in outdoor workplaces prohibited?

Work cannot be performed in outdoor workplaces (where workers are exposed to weather conditions: solar radiation, humidity and heat) from 01 June to 15 September, from 10 am to 3:30 pm. [Ministerial Decision No. 17 of 2021, Article 2]

How is “outdoor workplace” defined?

Outdoor workplaces are defined as workplaces where workers are exposed to weather conditions (such as solar radiation, humidity and heat). [Ministerial Decision No. 17 of 2021, Article 1]

Example of an outdoor workplace where workers are exposed to weather conditions

Can work be performed in a shaded and ventilated workplace that is outdoors?

Yes! If work is performed exclusively in shaded and ventilated workplaces, work can be performed outdoors, provided that the wet-bulb globe temperature (WBGT) index, used to assess the level of occupational heat stress, is below 32.1 °C. [Ministerial Decision No. 17 of 2021, Article 4.8]

Please find out more information on WBGT in section [no. 5 of this Guide].

How are "shaded and ventilated workplaces" defined?

These cover all outdoor workplaces where workers are not exposed to solar radiation, where there is a sufficient and suitable system of artificial ventilation (fans and/or air-conditioning), and where there is no exposure to additional heat from operating machines and other sources. [Ministerial Decision No. 17 of 2021, Article 1]

Example of a shaded and ventilated workplace

What is the WBGT?

The wet-bulb globe temperature (WBGT) is a widely-adopted index to evaluate occupational heat stress. It takes into account the temperature, humidity, wind-speed and solar radiation. Pursuant to the new Ministerial Decision, an instrument for measuring WBGT should be located in close proximity to the workers, without risking accidents and/or interrupting their normal workflow. This ensures that the collected data represent workers' actual level of occupational heat stress.

Please find out more information on WBGT in section [no. 5 of this Guide].

What are the specific measures concerning information and training, provision of drinking water, shaded rest areas and personal protective equipment?

Workers and safety and health officers should be informed and trained about how to prevent heat-related illness. Employers must provide workers with free and suitably cool drinking water, shaded rest areas that are easily accessible to workers and effective in providing shelter from solar radiation during breaks, as well as personal protective equipment appropriate for the hot weather including thin, loose and light-colored clothing. [Ministerial Decision, No. 17 of 2021, Article 4].

How can employers support the process of acclimatization of workers?

Acclimatization is a gradual physiological adaptation that improves workers' capacity to tolerate heat stress by optimizing human thermo-physiological responses in the heat. Employers should allow workers to acclimatize to the conditions by gradually increasing their workload or providing breaks more frequently to new workers and those returning to a job after time away. Based on an analysis of the conditions in the summer in Qatar, it is recommended that newly-recruited workers gradually build up their exposure over two weeks before full duties are assigned.

Find out more information on acclimatization in the [section 4 below] for additional guidance and tools

Is it safe to work at night?

Night shifts can reduce workers' exposure to heat stress. However, there might be adverse effects of night shifts on workers' safety, productivity, and health. Sleep deprivation accumulating over consecutive days can lead to acute or chronic fatigue and increase the risk of accidents. Based on an analysis of the conditions in the summer in Qatar, a work shift between 16:00 and 02:00 offers the optimum combination of low occupational heat stress and limited risk of sleep deprivation.

What are the medical checks needed to diagnose and manage chronic diseases that may contribute to the risk of heat stress?

There is evidence that certain chronic diseases may heighten the risk of heat stress. These include hypertension and diabetes. In addition to the medical screening carried out prior to departure, medical checks should be carried out on an annual basis to diagnose these diseases so that they can be managed, and workers who are at risk at heat stress can be reassigned to other tasks.

What are the penalties for non-compliance with Ministerial Decision No. 17 of 2021?

In case of non-compliance with any of the requirements set forth in the Ministerial Decision No. 17 of 2021,a workplace may be shut down, in part or in whole. [Ministerial Decision No. 17 of 2021, Article 7].

Where can I report a case of non-compliance?

Please call the Labour Inspection Department of the Ministry of Administrative Development, Labour and Social Affairs at 16008. Rest assured that your call will be treated confidentially, meaning that you will not be asked for any personal details and the company will not be informed that a complaint was lodged.

From 1 June to 15 September between 10 am and 3:30 pm

Workers cannot work **outdoors** when they are exposed to weather conditions (such as solar radiation, humidity and heat).

From 1 June to 15 September between 10 am and 3:30 pm

Workers can work outdoors in shaded and ventilated areas, if there is no exposure to additional heat from operating machines.

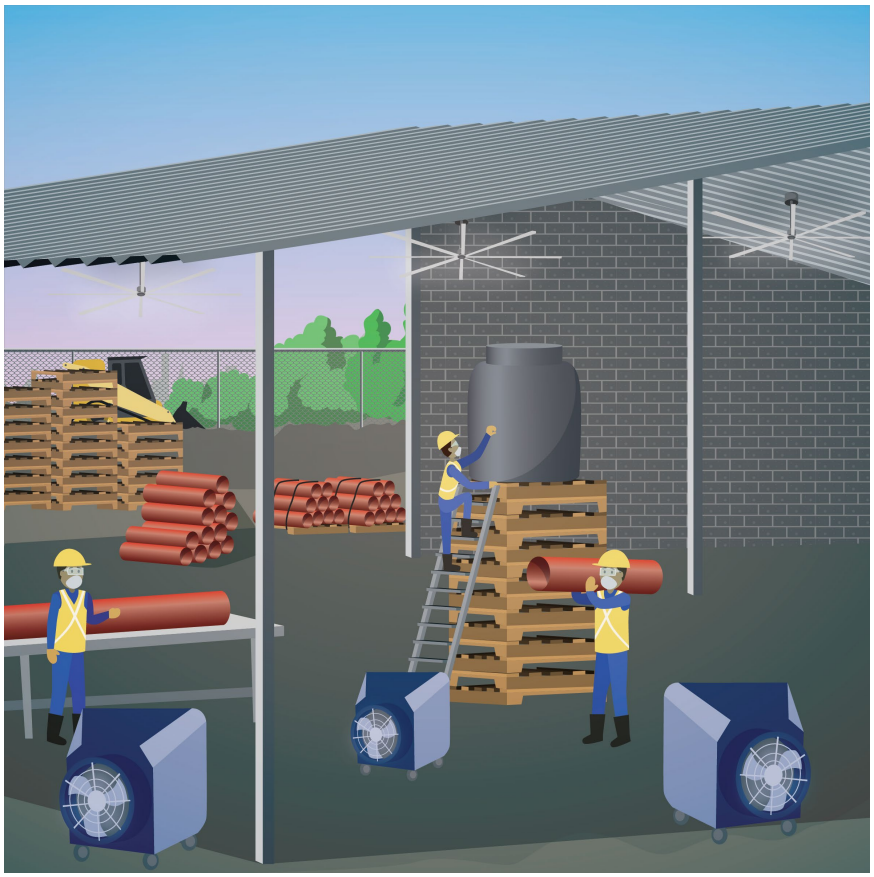
All work must stop work if the WBGT rises beyond 32.1 °C.

