



DUBAI AVIATION CITY CORPORATION OHSE CODE OF PRACTICES



DATE: 28.10.2019

DACC CODE OF PRACTICE – HEAT STRESS AT WORK



HEAT STRESS AT WORK
DACC (DUBAI SOUTH) Code of Practice
Document Reference No.: DACC.DS.OPS.OHSE.WRH.02.HS

| | | |
|-----|------------------------|----|
| 1.0 | INTRODUCTION | 4 |
| 2.0 | TRAINING AND AWARENESS | 5 |
| 3.0 | REQUIREMENTS | 5 |
| 4.0 | RECORD KEEPING | 11 |
| 5.0 | REFERENCES | 11 |



HEAT STRESS AT WORK
DACC (DUBAI SOUTH) Code of Practice
Document Reference No.: DACC.DS.OPS.OHSE.WRH.02.HS

1.0 INTRODUCTION

- (i) This Code of Practice (CoP) is mandatory to all operational facilities within the Dubai South jurisdiction. This CoP is designed to incorporate requirements set by UAE and other relevant Regulatory Authorities. If requirements of this document conflict with requirements set by another regulatory authority, operational facilities are required to follow the more stringent requirement.
- (ii) This Code of Practice (CoP) applies to all Operational Facilities within Dubai South Jurisdiction that have employees working in high temperature environments. High temperature environments includes both weather (working outside in summer months) and site operations (furnaces, ovens, boiler rooms and other high temperature operations).
- (iii) Operational facilities means the business units such as Factories, Logistics and Warehouse Facilities, Recreational Facilities, Multi Store Apartments, Retail Facilities, Offices, Educational Institutions, Medical Facilities, etc. and all other facilities which are registered under Dubai South Licensing and Registration Department and operating in Dubai South Jurisdiction.
- (iv) A duty Holder is defined as;
 - a) The person(s) who owns or is in control, through contract or tenancy, of non-domestic premises;
 - b) With regard to multiple tenanted premises, the duty holder shall be the person who owns or is in control of the building, including access and egress
 - c) All other persons shall cooperate with the duty holder to allow them to comply with their duties requirements under this CoP.
- (v) Heat Stress defines that Heat Stress occurs when the body cannot get rid of excess heat or your body cannot cool itself enough to maintain a healthy temperature (37°C). When this happens, the body's 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. The next stage is most often fainting and even death if the person is not cooled down.
- (vi) Main factors contributing to heat stress are high air temperatures, radiant heat sources, high humidity, direct physical contact with hot objects, and strenuous physical activities.

2.0 TRAINING AND AWARENESS

- (i) Operational Facilities shall ensure that OHSSE training complies with the requirements of:
 - a) *Dubai Aviation city Corporation (DACC) OHSERF - Regulations 6 – Competence Management, Training and Awareness;*
- (ii) Appropriate training shall be given to all employees working in high temperature environments in a language they can understand prior to starting work.
- (iii) General working in heat awareness shall be provided to all employees, in a language they understand, throughout the summer months, as defined by ministry of labor decrees.



HEAT STRESS AT WORK
DACC (DUBAI SOUTH) Code of Practice
Document Reference No.: DACC.DS.OPS.OHSE.WRH.02.HS

