حكومة دبي
GOVERNMENT OF DUBAI

سلطة مدينة دبي الطبية
Dubai Healthcare City Authority
القطاع التنظيمي - Regulatory

HEALTH & SAFETY COMMUNITY GUIDELINES

By Dubai Healthcare City Authority - Regulatory

Foreward

This document is published by Dubai Healthcare City, Dubai Healthcare City Authority – Regulatory, and is intended for all investors and business partners operating in DHCC to conduct their business in accordance with these guidelines. They have been designed in accordance with DHCR Rule 1, Rule 2, Rule 3, Dubai Municipality requirements, Local Order, Federal Law, International Standards and best practice. All business partners must ensure they are aware of their legal requirements and ensure compliance with the guidelines.

Objectives

These guidelines should be read in consultation with a qualified health and safety building facility manager or competent professional for a clear understanding. The result is to provide a safe and healthy environment at all times for all on the DHCC campus and the wider community.

The DHCR HSE Community Guidelines should be read in conjunction with the local policies, procedures and guidelines, together with:

- Rule 1 of 2018 Activities and Licensing
  Concerning permitted activities and licensing categories for Dubai Healthcare City.
- Rule 2 of 2016 Violations Schedule
  Related to the hygiene and maintenance standards for properties and public areas.
- Rule 3 of 2018 Violations and Penalties Schedule
  Related to clinical and commercial activities, DHCR standards for violations management enforcement, policy and procedure for violations management, Regulatory Oversight Committee

(ROC) facility committee and appeals unit operational policy, DHCR enforcement policy and DHCA Law No. 9 of 2011, and

- Any other relevant guidance.

DHCR HSE inspectors visiting the workplace will assess the organization's safety management system based on these guidelines and any other published DHCR HSE policies, procedures or guidelines released to the community.

Responsibility and Duties Under the Law

Under Dubai Municipality Local Order 61 and 32 of 1991, and codes adopted under this order, it is the duty of every employer to protect the health and safety of all employees. Under UAE Federal Law No. ٨ each employer is required to provide appropriate safety measures to protect workers against hazards. All contractors, consultants and stakeholders must also take every opportunity to revise, review and check their own HSE management systems.

Other applicable legal requirements for HSE, Fire & Life Safety (this is not an exhaustive list):

- Ministerial Order (5/1) 1981
- Ministerial Decision (6/1) 1981
- Dubai Local Order No. 61/1991
- Dubai Municipality, Code of Construction Safety Practice 1995
- UAE Fire Code 2011 etc.

Introduction

The impact for any organization arising from an accident or dangerous occurrence can have a negative impact to life and property. The outcome for an organization can have a significant impact on brand reputation, workplace productivity, and professional integrity. It is important to understand that directors and managers in an organization can be held personally responsible for failures to control health and safety in the workplace, therefore, these guidelines must be read and understood by all persons in positions of authority concerning all business partners in DHCC activities.

Aim

This guidance will help all business partners, investors, operators, and entities operating, to endeavor to avoid exposure to hazards, maintain productivity and reduce the costs arising from injuries, illness, and property and equipment damage. DHCC strives to implement world class HSE standards and practices. This should be central to how we do business each and every day.

Definitions

Accident:	An accident is an unplanned event resulting in in an injury such as a severe sprain or strain (for example, manual handling injuries), a laceration, a broken bone, concussion or unconsciousness, and even death.
Adverse event:	An adverse event is defined as an unexpected, undesirable, or potentially dangerous occurrence.
ALARP:	As low as reasonably possible
All:	Business partners, investors, contractors, service providers, and any operatives carrying out work activity on site.
Audit:	Systematic examination to determine whether activities and related results conform to planned arrangements and whether these arrangements are implemented effectively and are suitable for achieving the organization's policy and objectives.
Autoclave:	A piece of equipment that uses steam at high pressure to sterilize (clean) objects used in medical operations.
Business partner:	All business partners and investors who operate within DHCC.
Confined space:	A space where an employee can bodily enter and perform assigned work, but has limited or restricted means for entry or exit (i.e. tanks, vessels, silos, storage bins, hoppers, vaults, pits). This space is not designed for continuous employee occupancy.
Continual improvement:	Process of enhancing the HSE management system to achieve improvements in overall performances in line with the organization's HSE policy.
Controlled area:	Any area where the occupancy and access of those within the area is subject to control and supervision by the registrant for the purpose of protection from laser radiation hazards
Corrective action:	An action to eliminate the cause of a detected nonconformity.
Dangerous occurrence:	An occurrence arising from work activities in a place of work that causes or results in: • The collapse, failure, explosion, bursting, electrical short circuit discharge or overload, or malfunction of any work equipment. • The complete or partial collapse of any structure under construction or in use at a place of work.

- The uncontrolled or accidental release or escape of any chemical, fume, gas or the ignition of any substance.
- A fire involving any substance, or,
- Any unintentional ignition or explosion of explosives, as may be prescribed.

DEWAR: A vacuum flask that keeps its contents hotter or cooler than their environment without the need to modify the pressure, by interposing an evacuated region to provide thermal insulation between the contents and the environment. Examples of specialized vacuum flasks are those that hold cryogens such as liquid nitrogen or liquid helium whose boiling points are much lower than room temperature.

DHCR: Dubai Healthcare City Authority – Regulatory

Disaster: A sudden event that results in death, incapacitation, or injury to a relatively large number of persons, creating stress on organizational resources.

DCD: **Dubai Civil Defense**

DM: Dubai Municipality

Document: Information and its supporting medium. The medium can be paper, magnetic, electronic or optical computer disc, photograph or master sample, or a combination thereof.

Emergency: A sudden and usually unforeseen event that must be countered immediately to minimize the consequences.

Environment: Surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation.

Environmental aspect: Element of an organization's activities or products or services that can interact with the environment. A significant environmental aspect has or can have a significant environmental impact.

Environmental impact: Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects.

Event: Anything that constitutes an incident, unsafe act, near miss, and dangerous occurrences.

FANR: Federal Authority for Nuclear Regulation (UAE)

First aider: A person who has received training and who holds a current first-aid certificate from an organization or employer whose training and qualifications are approved by the HSE Department.

FW:	**Fire warden**
Hazard:	The potential of an activity, arrangement, circumstance or substance to cause harm or loss either by injury/illness to humans, damage to property or environment, and/or loss to process. For example, working at height is a hazardous activity, a machine without proper guards is a hazardous arrangement, insufficient light or too much noise is a hazardous circumstance, and flammable liquids or toxic chemicals are hazardous substances.
Hazard identification:	Process of recognizing that a hazard exists and defining its characteristics.
Hazardous materials:	Hazardous materials appear in various forms that can cause serious injury, long-lasting health effects, damage to property, or even death. They come in the form of explosives, flammable and combustible substances, poisons, acid or alkali chemicals, and radioactive materials.
HSE:	Health, Safety & Environment
HSE management system:	A set of interrelated elements used to establish and achieve HSE policy and objectives. An HSE management system includes organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources.
HSE objective:	Overall HSE goal, consistent with the policy that an organization sets itself to achieve
HSE performance:	Measurable results against the organization's HSE policy, objectives, targets and performance requirements.
HSE policy:	Overall intentions and direction of an organization related to its HSE performance as formally expressed by top management. It provides a framework for action and the setting of HSE objectives and targets.
HSE target:	A detailed performance requirement applicable to the organization or parts thereof, that arises from the HSE objectives.
Incident:	Any event that could have or did lead to unexpected or unintended harm, loss or damage to a patient, staff, visitor, third party, hospital property or premises.

Inspection:	The process carried out by the DHCR inspectors that involves assessing relevant documents held by the licensee, interviewing people and observing site conditions, standards and practices where work activities are carried out under the licensees. Its purpose is to secure compliance with legal requirements.
Interested party:	Individual or group concerned with, or affected by, the HSE performance of an organization.
Health and safety conditions and factors:	That which affects the well-being of employees, contractor personnel, visitors and any other person in the workplace.
Laser:	Any device that can produce or amplify electromagnetic radiation at wavelengths greater than 180 nanometers but less than one millimeter, primarily by the process of controlled stimulated emission.
Laser facility or laser installation:	A location or facility where laser systems are stored, produced, disposed of, or used for any purpose.
Laser radiation:	An electromagnetic radiation emitted from a laser system, which includes all reflected radiation, any secondary radiation, or other forms of energy resulting from the primary laser beam.
Lead aprons and coats:	Aprons to protect the wearer against scattered radiation. They are worn when the operator needs to be outside the control cubicle where they could be exposed.
Lead equivalent:	A material that is the thickness of lead and would absorb radiation to the same extent as the actual thickness of the material concerned, under specified conditions of irradiation. Lead equivalent is expressed in mm and is used as a measure of the protective properties of shielding materials.
Lead glass:	A glass that contains a high proportion of lead compounds and thus has a relatively high absorption of x-rays (that is relatively high lead equivalent for a given thickness), although transparent to light. It is commonly used in the upper portion of radiation shields forming part of the control area of a general x-ray room.
Lead gloves:	Gloves made from lead rubber, which protect the operator's hands from direct x-rays.
Lifting operation:	An operation concerned with the lifting or lowering of a load,
Mechanical handling	

equipment (MHE):	Any vehicle, truck, sling, hoist, etc. used to aid moving tasks.
Near miss:	An incident, which could have but did not result in harm, loss or damage to a patient, staff, visitor, third party, hospital property or premises.
Organization:	Company, corporation, firm, enterprise, authority or institution, or part or combination thereof, whether incorporated or not, public or private, that has its own functions and administration within DHCC.
Personal protective equipment:	Specialized clothing or equipment worn by employees for protection against health and safety hazards. Designed to protect many parts of the body, i.e., eyes, head, face, hands, feet, and ears.
Prevention of pollution:	Use of processes, practices, techniques, materials, products, services, or energy to avoid, reduce or control (separately or in combination) the creation, emission or discharge of any type of pollutant or waste. Examples include efficient use of resources, material and energy substitution, reuse, recovery, recycling, reclamation and treatment.
Preventive action:	Identification and actions to eliminate the cause of a potential non-conformity.
Procedure:	Specified way to carry out an activity or a process. Procedures can be documented in electronic or paper form.
Protective apron:	An apron of radiation-absorbing materials, at least 0.25 millimeter lead equivalent, used to reduce exposure from leakage and scatter radiation.
Record:	A document stating results achieved, or providing evidence of activities performed. Records may be in paper or electronic forms.
Risk:	The chance of something happening that will have an impact on the achievement of organizational stated objectives and the likelihood that a specified undesired event will occur due to the realization of a hazard by, or during, work activities. A risk always has two elements—the likelihood that a hazardous event may occur, and the consequences of the hazardous event.
Risk assessment:	The process of identification of hazards and the qualifying of the risk of harm that such hazards might cause.
SR:	Safety representatives
Tolerable risk:	Risk that has been reduced to a level that can be endured by the organization having regard to its legal obligation.
Violation:	An action that breaks or acts against laws, regulation, policies or circulars as defined and listed in this standard.

Policy Statement

Dubai Healthcare City aspires to be an internationally recognized location of choice for quality healthcare and an integrated center of excellence for clinical and wellness services, medical education and research.

Dubai Healthcare City (hereinafter referred to as DHCC) is committed to the highest Health, Safety and Environment (HSE) standards and it is the policy of Dubai Healthcare City Authority – Regulatory (DHCR), the regulator of the DHCC free zone, to promote standards of health and safety, and welfare of all employees, including temporary employees, business partners, service providers, contractors (all) and anyone affected by any activities across the DHCC Community. They ensure best practice methods of compliance with the Federal Law and all other national legislation are strictly followed.

Through positive engagement, DHCR strives to guide all members of the DHCC Community on prevention strategies of occupational health, injuries and occupational illness; act as an oversight advisor regarding behavioral-based safety, and aid in developing a supportive culture.

Effective application of a safety management system will depend on the committed engagement by all operating within DHCC and their employees to align strategic business planning and decision-making processes with the regulatory standards. DHCR HSE regulatory function guides business partners as follows:

- Must ensure a safe place of work, including safe access and egress.
- Must provide a safe plant and equipment, articles and substances.
- Must demonstrate a safe system of work.
- Must provide welfare and hygienic facilities.
- Must deliver appropriate HSE information, instruction, training and supervision.
- Must demonstrate appropriate preventative and protective measures for all HSE risks.
- Must establish robust general principles of prevention for any potential HSE hazard.
- Must provide vigorous provisions for emergency plans, procedures and preparedness.
- Must report in a timely manner all accidents and dangerous occurrences to DHCR, HSE Department.

The application of a safety management system by all must ensure the following application:

Objectives:	Business partners and investors have an established HSE framework to ensure the objectives are fully achieved.
Communication:	Consultation and communication of HSE matters.
Hazard identification:	Details of safety arrangements for site work activities are established with site-specific risk assessments, and appropriate controls are in place.

Risk assessments:	All relevant fire and life safety documentation will be maintained individually, by all.
Training:	HSE provision for mandatory training and education awareness, ensuring full engagement to promote HSE awareness.
Projects:	All new projects or activities take full account of DHCR HSE requirements.
Reasonableness:	All personnel operating in DHCC must share an equal, individual, and professional responsibility and have a legal duty to take reasonable care for their own safety, health and welfare and that of other persons who may be affected by their and/or the organization's acts or omissions at work.
Full engagement:	The application of the HSE policy requires full co-operation.
Accountability:	Promote HSE awareness in DHCC Community through corporate social and legal responsibility applicable to all operating within the community.
Non-conformance:	Adherence to DHCR safety policies and procedures is a requirement and willful negligence may result in a violation.
Audit & review:	Safety and management systems of all facilities will be reviewed.

The DHCR HSE policy is communicated and applicable to all operating in delivery of any activity in DHCC and it is the legal duty for all to ensure compliance with this policy.

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Standard: 1.1	**Roles & Responsibilities**
Standard Requirements	All must have a structured program to ensure there are competent personnel specifically assigned to manage the health, safety, environment, and fire and life safety function regarding any site activity.

- The personnel involved in HSE must have clarity on what their assigned HSE duties are, functions, and/or scope of work.

- The personnel and anyone actively involved in the function of HSE must ensure there is a program to convene, consult, communicate and engage in HSE forums, meetings, and committees, with all relevant personnel, to drive a robust safety management system for the organization.
- The personnel involved in HSE must ensure they have adequate training and are competent to carry out the task. There should be an education and awareness program for HSE training for the appropriate personnel, relevant to their work activity.
- The HSE assigned personnel team must drive a safe system of work to ensure periodic HSE activities are executed to ensure familiarization for all staff regarding the safety management system within their work practices.
- The HSE personnel and key stakeholders should ensure HSE inspections, audits and site follow ups are conducted to ensure that all incidents involving harm or damage are reported internally and investigated thoroughly.

The specific obligations of employees are as follows:

- Minimum standards for occupational health should be adopted.
- Take reasonable care of their own safety, health and welfare, and that of others.

- Ensure they are not under the influence of an intoxicant to the extent that they may endanger themselves or others.
- Cooperate with their employer or any other person.
- Not engage in improper conduct or behavior.
- Attend all necessary HSE training, when assigned.
- Use safety equipment or clothing provided or other items provided for their safety, health and welfare at work.
- Follow and incorporate safety instruction as guided.
- Assist in effective communication.
- Assist, cooperate and engage in developing HSE awareness.
- Familiarize with the safe work practices as provided.
- Keep fully informed of safe work practices.

Employees must not:

- Interfere with, misuse or damage any property.
- Place anyone at risk in connection with work activities.
- Intentionally or recklessly interfere with any property.
- Remove or alter any health and safety records.
- Never obstruct an emergency exit or interfere with emergency/safety signposting, emergency lighting and fire extinguishing equipment.

Standard: 1.2	**Safety Representative (SR)**
Standard Requirements	Every business entity shall appoint one full-time safety representative or safety personnel to manage the health and safety of the workplace, where an organization employs in excess of 50 persons. However, for an organization with less than 50 employees, there is a requirement for a nominated personnel to manage safety. The duties of the safety personnel (SR) shall include, but is not limited to: • Inspection of all workplaces and the promotion of safe conduct of work. • Occupational health and safety hazard control measures. • Environmental impact identification and control measures. • Maintenance of first-aid facilities and safety equipment. • Reporting incidents/accidents, investigating and maintaining records. • Appropriate safety training (in accordance with legislation). • Maintain a register of chemical materials supported by safety data sheets. • Reviewing the emergency preparedness. • Possesses an adequate knowledge of English.

Standard: 1.3	Fire Warden FW
Standard Requirements	Fire wardens oversee the fire protection and detection systems and are champions in the delivery of a fire safety system. There must be sufficient representation of staff to manage the fire safety systems in each place of work to provide the maximum level of fire and life safety to prevent and manage a potential fire within the workplace. The DHCR HSE Fire and Life Safety Preparedness Guidelines must be referred to for the number of FW required. • All building occupants must ensure that building owners or facilities teams who manage the fire systems and building design are properly constructed, serviced and maintained with robust fire protection systems that detect and suppress fires and alert occupants. • The human interface with the fire protection, fire detection, fire prevention and evacuation procedures are all equally critical to ensure the correct provision of an acceptable level of life safety, and all business partners must ensure the systems are effective to protect fire and life safety. • All building occupants/staff must be aware of the evacuation alarm sounders, where the exits are, and the proper response during an emergency. Emergency plans and workplace fire drills address the human element in the protection of lives in the event of a fire. Evacuation drills provide learning experiences for occupants and staff for a variety of emergency conditions including fire, hazardous materials spills, bomb threats, earthquakes and building system failures. Primary duty of a fire warden is to ensure and co-ordinate evacuation of the part of a building as follows (only where safe to do so): • Ensure that the fire alarm is raised and security and appropriate building personnel are contacted. • Coordinate and assist with the fire drills and evacuation. • Check all areas for occupants e.g. rooms, toilets and store rooms within their designated area. • Encourage people to leave the building by the nearest available exit in an orderly manner and direct people to the appropriate assembly point. • Close doors and windows to help isolate and contain the fire. • Stay calm and reassure occupants of the procedures. • Report any other problems associated with the evacuation process to the senior person present (facility manager/Dubai Civil Defense). • Assist staff in manning external exits to prevent unauthorised re-entry until a decision is made that the building is safe to return to.

- May have other duties related to your working practices and environments.
- Must not put themselves at risk in carrying out their duties.
- Must be familiar with all escape routes and evacuation plans.

FW Proactive Planning

- Familiarize yourself with building, floor layout, other fire wardens on your floor and the building.
- Coordinate with other business partners' fire wardens about specific assembly point usage.
- Establish a plan for inspecting your assigned business unit and floor(s).
- Review the emergency management plan, available resources and brief staff.
- Identify hazards in the workplace, record and report the observations internally for corrective action.
- Identify and plan an evacuation process for disabled persons.
- Fire warden must attend emergency preparedness training (fire life safety training).
- Conduct departmental/operational fire risk assessment and review.

Emergency Functions

On sounding of the building evacuation alarm, the floor fire wardens/fire first responders shall (only where safe to do so):

- Fire warden must don a retroreflective yellow jacket.
- In the event of a fire emergency, a fire responder may have already attended the scene with sufficient fire extinguishing equipment (accompanied by a buddy) and evaluated the emergency before attempting to fight a fire (only if adequately trained).
- If the fire emergency responder has any doubt in relation to the magnitude of the fire and the risks posed, they are not required to fight the fire and never tackle a fire alone.
- The fire emergency responder must communicate and inform the fire warden of the actions taken and the location of the fire emergency.
- If the fire emergency responder decides to evacuate, they must leave the area and check there are no other occupants in the area, if safe to do so, and close doors and windows on the way out.
- The fire warden will enter each accessible room, including toilets and direct occupants to leave the building, where it is safe to do so.
- All staff must not open doors which have hot handles or smoke coming from under the door.
- Report to the building facilities team/security the state of evacuation of their

floor/unit and provide the total head count of the organization, details of the location, severity and cause of the incident, if known.