This area is shaded but not ventilated.

From 1 June to 15 September between 10 am and 3:30 pm

Workers can work outdoors in shaded and ventilated areas, if there is no exposure to additional heat from operating machines.

All work must stop work if the WBGT rises beyond 32.1 °C.



This area is shaded but not ventilated.

Operating the machine generates additional heat.

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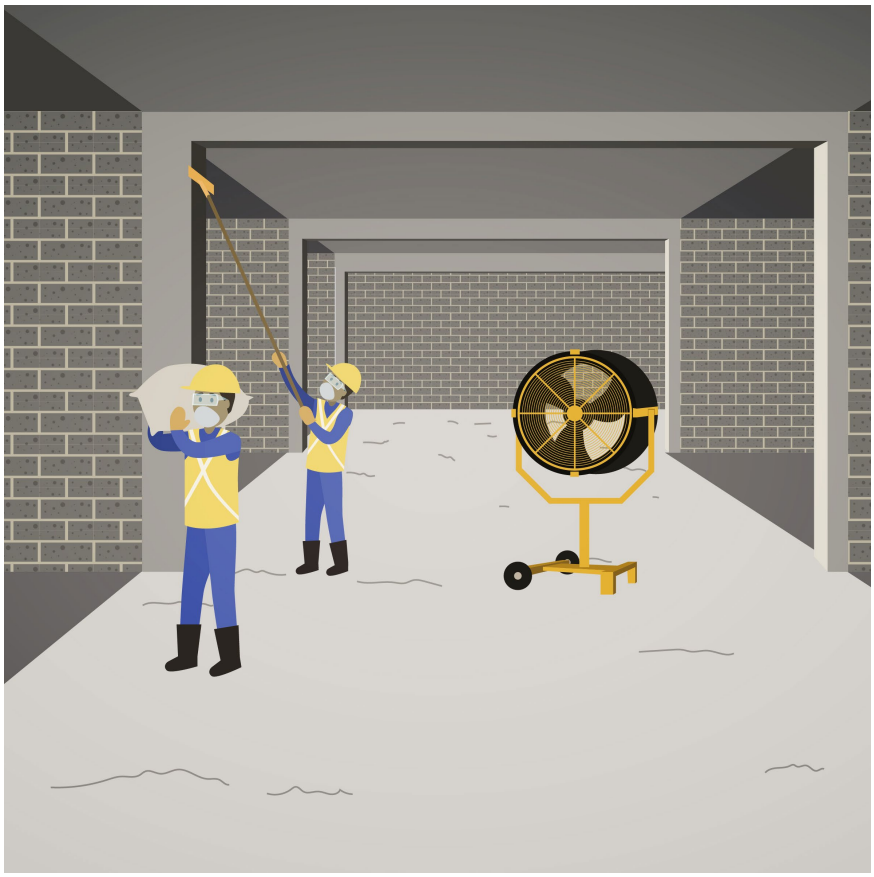
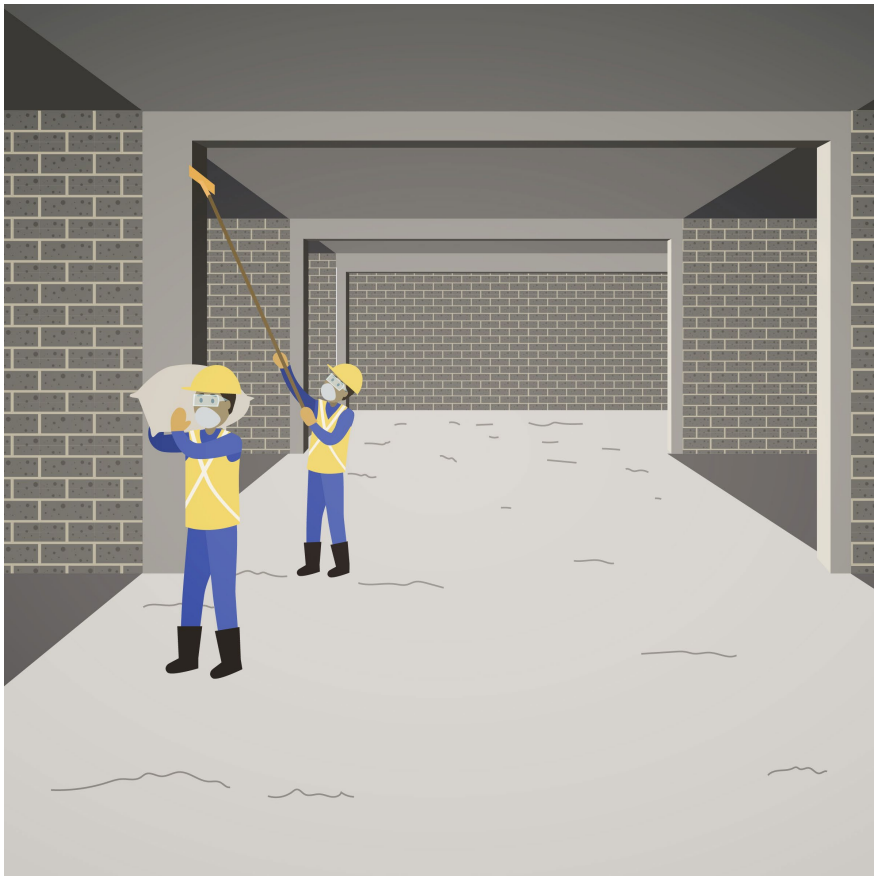


This area is shaded but not ventilated



2. Conducting a risk assessment

Since the adoption of Ministerial Decision No. 17 of 2021, conducting a risk assessment to mitigate the risk of heat stress is a legal requirement in Qatar. This is already a widespread best practice in Qatar and around the world. However, some smaller enterprises may not be familiar with the tool.