-
- (iv) Within 10 days of starting employment and prior to the start of the defined summer months, employees shall be trained on:
- a) how to recognize the signs and symptoms of heat related illness in themselves and others and how the body overheats;
 - b) the importance of drinking water (at least 2 liters every 2-3 hours) and the addition of a little extra salt to meals;
 - c) how to self-monitor urine color to determine hydration levels;
 - d) the importance of acclimatization, work pacing, rest breaks and effects of clothing on heat stress;
 - e) the procedures to call for first aiders and/or medical assistance if experiencing the symptoms of a heat related injury/illness; and
 - f) the requirements of the employer's heat stress program.
- (v) Duty Holders shall ensure managers and supervisors are appropriately trained on:
- a) How to recognize the signs and symptoms of heat related illness and how the body overheats;
 - b) The precautions to be taken for the prevention of heat related illness amongst the workforce;
 - c) The importance of self-pacing and providing appropriate rest breaks for recovery;
 - d) The procedures to call for first aiders and/or medical assistance; and
 - e) The requirements of the employers' heat stress program.
- (vi) Duty Holders shall ensure First Aiders are suitably trained on:
- a) How the body overheats and how to recognize the signs and symptoms of heat related illness and its different types;
 - b) The precautions to be taken for the prevention of heat related illness;
 - c) The first aid treatment of the different types of heat related illness;
 - d) The procedures to call for medical assistance; and
 - e) The requirements of the employer's heat stress program.



HEAT STRESS AT WORK
DACC (DUBAI SOUTH) Code of Practice
Document Reference No.: DACC.DS.OPS.OHSE.WRH.02.HS

3.0 REQUIREMENTS

- (i) Duty Holder shall undertake their roles and responsibilities in accordance with the general requirements of *Dubai Aviation City Corporation (DACC) OHSERF – Regulation 5 – Leadership, Roles, Responsibility and Self-Regulation*.
- (ii) Duty Holder shall ensure a risk assessment is performed in accordance with *Dubai Aviation City Corporation (DACC) OHSERF Regulation 2 – Risk Management*, to identify high temperature working environments and implement effective control measures to reduce exposure and protect employees from heat exposure as far as reasonably practicable.
- (iii) Duty Holder shall ensure a medical surveillance program in accordance with *CoP- DACC.DS.OPS.OHSE.WRH.03.MS – Occupational Health Screening and Medical Surveillance* is implemented to evaluate employees working in high temperature environments to ensure they are able to perform their assigned duties.
- (iv) Duty Holder shall ensure an effective heat stress program in accordance with this CoP is implemented for operational facilities where employees work in environments where high temperatures and humidity may pose a health risk. Any Operational Facilities that has, or it is reasonably foreseeable to have, a temperature at or above 35 degrees Celsius at any time during a work shift, shall implement an effective heat stress program, unless they can document through risk assessments that there is no risk to employees.
- (v) Duty Holder shall ensure Operational facilities adhere to the UAE Ministry of Labour requirements for a midday break during the summer months for employees working outside.
- (vi) Duty Holder shall implement a process for assessing the environmental conditions and comparing it to the Thermal Work Limit heat stress index (*Refer Table -1*) and implement the required control measures.
- (vii) Duty Holder shall ensure Duty Holder supplied meals are evaluated so that they offer a healthy balanced diet with appropriate nutrition and appropriate electrolytes and calories to sustain work in high temperature environments.
- (viii) Duty Holder ensure information is provided to employees on the hazards of consuming of alcohol, tea, coffee and caffeinated drinks which can make them more susceptible to heat related injuries and illnesses.
- (ix) Duty Holder ensure that appropriate rest breaks are provided to exposed employees and if the employee is suffering from a suspected heat related illness then the employee have immediate access to medical attention.
- (x) Duty Holders that have employees working in high temperature environments shall develop a worksite specific heat stress program that shall consist of, but not be limited to the following elements:
 - a) Acclimatization program for new employees, employees that have been on vacation, and employees that are moving from a worksite that has climate control to a worksite that has



HEAT STRESS AT WORK
DACC (DUBAI SOUTH) Code of Practice
Document Reference No.: DACC.DS.OPS.OHSE.WRH.02.HS

high temperatures with an allowance of 5-7 days for acclimatization before performing work in adverse weather conditions.