- Encourage all from re-entering the building.
- If an emergency is confirmed, the fire warden must liaise with the building facilities/building security and relocate all to the assembly point.
- Fire warden must manage the crowd on the exterior of the building to prevent access obstructions for the DCD emergency response.
- Ensure no one re-enters the building premise till the all clear signal is given from Dubai Civil Defense or the building facilities manager.
- Where there are number of fire wardens within an organization or building, they must coordinate with each other.

Standard: 1.4	**Training**
Standard Requirements	All business partners have a legal obligation to all their staff/contractors to have the appropriate HSE training and be competent in carrying out their tasks safely. An example of mandatory HSE education and training (this is not an exhaustive list): • Orientation • Emergency preparedness • Fire safety • Health and safety tool box talks • Manual handling • Waste • Chemical • Ionizing and non-ionizing radiation • Risk assessment • Medical gas NB: The business partner must keep evidence of training activities and attendees, which shall be documented, maintained, and available for auditing purposes by DHCR. • A competent person can best be considered someone who has the skills, knowledge, attitude, training, and experience to perform a task safely. • It is recommended as best practice that all new employees are inducted about fire, and health and safety awareness for the organization and building they work for and within. • It is advisable that all employees have job descriptions which clearly define HSE competence requirements in terms of education, experience, and training needs to perform that job function safely, prior to work placement and whenever there is a change in job profile. • It is advisable that all operating within DHCC have a training matrix with a schedule

of courses to ensure compliance with fire and health and safety legislative requirements. All training must be recorded with evidence of a training plan, schedules, material, training attendance, and competency. After completion of an external training course, retention of training certification must be held on personnel file.

Evaluation of effectiveness of training

The effectiveness of training will be evaluated by testing the candidate's ability to meet the set training objectives. The effectiveness is evaluated based on following one or more methods. For example:

- Test after attending the program.
- Evaluation after three months from the date of trainin to ensure the topic is implemented and understood by the trainee.

At the end of each year, it is advisable that management initiates a performance evaluation of all personnel and the assessment is based on the following criteria:

- Company's objectives
- Achievement of specific tasks
- Roles, responsibilities and accountabilities
- Completion of assignments safely

Standard: 1.5	**First-Aiders**
Standard Requirements	First-aiders engage in proactive risk management first-aid post an event. First aid is immediate and temporary treatment is applied, following an incident or sudden illness before the service of a physician can be secured. First-aid is prompt attention given to injuries such as cuts, scratches, bruises and burns which are usually minor in nature. The business partner shall ensure that their organization has the appropriate safety provisions for a first-aid service in the area, including the number of designated first-aiders required, provision of first-aid kits and first-aid training. Adherence to the DHCR HSE First-Aid Policy is required. The business partner will ensure there are trained personnel that will be designated to provide basic first-aid services. These designated first-aiders will be in possession of a first-aid certificate (if they are not qualified healthcare professionals). They will participate as an active member of emergency preparedness teams, as and when required.

Standard: 16	**Document Control/Evidence**
Standard Requirements	All documents and data containing information critical to the operation of the HSE and fire life safety performance must be retained; the information must provide details of the business partners HSE activities, and be readily available for inspection, audit and evaluation.

Chapter 2	**Standard 2: Risk Management**	
	Standard 2.1	**Incident Reporting**
	Standard 2.2	**Risk Management**
	Standard 2.3	**Risk Assessment**

Standard: 2.1	**Incident Reporting**
Standard Requirements	In order to learn lessons from adverse events, incidents and near misses, DHCC aims to ensure the reporting of any event which has potential for unintended or unexpected physical or psychological injury, disease, disability or death of a staff member or visitor. When things do go wrong, it is now widely accepted that the response should not be one of blame and retribution, but of learning, with an overarching aim to minimize risk. Every business partner, including all contractors working on behalf of, or for the business partner, should strictly adhere to this DHCR Incident Reporting Policy, only in relation to occupational health and safety related events. The business partner shall ensure the following: • An incident report register shall be maintained • Report incidents on the DHCR HSE on-line incident reporting system • All minor or major incidents shall be registered • All major accidents resulting in harm shall be reported to the DHCR HSE Department, excluding patient safety events which occurred during the delivery of care The business partner concerning all incidents must be recorded and accessible for review by DHCR HSE, to include any contractor's events.

The records must be retained for a minimum of three years, as follows:

- Reportable deaths/harm/injury event arising out of, or in connection with work.
- Reportable occupational diseases (lung disease, asthma, contact dermatitis, skin disorders arising from sun exposure, and/or carpal tunnel syndrome, which occurs when the person's work involves regular use of percussive or vibrating tools; tendon injuries).

The business partner must notify DHCR HSE Department of an adverse event with a report, within 24-hours post-occurrence. For any patient safety related sentinel events, please refer to DHCR Sentinel Event Policy.

Standard: 2.2	**Risk Management**
Standard Requirements	Risk management process, the management of occupational health, safety and environment risk is a key component in the safety management system within an organization. The risk management process is the systematic application of management policies, procedures and practices that determine the approach for communicating, identifying, assessing, monitoring and reviewing risks. It is a step-by-step approach that leads the user through assessment of the activities they undertake and identification of risks. The aim of risk assessment is to identify potential sources of harm and loss and put in place adequate controls or preventive measures before they result in an accident or illness. Implementation of a system, where possible, to prevent harm and conduct activities in such a way as to ensure that all on campus are not exposed to unnecessary hazards through the provision and maintenance of equipment and premises which are safe and without unnecessary risks to health and safety. Steps to risk assessment There are three basic steps to risk assessment: 1. Identify the hazard 2. Identify the level of risk for each hazard 3. Identify the controls

Identify the hazards

Identify the level of risk for each hazard (i.e. the chance/likelihood of harm occurring, coupled with how severe the harm or ill health could be). Decide who could be harmed and how, and give consideration to vulnerable groups (e.g. young persons, the elderly, pregnant employees, shift workers etc.).

Assessment of risk

Risk represents more than the mere existence of a hazard – it should take account of the likely scale of consequences, the frequency, duration and the extent of hazard exposure, the probability that an unwanted/undesired event will occur, and the time scale over which consequences might be manifested and probabilities assigned. Identify the controls or improvements that need to be put in place to avoid or reduce the risk.

Mitigation/eliminating risk - control measures

Once a hazard has been identified and the risk has been assessed, necessary arrangements are made to either eliminate/mitigate. Control measures are designed to reduce the risk to a tolerable level; i.e. the risk is reduced to the lowest level as far as is reasonably practicable.

In controlling the risk, the hierarchy of controls should be taken into consideration

- Remove
  Eliminate the risk
- Replace
  Substitute the risk
- Restrict
  Isolate the risk
- Guard
  Engineering
- Administrative
  Standard Operating Procedure
- Protect
  Personal Protective Equipment

The business partners shall ensure compliance and reference to the DHCR HSE Risk Management Policy.

Standard: 2.3	**Risk Assessment**
Standard Requirements	The aim of risk assessment is to prevent loss, whether due to personal injury or property damage). The business partners shall ensure compliance and reference to the DHCR HSE Risk Management Policy for all occupational health and safety related risk assessments. The objective is to: • Identify all the factors which may cause harm. • Consider the likelihood of that harm actually befalling anyone. • Plan, introduce and monitor measures to ensure that the risks are adequately eliminated or controlled at all times. Business partners are advised to develop risk assessment for all activities and communicate the same to the concerned employees. The review of risk assessment needs to be done immediately after an incident or introduction of new hazards, and the findings need to be documented and reviewed periodically. For effective risk control: • To identify the magnitude of risk associated with the task/area/person • To help identify how good the control measures are • To prioritize action • To take reasonably practicable action • To stop/reduce injury and loss • To comply with legislation Hazard A hazard is commonly defined as "something with the *potential* to cause harm." Through hazard identification, it is possible to establish whether or not the risks that exist are acceptable or not. The presence of hazards and a given level of risk may not be a cause for immediate concern, however, some situations may exist or arise where there is a danger of loss. There are four main types of hazards: 1. Physical 2. Psychosocial 3. Biological 4. Chemical Hazard Management

The business partners shall identify risk, minimize and control occupational hazards within the work environment. Occupational hazards shall include, but are not limited to:

- Biological/infectious hazards

  Bacteria, viruses, fungi or parasites
- Chemical hazards

  Toxins and/or gases
- Mechanical hazards

  Injuries, accidents, strains
- Physical hazards

  Radiation, electricity, extreme temperature, etc.
- Human/psychological hazards

  Associated with work environment, stress and/or emotional strain.
- Fire Hazards

Some business partners have unique hazards and details of special control procedures will be reviewed locally and incorporated in their local risk assessments. Each of the above hazard categories will be required to be broken down into sub-categories.

Stages of risk assessment:

- Identify the hazard and risks
- Identify those people affected (e.g. employees, members of the public, visitors, etc., as well as those that may specifically be at risk, e.g. women of childbearing age, young workers, etc.).
- Identify the likelihood of occurrence
- Identify the degree of severity
- Identify any existing preventive and/or protective measures
- Decide upon the effectiveness of preventive and protective measures.
- Give a risk rating
- Prioritize for reasonably practicable action (take short, medium and long-term action as it becomes reasonably practicable).
- Record the assessment
- Monitor and review/reassess

Risk Matrix

The business partners shall ensure compliance and reference to the DHCR HSE Risk Management Policy. An extract from policy is shown below:

RISK MATRIX 5 X 5 RISK RATING MATRIX TOOL							
Low Risk	Green = 0 - 5	Severity of the potential injury/damage					
Moderate Risk	Amber = 6 - 10						
Major/Extreme	Red = 11 - 24						
Sentinel Event	Purple = 25	Negligible (1)	Minor (2)	Moderate (3)	Major (4)	Extreme (5)	Risk Rating
Likelihood of the hazard happening	Almost Certain (5)	5	10	15	20	25	Sentinel
	Likely (4)	4	8	12	16	24	High
	Possible (3)	3	6	9	12	15	Medium
	Unlikely (2)	2	4	6	8	10	
	Rare/Remote (1)	1	2	3	4	5	Low

Chapter 3	**Standard 3: Dangerous Goods**	
	Standard 3.1	**Chemicals**
	Standard 3.2	**Medical Gas**

Standard: 3.1	**Chemicals**
Standard Requirements	The business partners must ensure the following:

- Safety data sheets (SDS) shall be kept for all chemicals. This also includes soaps, detergents, and disinfectants
- All chemicals must be stored in a locked facility
- Chemicals shall be handled and stored according to the SDS. All the hazardous chemicals should be stored in a manner to protect from weather conditions with

adequate spill collection, ventilation, separation and fire protection

- Any corrosive/flammable/toxic products shall be maintained in a controlled environment
- There must be 'No smoking' signs or warning notices displayed beside chemical storage with the hazard associated symbol

Hazardous chemicals

It is prohibited to dispose of chemicals or other hazardous toxic waste, corrosive chemical waste or their empty cans into ordinary skips. It is the business partners' responsibility to adhere to DHCR HSE Waste Guidelines.

Safety precautions in the safe use of chemicals

- Access to chemical storage area to be restricted only for authorized personnel.
- Only trained and authorized persons to be permitted to work with flammable materials.
- Clearly label all bottles, cartons and containers to identify contents and any potentially hazardous effects.
- Delegate a responsible person to control chemicals and supervise use of radio-active materials.
- Ensure spark/flame-proof electrical fittings are provided in the storage areas.
- Material safety data sheets (MSDS) have to be maintained for each product identified, reviewed and updated annually, and stored in a readily-accessible and labeled location.
- Care is to be taken to ensure that there is no spillage of toxic industrial waste during handling, storage and transportation. If there is any spillage, it should be cleaned up immediately in adherence to DHCR HSE Biological Spill Procedure and DHCR HSE Hazardous Material Guidance.
- Hazardous wastes must be stored only in specified/designated areas, with a sign worded Hazardous Waste Area or similar, and by other appropriate means (i.e., marking on the floor or countertop). The area shall be kept off-limits to anyone but authorized personnel and should be capable of being secured (locked).
- Hazardous wastes shall be collected only in containers appropriate to the waste material, and segregated by compatibility. The containers must be kept closed, stored on an impervious surface to prevent reaction or physical damage, and secondary containment precautions must be used. It is acceptable to transfer waste from the point of generation to the storage containers with another, smaller container designated solely for that purpose.
- All hazardous wastes to be disposed as per the legal, municipal and local authority.
- Flammable liquids such as petrol and diesel must be stored in approved non-combustible rooms with a sump (oil pan) of sufficient volume to contain any

spillage.

- Storage facilities should be purpose built and kept away from any sources of fire.
- Adequate control should be in place to ensure safe handling of all chemicals.

Standard: 3.2	**Medical Gas**
Standard Requirements	The business partner shall ensure appropriate mechanisms are used for safeguarding patient, staff, visitors, and property by promoting safe practices in the receipts, storage, handling, and use of compressed gas cylinders. The business partner shall ensure that personnel involved in use and transport of compressed gas cylinders are trained in proper handling of cylinders, supports and cylinder-valve-protective caps. The Business partners shall ensure compliance and reference to the DHCR Medical Equipment and Management Guidelines. Examples of gases and/or combination of gases used in DHCC: • Carbon dioxide/nitrogen • Carbon dioxide/oxygen/nitrogen • Carbon dioxide/air • Industrial grade oxygen • Nitrous oxide • Medical air • Liquid nitrogen • Ethylene oxide 100% • Acetylene • Chlorine • Freon The business partner shall ensure cylinder contents are identified by labels in English, naming the component(s), giving their proportions and with appropriate cylinder color-coding. All cylinders stored and in-use shall display a label with an 'Empty/In-Use/Full' status condition. Storage of Medical Gas Cylinders The business partner shall ensure the following safety conditions are observed with regard to compressed gas cylinder storage: • Storage rooms must be dry, cool and well ventilated and maintained below 35°C. • Storage area is secured to prevent tampering • No smoking signs are posted and clearly visible to show the presence of compressed

gas cylinders.

- Compressed gas cylinders are kept away from radiators, steam pipes, direct sunlight and other sources of heat.
- No flammable gases or liquids stored with oxygen and nitrous oxide.
- Oxygen and nitrous oxide cylinders are stored at least 20 feet away from any combustible materials such as paper, cardboard, plastics and fabrics.
- Cylinders are secured, upright and properly chained or supported by a metal strap on cylinder storage racks/stands/carts.
- Large cylinders not stored on racks shall be stored upright (nitrous oxide excepted) and secured.
- Nitrous oxide cylinders shall be stored horizontally.
- Compressed gas cylinders must be capped when not in use or when not connected to the delivery system.
- Wrappers shall be removed from cylinders prior to storage.
- Empty cylinders shall be segregated from full cylinders.
- Valves shall be closed and capped on all cylinders in storage.
- All empty cylinders must be discarded appropriately and immediately, and used for no other purpose.
- The room where liquid N2 (more than 70L) is kept shall be equipped with O۲ level sensors.
- Cylinder carts must be used for transporting cylinders.
- No rolling or dragging of cylinders shall be permitted.
- Use of oil/grease/lubricants on cylinder valves, regulators or fittings is prohibited.
- Do not attempt to repair damaged cylinders or to force frozen cylinder valves.
- Storage locations are shown on emergency evacuation.
- Cylinders should be stored in definitely assigned places away from elevators, stairs, or gangways.
- Assigned storage spaces shall be located where cylinders will not be knocked over or damaged by passing or falling objects, or subject to tampering by unauthorized persons.
- Cylinders shall not be kept in unventilated enclosures such as lockers and cupboards.

Handling medical gas cylinders

The business partner shall ensure the following safety conditions are observed with regard to compressed gas cylinder handling and use:

- Cylinders in use must be secured in an approved manner.
- Equipment designed for one gas should not be utilized for another.

- Regulators should be off as the cylinder is turned on and the cylinder valve is opened slowly.
- Regulators and hoses should never be interchanged between materials without the gas supplier's approval.
- Compressed Gas Association (CGA) approved fittings only shall be used.
- Before equipment is disconnected from a cylinder, the cylinder valve should be closed and pressure released from the device.
- Trans-filling of cylinders is hazardous and shall not be done.
- Cylinders must not be lifted by the cap.
- Cylinders must not be knocked or bumped together.
- Never lubricate valve outlets or connecting equipment.
- Replace cap on empty cylinders and ensure cylinder status label indicates 'empty'.
- Position cylinders so that the label is clearly visible.
- Check the label and color code of the compressed gas cylinder before use.
- No source of open flame is permitted in areas where compressed gas cylinders are in use.
- Equipment designated for use with a specific gas must be clearly and permanently labeled accordingly.
- Cylinder carts must be self-supporting, designed with appropriate casters and wheels, serviceable clamping or cylinder storage devices. The appropriate cart must be used at all times when full and empty cylinders are transported.

Handling of Oxygen

The business partner shall ensure the following safety conditions are observed with regard to use of oxygen:

- When oxygen is in use, fire and safety sign/labels shall be clearly displayed.
- Ensure cylinders are secure on a rack and never hang anything on a cylinder.
- Safety relief mechanisms, non-interchangeable connections and other safety features shall not be removed or altered.
- Do not use wool or nylon inside the oxygen tent as they may cause sparks.
- Control valves on equipment must be closed before connections/disconnections are made and when the cylinder is not in use.

Handling of Oxygen-ethylene oxide (ETO)

The business partner shall ensure the following safety conditions are observed with regard to the use of ETO:

- Cylinders should not be stored outdoors in direct sunlight.
- A wrench or other leverage device should not be used to tighten if a leakage is

discovered. Instead, remove the leaking cylinder to open air (if safely practicable) and notify emergency services.

- The storage of ETO cylinder(s) should be segregated from other cylinder sources.
- Appropriate signage for the cylinder.
- Employees are trained in the safe management of cylinders and systems using ETO and the training records are retained.

Handling of Liquid Nitrogen and Other Cryogenic Material

The following precautionary handling measures listed below should be applied for business partners using liquid nitrogen or other cryogenic liquids to minimize the risk involved:

- Liquid nitrogen should never be used except in a well-ventilated area. This is especially true when filling a warm container or transfer tube or inserting a warm object, as large volumes of nitrogen gas is involved. (The safe volume of liquid nitrogen stored or used in any enclosed space is described later.)
- The dispensing of liquid nitrogen from the supply tank may be carried out only by those trained to do so and decanting should ideally be avoided.
- Only containers or fittings (i.e. pipes, tongs) that have been designed specifically for use with cryogenic liquids may be used as non-specialized equipment may crack or fail. In particular, food type vacuum flasks must not be used as they can implode resulting in flying glass fragments.
- All glass dewars must be protected against the possibility of flying glass fragments, arising from failure by mechanical or temperature stress damage, by sealing all exposed glass either in an insulated metal can or by wrapping with adhesive tape.
- Warm dewars should be filled slowly to reduce temperature shock effects and to minimize splashing. Storage dewars should not be over-pressured when filling a globular dewar. The minimum pressure required to maintain a flow of liquid should be used.
- Containers of liquid nitrogen must be suitably vented and unlikely to be blocked due to ice formation.
- Care must be taken to avoid the formation of liquid oxygen in cold-traps that are open to air, or the increase of liquid oxygen content in a flask of liquid nitrogen that has been cold for a long period (liquid oxygen has a blue water-like appearance).
- Solid carbon dioxide (dry ice) should be considered as an alternative coolant in situations where liquid oxygen could accumulate. However, most liquid nitrogen containers are closed except for a small neck area and the nitrogen vapor issuing from the surface forms a barrier that keeps air away from the liquid, thus preventing oxygen contamination.

- Skin contact with either liquid nitrogen or items cooled by liquid nitrogen should be avoided as serious burns may occur. Care must be taken with gloves, wrist-bands or bracelets which may trap liquid nitrogen close to the skin.
- Personal protective equipment (especially safety glasses) must be worn to protect against splashes, freezing vapor, failure of glass apparatus or brittle failure of items cooled by liquid nitrogen.

Personal Protective Equipment: Liquid Nitrogen

The following equipment should be worn when handling or dispensing liquid nitrogen:

- Face shield or safety glasses
- Dry insulated gloves when handling equipment that have been in contact with the liquid. If gloves are worn they should be loose fitting and easily removed.
- Lab coat or overalls are advisable to minimize skin contact and also trousers over shoe/boot tops to prevent shoes filling in the event of a spillage.
- If gloves are worn they should be loose fitting and easily removed.