> **What is a risk assessment in this context?**
>
> A risk assessment is a key tool that is widely used in managing occupational safety and health (OSH) in an enterprise. It gives companies a way to be proactive, to identify hazards and take action to remedy problems before they cause an accident or disease through continuous monitoring and action. The identification of risks and solutions should be based on the collaboration between management and worker and their intimate knowledge of their own workplace.

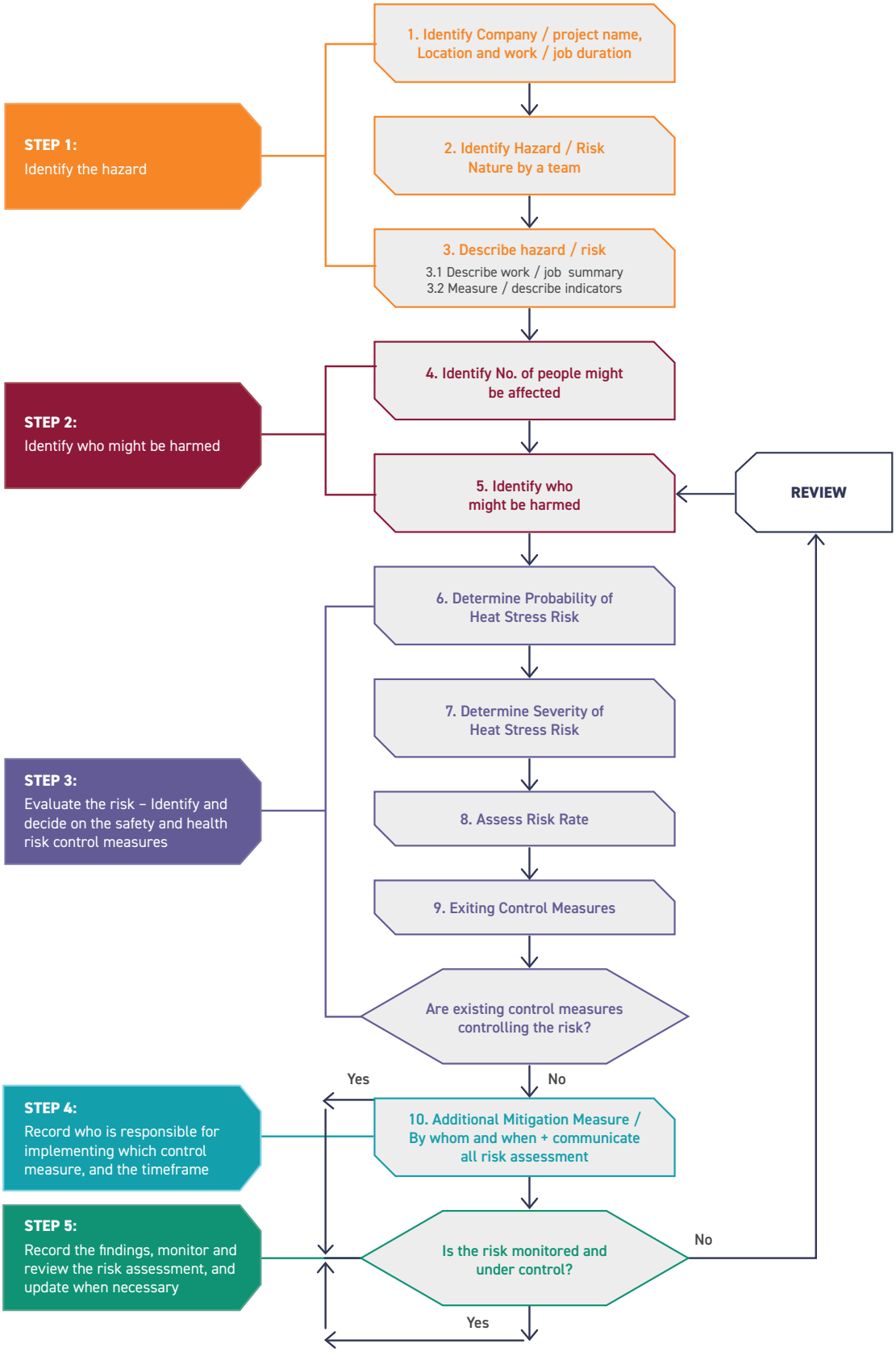
The following tools can support employers on how to perform a risk assessment:

a. Risk Assessment Flow Chart

b. Risk Assessment Template

c. Risk Assessment Matrix for evaluating the risk

a. Risk Assessment Flow Chart



b. Heat Stress Risk Assessment Template

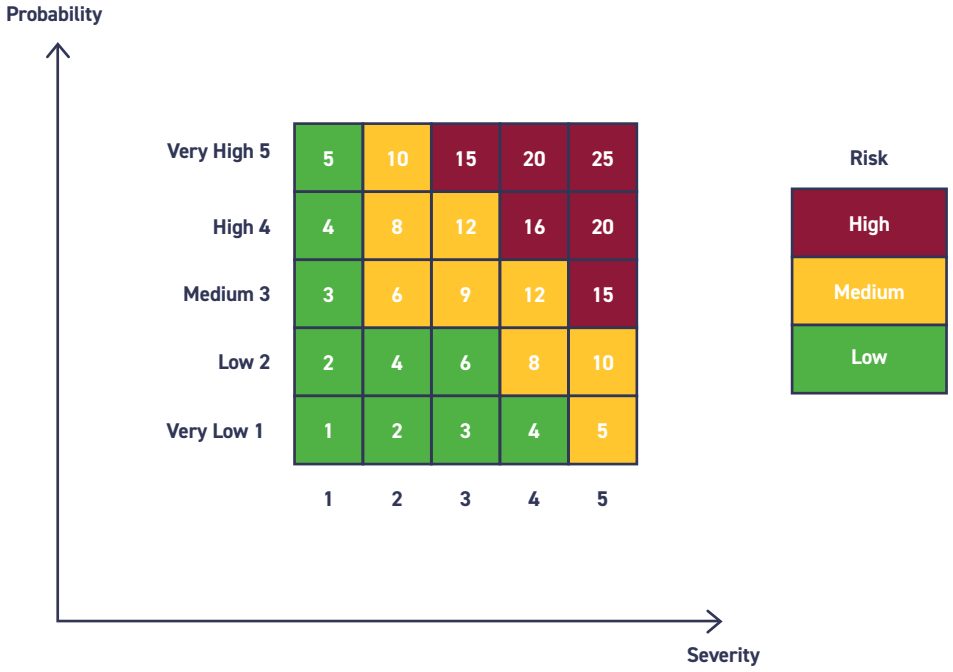
STEP 1 Identify the hazard	**STEP 2** Identify who might be harmed	**STEP 3** Evaluate the risk – Identify and decide on the safety and health risk control measures		**STEP 4** Record who is responsible for implementing which control measure, and the timeframe	**STEP 5** Record the findings, monitor and review the risk assessment, and update when necessary
What are the hazards?	Who might be harmed and how?	What is the probability, severity and risk rate?	What are you already doing according to the Ministerial Decision No. 17 of 2021?	What further action could be necessary?	Action by whom? Action by when?	The risk assessment is not a one-time activity. It needs to be reviewed from time to time, at least annually if not more often, when there is a significant change.
Heat stress	All workers exposed to heat. Heat-related illnesses include: fatigue, rash, syncope, cramps, exhaustion, and heat stroke. Workers affected by heat may lose concentration and control, which may result in accidents on site.	The risk is evaluated following a matrix that takes into consideration its probability and severity.	Stopped work from 10:00 to 3:30 from 01 June to 15 September, in line with the Ministerial Decision No. 17 of 2021. Monitor heat, humidity and other factors on site using WBGT, and stop all work in case of 32.1 WBGT ("extreme threshold") or higher.		Identify who is responsible from amongst the following: Project Director Project Manager Construction Manager Plant Manager / Engineer Site Engineer H&S Manager H&S Officer Foreman / Supervisor Workers Welfare Officer Doctor Nurse Employees Subcontractors Camp Boss	
			Posted schedule for different shifts in visible areas around the worksite, canteen and accommodation.	Arrange schedule so that high intensity work is carried out (a) with a larger crew; and (b) during the relatively cooler / less humid hours of the day.		
			Provided drinking water to workers.	Install water dispensers (insulated or iced to keep the water cooler), as close as possible to work areas (possibly not more than a 5-minute walk) and provide workers with personal water bottles. Provide workers with information on salt intake in their diets and fluid consumption, taking into account medical advice for workers with heart, blood pressure, or other medical conditions that require the intake of medications. Post the urine colour scale in all bathrooms on the site and in accommodations.	
			Installed shaded rest areas that are easily accessible to workers and effective in providing shelter from solar radiation.	Place netting on all sides of the rest areas to reduce exposure to direct sunlight. Make rest areas from wood and materials that do not absorb the heat. Install misting fans in rest areas. Install shading to certain work areas, where feasible.		
			Instructed supervisors to give workers regular breaks, to be flexible on targets and ensure that workers can self-pace.	Schedule breaks regularly, based on consultations with workers. Monitor that these breaks are being taken.		
			Ensured Personal Protective Equipment (PPE) is appropriate for hot weather conditions.	Provide workers with light-coloured, loose-fitting and breathable clothes. Encourage workers to minimize undergarments. Assess the suitability of certain PPE according to occupations, as some PPE may aggravate heat stress.		
			Trained workers and raised awareness on heat stress through toolbox talks, posters and other materials, in workers' languages.	Arrange toolbox talks on heat stress ahead of, and throughout summer. Training topics may include but not limited to understanding heat stress, its symptoms, how it affects health and safety, heat stroke, and how it can be prevented. Introduce a buddy system, and train workers to recognize early warning signs of heat stress in themselves and others.		
			Installed equipment to ensure ventilation in confined areas.	Provide ventilation and spot cooling in selected areas (according to occupation, exposure, etc.) and cooling rooms that are accessible to all workers Ensure air conditioning and access to water on buses (transporting workers to and from work) as well as heavy vehicles, security cabins, etc.		
			Performed annual health check-ups to diagnose and manage chronic diseases that may contribute to the risk of heat stress. The medical examinations shall be performed at no cost to the worker. Kept records of such medical examination.	Systematic medical screenings and identify workers who are more susceptible to heat strain. Reassign workers with chronic health problems to less strenuous and exposed roles; as they are more susceptible to heat stress.		
				Increase the number of workers to reduce exposure and workload. Allow newly recruited workers a period of acclimatization, and gradually build up their exposure to working in high temperatures. The time between 16:00 and 02:00 offers the optimum combination of low occupational heat stress and limited risk of sleep deprivation. While night shifts can reduce workers' exposure to high levels of heat stress, the conditions are still challenging. Moreover, there are risks to workers getting insufficient sleep.		

c. Matrix for evaluating the risk

A risk matrix is a tool that can be used to work out the level of risk associated with a particular issue. It categorises the likelihood of harm and the potential severity of that harm. This is then plotted in a matrix, as illustrated below.

The risk level determines which risks should be tackled first, starting with the highest risks. Using a matrix can be helpful for prioritizing the actions to control a risk. It is suitable for many assessments and, in particular, for more complex situations. However, it does require expertise and experience to judge the likelihood of harm accurately. Getting this wrong could result in failing to take important risk reduction measures or applying unnecessary measures.

There is a wide variety of risk matrices, many of which are designed for use in larger enterprises, while most small businesses will not need to use a risk matrix.[2]



2 See ILO, Training Package on Workplace Risk Assessment and Management for Small and Medium-Sized Enterprises.

3. Self-pacing and the right to stop work

The amount of time spent doing work is significantly impacted by the level of heat stress experienced by workers (and vice versa).

Enhancing workers' ability to self-pace must be a key element of any effective heat stress mitigation plan. Tests conducted in harsh environmental conditions have shown that workers are able to avoid the high levels of heat strain that would be expected by self-pacing and performing their job at a low intensity.

