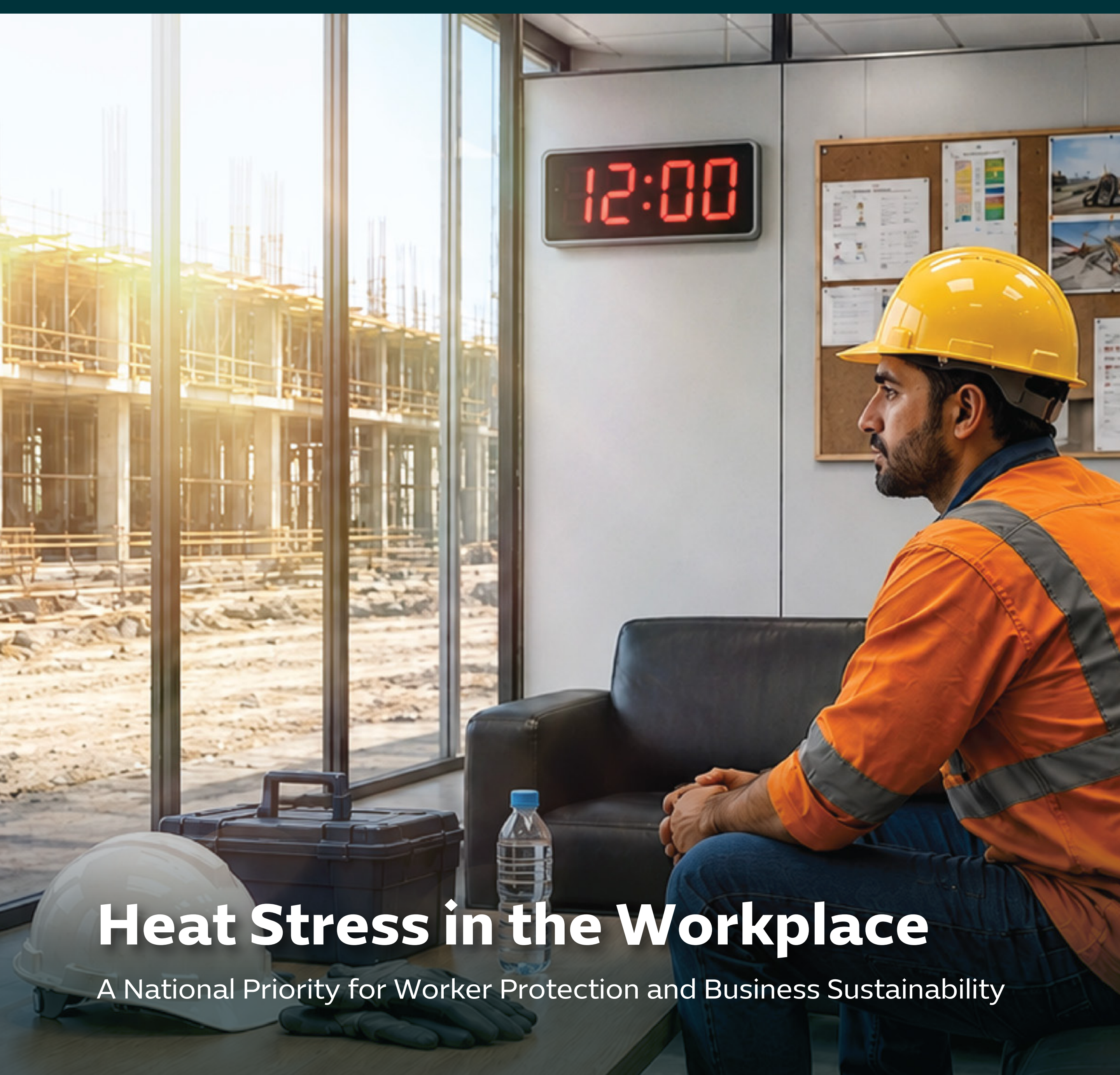


E S B A R

Occupational Safety and Health Bulletin

The First Issue, Second Quarter 2026



Heat Stress in the Workplace

A National Priority for Worker Protection and Business Sustainability

Spotlight on the risks of heat stress in worksites and how prevention can move beyond a seasonal measure to become a continuous professional practice that protects workers, enhances compliance, and supports business sustainability.

A simplified reading of the legislative and regulatory framework that makes protecting workers from heat-related risks a firmly established obligation one that begins with laws and extends to decisions, guidelines, and regulations.

Showcasing smart tools for monitoring heat stress and dehydration Indicators. A look at intelligent tools that measure heat stress and dehydration indicators, supporting supervisors in making proactive decisions to protect workers in high-temperature environments.

A Look at local and International practices in heat stress management. Addressing heat stress as an occupational risk, not a seasonal concern, through risk assessment and preventive workplace practices.

Message of the First Issue

The field of occupational safety and health is witnessing a growing presence today as one of the vital fields directly linked to protecting people and enhancing the sustainability of work environments. This comes in light of the continuous global development of professional concepts, the modernization of regulatory practices, and the growing attention given to prevention as a fundamental element in building safer and more efficient work environments.

In recent years, occupational safety and health has become increasingly linked to the concepts of quality, sustainability, and productivity. Experience has shown that raising preventive awareness, enhancing professional knowledge, and developing safety-related practices are all influential factors in reducing occupational risks and improving work environments across various sectors.

Recognizing the importance of a periodic platform that provides regular content, builds a continuous relationship with readers, and addresses occupational safety and health topics from multiple perspectives, this first issue of “Mesbar” focuses on heat stress. It provides scientific content that sheds light on heat-related risks, reviews key practices and procedures for protecting workers, and presents professional knowledge in a way that combines practical application with a scientific approach.

This issue aims to provide balanced content that combines knowledge, regulatory, and awareness aspects. It does not merely present information; rather, it seeks to offer topics that are practically useful and closely connected to the realities of work environments and their related challenges and developments, particularly those associated with heat stress and the reduction of risks resulting from direct exposure to heat, given the significance of this topic and its direct connection to occupational safety and health.

The issue also includes a number of sections designed to form a consistent identity for the bulletin. Each issue will provide diverse content, including indicators and relevant statistics, highlights of regulations and regulatory guides related to the issue’s topic, as well as a section for frequently asked questions aimed at simplifying certain concepts and procedures, and creating space to showcase impactful experiences and practices.

The issue also dedicates space for expert articles, reflecting the importance of providing a platform for specialized perspectives that enrich the content and support diversity in presentation. In addition, it reviews selected modern innovations and international experiences that reflect the ongoing development of occupational safety and health in prevention tools and risk management methods.

Care has also been taken to include simplified visual content that helps deliver awareness messages in a more engaging manner, by presenting selected information in concise formats that help presenting messages related to the issue's topic in a clearer way.

This direction aims for “Mesbar” to become a periodic publication that reflects professional activity in the field of occupational safety and health, contributes to the continuous transfer of knowledge, and keeps pace with the regulatory and professional developments taking place in the sector, while ensuring that the content remains close to the needs of readers and target audience.

The bulletin also represents an open space for continuous development in future issues and for highlighting further experiences and initiatives, thereby strengthening the presence of occupational safety and health in the professional landscape in a more regular and impactful manner.

In this issue, we hope that the content presented will mark the beginning of a renewed knowledge pathway that enhances the presence of professional knowledge and opens a continuous space for addressing occupational safety and health topics in a way that reflects their growing importance and supports efforts to build safer and more sustainable work environments.

A portrait of Eng. Ahmed bin Sulaiman Al-Rajhi, a man with a beard wearing a traditional Saudi headdress (ghutra and agal) and a white thobe. The background is a solid teal color.

Eng. Ahmed bin Sulaiman Al-Rajhi

H.E. the Minister of Human Resources and Social Development, Chairman of the National Council for Occupational Safety and Health

Occupational Safety and Health: An Evolving System to Protect People and Promote Safe Work Environments

The occupational safety and health sector in the Kingdom is undergoing continuous development, reflecting the growing attention given to building safer and more sustainable work environments. This comes amid the expansion and diversification of work activities across various sectors, accompanied by a continuous need to develop preventive practices, raise compliance levels, and enhance awareness of occupational risks and ways to mitigate them.

Today, occupational safety and health has become an essential part of the modern world of work, not only as a regulatory requirement, but also as a key factor in the quality, stability, and sustainability of the work environment. Experience has shown that investment in prevention strengthens protection, improves performance, and reduces risks associated with various work activities.

From this perspective, “Mesbar” is launched as a periodic bulletin dedicated to providing specialized content in occupational safety and health. It seeks to highlight priority topics, review recent developments, and present professional knowledge in an organized manner that contributes to supporting occupational awareness and expanding the benefit derived from content related to this vital field.

Over the past few years, the Kingdom has made significant progress in occupational safety and health by updating regulations, strengthening regulatory frameworks, and developing initiatives to support compliance across workplaces. These efforts are aligned with national priorities to improve quality of life and promote safe work environments.

Within this framework, the National Council for Occupational Safety and Health continues its efforts to support compliance and advance regulation in the sector. Its work is guided by the importance of building a clear regulatory environment that contributes to improving the quality of implementation and supports establishments in understanding requirements related to occupational safety and health.