Hazards of Oxygen Depletion/asphyxiation

Liquid nitrogen should normally be used only in a well-ventilated area. However, there may be occasions (i.e. transport of dewars in lifts) when this may not be possible. To avoid the danger of oxygen depletion, the following should be noted:

- Safe limit in an unventilated space: Calculate the room volume in m³ and the max volume of nitrogen in m3 (this can be found from the volume of liquid in liters x0.7). If the volume of nitrogen amounts to >0.15 of the room volume, special precautions or ventilation are required.
- Spillage during filling: During filling assume that 10% of the final volume may be spilled.
- Loss during storage: The boil off loss from a 0l dewar is expected to be 0.2l per day.
- Transport of liquid nitrogen in lifts: To avoid possible risks from nitrogen boil off during a prolonged period of lift breakdown, for example, dewars of liquid nitrogen must not be accompanied in lifts. Rather, two people should be used to transport the dewars - one to load and one to receive at the destination floor. To prevent others from entering the lift, the fitted straps should be pulled across the entrance.

Liquid Nitrogen Training

Formal training is required before using the liquid nitrogen dispensing facility. All

personnel handling liquid nitrogen should receive instruction in its use from the experienced personnel prior to the handling of liquid nitrogen.

Liquid Nitrogen Risk Assessment

There remains a significant risk in using liquid nitrogen from inadvertent condensation of oxygen into a closed system. It is therefore recommended that whenever possible some other coolant is used e.g. solid carbon dioxide/liquid traps or baths – the preferred liquids for such baths are isopropanol or glycols. It is recommended that such baths be used in preference to liquid nitrogen when long-term storage is envisaged.

Compressed gas cylinders (CGC)

- CGC are operated and handled only by personnel who have been instructed in proper procedures for their use and in the hazards involved.
- No cylinders are received without protective guards or caps for the valve assemblies.
- All cylinders are protected against direct sunlight.
- Cylinders are always stored in an upright position and secured.

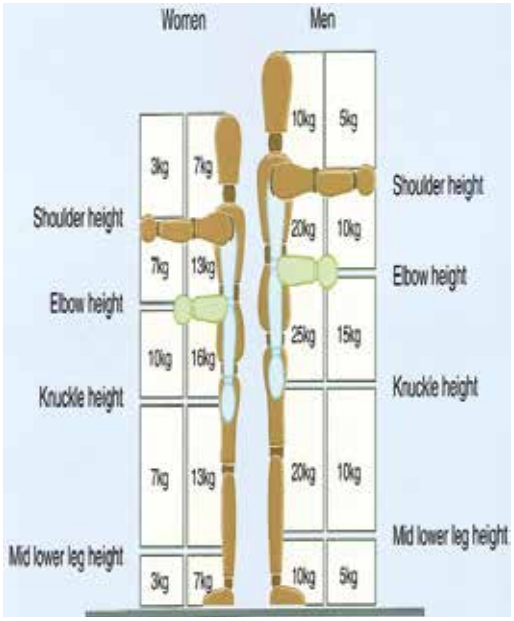
Liquefied petroleum gas cylinders

- LPG cylinders are stored in a well-ventilated, covered area and protected from direct sun light.
- LPG storage area is free from combustible material such as plastic sheets, cardboard, paper, etc.
- 'No smoking' signs are exhibited in the LPG store area.
- Cylinders are kept in an upright position and secured with tying ropes or chains to prevent them from falling.
- No naked flame allowed in the premises where LPG cylinders are stored.

Chapter 4	**Standard 4: Dangerous Goods**	
	Standard 4.1	**Manual Handling**
	Standard 4.2	**Lifting Equipment/Hoists**
	Standard 4.3	**Ergonomics**
	Standard 4.4	**Visual Display Units**

Standard: 4.1	**Manual Handling**
Standard Requirements	Manual handling operations is the transporting or supporting of a load, including the lifting, putting down, pushing, and pulling, carrying or moving by hand or by bodily force.

- It is interesting to note that 31.۴ million working days are lost due to work-related ill health and non-fatal workplace injuries, according to a UK statistic for 2016/17.
- Most manual handling injuries are cumulative. Back injuries are a common workplace problem as many people in office environments need to move boxes or other objects around. However, most back injuries can be prevented, so it is important to be aware of good manual handling techniques. A damaged back can lead to long-term problems.
- Symptoms from manual handling injuries can vary from mild aches and pains to severe swelling and inflammation that can result in the injured person being unable to carry out their work or lead a normal life.
- It is important to note, that it is not just the weight of an object that poses a risk. Any object picked up awkwardly can cause back strain/damage, for example removing a file or folder from a high shelf or moving a stack of paper around the office.



- Prior to carrying out any manual handling task, an assessment must be carried out by all personnel, using TILE

  (T)ask

  The job that needs to be done

  (I)ndividual

  The person carrying out the task

  (L)oad

  The item/patient to be moved

  (E)nvironment

  The area in which the task is taking place

- When assessing the task, the employee should consider if it involves:

  Holding loads away from the body

  Carrying them a long distance

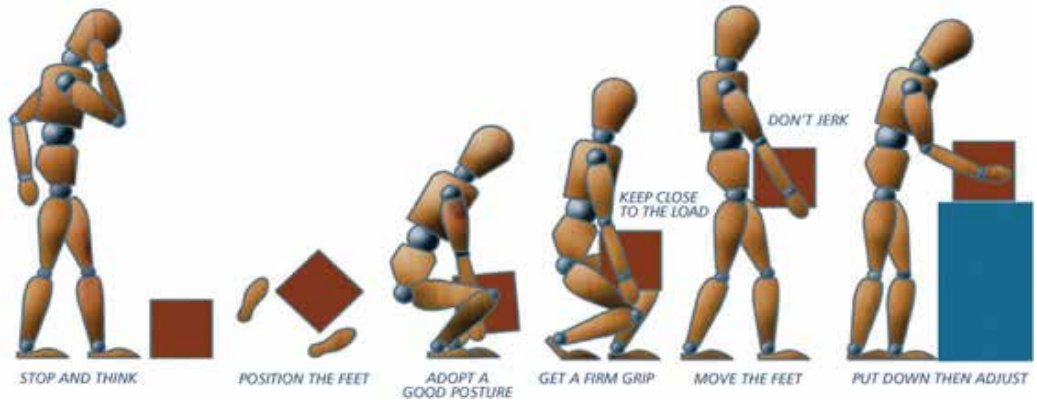
  Twisting, stooping, poor posture

  Sudden movement

Is it repetitive

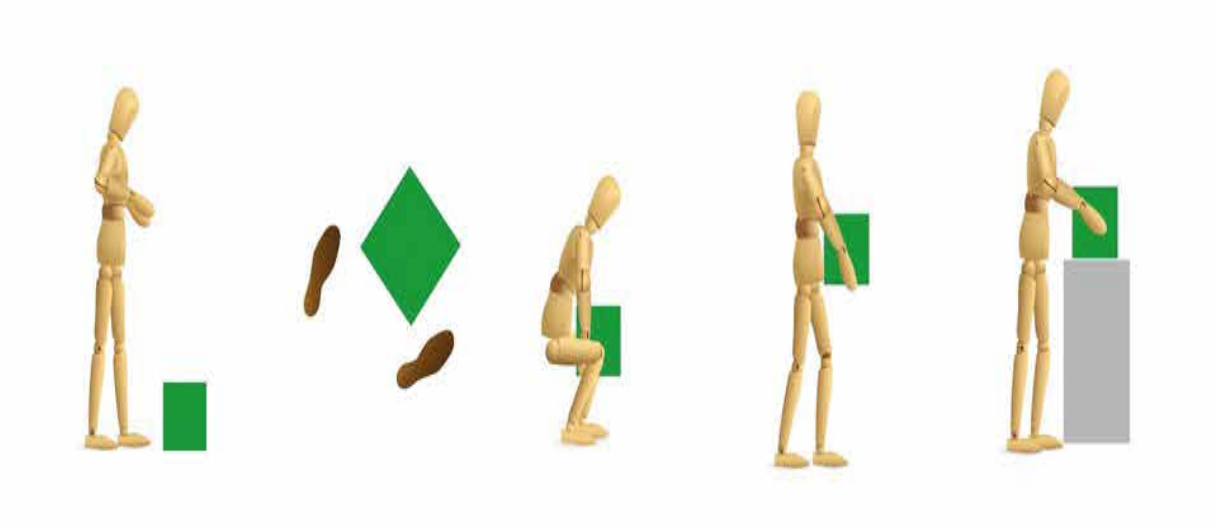
Safe Manual Handling Techniques

- Do you need to lift it?
- Is there any mechanical lifting equipment that a trained person can use to lift the object?
- Can the load be split?
- Do you know how heavy it is or if it has an unusual center of gravity?
- Lift one corner carefully to get an idea of its weight, and rock it gently to check its center of gravity.
- Clear the route first: Ensure a clear space to put the load down, open the doors or get someone to hold it open, or prop it open temporarily.



Lifting posture

- Stand close to the load with your feet apart and your balance even.
- Place one foot in front of the other with your front foot flat on the floor.
- Keep your knees slightly bent.
- Keep your back straight.
- Grasp the load firmly.
- Raise your head as you start to lift, but keep your chin tucked in.
- Keep the load close into your body.
- Stand up slowly/smoothly, using your thigh muscles, not your back muscles.
- Do not twist the body during the lift, or lean or reach out.



Putting down posture

- Put down in a reverse of the lift procedure.
- Slowly and smoothly bend your knees.
- Keeping your back straight.
- Keeping the load close to your body (be careful of fingers/toes do not trap them during.
  putting the load down)
- Slide the load into tight areas or across tables/benches
- Leave the load secure/safe
- Ensure that it will not fall, tip over or roll
- Ensure that it is not blocking someone's way – in particular access/fire routes and other items needed regularly

Standard: 4.2	**Mechanical Handling: Lifting Equipment/Hoists**
Standard Requirements	Mechanical devices and machine alternatives to manual handling of materials should be used whenever possible to minimize lifting and bending requirements. These devices/machines but are not limited to:

- Hoists
- Forklifts
- Dollies
- Carts
- Other mechanical devices

Mechanical devices are only to be used by employees trained in the proper use and limitations of the equipment they operate. It is recommended that business partners ensure that they identify equipment types and evaluate the precautions necessary to ensure that they are adequately controlled.

Safety Precautions

Suitable and sufficient risk assessments must be carried out for the use of all mechanical handling equipment (MHE), which should take into account:

- Workplaces, specifically but not restricted to the condition of floors.
- Appropriate separation of pedestrians and vehicles, inclines, blind spots, one-way routes, warning signage, guard rails etc., and must also include temporary workplaces where MHE is used.
- All activities and processes where MHE is used should allocate a person responsible for identifying lifting equipment, subject to periodic statutory examination and Inspection and ensuring that this is completed by a competent person (approved by the regulatory authority).
- All such statutory inspection records must be kept locally and be readily available for inspection by enforcing authorities.
- All lifting equipment is subject to a thorough examination by a competent person prior to being put into service for the first time.
- The maximum safe working load shall be marked on all lifting machines.
- All lifting machines, gears and appliances etc. shall conform to the standard specifications while meeting the intended purpose.
- When the weight of an object is in doubt, lifting tackle of higher safe working load capacity shall be used.
- No riders are allowed on lifting equipment.

Safety controls for MHE are as follows:

- All such statutory inspection records must be kept locally and be readily available for inspection
- All lifting equipment is subject to a thorough examination by a competent person prior to being put into service for the first time
- The maximum safe working load shall be marked on all lifting machines and tackles, at a conspicuous location
- All lifting machines, gears and appliances etc. shall conform to the standard specifications while meeting the intended purpose
- When the weight of an object is in doubt, lifting tackle of higher safe working load capacity shall be used
- Only suitably qualified and trained individuals should be allowed to use/operate the equipment
- No riders are allowed on lifting equipment
- Do not overload the lifting gears beyond its safe working limit (SWL)
- No person is allowed to stand under any suspended load at any time
- All lifting equipment must have a six-month service testing label on each piece of

patient lifting equipment

- A 12-month service testing label for all other lifting equipment
- Lifting equipment should have a safe working load/serial number label on each piece of equipment

Standard: 4.3	**Ergonomics**
Standard Requirements	Ergonomics is a scientific discipline, which is concerned with improving the productivity, health, safety and comfort of people, as well as promoting effective interaction among people, technology and the environment in which both must operate. All business partners are encouraged to purchase adjustable equipment for the reasonable accommodation of users. Some users may have special needs, such as left-handedness, color blindness, vision impairment, historical back complaints etc. The goal should be flexibility to accommodate the user population so that personnel may interface effectively with equipment. To achieve these objectives, there are several key workplace design elements of ergonomics to consider: • Equipment Video display terminals • Software design System design and screen design for greater usability • Workstation design Chairs, work surfaces and accessories • Environment Space planning, use of colors, lighting, acoustics, air quality and thermal factors • Training Preparing workers to deal with technology For guidance in selecting office furniture and setting up workstations, the following guidelines from the American National Standards Institute and the Environmental Health and Safety Center can be considered. 1. Office chairs with adjustable seat height Seat height should be pneumatically adjusted while seated. A range of 16-20.5 inches off the floor should accommodate most users. Thighs should be horizontal, lower legs vertical, feet flat on the floor or on a footrest. Seat height should also allow a 90-degree angle at the elbows for typing. 2. Seat width and depth A seat width of 17-20 inches suffices for most people and should be deep enough to permit

the back to contact the lumbar backrest without cutting into the backs of knees. The front edge should be rounded and padded. The seat slant should be adjustable (0 to 10 degrees). The seat should swivel easily. Avoid bucket-type seats.

3. Backrest

The backrest should be between 12-19 inches wide, offer firm support especially in the lumbar (lower back) region, and should be easily adjustable both in angle and height, while sitting. The optimum angle between seat and back should permit a working posture of at least 90 degrees between the spine and thighs. Seat pan angle and backrest height and angle should be coordinated to allow for the most comfortable weight load on the spinal column.

4. Seat material

A chair's seat and back should be padded enough to allow comfortable circulation. If a seat is too soft, the muscles must always adjust to maintain a steady posture, causing strain and fatigue. The seat fabric should breathe to allow air circulation through clothes to the skin.

5. Armrests

Armrests are optional, depending on user preference and task performed. They should not restrict movement or impede the worker's ability to get close enough to the work surface. The worker should not rest his or her forearms while typing.

6. Workstation design

Correct workstation height depends upon the user and upon the chair and other factors that interact with the user and table. It is ideal for the user to be able to sit at the workstation with the keyboard in place and be able to easily maintain your elbows at a 90-100 degree angle and straight wrists while typing. The height of an adjustable keyboard support should adjust between 23 - 28 inches to accommodate most users. 26 inches is the recommended compromise position while leg clearance must still be considered.

7. Workstation leg room

Knee spaces should allow a worker to feel uncrowded and to allow some changes of position even with the keyboard support lowered to the correct level for use. The knee space should be at least 30 inches wide by 19 inches deep by 27 inches high to meet the requirements of the disabled. For those using a footrest, clearance must be calculated with the legs in place on the footrest. Likewise, depth of the clearance envelope for both legs and toes should be evaluated while the workstation user is in a normal working position at the workstation (determined by the design of the seating system and the way the user sits). Drawers and support legs (for furniture) should not go where human legs need to fit.

- The workstation top should be big enough to allow space, not only for all computer-related necessary equipment, but also for paperwork, books, and other materials needed while working at the computer.

- Working with materials on chairs and at odd angles has the potential for neck and other body strain.
- Frequently used items should be kept close to avoid long reaches.
- A general recommendation is that the work area top should be at least as big as the standard office desk - 30 inches by 60 inches.
- A depth of at least 30 inches allows flexibility in use/reuse of the work area. Usable space may be maximized by good wire/cable management.
- The thickness of the work surface should be one inch.

8. Footrest

Situations will arise in which a user is perfectly adjusted for keyboard use, with the monitor at the correct angle, but his/her feet do not rest flat on the floor. A footrest may be used to correct this problem.

9. Document placement

When typing off a document, use a holder to place the document as close to the screen, as possible. Alternatively, you could place the document at an angle between the keyboard and monitor (when using a desktop). These positions help to eliminate strain and discomfort.

10. Wrist rests

Wrist rests should only be used to support the wrist between typing, if it's comfortable. Placing your wrists on a rest while typing can create a bend in the wrist and put pressure on the carpal tunnel. Wrist rests should have rounded, not sharp edges, and should provide a firm but soft cushion.

Standard: 4.4	**Visual Display Units (VDU) & Workstations**
Standard Requirements	A workstation describes an assembly, comprising display screen equipment, which may be provided with a keyboard or input device or software, or a combination, determining the operator and machine interface, and includes: • A work desk/work surface and a chair • Any optional accessories and peripherals • The immediate work environment of the display screen equipment Awareness for working safely at visual display units (VDU) or simply a workstation is essential, as poor posture contributes to back strain. When sitting at a desk and using a VDU, adherence to good posture is very important. It is advisable for business partners to guide employees on good workstation design.

Chapter 5	**Standard 5: Emergency Management**	
	Standard 5.1	**Fire**
	Standard 5.2	**Emergency Management**
	Standard 5.3	**Fire Detection**
	Standard 5.4	**First Aid**

Standard: 5.1	**Fire Protection, Fire Prevention & Fire Emergency**
Standard Requirements	All business partners must comply with the fire protection, fire prevention, and fire emergency control measures as stipulated by Dubai Civil Defense, supported by DHCR HSE Fire Safety Guidance (this is not an all-inclusive assessment of requirements).

- Dubai Civil Defense and any other relevant authorities are authorized to take full control of a fire-fighting situation, where it is justified.
- DCD fire crews are authorized to make a forced entry into any premises, where there is reasonable suspicion of a fire and the premises are unmanned, unguarded, closed, locked or where failure to do so could result in a significant loss. Dubai Civil Defense and the authority shall not be liable for loss that may be caused to the premises due to a fire.
- Every building or structure shall be designed, constructed, arranged, equipped, maintained, operated and provided with fire protection facilities in order to avoid undue danger to the occupants from fire, smoke, fumes or any resulting panic.
- The business partner shall be held liable for any damage or malfunction arising due to acts or omissions by any if its employees, visitors and contractors on the installed fire systems for the building. The business partner is responsible for the preparation of a site specific emergency plan in consultation with the building owners fire

systems to ensure appropriate collaboration.

Fire Prevention

All business partners are responsible for implementation of necessary fire preventive measures. The fire preventive measures shall include, but are not limited to precautions against:

- Sources of ignition including heat transfer
- Lightning
- Spontaneous combustion
- Explosions
- Flammable/combustible dusts, gases or other special requirement applications, storage areas, and vapors and wastes
- Hazardous processes
- Obstructions
- Naked lights and flames
- Poor electrical management
- Hazardous chemicals posing flammability risks

The business partner shall ensure the following:

- Smoking is allowed in designated areas only, see DHCR HSE No Smoking Policy.
- Avoid careless disposal of burning cigarette butts.
- Check ashtrays for smoldering cigarettes or other combustibles.
- Do not use naked flame such as candles, lamps, bakhoor etc. Use of burners in a controlled way in laboratory fume hoods or hospitals may be allowed with proper process/procedure and precautions in place.
- Do not let papers, rags or other rubbish accumulate at your place of work.
- Use proper containers for flammable liquids.
- Handle flammable liquids at a safe distance from possible sources of ignition.
- Do not overload electrical circuits.
- Switch off any electrical equipment from the mains.
- Check electrical cables and plug sockets for damage/fraying and remove if identified.
- Remove spilled oil, grease or liquids.
- Use fire proof approved containers for flammable chemical waste.
- Do not leave excess rubbish.
- Do not hang clothing over or near a heating element.
- Keep compressed gas cylinders away from the sun, artificial heating, flammable materials, corrosive chemicals and fumes.