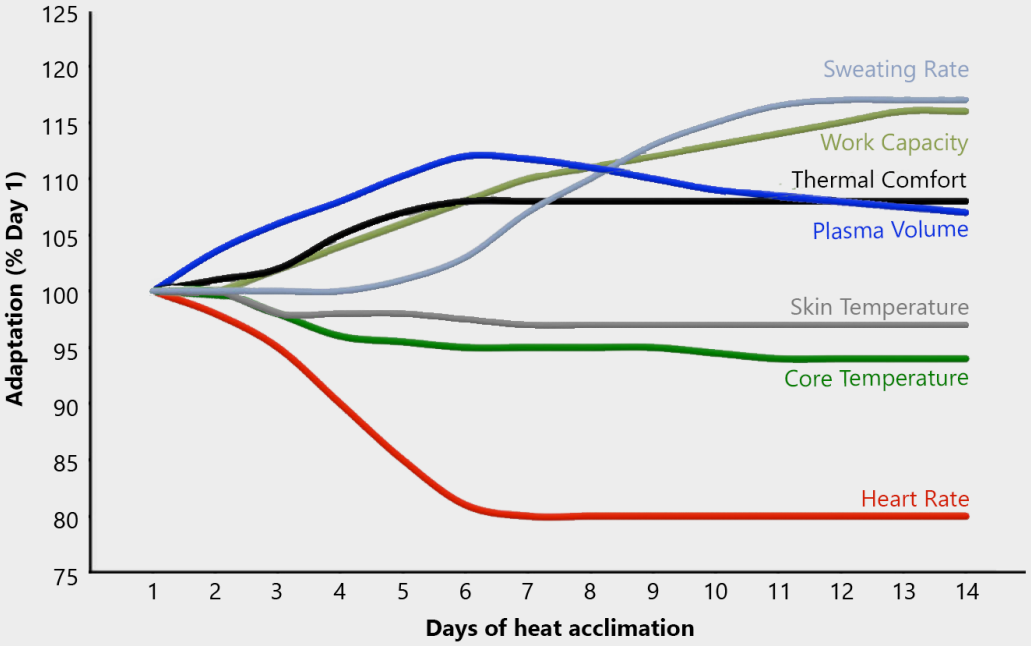
Therefore, it is considered safe and efficient to enable workers to self-pace their work effort, to set flexible work targets, and to take spontaneous breaks as they see fit (excluding planned breaks administered by management, such as for meals).

In addition, workers have the right to remove themselves from a particular situation when they have reason to believe that heat stress is causing danger to their safety or health. In such situations in which workers have stopped working, they should not be dismissed, discriminated against or disadvantaged by their employer. Once workers have removed themselves from a dangerous situation, they should follow-up by informing their supervisors.

4. Acclimatization

Acclimatization is a gradual physiological adaptation that improves workers' capacity to tolerate heat stress by optimizing human thermo-physiological responses in the heat (Figure a). After two weeks of daily exposure, a newly-hired worker can be considered acclimatized.

Figure a. Time course of induction in human adaptations to heat stress (modifie from Periard).[3]



Based on the above, newly hired workers should follow an acclimatization protocol characterized by a gradual increase in exposure to occupational heat stress.

According to the United States National Institute for Occupational Safety and Health[4], the schedule for newly-recruited workers includes no more than a 20% exposure on the 1st day and an increase of no more than 20% on each additional day thereafter. Importantly, the same procedure is followed by workers returning from vacation or long breaks, and workers who change workplace environment (e.g. a security guard who moved from an air-conditioned office space to an outdoor assignment). For workers with previous experience in their job, the acclimatization protocol includes

3 Périard et al. (2015). Adaptations and mechanisms of human heat acclimation: applications for competitive athletes and sports. Scand J Med Sci Sports; 25: 20-38.

4 Centers for Disease Control & Prevention (2018). National Institute for Occupational Safety and Health (NIOSH). Available at: www.cdc.gov/niosh/topics/heatstress/acclima.html. Accessed on: Sept. 8, 2019.

no more than a 50% exposure on the 1st day, 60% on the 2nd day, 80% on the 3rd day, and 100% on the 4th day.

Based on an analysis of the conditions in the summer in Qatar, it is recommended that newly-recruited workers gradually build up their exposure over two weeks before full duties are assigned, while full duties may be assigned to experienced workers after the 4th day. This process is illustrated in Figure b, while an example of how this process can be translated to an infographic for posting across the work site to inform employees of all levels is illustrated in Figure c.

Figure b. Example of acclimatization protocol based on NIOSH recommendations.Vertical and horizontal axes describe the suggested amount of time spend doing work and acclimatization days, respectively. Blue bars indicate recommendations for workers who have previous experience with the job. Orange bars indicate recommendations for newly-hired workers.

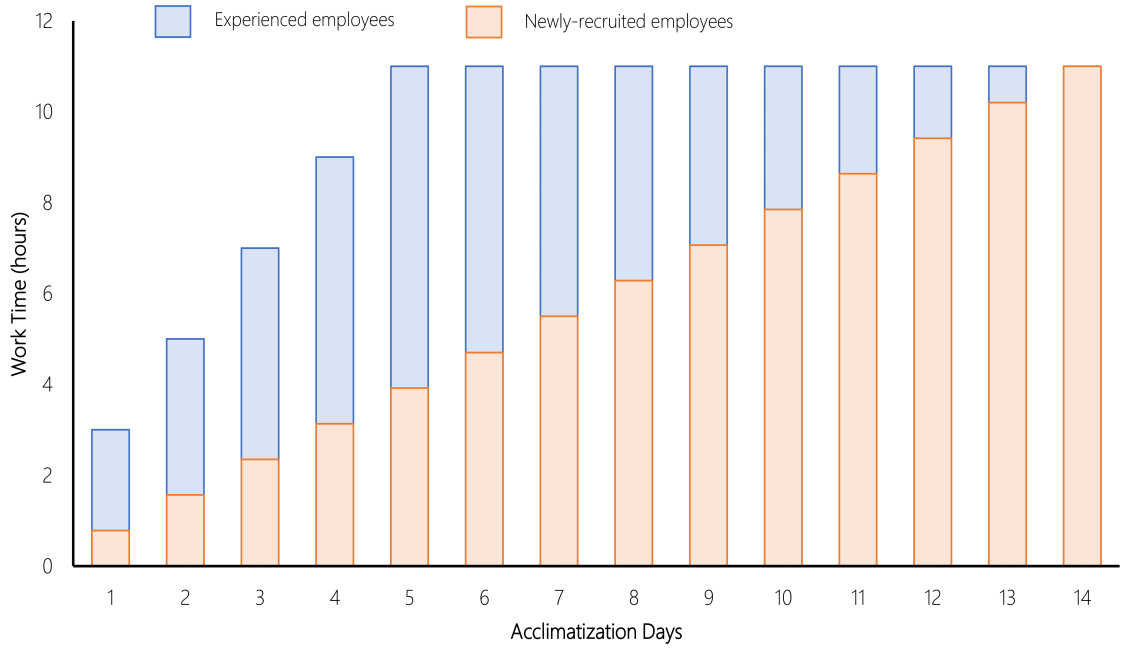
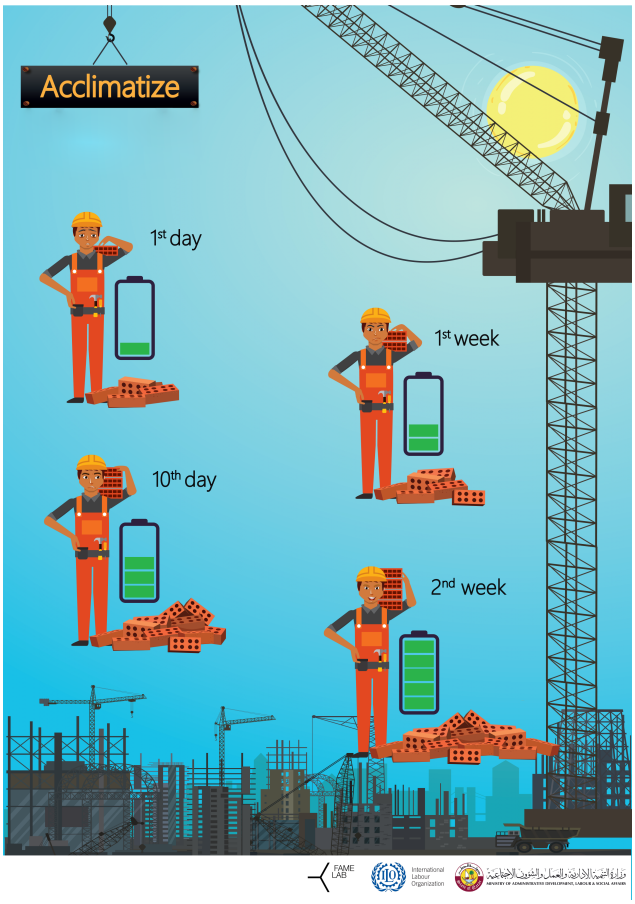