- b) Process for assessing environmental conditions utilizing the Thermal Work Limit (TWL) to determine work/rest breaks and water consumption requirements for employees.
 - c) System to communicate current environmental conditions to employees so they can take the appropriate control measures to prevent heat stress injuries and illnesses;
 - d) Communication system to inform/remind employees, employees returning from vacation and visitors to the operational facilities of the hazards of heat stress, signs and symptoms of heat stress, and steps to be taken to prevent heat stress;
 - e) Requirements for provision of appropriate amounts of potable drinking water close to the operational facility and appropriate electrolyte replacement drinks, as per guidance from a qualified physician, for employees working in high temperature environments and implement programmed drinking where appropriate every hour to encourage appropriate fluid intake;
 - f) Provision of appropriate clothing (e.g.- Lightweight, cotton, light colored, loose fitting) and personal protective equipment including personal water container. (Shared drinking cups, water bottles are not allowed).
 - g) Provision for design and placement of shade and cooling shelters for employees working outside operational facility during summer months and appropriate cooled shelter for the summer months during the midday break periods set by the ministry of Labor;
 - h) Pre-job training prior to working in high temperature environments and a permit to work system in extreme high temperature and humidity environments that includes the Thermal Work Limit High Risk Zone.
 - i) Inspection/Audit program to ensure operational facilities are following the heat stress program requirements.
 - j) Investigation and reporting of heat injuries and illness as per *Accident investigation Reporting – DACC.DS.OPS.OHSE.OST.01.AI*
- (xi) Whenever reasonably practicable, engineering control measures shall be used to eliminate/reduce the heat exposure. Control exposure may include:
- a) Adding insulation to building ceilings to minimize solar heat transfer;
 - b) Providing shaded working areas;
 - c) Providing cooled and air- conditioned rest areas with water or electrolyte drinks, as per Dubai Health authority/ Qualified physician's instructions;
 - d) Using exhaust ventilation such as fans to increase airflow across the skin and increase evaporation and cooling; and



HEAT STRESS AT WORK
DACC (DUBAI SOUTH) Code of Practice
Document Reference No.: DACC.DS.OPS.OHSE.WRH.02.HS

- e) Using cooled air from an air-conditioning system to cool work areas.
 - f) Work is to be planned so that an appropriate number of employees are acclimatized and prepared to work in a high temperature environment.
 - g) Lone working are not allowed in operational facilities;
 - h) Appropriate cool fluids shall be available and accessible by employees to maintain appropriate hydration during periods of high temperature. If refillable containers (eg. Water coolers) are used, the seal shall be taped with the date the container was filled written on the tape. Refillable containers shall be cleaned and refilled daily and containers without a taped and dated seal shall be not be used for rehydration of employees.
- (xii) Duty Holder with high temperature work environments shall implement the following protocol in case of dehydration or heat illness;
- a) Ensure first aid or medical treatment is readily available for the operational facility; and
 - b) Ensure employees/Supervisors know how to call for additional emergency medical assistance if required or if the employee complains of chest pains, or has symptoms of heat stroke.

Table 1- Thermal Work Limit Zones and Interventions for Management of Work

| Working Zones | Interventions | Rehydration Schedule (per hr) | Work- rest schedule (Minutes) |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------|
| Low Risk (Unrestricted zone) TWL : 140 - 220 < | No limits on self-paced work ^a for educated, hydrated workers | Light work 600ml - 1 Litre/hr | Safe for all continuous Self-Paced work |
| Medium Risk (Cautionary Zone) TWL : 115 - 140 | Cautionary Zone indicates situations in which environmental conditions require additional precautions. ➤ Practicable engineering control measures to reduce heat stress | Light Work 1- 1.2 Litres /hr | Safe for continuous self-paced light work |