- Do not obstruct access to fire extinguishers.
- Make sure that staff members and visitors know the escape routes in case of fire.
- Keep fire escape exits unobstructed.
- Ensure that all fire protection facilities are inspected/maintained/serviced. For example, (this is not an exhaustive list): hose reels (monthly), fire extinguishers (six monthly) and fire detector/alarm system (six monthly) etc.
- Ensure that employees are trained in the use of firefighting equipment and fire action. Evacuation drills should be conducted every six months at least.
- Evacuation drills must involve all occupants.
- Ensure that staff members and visitors know what to do in case of a fire.
- Fire safety is the responsibility of everyone in the workplace.

Fire Controls

Fire emergency/evacuation plan shall be in place and it shall be rehearsed/drilled at least every six months. Business partners must ensure that all employees are aware of how to use fire extinguishers and fire alarm procedures and adhere to DHCR HSE R.A.C.E and DHCR HSE P.A.S.S. Practicing an evacuation during a non-emergency provides training that will be valuable if an emergency arises.

It shall be ensured that employees are trained in the use of firefighting equipment, fire actions and evacuation bi-annually. The employees should know the location and the correct use of:

- Fire extinguishers
- Alarm call points
- Emergency telephones
- Escape routes and fire exists, and
- Assembly points

General safety precautions

- All fire exits, shutters, doors, corridors and access zones must remain clear, unobstructed and available at all times.
- It is mandatory for there to be firefighting equipment for each unit/facility in accordance with the size/activity and sq. footage of each business partner's activity.
- Pyrotechnics, smoke machines, and/or burning candles are strictly prohibited.
- Flammable substances must be risk assessed and stored in a flammable press.
- All facilities should have clear evacuation drawings and trained staff.
- Fire drills are run bi-annually, however, increased frequency may be required in accordance with the facility site activity and awareness of risks.
- Cigarette butts and waste flammable material are discarded only in designated,

approved locations.

- Electrical equipment such as portable appliances, transformers, electrical equipment in hazardous atmospheres, etc. are maintained, inspected and tested at regular intervals.
- Heating equipment such as refrigerators are maintained clear from combustible material.
- Open flames or heat producing equipment such as halogen lamps or spot lights are positioned at least one meter away from sprinkler heads.
- Extension cords in use are protected with circuit breakers.
- No mult- tap sockets are used.
- Smoke generated from the activities is disposed in a controlled manner.
- Ventilation ducts, machinery intakes/extracts are maintained clear and clean from grease and debris.
- Pipelines carrying combustible material are protected with earth bonding against static electricity.
- Hot work is performed only with permit to work.
- During the hot work, combustible materials are protected from ignition sources and suitable extinguishing equipment are properly located at the site.

Fire prevention

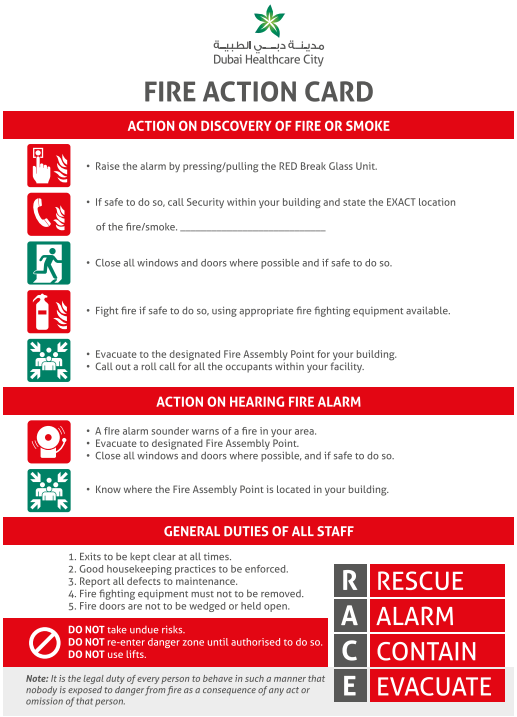
The first step in fire safety is prevention

- Smoke only where permitted. Use large, non-tip ashtrays and make sure everything in them is cold before they are emptied. Strict Adherence to DHCR HSE No Smoking Policy.
- Keep passageways and exits free from storage and waste. Promptly remove waste paper, packaging, old rags and other fire hazards.
- Designate an employee to ensure that appliances (stoves, kettles etc.) are switched off at the end of a work shift.
- Wherever possible turn off computers and/or monitors at the end of a work shift.
- Make sure that any cracked, frayed or broken electrical cord or plug is replaced immediately.

- Keep combustibles away from heat-producing equipment.
- Do not run electrical leads or cords across doors or walkways, or pinch them behind furniture.
- Always follow the manufacturer recommendations, when using or installing new office equipment.
- Always use proper sized circuit breakers and fuses.
- Do not overload power outlets or extension boards.
- If an appliance or item of equipment smells or gives off smoke, turn it off, unplug it and do not use it again until a qualified technician has checked it.
- Make sure that fire and smoke doors that should be kept shut are not propped open.
- Make sure that there is plenty of air circulation space around heat producing equipment (e.g. photocopiers and computers).
- Make sure that escape stairs and exit doors are not locked or blocked.
- Develop and discuss fire emergency plans and evacuation procedures with employees.
- Conduct and participate in fire drills.
- Be sure that the emergency response team in authority knows about disabled persons whose escape could be delayed, and make plans for their safe evacuation.
- Follow fire notices displayed in the building.
- Leave one or two contact details with security, in the event of an emergency.
- Store flammables and chemicals in designated places and do not store flammable materials close to heat producing agents and/or energized

equipment.

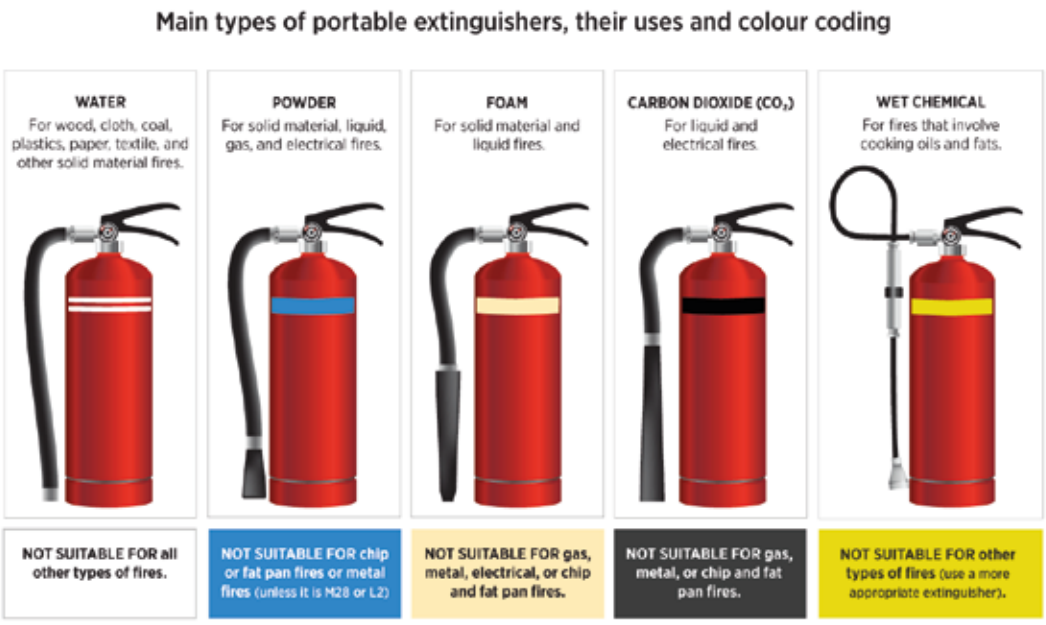
- Discard flammable material in designated receptacles.
- Use extension cords protected with circuit breakers.
- Ensure availability of adequate and charged fire extinguishers in your area at all times.
- Always install door locks in alignment with the building's master key system (for security to gain access during an emergency).
- Do not place open flames or heat producing equipment close to sprinklers.
- Do not use multi-tap sockets.
- Do not use fire extinguishers unless you know their correct handling.
- Do not keep fire extinguishers un-refilled/uncharged after their use.
- Do not misuse or tamper with fire extinguishers.
- Do not remove fire extinguishers from their designated places.
- Do not use fire hoses for non-designated purposes.
- Do not remove nozzles from the fire hose boxes without authorization.
- Do not isolate or disable smoke detectors, riser's, landing valves, and sprinklers without authorization.
- Do not cover fire/smoke detectors.
- Do not place steam, smoke, or fog generating equipment below fire/smoke detectors.
- Inspect and maintain the fire suppression and detection system periodically.
- Do not keep the exits chained or locked.



In case of a fire, follow DHCR HSE Rescue Alarm Ccontain Evacuate and DHCR HSE fire action card, as follows:

- Sound the alarm immediately
- Leave the area quickly, closing doors as you go to contain heat and smoke
- If you must escape through an area with smoke, crawl low to avoid heat and smoke
- Check for smoke by slowly opening doors
- Always know two ways out of your area
- Once outside, call the security/emergency number
- Follow the direction of security personnel and stay outside the building

Below is an example of the different types of fire extinguishers:



Evacuation plan/drawing

The evacuation plan of the building shall be clear and simple and will be made on floor plans without structural or construction details and specifications. The evacuation plan will highlight the following:

- **Yellow**

  Location of the evacuation plan. 'You Are Here', is a message for the person seeking information from the plan
- **Black**

  Location of the exit components such as exits, corridors, exit access ways, doors, exit stairwells, exit ramp
- **Green**

The direction/shortest routes to reach the above mentioned exit components

- **Red**

  Location of fire extinguishers, fire blankets, first-aid boxes, manual alarm control panel, fire house cabinets, landing valves, zone control valves, isolation valves, chemical and inert gas protected areas, fire pump room, fire water tank, emergency equipment keys, elevator keys, smoke management equipment keys, etc.
- **Blue**

  Location of assembly points
- **Orange**

  Location of security guard room/emergency command center

Note: Assembly points where evacuees coming out of the building can wait in a secure location for further instructions are designated with a signboard in blue. All assembly points should be able to accommodate the occupants from the building, and be at a safe distance to protect people from fire, falling debris, and/or building collapse.

Standard: 5.2	**Emergency Management**
Standard Requirements	Emergencies, disasters, accidents, injuries, and crime can occur at any time without warning. Being physically and psychologically prepared to handle unexpected emergencies is the business partners' responsibility.

Emergency preparedness and response

The business partners shall ensure a display of the facility layout map that shows sufficient details to enable rescue services, utility workers and the employees to find power shutoffs, fire protection devices and emergency exits. Maps shall be reviewed and updated on a regular basis.

Emergency coordinator

It is recommended that each business partner has a designated emergency coordinator and deputy coordinator. The emergency coordinator, dependent on the size of the facility/site activity can also double up as the:

- Safety representative
- Fire warden

The emergency coordinator, and in his absence the deputy coordinator, is in charge of the emergency action plan. The plan shall include contact information of the emergency coordinator, deputy coordinator and all employees. The emergency coordinator must be nominated and their contact details must be reported to the DHCR HSE Department, for their site register.

Emergency Action Plan

Each business partner shall ensure an effective emergency action plan to:

- Prevent personal injury or death.
- Avoid damage to environment.
- Minimize property damage.

The emergency action plan shall take into account:

- Serious or life-threatening injury
- Entrapment
- Fire
- Explosion
- Radiation
- Chemical release or spill
- Flammable liquid and gas leaks
- Structural failure
- Natural disaster
- Power failure
- Bomb threat
- Civil disorder
- Security risks

Emergency action plan

- Keep enough emergency supplies in your office or car (medication, flashlight, comfortable shoes, bottled water, food, batteries, and portable radio) for up to 72 hours in case of a serious emergency.
- Prepare your business/office emergency evacuation plan.
- Fill in the planned emergency evacuation preparedness (PEEP), which is accessible on Masaar.
- Print and post the emergency procedures information in a visible location in your office and communicate it to all.
- Become familiar with the quickest exit routes from your office, the building, and alternate routes. Next to the elevators and on every floor are emergency evacuation maps for guidance.

- Locate the nearest fire extinguisher (normally in the fire cabinets) and manual call point (MCP) station (the little red box on the corridor walls, with either 'break glass' or 'pull lever' fire alarm activation device) and register for an evacuation drill procedure.
- Ensure all in the facility are aware of what to do in the case of an emergency.
- Ensure employees are aware of the building emergency contact number.
- Ensure that the emergency contact numbers are displayed prominently in all areas.
- Emergency evacuation drills are conducted at least once in year at each facility.
- Emergency drill records are retained for inspection.
- Action points identified during emergency drill to identify weak spots and ensure appropriate rectification.
- Procedure is reviewed and revised where necessary, especially after the occurrence of accidents or emergency situations.
- Employees are familiar with sounds/modes of the emergency alarms (evacuate upon hearing the alarm for more than 30 seconds).
- Employees are familiar with exits/means of egress.
- Assembly areas are maintained free of all obstructions.
- Fire response plans are tested at regular intervals and short falls are addressed.

Emergency Phone Numbers

- 999 - Police and Medical Emergencies (Dubai Police)
- 998 - Ambulance
- 997 - Fire (Dubai Civil Defense)
- 800 4567 Dubai Municipality (food section)

Emergency Response Team

Each business partner shall ensure that an emergency response team (safety representative/emergency coordinator/fire warden) is assigned with specific responsibilities in the event of an emergency. Their responsibilities shall include, but are not limited to:

- Procedures for turning off utilities
- First aid
- Contacting emergency services
- Control of traffic, onlookers, security

The emergency coordinator shall direct the emergency response team and coordinate activities of the emergency plan. The contact details of the emergency response team shall be indicated in the emergency plan.

Emergency Services

Each business partner shall ensure emergency services contact details are displayed in waiting/reception areas. Phone numbers shall include, but are not limited to:

- Building facilities emergency incident line
- Security control room
- Civil Defense
- Police
- Emergency ambulance service
- Utility companies
- Hospitals

Salvage and Recovery

Each business partner shall ensure provisions for cleanup, salvage and recovery after an emergency. The business partner shall ensure a backup plan in case of emergencies to minimize damage and to enable immediate resumption of operations including, but not limited to:

- Protection of undamaged property
- Customer notification
- Information and records protection
- Backup communications
- Emergency supplies

Emergency Training

The business partner shall ensure that all employees are provided with orientation and training in terms of their responsibilities during an emergency, the locations of exit routes, alarm signals, fire extinguisher locations, as well as hazardous material information.

Standard: 5.3	**First Aid**
Standard Requirements	The business partner is legally obligated to provide first-aid services that include trained first-aiders in adherence with the strict DHCR HSE First Aid Policy.

First aid plans

- All new staff shall be oriented on the first-aid policy as part of the general staff orientation program.
- Every business partner and their staff, including all contractors' staff should be required to report all incidents, whereby first-aid was applied, regardless of the severity, nor the nature of event, to DHCR HSE Department as an oversight adviser, ensuring the appropriate corrective actions are undertaken.

- Each business partner will determine jointly within their own organization the appropriate safety provisions for a first-aid service in the area, including the number of designated first-aiders required, provision of first-aid kits and first-aid training.
- Each business partner will ensure first-aid kits are accessible to all for the treatment of injuries in the workplace. A first-aid kit will be in the care of a responsible person (usually a designated first-aider) and will be maintained by that person.
- Each business partner will ensure there are trained personnel who will be designated to provide basic first-aid services. These designated first-aiders will be in possession of a first-aid certificate. They will participate as active members of emergency preparedness teams, as and when required.
- All first-aid treatments and descriptions of those treatments will be recorded. Records will be retained for three years, unless other specific requirements apply.
- There is a first-aid box or cupboard provided, maintained during all working hours with the minimum prescribed contents as per DHCR HSE First Aid Policy.
- Each first-aid box or cupboard is placed in a clearly identified and readily accessible location.
- Boxes and kits are checked frequently to ensure that they are fully stocked and all items are in a usable condition.
- The first-aid box or cupboard should protect the contents from dampness and dust.
- The name of the first-aider(s) must be exhibited in the premises.

First Aid Training

The business partner shall ensure that first-aid training is given by a licensed healthcare professional who is trained to deliver first-aid. A certificate of qualification as a first-aider is valid for three years, after which a two-day refresher course, followed by further examination is necessary before the person can be granted a further certificate. First aiders should be trained in the following techniques:

- Communication and delegation in an emergency
- Recognition of illness
- Management of unconscious casualty
- Resuscitation
- Treatment and control of bleeding
- Treatment of shock
- Treatment to injuries of bones, muscles, and joints
- Treatment of burns and scalds
- Treatment of poisons
- Treatment of minor injuries

- Treatment of eye irritation
- Treatment of a casualty overcome by fumes
- Personal hygiene in treating wounds
- Transport of casualties
- Simple record keeping
- Contents of first-aid rooms
- Purchasing first-aid supplies

Chapter 6	**Standard 6: Controls**	
	Standard 6.1	**Personal Protective Equipment**
	Standard 6.2	**Signage**

Standard: 6.1	**Personal Protective Equipment (PPE)**
Standard Requirements	The business partner shall provide the employees with protective clothing and equipment necessary to protect them from risk or danger in relation to their work activity. PPE shall be personally provided to all workers for whom it is mandatory during their employment and while carrying out their tasks. Protective clothing and equipment of a personal nature, such as footwear, hairnets etc. should be provided on an individual basis. A health and safety risk assessment must be completed for all work activity to identify the staff who require PPE. All employees must use the protective equipment and clothing provided to prevent health and safety hazards. Occupational PPE, shall include, but are not limited to: • Hard hat • Safety boots • Chemical googles • Dust masks Note: Sandals and open/soft toe shoes will be not permitted by any healthcare professional working in clinical areas or on any construction/fit out/permit to work activities. Under the hierarchy of control, personal protective equipment must only be applied as the final resort once all alternative measures have been investigated and exhausted as far as reasonably practicable.

Standard: 6.2	**Signage**
Standard	Safety signs must be used whenever a hazard or danger cannot be avoided adequately or

Requirements

reduced in another way. Before installing safety signs, the business partner should examine whether the hazard can be avoided or reduced by collective precautions (those that protect everybody) or safer ways of doing the work.

Safety signboards should not contain text. The symbols or pictograms on a signboard are intended to be understood, independent of the language ability of the worker viewing it. However, business partners must provide information to employees on the meaning and requirements of any signs used in the workplace, especially where text on supplementary signboards is used.

Colors and shapes for safety signboards

- Red for prohibition
- Yellow for caution
- Green for positive action
- Blue for mandatory actions
- Circles for prohibitions and instructions
- Triangles for warnings
- Squares and rectangles for emergency and information signs

An example of effective signage is shown below

	Standard 7.2	**Hygiene**
	Standard 7.3	**Smoking**

Standard: 7.1	**Occupational Health & Welfare**
Standard Requirements	The business partner shall not employ any person (male or female) under the age of 15. The business partner shall conduct a pre-employment assessment of employee health and maintain the pre-employment medical history along with records of all medical tests performed. Health Surveillance and Immunization The business partner must conduct medical checks of its employees through a clinic authorized by the Dubai Health Authority (DHA). They shall ensure vaccination of employees to prevent transmission of diseases. Health records must be maintained and provided to DHCR HSE as and when required. Pregnant Employees Business partners are legally required to advise pregnant employees of their legal obligation to notify their employer, on a strictly confidential basis of their pregnancy status. This is done so that a workplace risk assessment is carried out to ensure the safety of the pregnant employer and their unborn child. Business partners shall complete an occupational health and wellbeing risk assessment, upon notification of the employee's pregnancy status and these records must be retained for review and audit by the DHCR HSE Department.

Standard: 7.2	**Hygiene/Infection Control**
Standard Requirements	The business partners shall develop an infection control plan, which will include adequate steps to prevent exposure of employees to infectious diseases, where this hazard is present in that specific workplace. If employees have an infectious diseases, see the Ministry of Health (MOH) register for the categories. The DHCR HSE Department must be informed of any HSE related events no later than 24 hours after the incident, to assess the severity and exposure risk to the public work exclusion/restrictions.