The Council has developed and issued a number of regulatory instruments that represent an important step in strengthening this pathway. These include the Regulation on the Organization of Work in High-Risk Occupations, which defines the requirements associated with occupations that require additional controls due to the nature of their related risks. They also include the Occupational Fitness & Non-communicable Diseases Examinations Regulation, which reinforces the importance of verifying the health suitability of workers in certain occupations and activities of a special nature.

The Council has also issued the regulation Regulation for the Licensing and Accreditation of Occupational Safety and Health Practitioners and Service Providers, with the aim of organizing this sector, improving the quality of services provided, and enhancing the professional competence of practitioners. This contributes to developing the occupational safety and health services market and supports establishments in accessing more organized and higher-quality services.

These efforts are not limited to the regulatory aspect alone; they also extend to continuous work with relevant entities in the Kingdom through building channels of integration and coordination that contribute to unifying efforts, enhancing the effectiveness of initiatives, and developing joint programs aimed at raising awareness, improving implementation, and expanding knowledge related to occupational safety and health.

This integration is essential to the development of the field, as occupational safety and health is, by nature, connected to several sectors and entities. It therefore requires the continuation of joint work to ensure the desired impact across various work environments.

The Council also gives special attention to awareness and knowledge-based content, based on the understanding that building awareness is a fundamental foundation for supporting compliance, promoting correct practices, and reducing work-related risks. For this reason, awareness initiatives and periodic knowledge platforms are an important part of the efforts undertaken in this field.

In this context, this issue of "Mesbar" serves as one of the tools that contributes to presenting knowledge on a periodic basis, reviewing topics related to the realities of work environments, and highlighting relevant developments. It opens a continuous space for addressing occupational safety and health topics in a clearer and more accessible manner.

This issue focuses on the topic of heat stress and the practical measures that contribute to avoiding the risks associated with activities in which workers may be exposed to heat stress across different work environments.

Today, the Kingdom continues its efforts to develop policies and procedures related to protecting lives in work environments from heat stress, guided by a clear vision that places people at the forefront of priorities. This vision seeks to enhance prevention, raise preparedness levels, and support practices that contribute to building safer and more sustainable work environments.

As this field continues to develop, the need remains to continue strengthening knowledge, expanding participation, and supporting initiatives that make occupational safety and health a renewed culture and a constant presence across all workplaces.

Risks of Heat Stress in the Workplace

High-temperature work environments represent one of the growing occupational challenges across many sectors, particularly in countries with hot climates such as the Kingdom of Saudi Arabia. The impact of high temperatures is not limited to workers feeling fatigued or uncomfortable; it may also extend to serious health and occupational risks, including dehydration, fainting, heat exhaustion, and heatstroke, in addition to an increased likelihood of accidents due to reduced concentration and decreased physical capacity.

From this perspective, managing heat stress risks is no longer a limited seasonal measure; rather, it has become an essential part of the occupational safety and health system, an important element in protecting human capital, enhancing productivity, ensuring business sustainability, and raising the level of compliance across work environments.

The Ministry of Human Resources and Social Development and the National Council for Occupational Safety and Health have emphasized the implementation of the Decision to Ban Working Under Direct Sunlight during the period from 15 June to 15 September, from 12:00 p.m. to 3:00 p.m., for private-sector establishments. This is intended to protect workers' health and provide a safe and healthy work environment.

What is Heat Stress?

Heat stress is a health and occupational condition that occurs when a worker is exposed to high temperatures, high humidity, or intense physical exertion for a period that exceeds the body's ability to adapt and cool itself naturally. This can lead to disruption in body functions, particularly when fluids and salts are lost, sufficient rest periods are not provided, or work is performed under direct sunlight or in enclosed high-temperature areas.

Heat stress is not limited to outdoor work only; it may also occur in industrial workshops, factories, central kitchens, warehouses, equipment rooms, and maintenance sites characterized by high temperatures and poor ventilation.

Health and Occupational Risks of Heat Stress

The effects of heat stress often begin with early warning symptoms, such as severe thirst, sweating, fatigue, headache, and dizziness. However, if early intervention is not provided, the condition may develop into heat cramps, heat exhaustion, fainting, or heatstroke, which may threaten the worker's life.

From an occupational perspective, heat stress leads to:

- Reduced concentration and attention while performing tasks.
- Increased likelihood of falls, trips, or improper use of equipment.
- Slower response in critical tasks.
- Increase in operational errors.
- Lower productivity and work quality.
- Increase in absenteeism and occupational injuries.

The risk of heat stress is particularly significant in work that requires high physical exertion, continuous work under the sun, or work near heat sources, such as construction, maintenance, loading and unloading, mining, manufacturing, agriculture, and transportation.

Factors Contributing to Increased Heat Stress Risks

The level of risk varies from one worksite to another and from one worker to another, depending on several interrelated factors, most notably:

- **Climatic Conditions**

High temperatures, humidity, poor air movement, and working under direct sunlight are among the main factors that increase the likelihood of heat stress.

- **Nature of Work**

The risk increases in work that requires high physical exertion, carrying heavy loads, frequent climbing and descending, using heavy equipment, or wearing heat-insulating work clothing.

- **Exposure Duration**

The longer the worker remains in a hot environment without adequate rest or fluid replacement, the greater the likelihood of developing heat stress.

- **Fitness Level and Health Status**

Workers who are not accustomed to working in heat, have chronic diseases, take certain medications, or suffer from dehydration or lack of sleep are more susceptible to heat stress.

- **Safety Culture at the Worksite**

Poor awareness, lack of supervision, absence of response plans, or disregard for early symptoms are all factors that may turn a mild condition into a serious injury.



H.E. Eng. Badr bin Abdullah Al-Dulami

CEO of the Roads General Authority

An exclusive discussion addressing the reality of occupational safety and health in the road sector, and the importance of protecting workers from heat stress risks. It also reviews the most prominent efforts and initiatives aimed at promoting safe work environments and raising compliance with preventive practices.

Q1

Your Excellency, why is the issue of heat stress and protecting workers under direct sunlight a special priority for the Roads General Authority?

This issue is a major priority because the nature of the roads sector depends on fieldwork in open sites, often under difficult climatic conditions, particularly during the summer season and periods of high temperatures. This places a direct responsibility on us to protect workers from the risks of heat stress and to ensure that the work environment is safe, healthy, and well organized.

At the Roads General Authority, we view worker safety as an integral part of project safety, not as a separate element. Therefore, we work to raise the level of compliance with occupational safety and health requirements through field follow-up, checklists, and the organization of work in a manner that reduces workers' exposure to risks associated with working under direct sunlight.

Q2

What is the scale of fieldwork managed by the Authority, which makes occupational safety and health risk management an important challenge?

The Roads General Authority supervises an extensive road network connecting more than 250 cities and governorates across the Kingdom. This reflects a large volume of operational and field activities. These activities include construction, maintenance, and operation projects, in addition to thousands of workers, equipment, workers' accommodations, and monitoring patrols.

This breadth of work makes occupational safety and health management a challenge that requires a clear system, not merely general procedures. Each worksite has its own conditions and risks, whether in terms of equipment movement, traffic diversions, the nature of work in open areas, or exposure to heat. Therefore, the Authority relies on monitoring, evaluation, auditing, and continuous correction to ensure that these risks are managed systematically.

Q3

How has the Authority shifted from a traditional approach to safety toward building a more mature and proactive system?

The Authority began by establishing a clear baseline for occupational safety and health by identifying the relevant legislation and aligning it with national regulations and technical specifications. It then collected the occupational safety and health plans for contracts and conducted assessment visits to evaluate the current situation across various sites.

After that, the results were analyzed, the plans were audited, observations were provided, and errors were corrected. This work helped the Authority move from addressing violations after they occur to building a proactive system focused on prevention before incidents happen. The objective is for safety to become part of planning, execution, and daily follow-up, rather than a subsequent measure taken after a problem occurs.

Q4

What practical measures does the Authority apply to protect workers from heat stress and working under direct sunlight? How do these checklists contribute to protecting workers?

The Roads General Authority works to protect workers from the risks of heat stress and working under direct sunlight through a clear field-based system. This system begins with identifying hazards at worksites, then ensuring that the necessary preventive controls are in place before and during work execution, while also enhancing workers' awareness of safe practices, symptoms of heat stress, and ways to respond to them.

Occupational safety and health checklists are one of the main tools in this system, as they transform safety requirements into elements that can be monitored and measured on site. The checklist for road worksites includes several elements directly linked to worker safety, such as work permits, approved traffic diversion, rest areas, drinking and washing water, work under direct sunlight, personal protective equipment, and training.

The importance of these checklists is not limited to recording observations. They also help standardize the evaluation approach, raise the level of compliance, and detect shortcomings early before they turn into incidents or injuries. They also enable follow-up teams to take the appropriate corrective actions, including stopping any unsafe practice that may affect worker safety. The ultimate goal is for prevention to become part of daily work in road projects, not a later measure taken after a violation or incident occurs.

Q5

What role do contractors and consultants play in the success of the occupational safety and health system?

Contractors and consultants are key partners in the success of the occupational safety and health system because they are closest to daily worksites and are responsible for applying the requirements on the ground. Therefore, a safe work environment cannot be achieved without their full commitment to providing preventive requirements, qualifying their teams, and monitoring behaviors and practices on site.