Figure c. Example of how the acclimatization process can be translated to an infographic for posting across the work site to inform newly-arrived workers of all levels.



5. Wet-bulb globe temperature (WBGT)

The wet-bulb globe temperature (WBGT) index is a widely adopted tool used to evaluate occupational heat stress. It takes into account the temperature, humidity, wind-speed and solar radiation. An instrument for measuring WBGT (Figure a) should be located in close proximity to the workers, without risking accidents and/or interrupting their normal workflow. This ensures that the collected data represent workers' actual level of occupational heat stress. The computation of WBGT incorporates three parameters describing all four environmental factors:

- Natural wet bulb temperature (i.e. air temperature and relative humidity).
- Globe temperature (i.e. solar radiation, air velocity, and air temperature).
- Dry bulb temperature (i.e. air temperature).

For example:

In an outdoor environment where the natural wet bulb temperature is 30 °C, the globe temperature is 50 °C, and the air temperature is 40 °C, the WBGT is calculated as follows:

WBGT = 0.7 Tnwb + 0.2 Tg + 0.1 Ta
= 0.7 * 30 °C + 0.2 * 50 °C + 0.1 * 40 °C
= 21 °C + 10 °C + 4 °C
= 35 °C

Figure held device evaluating WBGT.

WBGT for outdoor environments

Tnwb + 0.2 Tg + 0.1 Ta 0.7 =

WBGT for indoor environments

Tnwb + 0.3 Tg 0.7 =

Tnwb = natural wet bulb temperature (combined with Ta (indicates humidity

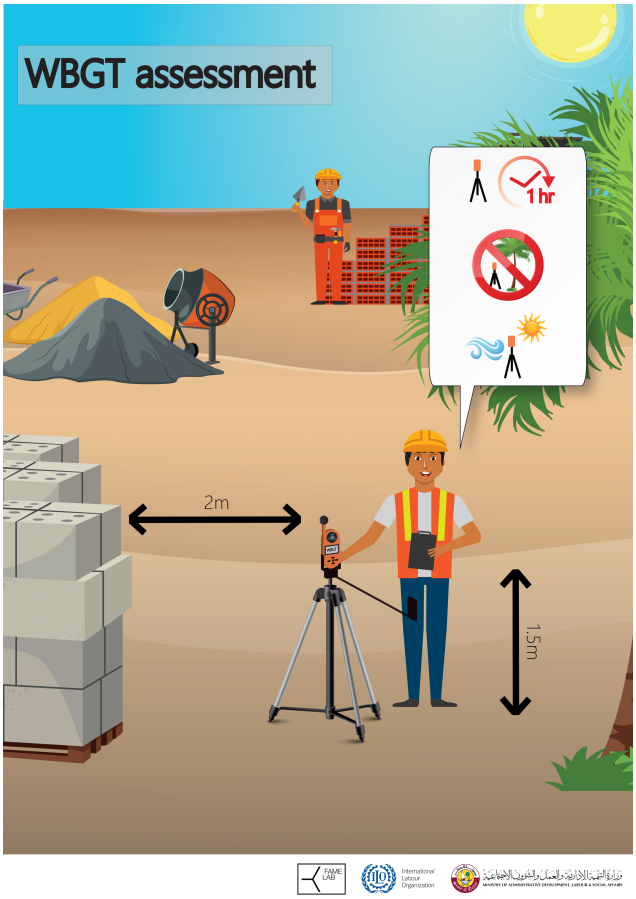
Tg = globe temperature

Ta = air temperature

The levels of occupational heat stress risk according to WBGT are as follows:

Level of occupational heat stress	WBGT
None	Lower than 27.8 °C
Low	27.8 °C to 29.4 °C
Moderate	29.5 °C to 31.0 °C
High	31.1 °C to 32 °C
Extreme	Higher than 32.1 °C

Figure b. Example of how the above-described information is translated to an infographic for posting across the work site to inform workers.



6. Advice on work-rest regimes

Fieldwork across different occupational settings highlights the benefits of work-rest regimes. Research in Qatar showed that workers in construction and agriculture were found to be working at low-intensity, due to the conditions and their ability to self-pace. Self-pacing (self-adjustment of work rate / intensity) is an important strategy to mitigate heat strain.

Workers should be educated regarding self-monitoring while providing them with the ability to take breaks whenever they feel the need. A further possible option would be to develop an adjusted timetable through discussion between employers/supervisors and workers regarding the optimum working schedule.