With increasing concerns about sickness and productivity, employee absenteeism and the dangers of cross contamination, infection and germ transmission, every business should recognize how critically important hand hygiene is in maintaining hygiene standards in an effort to reduce exposure to bacteria. Education and training regarding hygiene at work is an important plan.

Safety precautions for welfare facilities

- Facilities provided for staff, such as toilets, lockers, changing rooms, kitchens etc., should be adequate for the number of staff, and always be in a clean and hygienic state.
- Lavatories, wash basins, showers etc. should be clean, with adequate sanitary facilities i.e. toilet paper, soap, hand cleaner etc.
- Kitchen and cafeteria areas should be clean, with no flies or vermin and garbage should be controlled.
- Notices should be posted to remind staff of good hygiene practices.

Below is a recommended guide to hand hygiene

Standard: ٧.٣	**Smoking**
Standard Requirements	Dubai Healthcare City (DHCC) is a free zone committed to creating a health and wellness destination. DHCC is committed to a smoke-free environment in the free zone to promote, create, and sustain healthy communities and protect the rights of individuals. In addition, DHCC discourages smoking for both employees and patients. It is advisable that all business partners strictly adhere to the DHCR HSE No Smoking Policy. Without exception, the policy

is applicable to all employees, business partners, visitors and contractors who visit or work within DHCC and its business entities.

Smoking is not permitted in any of the premises, including the parking areas for any closed indoor spaces, as per UAE Federal Law. Under Resolution (92) of Smoking in Public Places, ashtrays must be removed from all places where smoking is prohibited. Shisha smoking is totally prohibited in gardens and public parks.

Smoking is prohibited in clinics, medical centers, hospitals, restaurants, cafeterias, hotels, office buildings, commercial buildings, companies, housing compounds, public institutions, with the exception of places in which smoking is permitted under Resolution (92) Regulation.

Chapter : 8	**Standard 8: Environment**	
	Standard 8.1	**Cleaning/Housekeeping**
	Standard 8.2	**Window Cleaning**
	Standard 8.3	**Grounds/Exterior Maintenance**
	Standard 8.4	**Security**
	Standard 8.5	**Noise**
	Standard 8.6	**Thermal Comfort**
	Standard 8.7	**Lighting**
	Standard 8.8	**Room Dimensions**
	Standard 8.9	**Sewage**
	Standard 8.10	**Waste**
	Standard 8.11	**Welfare Facilities/Sanitary Conveniences (Bathrooms)**
	Standard 8.12	**Outdoor Workers**
	Standard 8.13	**Water**
	Standard 8.14	**Pests**
	Standard 8.15	**Air Quality**
	Standard 8.16	**Conservation of Resources**
	Standard 8.17	**Oil Storage**

Standard: 8.1	**Cleaning/Housekeeping**
Standard Requirements	Good housekeeping is one of the vital tools in getting a job done safely and effectively; it is good business. Immediate and long-term results can be obtained by developing a well-planned housekeeping program. • Proper housekeeping, including a system for the separation of waste segregation shall be maintained.

- General housekeeping is essential to avoid residue of material building up, which may present a trip hazard.
- Poor, inadequate housekeeping must be avoided to prevent fire exits, stairwells, and/or sprinklers being obstructed or presenting unnecessary poor workplace ergonomic design.

The business partners shall ensure that comprehensive cleaning schedules are established, with time, date and name of cleaner to include different areas, equipment, fixtures and physical facility structures, where appropriate.

Safety Precautions in a Working Environment

- All working places, working rooms, passages, store rooms, office rooms, floors, walkways etc., are kept clean, non-slippery and free from obstructions.
- Drawers and cabinets are closed before and after use
- Supplies are stored inside cabinets, not on top of them where they are liable to fall.
- Supplies should not be stored up to the ceiling, and must have a clearance of 18 inches from a sprinkler.
- Heavy items must be stored in lower drawers or on low shelves, and lighter items on mid shelves.
- Slippery surfaces should be identified, signage posted, and cleaned without undue delay.
- Chairs, desks or boxes are not used to reach heights—only step ladders are used for this purpose.
- All toilets, wash basins, drinking water points etc., are maintained in a hygienic condition.
- Adequate number of waste containers are provided in all the places and these shall be emptied periodically.
- Access to safety and fire-fighting equipment, electrical control panels, plant rooms etc. shall be kept clear and not obstructed with cleaning or storage material.
- No leads, plants, boxes, cables, hoses, etc., are to run across pathways.
- Regular cleaning routines and separate deep cleaning programs must be put in place, to include overhead, odd corners and roof/floor voids.
- Defective equipment such as burned out lights, loose steps, torn carpets, etc. must be identified and fixed.
- The floor of every working room and other places shall be maintained clean and as far as practicable, dry and non-slippery.
- Any spills shall be cleaned without undue delay.
- Biological spills, are to follow strict adherence to the DHCR HSE biological spill procedure.

- Don't overfill racks, bins or storage areas.
- Clear out items that are no longer used or are past their use-by date, etc.

Good housekeeping can help make any job you do:

- Safer, by minimizing carelessness and clutter—two common causes of accidental injuries and fires.
- Easier, by allowing you to spend less time looking for things and fighting frustration. This will give you more time to devote to the task at hand.
- Better, by ensuring you have time and energy to spend on the more important aspect of your work: quality and productivity.
- More fun. Your work area can be an enjoyable, comfortable place to be in, instead of a dangerous eyesore.

Standard: 8.2	**Window Cleaning**
Standard Requirements	Each building should have a facility management program for window cleaning, overseen by the building competent facility manager and/or health and safety manager. As this is high risk, specialist work activity and a robust review of all work activities must be undertaken to ensure that a strong safety management system is in operation, prior to any site works. This will be carried out by an external fully DM certified and licensed operator. Prior to site works, a full, detailed work methodology must be provided together with site-specific risk assessment in relation to the task in hand. The operators must be fully trained and competent to carry out the task. The equipment (PPE, lifting device, harness, falls arrest etc.) must be fully insured and certified, with full service maintenance records. The following hazards and risks must be assessed: • Working load • Roof and edge protection • Correct ladder access • Window protection systems • Roof access • Support ledges • Platforms • Falls arrest systems • Safety harness • Weather conditions • Outdoor workers • Lone workers • Signage • Demarcation • Zoning

- Emergency preparedness
- Pedestrian and traffic management
- Training etc.

Standard: 8.3	**Grounds/Exterior Maintenance**
Standard Requirements	Each building will have a facility management program for grounds maintenance overseen by the building competent facility manager. The grounds maintenance will cover the following areas of scope: • Pedestrian and traffic access • Drainage • Access and egress arrangement • Adverse weather management • Contractors • Delivery procedures • Pest control • Gardening • Litter picking • Signage • Pavements • Lighting • Oversight of utility services • Dust and sand controls • Road maintenance etc. Wastewater irrigation points should be regularly tested for bacteria including legionella. All areas where recycled water is used are sign posted to alert the public not to drink the water.

Standard: 8.4	**Security**
Standard Requirements	Each building will have a security program overseen by the building facility property management responsible for the security of property in their control. Where possible, items of value that can be easily moved should be secured. Sensitive items should be kept in locked and secured rooms, presses, lockers, cabinets or other secure containers. When not in use, rooms, offices and departments should be locked and secured, and internal operational decisions like the allocation of internal security provisions by the business partners should be internally considered.

The business partners shall ensure the following security functions are in operation in their buildings, in consultation with the building facility team (this is not an exhaustive list):

- Safeguard the personal safety of all patients, staff, visitors, clients, contractors, volunteers and other patrons in a security capacity, as is reasonably practicable.
- Reasonably protect the property, premises and assets against theft, damage or fraud.
- Raise staff awareness of the security arrangements in the workplace
- Emergency management procedures should be in place for security access/egress/evacuation.
- Fire alarm activations teams should work closely with the security and facilities team for ease of resolution.
- Ensure standard and defined security continuity arrangements exist with the business partners.
- Reasonably safeguard the smooth and uninterrupted delivery of service.
- Educate patrons about the no smoking DHCC campaign, and strict adherence to the no smoking policy. (See DHCR HSE no smoking policy).
- Oversight and review of the integrity of the fire detection and protection systems within their scope.
- Manage and secure access and egress provisions of contractors/vendors entering the premises.
- Control access to and egress from sensitive areas i.e., all entrances, server rooms, electrical room, walk-in clinic departments etc.
- Ensure guidelines and procedures for contracted service providers are clearly defined.
- Ensure all contracted service providers, their employees and agents adhere to the legislative and regulatory standards from a security perspective.
- Ensure security officers operate within their scope of work.
- Reduce the risk of security incidents occurring and their potential for occurrence through mitigation, preparedness, tested responses, recovery through action planning and follow-up.
- Address security concerns for all occupants.

The building facilities management team should work closely with the security team for implementing, monitoring, risk-assessing and managing the security management program in a team support approach. The business partners should ensure there is a CCTV (closed-circuit television) in operation within their facility (where appropriate), and the security should have communal/exterior building security where appropriate.

If the business partner has internal cameras, or if building security has CCTV in operation, the following must be undertaken:

- Signage to notify your visitors of the presence of CCTV (both in English and Arabic) displayed at the entrance to the public area and clearly visible.
- Notification to visitors prior to entering notifying them that the area is monitored by CCTV.
- CCTV policy to support the sign and action, which should cover monitoring, recording, retention, disposal, and release to the Dubai police etc.

Access key control

All master keys are retained by security and issued as per the set procedure and recorded on the key issue record. Keys held in offices or departments or any other areas are the responsibility of the manager/department head. Keys should be held securely and an inventory maintained of same. Keys should be readily accessible 24/7 for emergency services and for security to address emergency scenarios.

Vehicles, bicycles, parking

All vehicles parked on the DHCC campus are done so at the owner's risk and overseen by building security teams. The building property manager has the right to report long stay vehicles to the Dubai police for guidance on removal.

All vehicles parked on the premises should be locked and secured. The owners of all vehicles entering DHCC campus must adhere to local regulations, directions and signage concerning speed limits, parking areas, loading bays, ambulance areas and other traffic management controls.

Vehicles are not to be parked in a manner that:

- Obstructs any access or egress.
- Obstructs any emergency utilities such as risers.
- Impacts on the service or function of the building or campus .
- Constitutes a danger or risk to any person or property.
- Interferes, in any way, with ambulances or other emergency services vehicles.
- Security have the right to request the vehicle to be removed.

Areas that should be closely monitored by security in accordance with the building facility management team, that can be classed as high security risk include, but are not limited to:

- Areas that handle cash.
- Areas that handle and dispense medications.
- Areas that contain chemicals or other potential biological hazards.

- Electrical switch rooms.
- Plant rooms.
- Boiler houses.
- Medical gas stores.
- Medical waste roof.
- Roof access.
- Radiology departments.
- I.T. server rooms.
- Patient isolation wards and patient seclusion rooms.

It is recommended that all business partners who have a security contractor, should encourage regular building inspections to assess the areas of risk, fire protection and detection systems, hygiene and environment standards, waste management, including security vulnerabilities of sensitive areas, security habits of personnel, staff knowledge and skill of security management.

Standard: 8.5	**Noise**
Standard Requirements	Noise is defined as any unwanted sound; its intensity (loudness) is measured in decibels (dB). It is not just the intensity that determines whether noise is hazardous. The duration of exposure is also very important. To take this into account, time-weighted average sound levels (TWA) are used. For workplace noise, this is usually based on an eight-hour working day. The limitations of noise set by the Dubai Municipality legal requirements, under local order 61 of 1991 are as follows: • A minimum of 55db between 7.00 am and 8.00 pm. • A maximum of 45db between 8.00 pm to 7.00 am. Entertainment premises noise criteria • Entertainment premises are not located adjacent to any residential premises. • Entertainment premises adopted the best effective means to contain the loud noise inside. • Proper sound proofing of the building must be undertaken to eliminate migration of loud noise. • Entertainment premises customers parking area is away from adjacent residential premises. • Noise from any entertainment premises is not audible inside a residential dwelling during regular sleeping hours of 10:00 pm to 6:00 am.

Construction/demolition noise

- Continuous noise levels from construction/demolition activities cannot exceed 55 dbA during the period of 7:00 am to 8:00 pm, and 45 dbA from 8:00 pm to 7:00 am.
- Access roads to the site are positioned such that vehicular movements cause minimum disturbances to residential buildings.
- Heavy vehicle movements to and from the site are made during the scheduled normal working hours unless approval has been granted by the environmental protection and safety section.

Noise level above 85 dbA is hazardous when the exposure exceeds eight hours per day, and may cause chronic health disorders including noise-induced deafness, tinnitus, fatigue, loss of efficiency, irritation, temporary threshold shift, and also loss of hearing capacity.

As far as practicable, noise emission from production or service or other activities are controlled within permissible limits for noise exposure. These include, but are not limited to:

- Machines
- Equipment
- Warning devices and
- Loudspeakers

Safety precautions

Generally, noise emitted from a premise must comply with provisions of Dubai Municipality's Environment Department Technical Guidelines

All business partners shall identify areas having the potential to produce excessive noise levels and where the noise limits are exceeded, the following steps must be undertaken:

- If the noise levels are higher than 87 decibels, employees must be provided with appropriate hearing protection equipment.
- Employees exposed to high noise levels must be educated and trained in the use of hearing protection, the effects of noise, and the consequences of noise-induced hearing loss.
- The business partner must conduct initial and periodical hearing tests for the employees exposed to noise levels above 87 decibels.

The business partners shall be responsible for ensuring that relevant provisions of the noise monitoring and control procedure are facilitated, and minimum requirements adhered to by the employees. This includes implementing workplace engineering design controls (where necessary), ensuring acceptable work practices, and providing training etc.

Noise control shall be achieved where necessary in the following ways:

- Lubrication and preventive maintenance of the machines.
- Enclosure/barrier of the noise source.
- Isolation of the noisy work process.
- All workers, who are likely to be exposed to excessive noise levels, will be issued suitable hearing protectors.
- Hearing protector signage indicating 'hearing protectors must be worn', shall be displayed at strategic locations near all shops and/or work sites with excessive noise levels. .

All employees exposed to excessive noise levels shall be instructed on the following topics:

- Effects of noise on hearing.
- Noise hazard sources in the company.
- Control measures.

Standard: 8.6	**Thermal Comfort**
Standard Requirements	For the heating, ventilation and air conditioning (HVAC) system, the business partners shall ensure and provide the following range of conditions for 95% of the year:

	Lower Limit	Upper Limit
Dry bulb temperature	DB: 22.5° C	DB: 25.5° C
Relative humidity	RH: 30% (min)	RH: 60% (max)

For occupant comfort, normal occupied spaces should have an average air velocity between 0.2 and 0.3 m/s.

Standard: 8.7	**Lighting**
Standard Requirements	Good interior lighting is a balance between your occupants' wellbeing, costs, energy consumption, installation and maintenance plus architectural characteristics.

Different tasks require different levels of lighting. Areas where intricate work is performed, for example, in a clinical treatment room, would require greater illumination than a storeroom. Lighting needs vary from time to time and person to person as well. One approach is to use adjustable task lighting that can provide needed illumination without increasing general lighting.

Vision problems are one of the leading sources of complaints among office workers. Poor office lighting can cause eye strain and irritation, fatigue, double vision, watering and reddening of the eyes, and a decrease in the power of focus and visual sharpness.

Common problems with artificial lighting include:

- Inadequate lighting design or intensity leading to widespread or localized dark areas described as gloom.
- Inappropriate lighting for specialized tasks; i.e. task lighting.
- Flicker arising from the oscillation of fluorescent lights typically associated with using magnetic rather than electronic ballasts.

Safety precautions

Business partners shall ensure the following measures are used to prevent and control poor lighting conditions in the work environment:

- Regular maintenance of the lighting system should be carried out to clean or replace old bulbs and faulty lamp circuits.
- A light-colored matte finish on walls, ceilings, and floors to reduce glare is recommended .
- Whenever possible, office workers should not face windows, unshielded lamps, or other sources of glare. Adjustable shades should be used if workers face a window.
- Diffused light will help reduce shadows. Indirect lighting and task lighting are recommended, especially when work spaces are separated by dividers.
- Task lamps are very effective in supplementing general office lighting for those who require or prefer additional lighting. Some lamps permit several light levels.
- Illumination levels are measured at regular intervals and documented
- Regular maintenance of the lighting system is carried out to clean or replace old bulbs and faulty lamp circuits.
- Adjustable shades are used if colleagues face a window.
- When work spaces are separated by dividers, indirect lighting and task lighting are provided.
- Ensure appropriate lighting is provided for all the different tasks that are done in your office space.

- In open-plan offices, many occupants of varying ages, preferences, and abilities engage in a large variety of tasks. Light levels or luminance must be selected to match the range of occupant tasks, along with the age and visual characteristics of occupants.
- Small and low-contrast objects require more light for equal visibility.
- More light is required if occupants are older or have visual problems.
- If the activities in office involve both reading and writing tasks, as well as screen-based or computer tasks, then light levels should be assessed in both instances.

Recommended light levels

- A minimum of 320 lux—a standardized model of human visual brightness perception—is recommended for common office tasks.

- The light reading is taken against the computer monitor and a minimum of 160 lux is recommended.

With the growing number of office ergonomic-related injuries these days, it would pay to give attention to lighting considerations—as possible causational factors, and as an examination of what is appropriate for each individual space. Nearly as important, should be the concern of lost productivity and down-time, due to the effects of glare and other poor lighting issues.

Standard: 8.8	**Room Dimensions**
Standard Requirements	Business partners shall ensure good workplace design and room dimensions, as these are vital to ensure an unobstructed ease of passage for workers in regards to their wellbeing.

- Business partners shall carry out a risk assessment to determine the space needed for a work area to ensure safe access and egress, along with an appropriate room to perform tasks.
- Work places should have a minimum of 10 m3 per person, and a minimum ceiling height of 2.5 m.
- Work areas that include a desk and a chair should have a clearing distance of 90 cm from behind the desk to any obstruction. If there is a walkway behind a person working or other work being completed, then that space behind the desk shall be a minimum of one meter to the nearest obstruction.
- Appropriate space is required to enable storage facilities such as filing cabinets, cupboards and bookcases to be used without excessive bending or twisting. Appropriate storage facilities shall be provided so that heavy and frequently used items can be stored between the employee's standing knee and shoulder height. A minimum clearance distance of 1.2m is recommended.

Standard: 8.9	**Sewage**
Standard Requirements	All sewage effluents are treated to secondary standard, sand filtered and chlorinated. Discharge of waste water to land in any reuse scheme, or discharge of sludge, or its use to condition soil is prohibited.

- Wastewater is treated to comply with the effluent standard. The physical, chemical, or biological parameters shall not exceed the minimum limits as specified in the regulations. Wastewater from public, industrial or other premises is not discharged in the public sewerage without a permit form DM.
- All sewer discharge points must be located one meter below the low water level and equipped with a sampling point to provide access for taking representative samples.

Septic tanks

- If applicable, the tenants shall ensure the maintenance of septic tanks and soak away.
- The maintenance record shall be retained.
- The building facility management team must oversee site activity of septic tank maintenance.

Standard: 8.10	**Waste**
Standard Requirements	The business partners shall ensure there is an effective and responsible waste handling and environmental management system. There is increasing international concern that wastes should be properly managed in order to minimize their potential to cause harm to our health and the environment. Moreover, efficient management of waste can reduce operating costs and potential liabilities. Characteristics of concern include flammability, reactivity, corrosiveness, longevity in the environment, and human, animal or plant toxicity. The business partners must ensure strict adherence to the DHCR HSE Waste Guidelines. The business partners, in collaboration with the facility management team (where required) shall ensure the following: • Every business partner who has medical waste must ensure that all waste streams are separated from non-hazardous waste. It must be handled and disposed of so that there is no risk of it entering the environment or affecting the health of any person coming into close contact. • Ensure a facility has a designated holder of waste. • Ensure waste is properly stored, transported and disposed. • Ensure appropriate systems are in place for the control of the waste. • All waste is stored and disposed of properly to ensure it will not cause environmental pollution, or cause a health and safety risk. • Hazardous waste is stored in designated colored containers, properly labeled, locked and secured. • Identifying waste and providing information on the hazardous nature of the waste. • Waste is only handled by individuals or companies that are authorized. • Spillages are promptly cleaned as per procedure. • Recycling is strongly encouraged, where possible. • Records are kept of all wastes. • Creating an inventory to identify and track waste streams, and record the costs associated with the management of those streams. • An accurate inventory of waste management practices—recording the types of wastes, methods of treatment or disposal, and location. • Proper management of waste begins with pollution prevention. Pollution prevention refers to the elimination, change or reduction of operating practices, which result in

discharge to land, air or water.