HEAT STRESS AT WORK
DACC (DUBAI SOUTH) Code of Practice
Document Reference No.: DACC.DS.OPS.OHSE.WRH.02.HS

| | | | |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>should be implemented e.g. Provide shade, improve ventilation etc.</p> <ul style="list-style-type: none"> ➤ Working alone to be avoided ➤ No un-acclimatized person to work^b ➤ Ensure adequate fluid intakes appropriate for type of work | <p>Heavy work > 1.2 Liters/hr^e</p> | <p>Continuous paced work 45 minutes work & 15 minutes rest.</p> |
| High Risk Zone TWL : < 115 | <ul style="list-style-type: none"> ➤ Strict work/Rest cycling required ➤ No person to work alone ➤ No un-acclimatized person to work ➤ High Risk induction required emphasizing hydration and identifying signs of heat strain. ➤ Provide personal water bottle (2litre capacity) on-site at all times | <p>All work >1.2 Liters/hr</p> | <p>Light Work^c 45 Minutes work & 15 minutes rest</p> <p>Heavy Work^d 20 minutes work & 40 minutes rest.</p> |

Notes: Determination of TWL – Alternative single instruments measuring Dry Bulb (air temperature), Globe Temperature (Radiant Heat), Wet Bulb (Evaporative Cooling) and Air Velocity (wind speed) can be used and individual readings entered into the verified online Thermal work Limit Calculator to calculate the overall TWL heat stress index result and ensure all these instruments are annually calibrated by DAC approved 3rd party.

- Self-Paced work – Workers must be allowed to adjust their work rate according to environmental conditions.
- Un-acclimatized workers – workers are defined as new workers or those who have been off work for more than 14 days due to illness or on vacation in a cool climate area.
- Light Work – sitting or standing, light arm work.
- Heavy Work – carrying, climbing, lifting, pushing, whole-body work.
- At high workloads and or thermal stress, sweat rates exceed 1.2 liters/hr. Increasing fluid intake much above this level is not practical due to gastric discomfort as the upper limit for gastric emptying and fluid absorption is 1.5 liters/hr so control solutions to improve thermal conditions should be implemented in addition to providing adequate hydration to replace sweat lost.



HEAT STRESS AT WORK
DACC (DUBAI SOUTH) Code of Practice
Document Reference No.: DACC.DS.OPS.OHSE.WRH.02.HS

4.0 RECORD KEEPING

- a) At a minimum, the following information shall be documented and records kept for a heat stress program:
- I. Details of heat stress program initiatives and activities conducted;
 - II. Details of training, information, education and awareness resources and materials communicated to employees regarding working in hot environments;
 - III. Details of heat stress related facilities and services provided to exposed employees, contractors and visitors to the workplace(s);
 - IV. Records of program evaluation such as cost effectiveness, cost benefit of interventions, comparative statistics with previous years, employee satisfaction or process evaluation; and
 - V. Records of heat stress related incidents.

5.0 REFERENCES

| NO. | DOCUMENT NAME | DOCUMENT NO. |
|-----|-------------------------------------------------------------------------------------------------------|-------------------------------------|
| 1 | Risk Management | DACC.DS-OHSERF – Regulation 2 |
| 2 | Leadership, Roles, Responsibility and Self-Regulation | DACC.DS-OHSERF – Regulation 5 |
| 3 | Competence Management, Training and Awareness | DACC.DS-OHSERF – Regulation 6 |
| 4 | Communication, Consultation and Participation | DACC.DS-OHSERF – Regulation 7 |
| 5 | Document Control and Record Management | DACC.DS-OHSERF – Regulation 8 |
| 6 | Emergency Management | DACC.DS-OHSERF – Regulation 13 |
| 7 | Incident Management | DACC.DS-OHSERF – Regulation 15 |
| 8 | Management Review | DACC.DS-OHSERF – Regulation 19 |
| 9 | Labor Law and its Amendments | Federal Law No. (8) of 1980 |
| 10 | Determination of Preventive Methods and Measures for the Protection of Workers from the Risks of Work | Ministerial Order No. (32), of 1982 |
| 11 | UAE Cabinet Decision No -13 | 2009 |
| 12 | General Work Place Amenities | DACC.DS.OPS.OHSE.WRW.01.WA |
| 13 | Safety Requirements for Lone working and or in Remote Locations | DACC. DS.OPS.OHSE.OST.14.LW |