Supervisors could use the table in relation to hourly WBGT measurements as an indication of the breaks that their workers should be taking to stay healthy. An analysis of the global literature commissioned by ADLSA identified no valid, workable alternative method to the Threshold Limit Values developed by the American Conference of Governmental Industrial Hygienists. The guideline document proposing the Threshold Limit Values indicates that a core body temperature of 38°C *"...can be exceeded under certain circumstances with selected populations, environmental and physiological monitoring, and other controls. Therefore, professional judgment is of particular importance in assessing the level of heat stress and physiological heat strain to provide adequate guidance for protecting nearly all healthy workers with due consideration of individual factors and the type of work."* The same guidelines also clearly highlight that *"assessment of both heat stress and heat strain can be used for evaluating the risk to worker safety and health."*

An indication of the amount of breaks that workers should be taking is provided through the evaluation of the WBGT, as follows:

Minutes of break within an hour of work shift	**WBGT for type of work load** (°C)			
	Light work	Moderate-intensity work	High-intensity work	Very high-intensity work
Acclimatized workers				
0 – 15	≤ 30.8	≤ 28.2	---	---
15 – 30	30.9 - 31.2	28.3 - 29.0	26.7 - 27.6	---
30 – 45	31.3 - 31.8	29.1 - 30.1	27.7 - 28.8	26.6 - 27.9
45 - 60	> 31.8	> 30.1	> 28.8	> 27.9
Non-acclimatized workers				
0 - 15	≤ 28.1	≤ 25.0	---	---
15 - 30	28.2 - 28.7	25.1 - 26.0	23.1 - 24.2	---
30 - 45	28.8 - 29.3	26.1 - 27.2	24.3 - 25.7	23.0 - 24.6
45 - 60	> 29.3	> 27.2	> 25.7	> 24.6

--- : No Threshold Limit Values provided. Detailed analysis and/or physiological monitoring should be used.

In a hypothetical scenario where an acclimatized worker performs light work (see

table below) in an environment characterized as 31 °C WBGT, they should be expected to spend at least 15 to 30 minutes every hour of his work shift recovering (i.e., not working). The research in Qatar monitored workers on a construction site and found that they were conducting light work for approximately 31-32% of the time, and resting for nearly 61-62% of the time. These workers were safe (according to their core body temperatures and other measurements) and protected by a number of heat stress mitigation measures, including the right to self-pace.

Examples of manual tasks classified based on metabolic intensity according to the ISO 8996:2004[5] that can be used to regulate the work load of workers are as follows:

Metabolic rate		Examples of job tasks
Categories	W/m^2	
Resting	65 (55 to 70)	Resting, sitting at ease
Light work	100 (70 to 130)	Light manual work (writing, typing. drawing. sewing, book-keeping); hand and arm work (small bench tools, inspection, assembly or sorting of light materials); arm and leg work (driving vehicle in normal conditions, operating foot switch or pedal). Standing drilling (small parts); milling machine (small parts); coil winding; small armature winding; machining with low power tools; casual walking (speed up to 2.5 km/h).
Moderate work	165 (130 to 200)	Sustained hand and arm work (hammering in nails, filing); arm and leg work (off-road operation of lorries, tractors or construction equipment); arm and trunk work (work with pneumatic hammer, tractor assembly, plastering, intermittent handling of moderately heavy material, weeding, hoeing, picking fruits or vegetables, pushing or pulling lightweight carts or wheelbarrows, walking at a speed of 2.5 km/h to 5.5 km/h, forging).
Heavy work	230 (200 to 260)	Intense arm and trunk work; carrying heavy material; shovelling; sledgehammer work; sawing; planning or chiselling hard wood; hand mowing; digging; walking at a speed of 5.5 km/h to 7.0 km/h. Pushing or pulling heavily loaded hand carts or wheelbarrows; chipping castings; concrete block laying.
Very heavy work	290 (260)	Very intense activity at fast to maximum pace; working with an axe; intense shovelling or digging; climbing stairs, ramp or ladder; walking quickly with small steps; running; walking at a speed greater than 7.0 km/h.

7. Strategies to prevent

5 ISO 8996:2004. Ergonomics of the thermal environment — Determination of metabolic rate. International Organization for Standardization. Geneva, Switzerland.

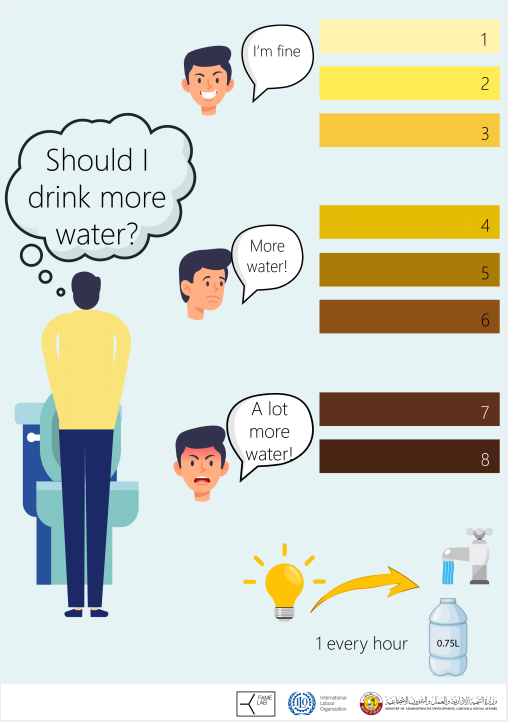
the occurrence of dehydration

Dehydration affects human capacity for maintaining a healthy and productive work shift. Workers should ensure that they arrive to work hydrated by drinking 500-750 ml (2-3 cups) of water before starting work. Workers should also consume 750 ml (3 cups) per hour during work performed during the day. During the night, workers are encouraged to keep themselves hydrated by drinking sufficient water to quench their thirst.

At the other end of the spectrum, workers should avoid overhydration, which can cause severe and fatal diseases (i.e. hyponatremia). Therefore, workers are advised to supplement their water consumption with a total of one tablespoon of salt (for the entire work shift) to avoid hyponatremia. However, workers with heart, blood pressure, or other medical conditions, or those taking medications should adopt this advice only when confirmed by their physician.

Finally, workers are also advised to sprinkle water on their face, neck and arms (if they are wearing a t-shirt) to help increase evaporative cooling and help limit the rate of dehydration.

Figure a. Example of how the above-described information is translated to an infographic for posting across the work site to inform workers of all levels.



8. Clothing

To minimize occupational heat strain, workers should be provided with appropriate personal protective equipment, including loose, light-coloured, and durable clothing made from breathable fabrics to maximize sweat evaporation.