- Segregate waste materials according to their general physical and chemical characteristics.
- The business partner shall ensure that medical waste is not disposed or mixed with non-hazardous general waste.

Every business partner (BP) and their staff, including all contractors staff should strictly adhere to the DHCR HSE Waste Guideline. They shall be responsible to contact a domestic waste clearing company, authorized by Dubai Municipality for the disposal of waste generated within the premises. It is important to meet legal, municipal and local authority requirements relating to storage, handling and disposal of flammable and hazardous materials.

Dubai Municipality is the controller of waste disposal sites in the Emirate of Dubai and it has its own local order and technical guidelines, which must be strictly adhered to. These guidelines and rules can be obtained directly from DM, which addresses the following:

- Waste minimization techniques such as reduce, reuse, recycle.
- Waste segregation.
- Waste storage.

Category of waste streams

Yellow lids/signs	Should be used with containers for disposal by non-incineration, disinfection technology.
Red or **blue** lids/signs	Should be used by manufacturers to distinguish sharps containers and for alternative technology disposal for specialist waste.
Purple lids/signs	Recommended for bins or boxes with healthcare risk waste, contaminated with cytotoxic materials, discarded medicines or pharmaceuticals, and intended for disposal by incineration.
Black lids/signs	Recommended for containers used for the disposal of recognizable, large anatomical waste material or body parts, including placentas and are intended for disposal by incineration.

Medical waste coordinator

The business partner, generating medical waste shall nominate an employee as waste coordinator, responsible for safe and efficient collection and handling of medical waste. The waste coordinator will ensure that a monthly waste generation report is sent to the DHCR HSE Department.

Medical waste bags

- The business partner shall ensure that medical waste is placed in approved medical storage bags or sharps containers for collection into wheeled container trolleys provided by approved medical waste transporters.
- The business partner shall ensure that bags are securely tied, sealed and labeled with the business partner's name.

  The bags shall not be re-bagged— except under supervision—in the event of a bag failure

  A yellow lockable bin with an identification label will be used for storage of medical waste when a medical waste storage room provided in the building is shared among the various health care operators (HCOs)
- The business partner shall ensure that all employees handling medical waste receive occupational health immunization.

Standard: 8.11	**Welfare Facilities/Sanitary Conveniences**
Standard Requirements	The business partner shall ensure the following for sanitation conveniences: • Each facility must provide sufficient water closets, wash hand basins with running hot and cold water, liquid soap dispensers and hand dryers. • Toilets should be well lit, ventilated to the external air and should have self-closing and tight-fitting doors. • All toilets and fixtures should be kept in good repair and in a sanitary condition. • The use of common toilets—in case both sexes are employed—is strictly prohibited. • Adequately illuminated. • Adequately ventilated. • Kept clean and orderly. • Be maintained and operational. • Have floors of non-slip surfaces. • Have separate bathrooms for ladies and men. • Have a door which is capable of being secured on the inside. • The bathroom facility must provide a toilet/hand washing facilities. • The bathroom must have a cleaning schedule to record the daily cleaning in all facilities. The business partner shall ensure the following for facilities and rest/waiting areas: • Proper seating for visitors and staff. • When selecting seating, ergonomic principles should be considered, such as height, weight and stability of seating. • Suitable rest areas. • The areas shall be well-ventilated, free from distractions (noise, smell, etc.) and

equipped with comfortable furniture.

- Areas must be identified for wheelchair access.

The business partner shall ensure the following for eating area(s) at place of work:

- A room or suitable place should be identified for employees to eat and rest.
- This designated area should be furnished with tables, chairs, and stools.
- This designated area should be well ventilated, equipped with a microwave, refrigerator and sink with hot and cold running water.

The business partner shall ensure the following for drinking water:

- Adequate filtered, cold drinking water facilities.
- Water should be available near the work area and easily accessible for disabled persons.
- Drinking points should not be located in sanitary accommodation.
- Any appliance used to cool drinking water should be regularly inspected and well-maintained to prevent contamination.

Standard:	**Outdoor Workers**
Standard Requirements	Heat stress is a significant occupational problem in the middle eastern region, especially during the summer months. Heat stress is dependent on the environmental conditions and the physical activity being undertaken by the person. High temperature, high thermal radiation, high humidity, low air movement, high activity levels in the work place and the need to wear personal protective clothing, all combine to elevate the body temperature, resulting in heat cramps, heat exhaustion or heat stroke. The same degree of exposure may produce different effects depending upon the susceptibility of the person exposed. Dubai Occupational Health and Safety Regulations Local Order 61 of 1991 requires the employer to ensure a safe working environment in the workplace (adherence to UAE's mid-day break rule). Type of heat The net heat load on the body is caused by: • Environment – temperature, humidity, velocity, radiant heat. • High metabolic cost of work and physical activity. • Clothing • Physical condition – fever, metabolic disorders, age, fitness, gender. The human body maintains a fairly constant internal temperature, even though it can be exposed to varying temperatures. To keep the internal temperature within a safe range, the body must get rid of excess heat. This is done primarily through varying the rate and amount

of blood circulation through the skin and release of perspiration onto the skin. These responses occur automatically when the body's temperature rises above 98.6° F (37° C). The body reacts to high external temperature by circulating blood to the skin, which increases skin temperature and allows the body to radiate excess heat through the skin. However, if the muscles are being used for physical labor, less blood is available to flow to the skin and release heat. Perspiration is released onto the skin to cool the body through evaporation. Perspiration is only effective if the humidity level is low enough to permit evaporation and the lost fluids are adequately replaced.

Heat-related illnesses are caused when the amount of heat generated by the body exceeds the amount lost. A heat emergency can be a serious condition and people should take precautions against this problem in hot and humid weather.

Heat is lost by:

- Evaporation
- Radiation
- Convection
- Conduction

To prevent a heat emergency, a person should:

- Avoid staying in the heat for long periods of time.
- Wear cool, loose clothing that is appropriate for the climate.
- Drink more fluids than usual in order to stay well hydrated.
- Use air conditioners, fans, and other means to keep cool.

Factors that raise a person's risk of suffering a heat emergency include: very young or very old age, alcohol and medication use. Alcohol lowers the body's tolerance to heat. It dehydrates the body and has many long-term effects such as brain degeneration, confusion, memory loss, and muscle damage. Studies have shown that even a single bottle of beer can affect a person's ability to work in hot weather.
Medications that can aggravate the problem include amphetamines, tranquilizers, antihistamines, and anticholinergics. Heart disease such as coronary artery disease, dehydration, poor acclimation to hot climates, and malfunctioning of sweat glands also lower the body's tolerance. Heat emergencies can range from minor discomfort to life-threatening.

Heat related illnesses are:

- Sunburn
- Heat rash
- Heat cramps
- Heat exhaustion
- Heat stroke

Safety precautions

Heat stress awareness training should be provided at least once a year (preferably during the spring) to personnel working in hot environments and the business partners are required to provide this training is they have outdoor workers.

The training should include:

- The hazards of heat stress.
- Recognition of predisposing factors, warning signs, and symptoms. First aid procedures for, and potential health effects of, heat stroke and other heat disorders.

Employee responsibilities in avoiding heat stress:

- Dangers of the use of drugs, including prescription and over-the-counter medicines, and alcohol in hot work environments.
- Proper use of engineering and administrative (work practice) controls.
- Proper use of personal protective equipment.
- Hydration, work pace, helpful nutritional habits, etc.

Standard: 8.13	**Water**
Standard Requirements	The business partner shall ensure use of clean, potable, and safe water in the food service facility. The business partner and/or the building facility manager shall test (by a certified competent specialist) the water monthly for its quality and potability and records maintained. Immediate corrective action should be initiated if the water does not conform to the DM drinking water technical specification. Water tanks Where applicable, the business partner shall ensure the following: • All fresh water tanks must be kept in good condition and maintained properly. • Water tanks should be cleaned on a regular basis by an approved cleaning company. • Prior to any tank cleaning, notification to the DHCC FM/HSE Department must be given, a minimum of 48 hours prior to site works, to ensure confined space/lone

working/environment-appropriate controls are in place.

- Records of tank maintenance shall be maintained.
- A permit-to-work system is recommended for water tank works.

Water taps

The business partner shall ensure that all external water taps should be fitted with a proper drainage system. They will also adhere to the following recommendations for water conservation:

- Where watering of plants and landscape cannot be avoided, TSE (treated sewage effluent) is used for landscape by an approved contractor.
- Landscape irrigation timing is optimized.
- Water savers installed in all wash basin taps and pantry sinks.
- Displacement bags are installed in WC flush tanks.
- Pressure reducer installed in shattaf sprays.
- Leaking faucets are repaired as soon as it's noticed.
- All water taps are shut off immediately after use .
- Regular briefings are conducted to create awareness amongst employees not to waste water.

Drinking water (potable water)

- It is recommended that business partners provide an adequate supply of drinking water for all persons at their work place.
- Each supply of drinking water shall be readily accessible and marked with appropriate signage.
- Business partner takes responsibility for the cleanliness and safety of the drinking water tanks in the building and is also responsible for verifying the efficiency of all water distribution points.
- Potable water tanks are cleaned annually, and water is sampled after the cleaning to meet applicable standards.

Waste water

The waste minimization plan should consider the following means:

- Water reuse/recycling
- Avoid excess water use/waste water generation.
- Reduce the strength of contaminants entering the waste stream.

Waste water disposal

The following substances are prohibited for discharge into a water environment:

- Pesticides and herbicides

- Oil and solvent waste
- Radioactive waste
- Residues from the removal of anti-fouling paints
- Biological waste

The business partner (building facility manager) shall ensure the periodic maintenance, cleaning, and disinfection of water systems and networks that create (not an exhaustive list):

- Water sprays
- Aerosols
- Cooling towers
- Evaporative condensers
- Hot and cold water systems
- Showers
- Evaporative air coolers
- Spas
- Fountains
- Swimming pools
- Misters etc.

These checks are in accordance with the technical guidelines issued by the Dubai Municipality regarding the control of legionella bacteria in water systems. Sampling and testing must follow by an approved, independent, third party laboratory.

The business partner (building facility manager) shall ensure the periodic maintenance, cleaning, and disinfection of all water systems equipment and accessories for the following (not an exhaustive list):

- Potable water network
- Hot and cold water systems
- Water tanks
- Pumps
- Pipes and fittings

The business partner (building facility manager) shall ensure the periodic maintenance, cleaning, and disinfection of all equipment and devices of:

- Swimming pools
- Spa pools
- Whirlpool baths

- Hydrotherapy pools and
- Jacuzzis
- Irrigation systems

The business partner (building facility manager) shall ensure the following legionella measures are taken for the prevention of disease from ventilation systems:

- Kept free from rust, lime scale, and organic matters.
- Above or below optimum temperatures—below 20° C and above 55° C.
- Avoidance of contamination and drift from water cooling towers.
- Regular changing of filters and the cleaning of spray heads.
- Surfaces are kept free of micro bacterial contamination.
- If chemical treatments of cooling towers become necessary, e.g. where cooling towers are open to air with water running at temperatures between 20° C and 55° C, a rotation of chemicals are used to prevent the development of resistant organisms.
- All chemical treatments are used under the direction and monitoring of a professional biologist.

Specialized companies approved by the Dubai Municipality must do water tests and sampling. All test results must be recorded and kept along with the records of maintenance and remedial works at site to be checked by Dubai Municipality.

Standard: 8.14	**Pest Control**
Standard Requirements	The business partner shall establish an effective, written pest control program and maintain appropriate records. The written pest control program shall include:

- Name of the contact person at the facility for the pest control.
- Name of the pest control company.
- List of chemicals and methods used.
- A bait location map.
- Frequency of inspection reports.

Safety controls

- Frequency of inspections, treatments (where applicable) and reporting for pest control.

- At points where pipe works/vents/services etc. pass into buildings, maximum care should be taken to ensure that rodents cannot gain access.
- It is the responsibility of the business partners, in collaboration with the building facility team, to control and prevent pest infestation.
- Companies may not use any form of residual pesticide, however, aerosol/flushing agents, which are properly labeled are allowed. With the exceptions of domestic aerosol products, companies are not permitted to use any pesticides in the DHCC without first consulting the DHCC FM Department.
- The business partner may not have private pest control services approved and certified by Dubai Municipality.
- All the incidents related to pest control should be reported to DHCC Facilities Department.

In order to accommodate individuals with a disability, service animals are permitted on the premises with pre-approval from DHCC Facilities Department. Animals involved in media production/events are also allowed if approved by the DHCC Facilities Department. Unauthorized animals are not allowed in common use areas including but not limited to conference rooms, classrooms, laboratories, rest rooms, and food courts.

Bird abatement

The business partner and building facilities team shall ensure they have a robust system to control the presence of birds in an effort to minimize environmental hazards.

Dubai Municipality registered animals are allowed on the premises.

- It is the owner's responsibility to ensure that animals relieve themselves outside, and to clean up after the animal and dispose of the animal's waste properly.
- All indoor accidents are also the responsibility of the owner/authorized and not the custodians.
- Authorized animals are to be leashed or kept under control at all times.
- A sign must be posted so that visitors will expect an animal in the area.
- All authorized animals must be healthy and pose no health risk to humans as carriers of active infections, parasites, etc.

Standard: 8.15	**Air Quality**
Standard Requirements	Indoor air quality (IAQ) is an important issue in the work environment. The study of IAQ and pollutant levels within office environments is a complex problem. The complexity of studying and measuring the quality of office environments arises from various factors including: • Office building floor plans are frequently changing to accommodate increasingly

more employees and reorganization.

- Office buildings frequently undergo building renovations such as installation of new carpet, modular office partitions and free-standing offices, and painting.
- Many of the health symptoms appearing are vague and common both to the office and home environment.
- Guidelines or standards for permissible personal exposure limits to pollutants within office buildings are very limited.

Many times, odors are associated with chemical contaminants from inside or outside the office space, or from the building fabric. This is particularly noticeable following building renovation or installation of new carpeting. Out-gassing from things like paints, adhesives, sealants, office furniture, carpeting, and vinyl wall coverings is the source of a variety of irritants. In most cases, these chemical contaminants can be measured at levels above ambient (normal background) but far below any existing occupational evaluation criteria.

Indoor air pollution

An inadequately ventilated office environment or a poorly designed ventilation system can lead to the buildup of a variety of indoor air pollutants. Air pollutants can originate within the building or be drawn in from outdoors. Examples of sources that originate outside a building include:

- Pollen, dust and fungal spores.
- General vehicle exhaust.
- Odors from dumpsters.
- Re-entrained exhaust from the building itself or from neighboring buildings.

Examples of sources that originate from within the building include:

- Building components and furnishings.
- Smoking
- Maintenance or remodeling activities (painting, etc.).
- Housekeeping activities.
- Unsanitary conditions (standing water from clogged drains or dry traps) and water damage.
- Emissions from office equipment or special use areas (print shops, laboratories, or food preparation areas).

Safety precautions for indoor air quality

- HVAC systems should receive periodic cleaning and filters should be changed on a regular basis on all ventilation systems.
- The ventilation system should introduce an adequate supply of fresh outside air into the office and capture and vent point air pollutant sources to the outside.

- Office machinery should be operated in well-ventilated areas. Most office machinery does not require local exhaust ventilation in areas that are already provided with 7-10 air changes per hour.
- Photocopiers should be placed away from workers' desks. Workers should vary work tasks to avoid using machines excessively.
- Office equipment should be cleaned/maintained according to the manufacturer's recommendations. Properly maintained equipment will not generate unhealthy levels of pollutants.
- Closed and semi-closed public places shall have sufficient means of ventilation proportionate to the size and capacity of the place and type of activity to ensure the circulation, cleanliness and adequate temperature of the air.
- Variable air-volume HVAC systems is balanced periodically.
- Smoking is prohibited in common areas, closed/semi closed places, and elevators.
- Pesticide application inside the building is performed during off hours and contaminants are cleared thorough ventilation.
- Maintenance plans for the HVAC system—particularly filters, cooling coils, drip pans, and ductwork—are in place and followed.
- Controls for specific contaminants, such as outdoor air contaminants, which may enter the building through the HVAC supply air system or through other means.

Fugitive (workplace) emissions:

- Air pollutants does not exceed the acceptable permissible limits.
- Machines, engines or vehicles producing exhaust gases that exceed specified limits are not used.
- Adequate measures are in place to prevent leakage or emission of air pollutants, unless it is within the permissible limits.
- If any leak persists, there should be necessary means of protection for workers in accordance with the conditions of safety and occupational health. This includes a choice of machines, equipment and suitable types of fuel, taking into consideration the dose and time of exposure to such pollutants.
- The emissions standard in the workplace for dust and grit should not exceed 0.050g/m3.

Stationary emissions

- Air pollutants do not exceed the acceptable permissible limits.
- Work which may cause pollution is not operated without a letter of approval from Dubai Municipality.
- Airborne wastes are collected by the best practicable means and discharged into the atmosphere.
- All chimneys are a minimum height of 1.5 meters above the highest point of any

structure.

- All gaseous waste, fumes or dust discharge have a minimum exit velocity of at least ʌm/sec.
- New chimneys are not constructed without the approval of DM.
- Any source emitting toxic and hazardous substances as classified by DM is provided with control technologies.

Car park air quality

Carbon monoxide and nitrogen dioxide are the most relevant air pollutants inside car parks. Petrol engine vehicles are the source of most, but not all, carbon monoxide in car parks but not all nitrogen dioxide. The business partners in collaboration with the building facilities team shall ensure the following:

- There is good ventilation.
- The ventilation provided must have sufficient dilution of carbon monoxide and nitrogen dioxide emitted from vehicles during peak houses.
- Air quality monitors positioned in the car park.
- Air quality monitors along with the results should be monitored continuously.
- Procedures should be in place in the car park is there if any air quality risk.
- Effective control of air pollution requires maintenance and supervision.
- Good and effective air quality monitors are effective with good preventative maintenance.

Standard: 8.16	**Conservation of Resources**
Standard Requirements	The business partners shall practice the principle of the three Rs - reduce, reuse, recycle. To produce less waste: • Reduce the amount and toxicity of the waste, including waste prevention through source reduction. • Reuse containers and products. • Recycle as much as possible, which includes buying products with recycled content. Resource conservation is the practice of decreasing the quantity of resources used. It may be achieved through efficient use, where the use of resources are decreased while achieving a similar outcome, or by reduced consumption of energy services. Resource conservation may result in increase of financial capital, environmental value, national security, personal security, and human comfort. Business partners are strongly encouraged to adhere to electricity conservation initiatives: • Switch off lighting in unoccupied spaces like meeting rooms, after working hours. • Utilize computer power saving features. This can be done by turning off your monitor

after five minutes, and your hard disk after 15 minutes.

- Use the staircase instead of elevators on the way down.
- Set your thermostat two degrees warmer in the summer.
- All equipment must be maintained periodically to ensure optimal performance.
- The last person to leave a section of the office at the end of the day shoud ensure that all office equipment (excluding fax machines) and lights are switched off.
- All split or window air conditioners must be switched off when not required.

Business partners are strongly encouraged to adhere to water conservation initiatives:

- Install a pressure reducer in shattaf sprays.
- Avoid over watering of plants and landscape.
- Optimize landscape irrigation timing.
- Repair leaking faucets as soon as it is noticed.
- Install water savers in all wash basin taps and pantry sinks.
- Install displacement bags in WC flush tanks.

Business partners are strongly encouraged to adhere to paper conservation initiatives:

- Print only when necessary.
- Double-sided printing of paper where possible.
- Use electronic means of communicating information, e.g. email.
- Reusable A4 paper, where only one side has been printed on, shall be collected for reuse at designated locations.