From this perspective, the Authority works to approve occupational safety and health specialists among contractors, qualify inspection engineers, and train specialists in internal auditing in accordance with the requirements of ISO 45001:2018. It also supports the accreditation of specialists through the "Occupational Safety and Health Cadres" program of the National Council for Occupational Safety and Health. The aim is to build sustainable capabilities within projects so that safety becomes a daily practice rather than merely a contractual obligation.

Q6

How does the Authority deal with unsafe practices that may endanger workers' safety?

The Authority has adopted a mechanism for issuing a control order to stop any unsafe practice that affects safety. This procedure is used when a dangerous behavior requiring immediate intervention is observed. This mechanism is important because it gives follow-up teams the ability to stop the risk at the moment it occurs, rather than merely recording the observation and waiting for it to be addressed later.

In fieldwork environments, delaying the correction of an unsafe practice may lead to a serious incident, especially when heavy equipment, traffic diversions, work under direct sunlight, or poor use of personal protective equipment are involved. Therefore, the Authority emphasizes that immediate intervention is an essential part of the safety culture, and that protecting lives and workers' health takes precedence over any other operational considerations.

Q7

What is the importance of a work permit before starting work at road sites?

A work permit is an important preventive tool before starting any field activity because it ensures that risks have been assessed and that the necessary controls have been provided before work begins. In road projects, several risks may overlap at the same time, such as equipment movement, traffic, high temperatures, work in open areas, and the use of hazardous tools or machinery.

Accordingly, the work permit helps organize responsibilities, define preventive requirements, and verify the readiness of the site, workers, and equipment. It also contributes to raising field teams' awareness of risks before the task begins and reinforces the principle that work does not start until occupational safety and health conditions have been verified.

Q8

How does the Authority measure the impact of its occupational safety and health efforts?

The Authority relies on clear performance indicators to measure the impact of its occupational safety and health efforts. These indicators include working hours, safe working hours, audit activities, comprehensive inspection of targeted scopes, weekly monitoring observations, and follow-up on fatal, minor, and near-miss incidents.

These indicators are not used merely to present results; they are used to guide decisions and improve performance. When results show improvement in worksites, machinery and equipment, monitoring patrols, or workers' accommodation, this confirms the effectiveness of the measures taken. When gaps appear in any scope, they are addressed through corrective plans, training, and field follow-up. In this way, data becomes a tool for managing safety, not merely numbers included in reports.

Q9

What is the role of incident investigation and documenting lessons learned?

Incident investigation is an essential element in developing the occupational safety and health system because it helps identify the root causes of incidents, rather than dealing only with their immediate consequences. The purpose of investigation is not simply to look for mistakes or assign responsibility, but to prevent recurrence and improve procedures and controls.

For this reason, the Authority has developed a model for investigating occupational safety and health incidents, focusing on investigation findings, corrective actions, preventive precautions, and the circulation of lessons learned. This ensures that every incident or near miss becomes an opportunity for learning and improvement, and that experience gained from one site can contribute to protecting workers at other sites.

Q10

How does the partnership between the Roads General Authority and the National Council for Occupational Safety and Health contribute to raising the level of compliance?

The partnership with the National Council for Occupational Safety and Health represents an important step toward strengthening compliance and spreading a preventive culture in the roads sector. The Council has quality programs and initiatives that help enhance the readiness of establishments and contractors, while the Authority supervises a broad scope of projects and establishments associated with the roads sector. This integration creates a greater impact.

Areas of cooperation include supporting the Council's programs; encouraging establishments within the Authority's supervisory scope to learn about safety programs and seek relevant certifications; coordinating the holding of workshops; and encouraging contractors to join the Incentives Program for Excellence and Compliance. The partnership also supports the qualification of specialists through the "Occupational Safety and Health Cadres" program, which enhances the presence of qualified competencies within worksites.

Q11

What are the Authority's most prominent upcoming steps in the field of occupational safety and health?

The Authority is working to continue raising the level of compliance across all targeted scopes, including worksites, machinery and equipment, collective accommodation, and monitoring patrols, while seeking to achieve compliance rates exceeding 80%. It is also working to obtain ISO 45001:2018 certification for the headquarters and the ministry's branches, thereby enhancing the maturity of the occupational safety and health management system.

Upcoming steps also include strengthening compliance with dress code rules for the field workforce, issuing a guidance manual for contractors, and activating the memorandum of understanding with the National Council for Occupational Safety and Health. These steps reflect the Authority's direction toward building a sustainable system based on standards, measurement, training, partnership, and continuous improvement.

Q12

What is your message to workers in road projects during the summer season?

My message to every worker in the field is that your safety and health come first, and no achievement is worth putting your life or health at risk. Working in road projects during the summer requires greater awareness of risks, particularly the risks of heat stress. Therefore, it is important to comply with instructions and procedures and to report any abnormal symptoms at an early stage. I also emphasize that safety is a shared responsibility among the worker, supervisor, contractor, and project owner. Supervisors and contractors must ensure the availability of rest areas, water, training, and appropriate work organization. As for the worker, his role is important in complying with instructions and reporting hazards. A safety culture begins when every individual on site feels that he has a direct role in protecting himself and his colleagues.

Q13

What message would you like to convey to entities and contractors in the roads sector?

My message to entities and contractors in the roads sector is that occupational safety and health is no longer merely a procedural aspect or a contractual requirement. Rather, it has become a key standard for measuring performance quality and execution efficiency. The success of road projects is not measured only by the number of kilometers completed or by speed of delivery; it is also measured by our ability to protect workers, reduce incidents, and provide a safe and healthy work environment, particularly in fieldwork conducted under direct sunlight and in difficult climatic conditions.

We affirm that protecting workers from heat stress is a direct responsibility of all parties to the project, beginning with work planning, organizing working hours, and providing rest areas and drinking water; continuing with the provision of personal protective equipment and training; and ending with field follow-up and immediate intervention when any unsafe practice is observed.

I also call on contractors to move from a culture of formal compliance to a culture of actual prevention, so that safety becomes part of daily decision-making on site and not a procedure that is addressed only after a violation or incident occurs. This cannot be achieved without qualified specialists, clear work permits, active checklists, serious incident investigations, and documentation of lessons learned.

At the Roads General Authority, we believe that the worker is the foundation of achievement, and that protecting them is a regulatory, professional, and humanitarian duty. Therefore, we will continue working with our partners, foremost among them the National Council for Occupational Safety and Health, to raise the level of compliance, strengthen the preventive culture, and ensure that road sites are safer, higher in quality, and more sustainable.

Numbers and Indicators

in the Kingdom in 2025



245

Rate of **non-fatal occupational injuries** **excluding** road traffic accidents per 100,000 workers (15 years and above)



76.7%

Risk **Awareness Index** among workers aged 18 years and above



Risks at workplace

25.3%

Prolonged standing (at least 4 hours per day)