The heat exposure assessment based on WBGT – and the associated breaks that workers should be taking – described in the previous section was developed for a typical work uniform (i.e., a long-sleeved shirt and pants). Therefore, in cases where workers are known to wear different clothing, the WBGT value should be adjusted by adding a clothing factor, as shown below:[6]

Clothing Type	Addition to WBGT (°C)
Work clothes (long sleeve shirt and pants)	0
Cloth (woven material) coveralls	0
SMS* polypropylene coveralls	0.5
Polyolefin coveralls	1
Double-layer woven clothing	3
Limited-use vapor-barrier coveralls	11

Note: These values must not be used for completely encapsulating suits, often called Level A. Clothing Adjustment Factors cannot be added for multiple layers. The coveralls assume that only modesty clothing is worn underneath, not a second layer of clothing.

*Key: * = Spunbond Meltblown Spunbond.*

6 ACGIH (2012). TLVs and BEIs Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents, and Biological Exposure Indices. In American Conference of Governmental Industrial Hygienists; Cincinnati, USA.

Figure a. An example of how this information is translated to an infographic for posting across the work site to inform workers of all levels.

9. Resources

- Law No. 14 of 2004 on the Labour Law
- Decision of the Minister of Administrative Development, Labour and Social Affairs No 17 of 2021
- Key Findings - Assessment of occupational heat strain and mitigation in Qatar (2019), ADLSA, ILO, Fame Lab, and Supreme Committee for Delivery and Legacy (English and Arabic)
- ILO, Training Package on Workplace Risk Assessment and Management for Small and Medium-Sized Enterprises

10. Decision of the Minister of Administrative Development, Labour and Social Affairs No 17 of 2021

Decision of the Minister of Administrative Development, Labour and Social Affairs No. (17) for the year 2021 specifying measures to protect workers from heat stress

The Minister of Administrative Development, Labour and Social Affairs,

After perusal of the Labour Law promulgated by Law No. 14 of 2004 and its amending laws,

Emiri Decision No. 29 of 1996 on the decisions of the Council of Ministers and submitted to the Emir for approval and issuance;

Minister of Civil Service Affairs and Housing Decision No. 16 of 2007 specifying working hours in outdoor places during summer time;

And on the adoption by the Council of Ministers of this Draft Law during its regular meeting (40) of 2020 held on 21/10/2020

Decided the following:

Article (1)

In the implementation of the provisions of this decision, the following words shall have the respective meaning assigned to them unless the context requires otherwise:

Heat Stress: occurs when the body fails to maintain its normal temperature in response to physical effort made while exposed to high temperatures combined with humidity. This may occur under direct sunlight, in shaded areas or indoor and could lead to illness due to the malfunction of the parts in charge of regulating body temperature, resulting in a number of health problems.

Workplaces: places where workers need to be or go to by reason of their work.

Outdoor workplaces: workplaces where workers are exposed to weather conditions such as solar radiation, heat and humidity.

Shaded and ventilated workplaces: covers outdoor workplaces where there is a sufficient and suitable system of artificial ventilation, where workers are not exposed to solar radiation, and where there is no exposure to heat from operating machines.

Wet Bulb Globe Temperature (WBGT) index: A system used to assess the ambient temperature of a work environment. It measures the combined proportional effect of dry bulb temperature (DB), globe temperature (GT) and wet bulb (WB), using specific devices.

Heat Stress Index: the WBGT temperature announced by the Ministry or recorded by the company in the workplace using approved WBGT devices.

Article (2)

It is prohibited to work in the sun, in outdoor workplaces or in places that are not shaded and ventilated, during the period from June 1 to September 15 of each year, starting from 10 a.m., until 3:30 p.m.

Article (3)

Employers shall set a schedule with the daily working hours in accordance with the provisions of this Decision, and publish this schedule in a visible location, which is easy for all workers to view, and for labour inspectors to check during their inspection visits.

Article (4)

Employers shall follow the guidelines on heat stress mitigation issued by the Ministry at all times and shall observe the following:

1. Complete a risk assessment to mitigate heat stress together with the workers and update it regularly. A copy of the assessment shall be kept at the workplace to be available to labour inspectors for review.
2. Provide training on heat stress to all workers by the beginning of the month of May of each year.
3. Provide free and suitably cool drinking water to all workers throughout the working time.
4. Secure shaded rest areas that are easily accessible to workers and effective in providing shelter from solar radiation and high temperatures during breaks.
5. Provide workers with appropriate personal protective equipment for the hot weather including thin, loose and light-colored clothing.
6. Perform annual health check-ups to diagnose and manage chronic diseases that may contribute to the risk of heat stress. The medical examination shall be performed at no cost to the worker. Employers shall keep a record of such medical examination.
7. Train paramedics and occupational safety and health supervisors to provide guidance and first aid to workers.
8. Adopt the Wet-Bulb Globe Temperature (WBGT) index to assess the level of occupational heat stress. The assessment shall take into account all weather parameters: solar radiation, relative humidity, air temperature, wind speed. Employers shall take the necessary measures in case of surges in the indicators.

Monitor and record weather conditions in the workplace and stop the work in workplaces where the WBGT index rises beyond 32.1 °C.

Article (5)

When two or more employers undertake activities simultaneously at one work site, the main contractor shall commit to follow-up on the application of the measures prescribed in the previous article with the remaining employers.

Article (6)

Workers have the right to stop working and submit a complaint before the Ministry when they have good reason to believe that heat stress is a threat to their safety or health. Workers shall inform their supervisors to examine their situation. In such cases, workers may not be dismissed, subjected to discrimination or deprived of their rights.

Article (7)

In case of violation of the provisions of this Decision, a workplace may be shut down, in part or in whole, by a decision of the Minister.

Article (8)

This Ministerial Decision does not apply to the activities undertaken by companies working on oil and gas projects.

Article (9)

Decision No. 16 of 2007 issued by the Minister of Civil Service Affairs and Housing and any other provision that contravenes the provisions of this Decision, shall be revoked.

Article (11)

All the competent authorities, each within its own competence, shall implement the provisions of this decision, which shall enter into force on the day that follows its publication in the Official Gazette.

Yousef bin Mohamed Al-Othman Fakhroo

Minister of Administrative Development, Labour and Social Affairs

Issued on: 12/10/1442/ A.H.

Corresponding to: /24/05/2020 A.D.