All office equipment using paper should, where possible:

- Use reusable paper.
- Use configurations to allow double-sided photocopying.

Staff shall minimize the generation of waste paper by:

- Sharing documents stored in a commonly accessible location, e.g. common filing, department or company directories in the servers, etc.
- Respective stationery controller shall keep and maintain records on paper consumption.

Ozone depleting substances

The business partners shall adhere to the requirements of the Montreal Protocol of Ozone Depleting Substances whereby use of chemicals such as chlorofluorocarbons (CFCs), halons, carbon tetrachloride and trichloroethane used in air-conditioning, refrigeration, fire protection systems, and aerosol sprays are controlled. The DHCC actively promotes the goal of controlling and achieving a timely phase-out of ozone depleting substances.

Prohibited discharge

It is prohibited to discard, abandon or discharge any of the following materials listed below in any road, path, passage, open land, roof, wall, fence or any other such public place whether communal or private:

- All kinds of waste and unwanted discarded materials such as garbage, waste paper, waste packing materials, waste equipment, medical waste, and waste water, and
- Anything that may hinder the free passage of vehicles and pedestrians or adversely affect the environment of DHCC areas or cause contamination or any other breach or threat to public health and environmental safety.

Standard: 8.17	**Oil Storage**
Standard Requirements	Storage of more than 200 liters of oil in tanks and containers, outside and above the ground at DHCC site shall meet the following requirements: • Tanks, drums or other containers must be strong enough to hold the oil without leaking or busting. • A form of secondary solid containment to oil and water, such as a bund or a drip tray must be provided to catch any oil leaking from the container or pipe work and equipment. • The bund must be large enough to contain 110% of the maximum contents of the oil container. • The bund must not have any outlet, valve or drain to remove rainwater or oil spilt. • The bund base and walls must be resistant to water and oil. It should be checked regularly for leaks. • Above ground pipe work must be adequately protected and underground pipes should be protected from damage and have provisions for leak detection. • Storage area and the environmental protection measures taken by the business partner must be approved by the DHCC FM Department.

Chapter : 9	**Standard 9: Critical Utility System**
	Standard 9.1 Electrical Safety
	Standard 9.2 Lifts & Escalators
	Standard 9.3 Bio Medical Equipment
	Standard 9.4 General Maintenance
	Standard 9.5 Air Conditioning, Heating & Ventilation
	Standard 9.6 Mechanical Safety
	Standard 9.7 Confined Space
	Standard 9.8 Car Parking

Standard 9.8 Car Parking

Standard: 9.1	Electrical Safety
Standard Requirements	Electricity is extensively used for various purposes, like equipment, machinery and computers, and for providing general lighting throughout offices and building premises. Electricity is not dangerous, if used properly. However, if used unwisely, serious accidents can occur. All electrical installations must comply with the Dubai Municipality Technical Guidelines and Associated Standards.

In the event of an injury, the severity depends on the following factors:

- Nature of current.
- Path of the current flowing through the human body.
- Duration of contact with the current.
- Physical condition of the human body, i.e. wet or dry.
- Magnitude of the current.

The primary hazards due to electrical repairs are:

- Electric shock
- Fires/explosions

General safety precautions

- The first principle of electrical safety should always be to switch off (isolate).
- Good technical planning, maintenance, education and vigilance by specialist technicians.
- Education and training in the correct procedure for electric shock, first-aid and resuscitation techniques for anyone competent to work with electricity.
- All electrical appliances and equipment used shall bear the approval of local/internationally acceptable technical standards.
- All current carrying parts shall be enclosed and insulated.
- Tools and rubber protective devices shall be periodically inspected and cleaned by competent persons.
- When their condition is in doubt, these shall be subjected to high voltage tests by competent persons.
- Hands, shoes and clothing must be kept dry when handling energized electrical equipment by competent persons.

Safety precautions against direct current

All the live parts of the electrical system shall be protected by insulation of adequate rating. It is also advisable for competent persons to carry out measurements of insulation resistance (IR) at regular intervals to gauge its effectiveness.

- Wires must only be attached to sockets using a plug with a suitable fuse. Electrical equipment that include sockets must be in good order.
- Damaged electrical appliances and accessories are removed from service and tagged defective.
- Do not use multiple sockets.
- Use certified plugs and sockets.
- Unnecessary approach to high voltage apparatus or live parts shall be avoided.
- Taping together leads or cables is strictly prohibited.

Barriers

In live conductor/apparatus that are exposed in the course of the work, barriers shall be erected by maintenance workers, to prevent others coming into contact with the system. Barriers shall only be removed upon positive isolation of the system by competent persons.

Controls

There are many precautions that can be taken to protect people against the possibility of electric shock; most of which are simply a matter of common sense:

- Good electrical installation and maintenance. No cowboy installations done on the cheap.
- The use of double insulated equipment and 'step down transformers
- Ensure proper earthing and regular testing of all electrical equipment - especially portable equipment.
- Use of earth leakage circuit breakers, also known as residual current devices (RCDs) and residual current circuit breakers (RCCBs).
- Use of good quality and well-maintained rubber gloves, mats and other protective equipment manufactured to international standards (BS/ANSI/EN).
- Use of locking off and permit to work systems to avoid live working.
- Emergency stop push button incorporated in the control gear of motors and are clearly marked in Arabic and English stating which machine they control and their function. To avoid confusion, the word start and stop instead of open and close shall be used.
- All electrical equipment is protected from ingression of water. e.g. rain, water leaks etc.

Protective earthing

It is the statutory requirement that all current-carrying metal parts of electrical driven equipment shall be earthed properly. The objectives of earthing are:

- To keep the non-current carrying parts of electrical driven equipment at zero potential.
- To discharge electrical energy in case of an earth fault in the system.
- To allow sufficient current to flow to blow fuses or operate protective. devices and thereby disconnect the faulty apparatus.

Protective insulation

Protective insulation means insulation provided in addition to the operational insulation of the current-carrying parts of the equipment. The internal layer of protective insulation completely isolates the electrical components from the outer housing in case of a fault in the winding coil, or other current-carrying parts. All portable hand-driven electrical equipment such as drilling machines, grinding machines, etc., shall be provided with double insulation (protective insulation) or earthed properly.

Protective circuits

1. Overload and short circuit protection

Dangers from excess current due to overload or short circuit shall be prevented by providing:

- Fuses
- Circuit breakers
- Thermal protection

Fuses, relays and circuit breakers shall be of sufficient breaking capacity to operate safely at the desired currents. All protective apparatus shall be set at an appropriate current value, so that it is operated effectively only in faulty conditions by a competent person. Protective devices shall be tested periodically.

Thermal Protection is activated when a motor operating at the rated voltage locks up with the power still being supplied. It uses a thermal relay inside the motor to break the circuit to the winding coil at a temperature below the level that would cause burning.

2. Earth leakage protection

Earth leakage devices are based on the principle that the amount of current entering a device should be exactly the same as the amount of current leaving the device and that any discrepancy is due to current flowing somewhere that it shouldn't. As the current necessary for fatal electrocution is less than a couple of Amps for a duration of less than a couple of seconds, an overload breaker offers virtually no protection from electrocution. Earth leakage protection devices are designed to trip for fault currents between 10 and 100 mA and for

interrupt times between 40 and 100 milliseconds after a fault current is sensed. Earth leakage circuit breakers (ELCBs) shall be provided to a competent person for all portable electrical driven equipment.

Lock out tag out (LOTO)

If any electrical work is carried out on a dead system, the contractor is responsible for ensuring that the suitable precautions exist (LOTO procedure) to prevent the system from becoming electrically charged during the work. Application and approval of a LOTO permit to work is required and approved through the DHCC Facilities Department.

Electrical competency

Electrical isolation/de-isolation is done only by an authorized, trained, competent electrical person. Overloading of multi-point connectors from a single outlet must be avoided. Electrical engineer/electrician working on the premises must hold a valid competency license issued by DEWA, and is responsible for correct installation and shall supervise and test the entire electrical works before commencement of any installation, modification of electrical system, and obtain approval from DEWA.

Electrical testing

All installations are tested once in two years by an independent contractor/consultant and the reports are submitted to DEWA.

Electrical switch rooms (operated by approved personnel only)

- Electrical switch rooms must be adequately illuminated and ventilated, and provided with heavy duty exhaust fans.
- The doors must be fire resistant/metallic louvered.
- There must be appropriate signage at the entrance indicating the electrical hazards.
- The entrances must be locked with only approved and authorized personnel with access.
- All electrical switch rooms and operational areas must be provided with an adequate number of emergency light fittings, which comply with BS 5266 and are rated for a period not less than three hours of continuous operation.

- Light fittings must incorporate the necessary battery and charger.
- Safety light fittings must incorporate appropriate signs in Arabic and English such as 'exit' and directional arrows, as applicable to the location.

Panels and distribution boards (operated by approved personnel only)

- All exposed live terminal connections and bus bars in any low voltage distribution box to be shrouded and/or insulated.
- Main and sub main panels/distribution boards and final distribution boards to be installed in locations accessible at all times. Minimum space: 1500 MM - Front, 750 MM - Sides, 2 M- height from ground level.
- All metering cabinets and enclosures are constructed of fire-resistant materials.

Earthing and earth leakage circuit breakers (ELCB) (operated by approved personnel only)

- All current-carrying metal parts of electrical-driven equipment are properly earthed.
- To prevent electrocution, the system of fuse and earth combination are applied.
- Fuses are rated for the current flow in use for the appliance.
- Every consumer installation is provided with a separate earthing system, installed and maintained.
- The system is connected to DEWA's earthing system.
- Consumer earth electrode and earth continuity conductors (ECCs) are tested periodically.
- Equi-potential bonding conductors are connected to the main earthing terminal within the wiring installation and the continuity is tested and maintained.
- Operation of all ELCBs/RCCBs, earth leakage detection systems etc. are checked and tested periodically.
- Earthing is connected with a grid of earth pits and earth pit resistance is checked at least annually.

DHCC sub-stations (operated by approved personnel)

Only sub-stations are fenced off and locked (key with authorized electricians) with electrical hazard danger signs posted and access is strictly prohibited.

Standard: 9.2	**Lifts & Escalators**
Standard Requirements	All building partners responsible for operating lifts and escalators within a building should ensure there is an up-to-date manufacturers guidelines available and managed by the facilities team. The manufacturers guidelines are an essential tool and utilized by the operatives carrying out periodical service maintenance checks, to understand the measuring and testing activity, recording, checking, analyzing, loading and charting one or more

characteristics of the equipment.

Safety precautions

The lift and escalator periodic maintenance program should be in accordance with the manufacturers guidelines on the safety operations and maintenance. The intercom must be functioning and regularly tested. Alarm systems work to alert the building recipients and should be regularly tested.

Safety controls

- All lifts should be fitted with automatic rescue devices (ARD), which are a safety provision. In case of a power failure, the lifts move to the nearest floor level and the doors open upon arrival.
- All lifts should be fitted with a falls arrester system (FAS)—check if installed in the equipment—which ensures the elevator is slowed down and comes to a halt on the nearest floor level for rapid and safe evacuation.
- Lift wells are pressurized to prevent the entry of fire.
- Fire rated cables – fire rating for two hours burn time.
- All lifts shall be certified and tested by an approved third party.

All business partners should ensure the following general operating precautions:

- Do not overload a lift or escalator.
- Do not hold the lift door open for a long period of time.
- Do not stand in between the doors.
- Keep loose clothing away from the edge of the lift or escalator.
- Hold children's hands during the journey.
- Children and elderly (with any health challenges) must be accompanied by an able-bodied adult.
- Stand in the center of the escalator.

- Hold onto the hand rail.

Lift communication

- If a lift entrapment occurs, use the emergency telephone to call for assistance. This facility should be operational at all times.
- If the elevator does not have an emergency telephone, turn on the emergency alarm (located on the control panel) to signal your need for help.

Standard: 9.3	**Bio Medical Equipment**
Standard Requirements	All healthcare facilities are required to have a specialist engineer to provide technical support on engineering design for medicine and biology for healthcare equipment in consultation with the manufacturers/service providers. The bio medical engineer's scope of work will be in regards to the planned, preventative, reactive and routine maintenance of all clinical equipment. This will include the management of medical gas and support infection control standard precautions, in compliance with the service providers, where required. The business partners shall ensure compliance and reference to the DHCR Medical Equipment and Management Guidelines.

Standard: 9.4	**General Maintenance**
Standard Requirements	The business partners shall ensure safe and reliable operations of all facility utilities and utility systems such as emergency power systems, electrical distribution, mechanical equipment, heating, ventilation and air-conditioning, plumbing, steam and hot water generation, medical gas, medical, surgical vacuum etc. under their control and management supported by a maintenance contract which should retain and support the following records, as follows: • Maintenance inventory that details current and accurate inventory of system, and components of the utility systems that support patient care environment and require regular observation and/or maintenance. • Planned preventive maintenance for ensuring ongoing performance and reliability of all systems supported by scheduled periodic checks. • Failure response plans for responding to system disruptions and failures. • Schedule monthly maintenance plans for ensuring ongoing performance and reliability of equipment. • Reactive maintenance plans for ensuring ongoing performance and reliability of all systems supported to schedule periodic checks.

Safety precautions

All work equipment used must be safe and fit for purpose.

- The equipment must be operated in accordance with the manufacturers manual/guidance.
- All equipment has an operations manual available and in compliance with the manufacturer's instructions.
- Work equipment must be maintained in good working order in accordance with the manufacturers manual/guidance.
- Work equipment must be regularly checked and tested to ensure safe operations.
- It is recommended that all non-routine maintenance work shall be controlled using permit to work system.

Standard: 9.5	**Air Conditioning/Heating & Ventilation**
Standard Requirements	The business partners shall ensure correct temperature, humidity and air flow in order to ensure a comfortable environment inside the facility, regardless of the climatic conditions outside.

- The management and maintenance of HVAC systems shall address system performance, air balancing, smoke control, filters and servicing, by a DM approved provider.
- For all new and existing buildings, the cleanness of HVAC equipment and systems must be maintained and all its parts must be inspected and cleaned in accordance with the standard specifications approved, and in accordance with the technical guidelines issued by Dubai Municipality.
- While specialized maintenance companies approved by Dubai Municipality must carry out inspection and cleaning, it may be done by the building operator if he can provide proof that he has qualified personnel and equipment to do the job.

The business partner shall ensure effective management and maintenance of the plumbing systems to accommodate:

- Hot and cold potable water.
- Cold non-potable water.
- Processes potable water for laboratory and patient treatment applications.
- Waste and storm water collection and disposal.
- Sanitary sewage disposal.

The management and maintenance of steam and a hot water generation system

shall address generation and distribution subsystems, stream and water quality, boiler water pre-treatment, smoke emission control, alarm and protection devices, and fuel supplies in the event of contingencies.

If applicable, the tenants shall ensure the following:

- Air conditioning condensed water drainage is connected to a central drainage system.
- Seek a specialist contractor to review the connections, that include a designed air gap to prevent system backflow.
- Seek a specialist contractor to review the drainage is maintained and routinely inspected for blockages and air gaps.
- Maintenance records are retained.
- Periodic cleaning/hygiene standards are followed.
- Air filters of air heating system are cleaned or changed in the winter and on air conditioning units in the summer so that they work more efficiently.
- Monitor the business unit and make adjustments of the HVAC control system time clocks to compensate for changes in the weather.
- When the temperature is expected to change significantly, HVAC systems are adjusted to provide proper temperatures. This adjustment is not required in buildings that have automatic optimization time control systems.
- Every opportunity to decrease HVAC system operating times should be considered by the business partners.

Standard: 9.6	**Mechanical Safety**
Standard Requirements	Mechanical hazards are created as a result of either powered or manual (human) use of tools, equipment or machinery and plant.

An example of a mechanical hazard is contact and/or entanglement with unguarded moving parts on a machine. Some of the injuries that can occur as a result of mechanical hazards are as follows:

- Impact - being hit by ejected parts of the machinery or equipment.
- Friction and abrasion - e.g. when using a sander.
- Entrapment - being caught in a moving part of a machine or equipment or plant.
- Stabbing and puncture - e.g. when using a nail gun.
- High pressure fluid injection – e.g. a pinhole leak in a hydraulic hose can burst and inject hydraulic oil into a person's hand.
- Crushing – e.g. collision of a plant with a person.
- Shearing - can be two moving parts (sharp or otherwise) moving across one

another.

- Cutting - severing of a human body part by a cutting motion e.g. amputation of finger on a cutting machine.
- Entanglement – e.g. a loose sleeve getting caught in a moving part and drawing the person into the machine.

The business partners shall check all mechanical hazards in the workplace e.g. hand tools like hammers, chisels, spanners etc. where this is applicable to the work activities.

Safety precautions (where applicable on the business partner's work activity)

- Ensure the hand tools used are in sound condition.
- Tools designed only for the intended purpose are used.
- Guarding of machinery - all moving parts of machinery and equipment are guarded effectively preventing persons from coming in contact.
- Polishing and grinding machinery - grinding wheels are not operated at a speed in excess of that which is recommended by the manufacturer.
- Defective wheels are not used.
- Grinding wheels are kept as true as practicable, and the work rest is kept adjusted close to wheels, leaving a maximum gap of 6 mm.
- Energy or abrasive wheels are provided with a sheet metal guard that enclose the wheel as far as possible to retain fragments in the event of bursting air receivers.
- Receivers are tested and certified in the last 12 months by a competent person.
- Water from the receiver is drained at regular intervals.
- Safety valves, drain valves pressure gauges are maintained in good condition.
- Jubilee clips that pierce into the compressed air hoses are not used.
- Couplings are secured positively with clips or other securing mechanisms.
- Checklists provided for maintenance, inspection and servicing are followed.
- Ensure that the platform is inspected and approved for use by a designated person every week.
- Cranes, hoists, lifts, lifting appliances and gears, forklifts, etc. used in workplaces are tested and certified by competent person annually.
- Safe working loads are displayed on the appliance, and the compliance certificate is kept at the site.
- Ropes, chain slings, fabric slings, are checked before use to ensure they are in good condition, free of deformity, corrosion and cracks.
- The inspection of boilers and pressure vessels are made at the time of installation and at regular intervals of one year thereafter. It is essential that inspections should be thorough and complete.

Standard: 9.7 Confined Space

Standard Requirements	Individuals will not be directed or permitted to enter any confined space until an assessment of that space has been made to determine if a permit is required and to establish the safety precautions that are necessary to maintain a safe environment.

Confined spaced is a work location, immediately dangerous to life or health and any condition that poses an immediate or delayed threat, would cause irreversible adverse health effects, or would interfere with an individual's ability to escape unaided from confined space.

Any space that has one or more of the following characteristics is a permit space (confined space):

- Contains or has potential to contain a toxic and/or hazardous atmosphere.
- Contains a material that has the potential for engulfing an entrant.
- Has internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section or contains any other recognized serious safety or health hazard.
- Storage tanks, boilers, pressure vessels, silos, open-topped spaces of more than 1,0m depth, such as degreasers or pits that are not subject to good natural ventilation, pipes, sewers, shafts, ducts and similar structures.

Anyone working in a confined space environment must operate only with a permit to work. This is a program for controlling, protecting and regulating all who enter into permit spaces for their safety.

Safety precautions (where applicable on the business partner's work activity)
Before working in a confined space, there must be a task-specific work methodology and risk assessment conducted before entering the confined space, which should contain the following:

- Confined space (site-specific) work methodology.
- Risk assessment (site-specific).
- Evidence of training certificates.
- Evidence of equipment maintenance certificates .
- Entering a permit required confined space.
- Business partner (competent personnel i.e. facility manager) approval and supervision of work activity.
- Ventilating confined space.
- Team/buddy systems.
- Communication devices .
- Emergency rescue plan for site-specific confined spaces.
- Prior to entry, spaces are monitored for oxygen and flammable/toxic gas levels.
- Activity-based checklists are used and complied with.
- Person working in confined space must wear safety rescue harness, certified and tested.
- Avoidance of lone working.