16.7%

Fatigue or working beyond one's capacity

16.4%

Sitting at a desk for long periods exceeding 3 consecutive hours



Most common work-related health issues

3%

Eye and vision problems

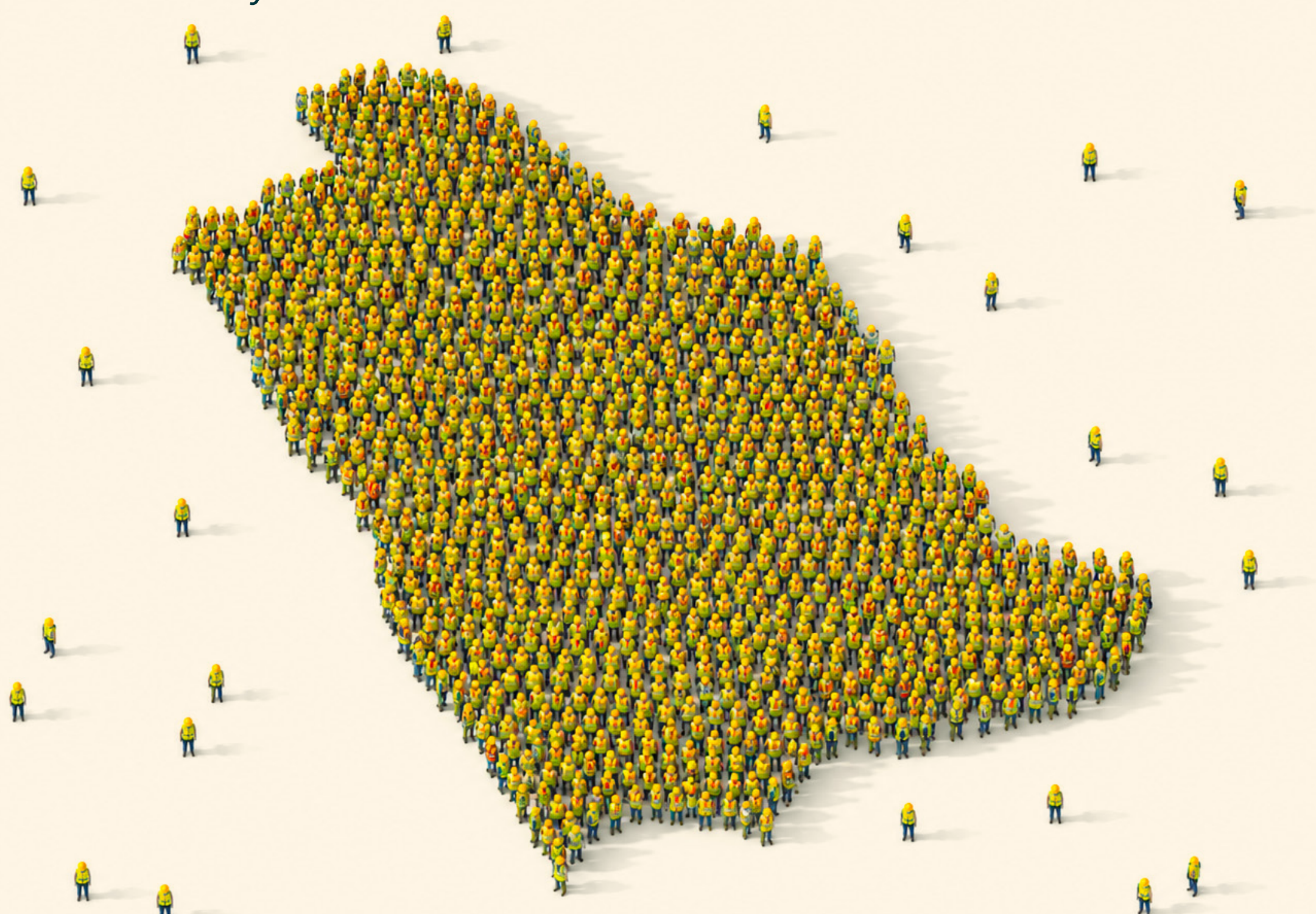
6%

Work-related stress

Regulatory Framework: Decision Prohibiting Work Under Direct Sunlight

Alignment with Regulations and Legislation in the Kingdom of Saudi Arabia

The laws and regulations of the Kingdom of Saudi Arabia affirm that occupational safety and health is one of the fundamental pillars for protecting people and enhancing the quality of work environments, in alignment with the national approach that balances worker protection, business sustainability, and the efficiency of the labor market



Regulations

الأنظمة

Basic Law of Governance

This approach is grounded in established principles set out in the Basic Law of Governance, as Article 28 of the Law states:

“The State shall facilitate the provision of job opportunities to every able person and shall enact laws that protect employees and employers.”

Labor Law

The Saudi Labor Law is one of the key laws that established the principles of occupational safety and health. Part 8 sets out clear obligations for employers to provide preventive measures, prevent occupational hazards, apply health requirements, and take the necessary measures to protect workers from occupational injuries and diseases.

Decisions

Decision on the Administrative Regulation for Occupational Safety and Health

The Administrative Regulation for Occupational Safety and Health primarily aim to create a safe, healthy, and hazard-free work environment, protecting both human resources and property. Its key objectives can be summarized as follows:

- **Protecting Human Resources:** Reducing work-related injuries, occupational diseases, and fatalities by identifying, eliminating, or controlling workplace hazards.
- **Defining Responsibilities and Duties:** Establishing clear legal and administrative frameworks that outline the employer's responsibilities (such as providing training and protective equipment) and the employees' duties (such as adhering to instructions and utilizing protective gear).
- **Promoting a Prevention Culture:** Embedding the concept of proactive prevention as an integral part of the corporate culture, rather than merely reacting after accidents occur.
- **Preserving Property and the Environment:** Safeguarding machinery, equipment, and facilities from damage caused by accidents or fires, while mitigating the negative environmental impacts of industrial activities.
- **Enhancing Productive Efficiency:** Minimizing lost workdays due to sick leaves or accidents, which positively impacts operational stability, increases productivity, and reduces compensatory and medical costs.
- **Regulating Supervision and Inspection:** Establishing clear mechanisms for periodic inspections, internal and external auditing, and violations monitoring to ensure continuous compliance with standards.

Decision to Ban Work Under Direct Sunlight

The Decision to Ban Work Under Direct Sunlight is one of the most prominent preventive decisions related to protecting workers from the risks of heat stress. It aims to limit workers' exposure to direct sunlight during peak heat hours, thereby contributing to the reduction of heat-related occupational injuries and diseases and raising safety levels at outdoor worksites.

The decision prohibits employing workers under direct sunlight from 15 June to 15 September of each year, from 12:00 p.m. to 3:00 p.m. Employers are also required to organize working hours in a manner that protects workers and reduces the health risks resulting from exposure to high temperatures.

Ministerial Decision Approving the Procedural Guidelines for Occupational Safety and Health for Preventing the Effects of Exposure to Direct Sun and Heat Stress

As part of supporting the practical implementation of preventive measures, a ministerial decision was issued approving the Procedural Guidelines for Occupational Safety and Health for Preventing the Effects of Exposure to Direct Sun and Heat Stress. The Guide serves as a regulatory reference that sets out the requirements and procedures to be followed to reduce risks associated with heat stress in work environments.

The Guide addresses in detail:

- Responsibilities of employers and workers.
- Procedures for assessing heat-related risks.
- Preventive controls and measures to be implemented, including the use of the Heat Index and related risk assessment tools.
- Provision of occupational safety and health requirements at worksites
- Awareness and training mechanisms
- Emergency response procedures for heat stress-related cases and injuries

Guideline on Preventing the Effects of Working in High Temperatures

It aims to raise awareness among employers, establishments, and workers about the risks and health problems associated with working in high temperatures, and to increase knowledge of prevention methods and safe practices in hot environments.

The Guideline discusses in detail:

- Understanding heat-related health risks
- Early signs and symptoms of heat stress
- Prevention and control measures such as the heat map
- Organizing rest and hydration periods
- Enhancing awareness and field supervision
- Rapid response to emergencies

Technical and Regulatory Guidelines Issued by the National Council for Occupational Safety and Health

• Occupational Fitness & Non-communicable Diseases Examinations Regulation

This regulation contributes to strengthening early prevention of work-related health risks by ensuring that the worker's health condition is suitable for the nature of the tasks performed, particularly in environments that require exposure to high temperatures or high physical exertion.

• Regulation Governing Work in High-Risk Occupations

This regulation aims to regulate work involving high levels of occupational risk and to establish the controls and procedures necessary to protect workers and enhance safety levels in such occupations.

Their Safety is a Responsibility, and Compliance is a Decision



The Role of Supervisory Authorities for Economic Activities in Risk Reduction

Supervisory authorities play a pivotal role in strengthening heat stress prevention by:



Issuing instructions and decisions regulating work environments.



Enhancing awareness among employers and workers.



Monitoring compliance in sectors with high exposure.



Supporting the development of guidelines and practical practices.



Promoting a culture of reporting injuries and near misses.



Encouraging establishments to adopt proactive practices that go beyond minimum compliance requirements.

The role of the National Council for Occupational Safety and Health is highlighted as a national entity concerned with developing the occupational safety and health system, raising awareness, and supporting integration among relevant entities, thereby contributing to building safer and more sustainable work environments.



Signs of Heat Stress

Early Symptoms

- Severe Thirst.
- Excessive sweating.
- Headache.
- Mild dizziness.
- Fatigue and exhaustion.
- Muscle cramps.
- Poor concentration.

Advanced Symptoms

- Nausea or vomiting.
- Severe dizziness.
- Rapid heartbeat.
- Fainting.
- Confusion or disorientation.
- Reduced or absent sweating in some cases.
- Noticeable increase in body temperature.

Immediate Action when Early Symptoms appear:



Stop the work



Move the worker to a cool or shaded area



Notify the supervisor



Provide appropriate first aid

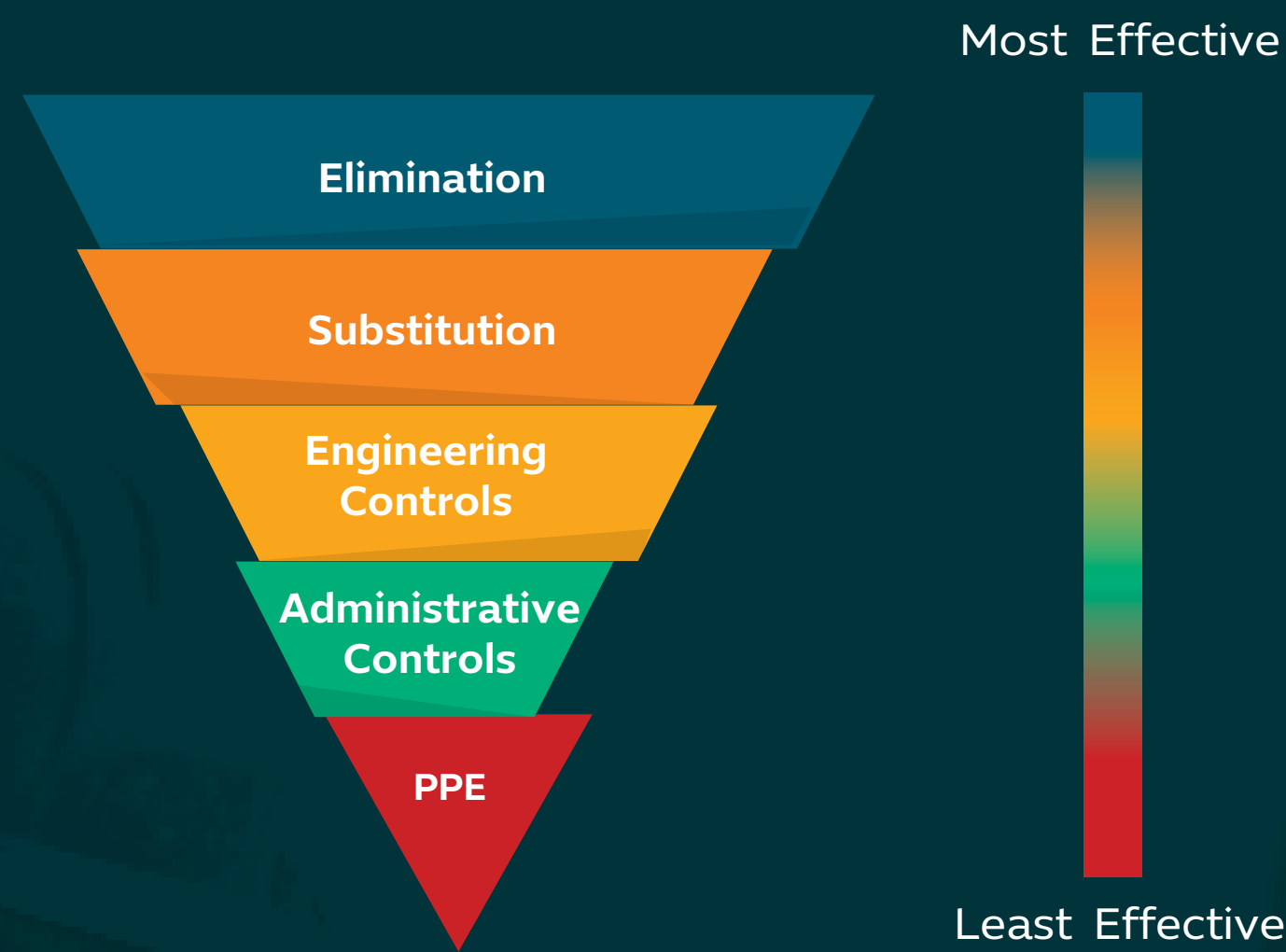


Request medical assistance when needed



Control Measures According to the Hierarchy of Controls

Effective management of heat stress risks relies on applying the hierarchy of controls, whereby establishments begin with the most effective solutions before relying solely on personal protective equipment.



First: Elimination

Prevent and eliminate heat-related hazards whenever possible.

- Postpone hot work during periods of extreme heat.
- Stop heat-generating operations when they are not necessary.
- Avoid unnecessary exposure to heat sources.

Second: Substitution

Reduce risks by replacing heat sources, work methods, or equipment with alternatives that are less stressful for workers.

- Replace the heat source with a lower-temperature option.
- Use equipment or machinery that produces less heat where possible.
- Select materials that do not require high heating temperatures.

Third: Engineering Controls

Engineering controls aim to limit workers' exposure to heat as much as possible.

- Provide shaded areas and work areas protected from direct sunlight.
- Improve ventilation in workshops, warehouses, and enclosed areas.
- Use fans or appropriate cooling systems in workplaces.
- Insulate heat sources in factories or equipment rooms.
- Provide cool or shaded rest areas close to the worksite.
- Use assistive equipment to reduce physical effort, such as cranes and mechanical carts.

Fourth: Administrative Controls

Administrative controls represent a key pillar of prevention, particularly in outdoor work.

They include:

- Scheduling strenuous work during cooler periods.
- Implementing regular and appropriate rest breaks.
- Providing cool drinking water near worksites.
- Training workers and supervisors on symptoms and prevention methods.
- Monitoring new workers or those returning from leave until they become acclimatized to work conditions.
- Empowering supervisors to stop work when clear signs of risk appear.

Fifth: Personal Protective Equipment

Personal protective equipment is an important element that complements engineering and administrative controls in reducing risks.

- Ensure that protective equipment is lightweight and suitable for the nature of the task.
- Use head coverings or helmets equipped with appropriate sun protection.
- Use protective eyewear when needed.
- Select protective equipment that balances protection requirements with thermal safety.

FAQs About Working in High Temperatures

Q&A

When is the prohibition of work under direct sunlight applied in the Kingdom?

The prohibition of work under direct sunlight is usually applied from 15 June to 15 September, from 12:00 p.m. to 3:00 p.m., for private sector establishments, in accordance with the annual announcement issued by the competent authority.

Is the risk limited only to workers under direct sunlight?

No. Heat stress may also occur in enclosed areas, such as factories, workshops, industrial kitchens, equipment rooms, and warehouses, particularly when ventilation is poor or internal heat sources are present.

What is the employer's responsibility?

The employer is required to provide a safe and healthy work environment, organize working hours, provide preventive measures, drinking water, rest periods, training, supervision, and an emergency response plan.

What are workers' rights in high-temperature work environments?

Workers have the right to work in a safe environment, receive the necessary awareness, have access to appropriate preventive measures, drinking water, and rest periods, and report any symptoms or hazardous conditions without hesitation.

How should a suspected case of heat stress be handled?

The worker should be stopped from work immediately, moved to a cool or shaded area, have heavy clothing loosened where possible, be given fluids if conscious, the supervisor should be notified, and emergency medical assistance should be requested if serious symptoms appear or the condition does not improve.

When should work be stopped?

Work should be stopped when there is a clear risk to workers' safety, when symptoms repeatedly appear among workers, when basic controls such as water, shade, and rest are unavailable, or when the work cannot be carried out safely.

Is personal protective equipment sufficient to prevent heat stress?

No. Personal protective equipment alone is not sufficient. It should be preceded by engineering and administrative controls, such as ventilation, shading, work scheduling, reducing exposure duration, and providing rest and water.

What is the role of the direct supervisor?

The supervisor is the first line of defense at the worksite. Their responsibilities include monitoring work conditions, observing workers' symptoms, ensuring rest periods are implemented, providing water, and intervening early when any risk indicators appear.

Violations of the decision banning outdoor work under direct sunlight may also be reported via the Ministry of Human Resources and Social Development's unified number (19911), or through the Ministry's smart device application

Smart Tools for Proactive Heat Stress Prevention

Toward Data-Driven Proactive Prevention

The field of occupational safety and health is witnessing a rapid shift toward the use of smart solutions that help establishments move from responding after injuries occur to preventing them before they happen. Among the most prominent of these solutions are smart wearable tools or tools integrated into the work environment, which read physiological indicators related to the worker’s condition while performing the task.

The concept of this tool is based on monitoring a number of vital indicators, such as heart rate, body temperature, sweating or fluid loss indicators, level of physical exertion, and duration of heat exposure. By analyzing this data, early alerts can be issued to the supervisor or worker when indicators appear that may suggest the onset of heat stress or dehydration.



How Does the Tool Work?

The tool collects data from the worker during work through wearable devices, such as occupational smartwatches, skin sensors, or heat and pulse monitoring devices. The indicators are then analyzed and linked to the work context, such as the nature of the task, exposure duration, and rest pattern.

When an abnormal increase in vital indicators is detected, the system can issue an alert to take immediate action, such as:

Temporarily stopping the worker from work.

Moving the worker to a rest area.

Providing the worker with fluids.

Redistributing tasks.

Alerting the supervisor to review site conditions.

The Role of the Tool in Proactive Prevention

The main value of this technology lies in the fact that it does not wait for an injury to occur; rather, it helps detect early signs that the worker or supervisor may not notice. In many cases, a worker may continue performing the task despite the early onset of fatigue or dehydration, either due to work pressure or lack of awareness of the seriousness of the symptoms.

Through continuous monitoring of physiological data, the establishment can make faster and more accurate decisions and reduce the likelihood of the condition developing into a serious occupational injury.

Added Value in Supporting Decision-Making

The importance of the tool is not limited to protecting the individual worker; it also extends to supporting site and establishment management through:

Identifying the tasks most associated with heat stress.

Determining the highest-risk periods during the day.

Improving work and rest schedules.

Evaluating the effectiveness of shading and ventilation measures.

Supporting investigations into incidents and near-miss cases.

Building a database that supports preventive planning.

When this data is used professionally and ethically, while protecting workers’ privacy, it can become an important tool for decision-makers in developing more realistic and effective policies and procedures.

Global Practical Examples

Some sectors globally use wearable technologies to monitor workers’ indicators in high-risk environments, such as mining, oil and gas, major construction projects, professional sports, and military operations. These applications focus on early warning, improving physical stress management, and reducing injuries related to heat and dehydration.

In occupational safety and health, these solutions represent an advanced direction toward data-driven risk management, rather than relying entirely on manual observation or responding only after a case occurs.

Key Considerations Before Implementation

Despite the importance of this technology, its successful implementation requires clear governance, including:

Defining the preventive purpose of data collection.

Protecting workers’ privacy.

Ensuring that data is not used for punitive purposes.

Training supervisors to interpret alerts.

Linking the tool to clear intervention procedures.

Ensuring that the technology is suitable for the nature of the work and the environment.

Summary

Smart tools for measuring heat stress and dehydration represent an advanced step toward building safer work environments. They enhance proactive prevention, support field decision-making, and help establishments protect workers before early indicators develop into actual injuries.



Dr. Andreas Flouris

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ILO and WHO guidance for workplace heat stress

Workplace heat stress is now one of the clearest and most preventable climate-related risks at work. The central message of recent guidance from the International Labour Organization (ILO) [1] as well as the World Health Organization (WHO) and the World Meteorological Organization [2] is that workplace heat stress is not defined only by air temperature. Risk also depends on humidity, solar and radiant heat, air movement, physical workload, clothing, personal protective equipment, hydration, acclimatisation, and the worker's ability to rest or slow the pace when needed. Therefore, a hot day can be safe for one task and dangerous for another. This is why workplace heat stress must be managed through task-specific risk assessment, not only through general weather alerts.

According to the EU Advisory Committee on Safety and Health at Work [3] and the ILO [1],# an effective, evidence-based, and practical prevention framework should include 10 basic protections.

First, employers should use a validated workplace heat-stress indicator, such as the Wet-Bulb Globe Temperature or the Heat Index, with thresholds adapted to work intensity and local conditions.

Second, workplaces must provide hydration strategies, including free, cool, and safe drinking water in close proximity to the task, supported by adequate sanitation facilities.

Third, rest breaks, self-pacing, task rotation and modified work schedules should be used to limit heat exposure, especially during the hottest hours. These breaks should be treated as preventive working time, not as a loss of pay or productivity.

Fourth, acclimatisation is essential for new workers, seasonal workers, and those returning after absence or cooler periods. Gradual exposure over several days allows the body to adapt and reduces the risk of heat illness.

Fifth, personal protective equipment should be selected carefully so that it protects workers from relevant hazards without adding unnecessary thermal burden.

Sixth, workers need accessible cool, shaded, and ventilated rest areas where they can recover, rehydrate, and report symptoms early.

Seventh, workers and supervisors should receive regular education on workplace heat stress, early symptoms, first aid, hydration, acclimatisation, emergency response, and safe work organisation.

Eighth, employers should identify worker groups at higher risk, including pregnant workers, older workers, young workers, workers with chronic disease, workers taking relevant medication, migrant and seasonal workers, and those wearing heavy or impermeable personal protective clothing. Protection for these groups should be stronger but non-discriminatory.

Ninth, workplace heat stress risk assessment should be participatory. Workers have valuable knowledge on which tasks, locations, and schedules create the greatest heat strain, and their knowledge is essential for effective prevention.

Tenth, regular medical check-ups and health monitoring should be used to identify vulnerability, follow up heat-related symptoms and evaluate whether prevention measures are working. Together, these ten protections convert heat guidance into an operational system: measurable, preventive, fair, and capable of protecting both health and productivity.

The first ILO tripartite meeting on OSH and climate change

In April, the ILO convened governments, employers and workers in Geneva for a landmark meeting on OSH in extreme weather events and changing weather patterns. The importance of the meeting is that climate change was addressed explicitly as a workplace risk, not only as an environmental issue. Its consequences extend beyond health to productivity, business continuity, labour inspection, compensation, and economic resilience.

The conclusions adopted at the meeting broadened the OSH agenda beyond heatwaves. They recognised that climate-related risks include excessive heat, floods, droughts, wildfires, cyclones, sand and dust storms, poor air quality, ultraviolet radiation, and changing patterns of disease vectors. These hazards can occur alone or in combination, creating compound risks for workers and enterprises.

The meeting set an important direction for national policy. Countries are expected to strengthen OSH laws and policies so that they address extreme weather and changing climate conditions, establish evidence-based exposure limits for relevant hazards, improve surveillance of workers' health, record occupational diseases and injuries more effectively, and strengthen coordination among labour, public health, meteorological, civil protection, and environmental authorities. The conclusions also call for early warning systems that reach employers and workers in time, stronger labour inspection, compensation where occupational illness or injury is linked to climate-related exposure, and protection for workers who leave dangerous work when there is an imminent and serious risk to life or health.

The conclusions also emphasize the importance of practical measures at enterprise level: documented risk assessment, preventive measures, adapted work organisation, cool rest areas, water, ventilation or cooling, appropriate equipment, shift adjustment, breaks, training, emergency planning, and safe return to work after extreme events. The strongest message from Geneva is that climate adaptation must begin in the workplace.

Future trends in workplace heat stress resilience

The next stage of workplace heat stress resilience will move from general advice to targeted, real-time, accountable prevention. Workplaces and labour authorities will increasingly need systems that combine weather forecasts, WBGT estimates, air-quality data, indoor conditions, sector, task intensity, clothing, personal protective equipment, sun or shade exposure, and acclimatisation status. Such systems can translate complex data into simple operational decisions: who is at risk, where the risk is highest, what action is required, and who must receive the warning.

This is particularly important in countries, sectors, and work environments exposed to high temperatures, including mobile worksites, outdoor labour, logistics, construction, maintenance, agriculture, and high-temperature indoor work. Heat stress risk management will increasingly be integrated with air pollution and sand or dust storm response, because these hazards often occur together. Future platforms should support ministries, inspectors, employers, and workers through role-specific dashboards, mobile applications, heat maps, inspection priorities, warning messages, and action matrices. Historical exposure databases and automated reporting can help evaluate policies, guide inspections, and identify sectors or regions where prevention must be strengthened.

Personalised protection will also become more important. With appropriate safeguards, wearable sensors and worker-response models can help predict dangerous heat strain before it develops and provide guidance on breaks, hydration, workload and recovery. However, such tools must be governed carefully. Their purpose should be prevention, not productivity surveillance or disciplinary control. Data collection should be limited, secure, transparent, and respectful of workers' rights.

Technology will not replace regulation, labour inspection, or employer responsibility. Its value lies in helping institutions act earlier, target resources better, and make prevention easier to implement. Therefore, the future of workplace heat stress resilience is a combination of science-based standards, digital decision support, trained inspectors, informed employers, empowered workers, and a clear commitment to protect both health and livelihoods.

Practical Examples from Workplace Settings

Construction Sites

Workers involved in concrete works, steel fixing, scaffolding, excavation, and road works are exposed to high risks due to direct outdoor work. These risks can be reduced by scheduling strenuous tasks in the early morning, providing shaded areas, increasing rest periods, and ensuring nearby water stations are available.



Industrial Facilities

Heat risks may arise inside factories due to furnaces, boilers, production lines, or poor ventilation. Control can be achieved by insulating heat sources, improving ventilation, reducing exposure duration, and training operation and maintenance teams to recognize risk indicators.



Service Sectors

These include cleaning, loading and unloading, delivery, and facility maintenance activities. These sectors require flexible plans that consider movement between sites, the availability of water and rest points, and a clear mechanism for reporting and intervention.



Summary

Managing heat stress risks is not a seasonal responsibility or a measure limited to the prohibition period only; rather, it is a continuous professional practice that requires planning, measurement, awareness, compliance, and rapid response. Every establishment can reduce these risks when it treats them as a leadership priority linked to human safety, work quality, and production sustainability.

Protecting workers in high-temperature environments represents an important national dimension, reflecting the Kingdom's commitment to enhancing the quality of work environments, raising compliance levels, and preserving the safety of the workforce as a fundamental pillar of development.

Arabian Drilling Company's Practices and Experiences in Preventing Heat Stress Risks

In view of the harsh climatic conditions experienced in the Kingdom of Saudi Arabia, where temperatures during the summer season may exceed 50°C, Arabian Drilling Company places great importance on managing heat stress risks as one of its key occupational health and safety priorities. The company adopts an integrated approach that combines preventive measures, continuous awareness, and the application of high protection standards to ensure the safety of workers and maintain operational continuity with high efficiency.

First: Key Preventive Measures

Arabian Drilling Company applies a range of organizational and technical measures to reduce heat stress risks, most notably:



Implementing Work-Rest Systems

- Implementing work-rest schedules based on the Heat Index to reduce direct exposure to heat stress.
- Adjusting working hours during peak heat periods.
- Applying Stop Work Authority when risk levels increase.



Continuous Environmental Monitoring

- Using temperature and humidity monitoring devices to track environmental conditions in real time.
- Installing Heat Index boards at work sites to inform teams of immediate risks.



Strict Commitment to Hydration Programs

- Requiring workers to drink fluids regularly every 10–20 minutes.
- Providing potable drinking water at all work sites.
- Promoting a culture of dehydration prevention among workers.



Providing Engineering Controls

- Preparing shaded and cooled rest areas.
- Providing appropriate cooling and ventilation systems at work sites.

Second: Awareness and Training Programs

The Company believes that prevention begins with awareness. Therefore, it has launched an integrated heat stress awareness program that includes:



Launching the annual Summer Heat Stress Awareness Campaign.



Conducting daily awareness sessions at work sites.



Training workers to recognize heat stress symptoms, such as:

- Dizziness
- Excessive sweating
- Nausea
- Heat exhaustion or heat stroke

The campaign also includes:

- Training materials, including presentations, posters, and awareness leaflets.
- Field follow-up plans to measure compliance and implementation.

Third: Worker Protection Mechanisms at Work Sites

Arabian Drilling Company adopts an integrated system to protect workers, based on assigning responsibilities and strengthening the safety culture.

Management Responsibilities

- Ensuring the availability of all preventive controls, including water, shaded areas, and monitoring devices.
- Conducting daily awareness sessions.
- Monitoring compliance with procedures and correcting any deviations.

Worker Re-sponsibilities

- Complying with hydration instructions and work-rest schedules.
- Immediately reporting any symptoms or heat-related cases.
- Supporting colleagues and intervening when any risk is observed.

Integration with Operational Planning

Heat stress risk assessment is integrated into:

- Daily work plans.
- Work permit systems.
- Safety meetings and briefings.

Fourth: Lessons Learned from Implementation

Through the implementation of these practices, Arabian Drilling Company has identified several important lessons, most notably:

1. The Importance of Proactive Prevention

Heat stress management should begin before work starts through prior planning and risk assessment, rather than relying only on controls during execution.

2. Strengthening Workers' Role in Safety

Raising workers' awareness has improved their ability to recognize risks and intervene early, contributing to the reduction of heat-related incidents.

3. Integration Between Systems and Field Implementation

The success of the program depends on linking:

- Policies and procedures
- Digital systems, such as monitoring and reporting tools.
- Actual implementation at work sites.

4. Leadership and Management Commitment

The experience has shown that management commitment and field presence have a direct impact on the overall level of compliance with safety culture.

5. Continuity of Awareness

Seasonal campaigns alone are not sufficient. Therefore, awareness messages are continuously reinforced throughout the year, especially in light of changing climatic conditions.

Conclusion

Arabian Drilling Company's experience reflects an advanced model in managing heat stress risks, as it adopts a comprehensive approach that combines planning, awareness, implementation, and monitoring.

Through the implementation of this system, the company seeks to achieve its strategic objective of eliminating heat stress-related incidents and ensuring that every employee returns home safely.

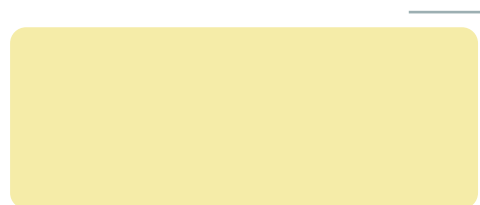


Check Your Hydration Level

One of the Heat Control Measures



Use this urine color chart to check your hydration level



Hydrated

The first and second pale straw colors mean you are well hydrated.

Keep up the good work.

Mild Dehydration

The third and fourth pale yellow colors mean you need to drink more water.

Drink a glass of water now.

Dehydrated

The fifth and sixth dark yellow colors mean you are dehydrated.

Drink 2-3 glasses of water now.

Severe Dehydration

The dark brown and strong odor are red flags for severe dehydration.

Drink a bottle of water immediately.

Did You Know?

Dehydration is one of the main factors that increase the risk of heat exhaustion, leading to heatstroke, which can be life-threatening. Therefore, prevention is always the best tool.

It is recommended to drink water continuously throughout the shift, and not to rely solely on the feeling of thirst to preserve body safety and performance under heat stress.

Tips to Stay Hydrated:

- Drink water regularly throughout the day.
- Avoid high-caffeine drinks.
- Protect yourself during work.
- Take rest breaks in shaded or air-conditioned areas.
- Inform your supervisor if you experience any symptoms of dehydration.

The background of the top section features a large, semi-transparent image. On the left, the Australian flag is shown waving. On the right, there is a silhouette of a construction worker wearing a hard hat and safety gear, standing on a construction site with rebar visible in the background. The entire background has a warm, orange-yellow tint.

Australia's Experience in Managing Heat Stress Risks

Australia is among the countries that face clear occupational challenges associated with working in high temperatures, particularly in sectors such as construction, mining, transport, agriculture, and outdoor services. Australian regulatory authorities have developed a practical approach based on managing heat risks as an occupational hazard that must be identified, assessed, controlled, and continuously reviewed.

Safe Work Australia emphasizes that working in heat can be hazardous, and that employers or persons conducting a business or undertaking have a duty to protect workers and workplaces from the risks associated with working in heat.

Applicable Policies and Legislation

The Australian model within the occupational safety and health framework is based on assigning employers the responsibility of managing foreseeable risks in the workplace. Heat is not treated as a temporary environmental factor, but rather as an occupational hazard that requires clear measures and periodic review.

Safe Work Australia provides practical guidance for managing the risks of working in heat, explaining how to address these risks and what should be done if a worker begins to experience a heat-related illness. The guidance also addresses multiple sectors, including transport, warehousing, construction, public administration, and protective services.

The Role of Regulatory Authorities

Regulatory and oversight responsibilities in Australia are shared between national bodies and state and territory authorities. These authorities issue practical guidance, conduct awareness campaigns, monitor employers' compliance, and provide tools that help establishments assess and manage heat-related risks.

For example, WorkSafe Queensland explains that heat stress occurs when the body is unable to cool itself quickly enough to maintain a safe internal temperature. It also provides guidance on identifying risks, training, first aid, and emergency procedures.

Worksite Implementation Mechanisms

The Australian model focuses on managing risks at the worksite through practical steps, including:

- Identifying work activities and sites where heat-related risks are elevated.
- Assessing the level of risk based on the nature of the work, the environment, and physical exertion.
- Implementing appropriate controls, such as shading, ventilation, rest, and water.
- Training workers and supervisors on symptoms and procedures.
- Reviewing the effectiveness of controls after implementation.
- Engaging workers in identifying risks and solutions.

SafeWork NSW emphasizes that managing extreme heat in the workplace follows the usual risk management approach: identifying hazards, assessing risks, controlling them, and then reviewing control measures, while consulting workers and their representatives at every step.

Outcomes and Impact of Implementation

Results of Implementation and Its Impact

The most distinctive feature of the Australian experience is that it transforms the management of heat from an individual response into an organized management system. When heat becomes part of daily risk assessment, establishments become better able to prevent injuries, develop work schedules, enhance supervisors’ preparedness, and improve the culture of early reporting. The availability of practical guidance issued by regulatory authorities also helps small and medium-sized establishments understand what is required of them without complexity, while strengthening practical compliance in the sectors most exposed to heat-related risks.

Lessons Learned

The Australian experience can be leveraged by:

- Strengthening seasonal preventive plans in sectors with high exposure.
- Developing simplified models for assessing heat-related risks at worksites.
- Linking seasonal prohibition measures to broader heat stress management plans.
- Empowering supervisors to make immediate decisions when risk levels increase.
- Enhancing practical training for workers using languages and methods suited to the nature of the workforce.
- Encouraging the use of smart solutions and field data to support decision-making.
- Focusing on awareness sufficiently ahead of the summer season.

Summary

The Australian experience confirms that managing heat-related risks is not based solely on prohibiting work during specific hours, but rather on building an integrated system that includes planning, training, monitoring, early intervention, and reviewing the effectiveness of measures. This aligns with the preventive approach pursued by the occupational safety and health system in the Kingdom, through protecting workers, raising compliance levels, and improving the quality of work environments.

References:

- 1- Safe Work Australia – Working in Heat
- 2- Safe Work Australia – Guide for Managing the Risks of Working in Heat
- 3- WorkSafe Queensland – Heat Stress
- 4- SafeWork NSW – Working in Extreme Heat

The National Institute for Occupational Safety and Health (NIOSH)

The National Enabler for Enhancing Workplace Safety and Workforce Health

In light of the comprehensive national transformation taking place in the Kingdom of Saudi Arabia under Saudi Vision 2030, occupational safety and health emerges as one of the key enablers for sustaining development, improving the efficiency of work environments, and protecting the workforce.

Building on this direction, the National Institute for Occupational Safety and Health (NIOSH) serves as a specialized national reference and an executive enabler that contributes to developing national capabilities, supporting the readiness of establishments, and enhancing compliance with the occupational safety and health system across various vital sectors.

Why Now?

Because today's challenge is no longer limited to managing a single workplace or individual project; rather, it is linked to managing an integrated system of operational and health risks amid the significant expansion of national projects, the growing number of workers, and the increasing complexity of work environments and high-risk professions.

With this transformation, the need emerges for a specialized national system that connects training, qualification, occupational health, compliance, awareness, and digital transformation, in a way that supports human protection, business sustainability, and the efficiency of work environments.



Establishment of the Institute and Its Strategic Position

The National Institute for Occupational Safety and Health was established to serve as the executive arm supporting the work of the National Council for Occupational Safety and Health by translating national policies and legislation into operational solutions and practical programs that are implementable and measurable.

The Institute works to support employers and establishments in moving from theoretical compliance to sustainable practical implementation through an integrated system that includes training, qualification, advisory services, and workforce health programs, thereby enhancing workplace efficiency and raising operational readiness.

Our Vision

Leadership toward an integrated national occupational safety and health system.

Our Mission

To enable the occupational safety and health ecosystem by developing capabilities and providing advanced services that contribute to enhancing workplace safety and workforce health.

The Four Integrated Pillars of the System

The Institute’s system is built on four interconnected pillars aimed at developing an integrated national model for occupational safety and health:



Capacity Building

Developing and qualifying national competencies through specialized training programs and professional pathways.



Qualification and Accreditation

Transforming training and development outcomes into documented professional readiness in accordance with approved frameworks and standards.



Workforce Health

Enhancing the health and well-being of workers through occupational wellness programs, proactive prevention, and monitoring of health indicators related to the work environment.



Supporting Employers’ Compliance

Assisting establishments in implementing occupational safety and health requirements, including requirements for regulating work in high-risk professions, and improving operational readiness and compliance.



Institute Services and Linkage with Regulatory Frameworks

Through its integrated digital ecosystem, the VCOSH Platform, the National Institute for Occupational Safety and Health seeks to provide specialized solutions and services that support establishments in improving operational readiness and enhancing compliance with occupational safety and health requirements, with the applicable regulatory and legislative frameworks in the Kingdom

Training Programs and Professional Certification Portfolio

The Institute has developed a training model based on capacity building and professional qualification according to the needs of sectors with different operational risks. This includes:

20 Short Training Programs

Covering occupational safety and occupational health fields, including safety fundamentals, risk analysis, workplace well-being, musculoskeletal health, and occupational mental health.

“Kawader” Programs for Developing National Competencies:

The “Kawader” programs contribute to qualifying, developing, and accrediting practitioners and specialists in occupational safety and health fields, supporting the improvement of professional practice quality and enhancing the readiness of establishments and national competencies.

7 Targeted Sectoral Professional Tracks:

Including construction and building, energy and utilities, manufacturing industries, transport and logistics, mining and quarries, chemicals and hazardous materials, and fire and emergency response.

14 Specialized Professional Certifications

Supporting the qualification of competencies in occupational safety and health fields, including Occupational Safety Practitioner, Occupational Health Professional, and Occupational Safety and Health Inspector.

Occupational Safety and Health Diploma:

A professional program focused on preventive risk management, emergency response, technical inspection, monitoring, and improving work environments.

Strategic Linkage with National Regulations

The Institute’s services and training programs are directly linked to recent regulatory and legislative directions in the field of occupational safety and health, contributing to supporting establishments and improving their operational and regulatory readiness. Key examples include:

Regulation on the Organization of Work in High-Risk Occupations

The Institute provides specialized qualification and training programs targeting high-risk professions, supporting the implementation of the regulation’s requirements and improving the readiness of workers and establishments to comply with relevant regulatory requirements. The Institute also supports employers and workers through structured pathways that include qualification, assessment, training, and professional examinations, contributing to improving professional practice efficiency, reducing the risks of non-compliance, and enhancing workplace readiness.

Regulation of Occupational Fitness Examinations and Non-Communicable Diseases

The Institute supports establishments by providing advisory services and specialized solutions in the management of occupational fitness examinations, assessing the current occupational safety and health status, and linking medical examination outcomes to job requirements and professional suitability for each role. This contributes to strengthening workforce readiness and supporting the prevention of occupational risks and work-related diseases.

The Institute’s Preventive Experience and Response to Heat Stress

Reflecting its role in enhancing workforce health and supporting workplace readiness, the National Institute for Occupational Safety and Health presents an advanced preventive model for addressing one of the most prominent environmental and operational challenges associated with field-work and expanding projects in the Kingdom: heat stress.

Preventive Approach and Digital Solutions through the Occupational Wellness Center

The Institute’s approach to heat stress is based on proactive prevention, health awareness, and operational readiness by integrating awareness and monitoring programs within the “Occupational Wellness Center,” part of the integrated VCOSH digital ecosystem.

The Center supports establishments and workers through a scalable digital system that includes:



Multilingual Education:

Providing specialized awareness content in multiple languages to enhance awareness of heat stress risks and preventive measures among different segments of the workforce.



Monitoring Health and Preventive Indicators:

Supporting employers in raising awareness of occupational risks associated with heat stress and monitoring early indicators related to occupational strain and fatigue through interactive tools and supportive digital solutions.



Access to Specialists and Specialized Content:

Providing specialized content and supportive guidance in the areas of occupational health and worker well-being, helping establishments enhance the implementation of occupational safety and health measures and improve preventive readiness.



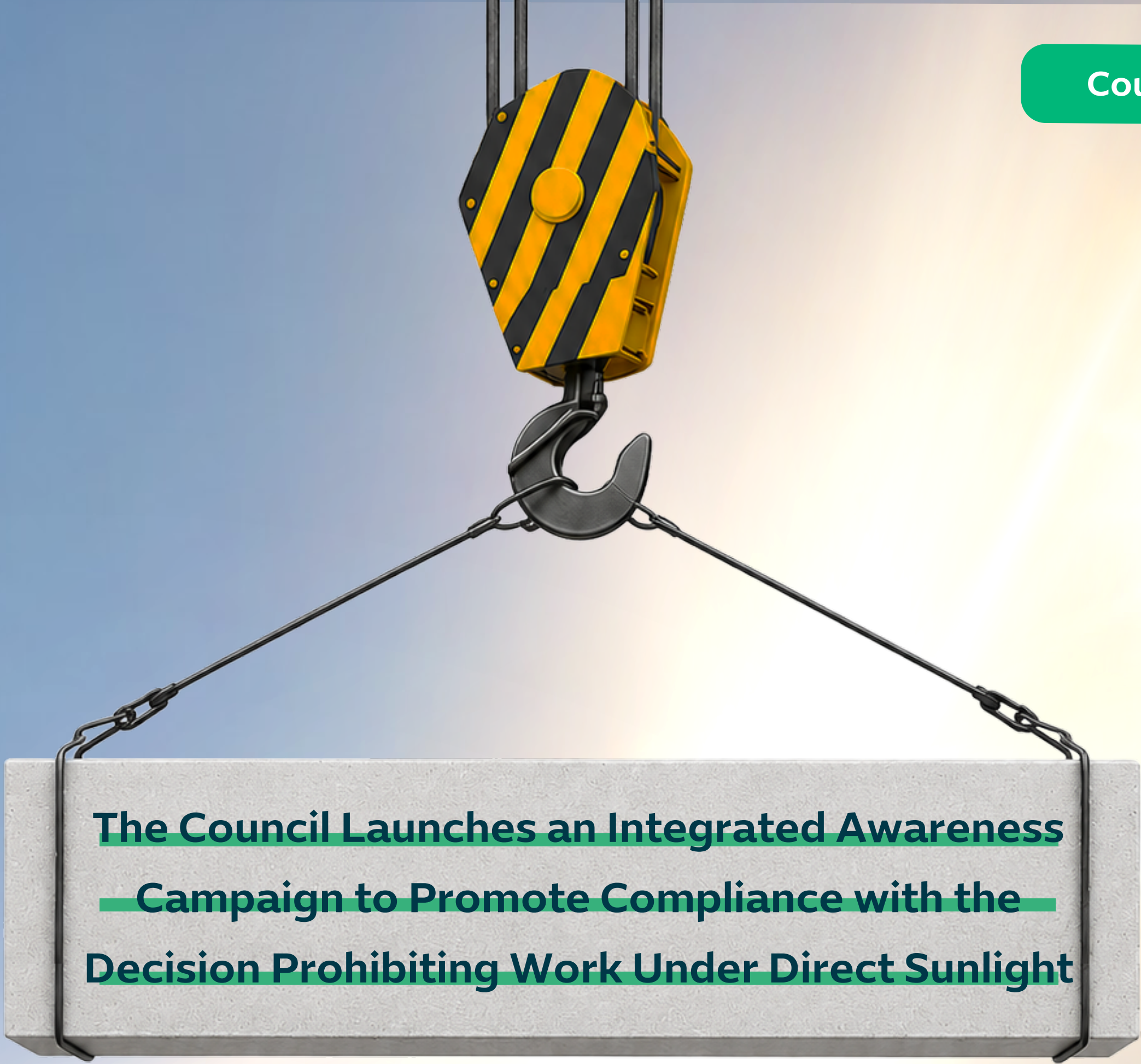
Motivation and Enhanced Preventive Participation

The digital occupational wellness system includes interactive tools for motivation and rewards, aimed at increasing worker participation in preventive and awareness programs and encouraging the adoption of healthy behaviors and practices that support occupational safety and health within work environments.

Added Value for Work Environments

This preventive approach helps support establishments in limiting the operational and health impacts associated with heat stress and occupational risks by enhancing workforce readiness, raising preventive awareness, and improving work environments that support productivity and sustainability.





The Council Launches an Integrated Awareness Campaign to Promote Compliance with the Decision Prohibiting Work Under Direct Sunlight

The National Council for Occupational Safety and Health, in collaboration with the Ministry of Human Resources and Social Development and relevant entities, intends to launch an integrated proactive awareness campaign to promote compliance with the decision prohibiting work under direct sunlight. The campaign coincides with the approaching start of the annual implementation period, which runs from 15 June to 15 September, from 12:00 p.m. to 3:00 p.m.

The campaign comes within the framework of joint national efforts to protect workers in outdoor work environments from the risks of direct exposure to sunlight during peak hours, and to reduce occupational injuries and diseases associated with heat stress. This contributes to strengthening safe and healthy work environments and raising the level of compliance with occupational safety and health requirements across private-sector establishments.

The awareness campaign focuses on integrating communication and awareness efforts between the Council, the Ministry, and relevant entities by disseminating awareness and guidance messages and raising the awareness of employers and workers about the preventive measures that must be followed during the implementation period. It also emphasizes the importance of early preparation and organizing working hours in a manner that preserves workers' safety and health while ensuring business continuity.

The campaign also seeks to support the readiness of establishments for the implementation period by reviewing work schedules, preparing outdoor work sites, and providing the necessary preventive measures, such as shaded rest areas, drinking water, and heat-stress prevention supplies, in addition to strengthening the role of supervisors in monitoring compliance with preventive guidelines at worksites.

The National Council for Occupational Safety and Health affirmed that the campaign is an extension of its efforts to promote a culture of prevention, enhance compliance, and support the application of best practices in the field of occupational safety and health. The Council noted that protecting workers is a shared responsibility that requires the integration of roles among government entities, employers, and workers.

The Council called on entities/establishments to prepare for and comply with the requirements of the decision as the implementation period approaches, and to follow the relevant instructions and guidelines in a way that reflects establishments' commitment to workers' safety, contributes to reducing occupational risks, and enhances quality of life in work environments.





Digital Training
Platform



Administrative
Regulations &
Bylaws



Electronic
Services



National Council for
Occupational Safety & Health

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