Standard: 9.8	**Car Parking**

Standard Requirements	For all buildings with enclosed parking, mechanical ventilation must be provided to ensure that the carbon monoxide (CO) concentration in the enclosed parking area is maintained below fifty (50) parts per million (ppm) by:
	• Providing a minimum of six (6) outside air changes per hour, or
	• Installing a variable volume ventilation system controlled in response to input
	  o From a minimum of one CO sensor per four hundred square meters (400 m2)
	  o Floor area of parking
	
	• A supply of outdoor air must be provided to each parking level.
	• Occupied areas connected to enclosed parking must be supplied with conditioned air under positive pressure compared with adjoining parking area.
	• Ventilation systems must be capable of providing ten (10) air changes per hour for smoke clearance purposes in case of a fire incident.
	• CO monitoring equipment must be installed with a minimum of one CO sensor per four hundred square meters (400 m2) floor area of parking. Sound alarm triggers when the CO concentration reaches or exceeds 75 ppm in, at least, five percent (5%) of the monitored locations.
	• Where a building management system (BMS) or central control and monitoring system (CCMS) is installed, the CO concentration must be monitored to allow real-time profiling and management of air quality.
	• CO monitoring equipment must be checked and recalibrated every six (6) months or according to manufacturer specification by a specialized calibration company certified

by Dubai Municipality. Test results and calibration certificates must be kept on site and be readily available for inspection by DM staff.

Chapter : 10	**Standard 10: Contractors**	
	Standard 10.1	**Construction/Contractors**
	Standard 10.2	**Fit Out**
	Standard 10.3	**Permit to Work**
	Standard 10.4	**Hot Surfaces/Hot Works**
	Standard 10.5	**Working at Heights (Ladders)**

Standard: 10.1	**Construction/Contractors**
Standard Requirements	The business partners shall ensure all contractors and subcontractors work in accordance with DHCR HSE Contractors Safety Code. Contractors with appropriate experience and standards can be appointed by the business partners in accordance with Dubai Municipality approval and license requirements. Safety precautions • A risk assessment of proposed work activities together with work methodologies must be completed and the appropriate personnel must have the appropriate training in accordance with the work activities. • Effective and sufficient monitoring of contractor performance, behaviors and compliance with site rules in place is required. • Effective communication between contractors and those involved in operations is essential. • Adequate controls in place for all identified hazards and risks. • The contractor should identify hazards associated with the proposed tasks and review. • Contractor's risk management processes are integrated with site processes. • Contractor should obtain permit to work (PTW) necessary for the work, by the appropriate building/business partner's facilities operating teams. • All contractor personnel should receive site induction/orientation training. • Contractor performance is monitored to ensure that all HSE requirements are met.

Monitoring include regular inspections, observations of the work practices.

- Formal, defined actions are taken where there are failures in contractor performance, including any failure to comply with HSE requirements.
- The contractor is responsible for providing his employees regarding. personal protective equipment and adequate provisions for first-aid
- Strict adherence to the UAE Fire Life Safety Code is mandatory and it is the responsibility of the business partners to ensure compliance.

Standard: 10.2	**Fit Out Permit**
Standard Requirements	A fit out permit is the preliminary request submitted by a business partner in relation to any site works under building, design maintenance, or internal plot modification. DHCR engineering issues the approval fit-out permit) to the contractor prior to proceeding. A general fit-out works include works for core and shell units and the modification works in fitted out units whether in DHCC owned buildings or other developers owned buildings, the business partners shall reference the ***DHCA – Regulation Engineering Department Design & Review Guidelines*** for strict adherence. Safety precautions All service providers, contractor's/sub contractor's must liaise with the building facilities team, prior to works to ensure compliance with the following general safety rules: • Contractors must comply with the DHCR HSE Contractors Safety Code. • All work carried out must take into account the safety and wellbeing of others. • Contractors must comply with the permit to work system or appropriate system in accordance with the building facilities team. • Contractors must wear any personal protective equipment, as required. • Contractors must receive HSE/fire tool box talk before commencing work on site. • Contractors must not interfere/disable/abuse any fire safety equipment or devices without prior approval from the building facilities team. • Contractors must not interfere with any services or utilities with prior approval from the building facilities team. • Contractor must nominate a site safety officer while working at DHCC. • Contractors must observe the isolation procedures in place for maintenance work for plant/machinery/ equipment with prior approval from the building facilities team. • Contractors must take all due care for their own safety and the safety of others affected by their work.

- Contractors must have prior approval to work on a roof/attic/duct or similar location where only authorized access is allowed for safety reasons.
- All injuries, accidents, fires or potentially dangerous occurrences must be reported to the DHCR HSE Department.

The DHCR HSE Department reserves the right to order a contractor to cease work where danger to the health or safety of persons exists or may appear to exist.

Standard: 10.3	**Permit to Work (PTW)**
Standard Requirements	There are a number of operations that pose high hazards and fall under the category requiring a permit to work. It is therefore necessary to have a control (permit to work) to carry out these operations safely. This control is brought about through a permit-to-work system. It is essentially a document which sets out work to be done, location, personnel responsible to apply, endorse and approve, date and time and the precautions to be taken. The business partners and/or the building facilities team should ensure there is a robust system to safely manage a permit to work program. A permit to work system provides a systematic disciplined approach to assess the risks of a job and specifies the precautions to be taken when performing the job. The permit to work system: • Specifies the work to be done and the equipment to be used. • Specifies the precautions to be taken when performing the task. • Gives permission for work to start. • Advises occupants of buildings that work is being performed within their building. • Provides a check to ensure that all safety considerations have been taken into account o Including the validity of permits, certificates and compliance The business partners: • Are accountable and must ensure that appropriate employees are trained to competently use and operate the permit process, when the need to do so is identified by a risk assessment. • Must ensure that when employees are to engage in hazardous work, they participate in identifying actual or potential hazards and assess the risks and utilize appropriate controls. • Must ensure that personnel fully understand and are competently trained. Hazards of permit to work All must be aware of the nature and duration of any hazardous work that they are to

engage in:

- The hazards and associated risks involved must be considered.
- The necessary precautions must be reviewed.
- No hazardous work is to be undertaken without an appropriately authorized permit.
- Work area must be safe before the work starts, during, and when it is completed.
- A workgroup stays within limitations set on the permit (e.g. physical boundaries, type of work and validity of time).
- On completion or suspension of work, the site is left in a safe condition and the permit issuer is informed.
- Permit issuer: authorized to issue the permit, must be trained and competent.
- Permit issuer is accountable for ensuring the required electrical and mechanical isolations etc. are in place and the person responsible for the work.
- All work areas/tasks are assessed for hazards and associated risks, and the appropriate controls implemented.
- Effective arrangements are made for examination of the worksite.
- All personnel who engage in work are accountable for keeping themselves and others safe.
- An appropriate work permit is in place prior to undertaking the hazardous work.

Standard: 10.4	**Hot Surfaces/Hot Works**

Hot work is defined as any temporary operation involving open flames or producing heat/sparks, which includes, but is not limited to brazing, open-flame soldering, oxygen cutting, grinding, arc welding/cutting, oxy-fuel gas welding, hot taps, and torch-applied roofing that are capable of initiating fires or explosions. These are external activities only and must be sanctioned with prior approval from the building facility management team.

The principal hazard associated with portable hot work equipment is unauthorized sources of ignition. Everyone involved in hot-work activities shall follow guidelines during all hot work operations. Precautions should be followed before, during, and after hot work operations.

Emphasis should be placed on surrounding fire hazards, guards/welding blankets, automatic sprinkler protection, and a fire watch during and after hot work operations. To make certain that portable cutting, welding, and other hot work for maintenance, construction, or modification are done safely, a permit system is required for each hot work job.

The contractor will be required to provide their own specialized fire-fighting equipment.

Safety precautions before commencing hot works:

- Work place is free from combustible and flammable material.
- Adequate lighting and ventilation are provided.
- Equipment and fittings used for the purpose of carrying out hot work are inspected and tested by a competent person.
- There is no painting (with flammable material) carried out in the vicinity of hot work
- Fire watchman with firefighting appliances is present
- Necessary personal protective equipment is being used by everyone
- Gas regulators, hoses and torch are in good condition
- Hoses, joints are connected properly and free from leakages.
- Flashback arrestors are fitted to the gas outlet
- Welding set and work piece are properly earthed
- Cables and connections are in good condition and firmly attached
- Electrode holder fully insulated
- Low voltage safety device functioning

Standard: 10.5	**Working at Heights**
Standard Requirements	Working at heights involves ascending/descending on ladders, carrying out the job, lifting and lowering of tools/equipment/materials etc.

The hazards involved in working at heights are:

- Fall of persons.
- Fall of objects such as tools/equipment/material on personnel working below.

Personnel working at heights should be familiar with the following safety requirements:

- If working at heights (any activity that is two meters and above is classified as working at heights) therefore a harness and safety belt is required.
- Full compliance with Dubai Municipality technical guidelines, relating to PPE for fall protection and safety lines.
- Personnel working at heights must have the approved training certification.

No one should work in DHCC until they have an approved working at height permit, by the building facility management team.

General safety guidance when using a ladder

- Ladders must be fixed firmly when in use.
- Both hands should be used to hold the ladder while ascending and descending.
- Firm grip of hands and firm footing shall be ensured.
- If more than one person has to ascend/descend, the ladder shall be used one at a time.
- Persons ascending or descending shall always face towards the ladder.

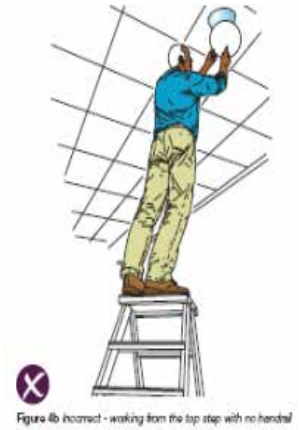


Figure 4b Incorrect - working from the top step with no handrail

- Hands shall not be engaged in holding other materials or tools.
- Ladder shall be secured before using.
- The correct ratio between the base and slant height of the ladder, (1:4 = Vo degrees to the horizontal) shall always be maintained.
- Ladders shall not be placed near doors which are likely to be opened, or near blind corners.
- Ladders shall be inspected for broken hand rails and missing, damaged or defective rungs.
- Tools, accessories and other items required for the job shall never be carried by hand while using a ladder; tool

bags shall be used instead. The tool bag must be slung over the shoulder when ascending or descending ladders.

- Tools and accessories, etc., shall be shifted to and from elevated work places by using a rope or other safe means of lifting/lowering.
- Ladders are only to be used as access and not a working platform.
- Ladders should be checked for any defects prior to use and should be in good condition.
- Homemade ladders are not permitted.

General safety guidance when on a working platform

- If a permanent working platform is not provided on the elevation where work is to be done, a proper scaffolding must be provided.
- The scaffolding provided must have hand rails, toe boards etc., as per scaffolding requirements.
- Scaffolding shall be inspected and certified by a competent person.
- Scaff-tag shall be provided in the scaffold, signed by a competent inspector.

- The area below the work shall be cordoned off.
- Due care shall be taken to avoid falling off any tools or articles, especially through the openings.
- Safety harness and lifeline must be anchored to a rigid point/structure wherever necessary.
- All tools, articles and other items brought to the work area shall be removed from the places of work and the area shall be cleared of all unwanted items.
- Grating, sections of flooring removed for the purpose of carrying out the work shall be replaced.
- A safety harness must be used while working more than two meters high.
- No work at height should be undertaken without handrails or a safety harness being fitted and used.
- Safety harness and lanyard are inspected for defects before use.
- Persons working in scaffold including erection and dismantling operations and on the scaffold platform without a proper railing, must wear a safety harness

and anchor to the permanent structure or fixtures.

- Safety harness is always anchored above the wearers work position to prevent the maximum free fall to 60 centimeters.
- Harness shock absorbing material must be used in places where the maximum fall is less than two meters.
- Mechanical device used in conjunction with harness on permanent ladders, lighting/antenna towers to restrict the drop, lock instantly under free fall.
- While working at a height, everyone must wear a helmet with chin strap.
- Precautions are taken to prevent the possibility of personnel being struck by objects dropped by those working at a height e.g. tools secured, area cordoned off etc.
- Crawling boards and/or along with suitable fall arrestors are used while working on a fragile roof.
- Activity-based checklist is duly completed and complied with before commencing the activity.

Chapter 11	**Radiology**
11.1	Radiation Safety Program
11.2	Laser Safety Program

Standard: 11.1	**Radiology**
Standard Requirements	Radiation is the emission of energy. It has always been present on earth and is part of our natural surroundings. Some natural sources of radiation include the air we breathe, the food we eat, the concrete in building materials, and the rocks and soil. Radiation from these natural sources is known as background radiation. There are two types of radiation, non-ionizing and ionizing radiation. Ionizing radiation has more energy and a large exposure may damage cells. Sources of ionizing radiation in radiology are X-ray machines, CT and radioactive sources in nuclear medicine. This guidance relates to these sources of ionizing radiation.

Non-ionizing radiation, such as visible light or microwaves, may cause heating effects in the body or have no effect at all. MRI, lasers and ultrasound do not use ionizing radiation.

How is radiation safety managed in the hospital

The business partner (where applicable) who uses ionizing radiation, should have a radiation safety officer (RSO), who ensures radiation procedures are followed in strict compliance with FANR.

Safety precautions

- Warning signs are placed on the doors of all rooms where there is the possibility of a radiation hazard.

  - If there are warning lights near the door and the yellow light is on, do not enter unless you are accompanied by a member of the x-ray department, or if they have told you it is safe to enter.

  - Packages with warning signs such as these should be secured in an area of the nuclear medicine or x-ray department. If you see these packages elsewhere, contact the radiology department. Do not move or handle the package unless instructed to do so by the radiology department, and keep a distance of more than one meter away until instructed.

- Inventory of all stored radioactive materials are up to date.
- Radioactive materials are secured and appropriately stored, placarded with radiation

signs and warning notices.

- If both lights are off, the equipment in the room is switched off and it is safe to enter the room.
- Cleaning staff must not empty waste containers with the following radiation warning sign in nuclear medicine.
- Female workers who become pregnant and who may come into the vicinity of ionizing radiation sources, must report to occupational health, or the appropriate department.
- Laboratory staff dealing with radioactive samples must apply strict safety controls.
- Ancillary staff including cleaners, porters, security and technical services that may come into the vicinity of ionizing radiation sources must apply strict safety control.

The business partner shall ensure appropriate safety controls for everyone, including external contractors and foreign workers, and ensure the following:

- Sufficient and appropriate training is provided to workers whose work may involve exposure to ionizing radiation, and records are kept of the date on which staff participated in training.
- Radiation safety procedures are in place, and reviewed annually.
- Area to be monitored using radiation survey meter periodically.
- The employer is required to keep record of the date on which the radiation safety procedures were provided to each radiation (exposed) worker.
- Procedures in place for preparation, storage, identification and use of medical gases, drugs and related materials.
- Personal protective equipment (PPE) includes gloves, gowns, lab coats, face shields, eye protection, mouthpieces, resuscitation bags, pocket masks and other ventilation devices. As such the PPE that should be used depends on the task and degree of exposure.
- Each healthcare operator must have a current safety manual containing policies and procedures with which the licensed facility must ensure compliance.
- The safety manual must include provision for the training of all personnel of the licensed facility in the safety policies and procedures, including but not limited to:
  - Identification of emergency exit routes
  - The locations of all fire alarms and extinguishers, and provisions for assuring that they shall be checked and maintained on a regular basis
  - The locations and procedures for use of all fire sprinklers/fire extinguishers
  - The locations and procedures for use of fire safety showers
  - The locations of first-aid boxes, and provision for assuring that they are checked and replenished on a regular basis
  - Monitoring badges to measure integrated external radiation dose received over extended time periods at low dose rates

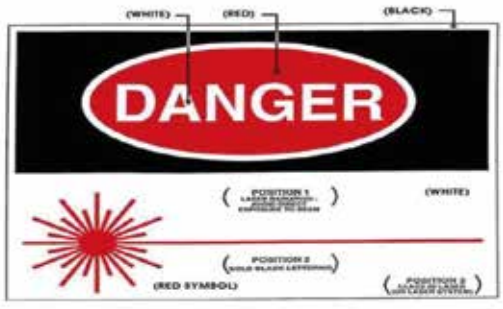
Whenever sources of ionizing radiation are used in a hospital (practices), a formal risk assessment should be carried out in consultation with the radiation protection adviser (RPA) to ascertain the training requirements for personnel affected. Procedures in place to minimize hazards from fire, explosion and electrocution and all electrical equipment.

Particular attention should be given to situations where new practices are introduced which may affect personnel unfamiliar with ionizing radiation. The risk assessment provides information on how to control any hazard arising from such practices, how to categorize exposed workers, how to instruct staff to minimize their exposure to the hazard (RSP) and how to designate areas according to the level of exposure (controlled or supervised areas).

Standard: 11.2	**Laser Safety**
Standard Requirements	Laser facility or laser installation means a location or facility where laser systems are stored, produced, disposed of, or used for any purpose. There are different laser classifications and each business partner (providing laser procedures) should know their classification.

Lasers are divided into classifications, from I to IV, based on their eye and skin hazards.

- Class 1 laser means it is incapable of causing eye damage.
- Class 2 or II (up to 1 milliwatt - typical laser pointer in most countries), means it emits visible light only. This type of laser is only capable of producing eye damage if the beam is stared at directly for longer than the normal human aversion response time to bright light (0.25 seconds) or Class 2a (II) means it is not hazardous if viewed directly for up to 1000 seconds.
- Class 3A or IIIa (up to 5 milliwatts) is the maximum power for a legal laser pointer in the U.S.
- Class 3B or IIIb (up to 500 milliwatts) is moderate to serious eye hazard.



- Class 3 Laser means it is capable of causing eye damage from a short-duration (<0.25s) viewing of the direct or specularly-reflected beam.
- Class 4 or IV (500 milliwatts), is a laser which is high- powered and capable of causing severe eye and skin damage with short-duration exposure to the direct or specularly-reflected beam.

Safety precautions

Every laser facility shall ensure that the designated laser safety officer has qualifications that include training, experience and familiarity in the following areas:

- Fundamentals of laser operation.
- Familiarity with the type of laser equipment utilized at the facility.
- Biological effects of laser radiation on the eye and skin.
- Laser and laser system classification.
- Control measures non-radiation hazards of lasers.
- Medical surveillance practices (if applicable).
- Laser terminology.
- Maximum permissible exposure (MPE) levels for eye and skin for all lasers and for all conditions of use of laser systems at the laser facility.

Every business partner that has a laser facility shall ensure the following specific duties are carried out by the laser safety officer (LSO):

- LSO qualified, credentialed and trained in the safe use of the laser.
- LSO may recommend/substitute or alternate control measures.
- LSO periodically audit the functionality of control measures in use and undertake the following activities:
  - Establish and implement a compliance program of laser radiation safety.
  - Ensure that instructions concerning hazards and safety practices are provided to individuals who may be exposed to laser radiation and to individuals who operate lasers.
  - Permit, on behalf of the DHCR operation of lasers only by individuals who have been qualified, credentialed and trained in the safe use of the laser, and received copies of and instruction in the CPQ operating and emergency procedures (licensing requirement).
  - Form a laser safety committee in laser facilities where more than one

practitioner or operator may use lasers. The committee shall oversee laser activity, establish use criteria and approve operating policies and procedures.

- Ensure that all laser systems in operation comply with this rule and that prescribed control measures are in effect. The laser safety officer may recommend and approve substitute or alternative control measures when the primary control measures are not feasible or practical. Accordingly, if alternative control measures are instituted, the personnel directly affected shall be provided with appropriate training.
- Periodically audit the functionality of control measures in use.

- Laser equipment shall be maintained in a clean and sanitary condition and installed or stored in a dry, well-ventilated area.
- Alignment of laser optical systems (e.g. mirrors, lenses and beam deflectors) shall be performed in a manner that assures that no one is exposed to laser radiation above the maximum permissible exposure.
- Routine maintenance, preventive maintenance, and repairs shall be performed according to the manufacturer's guidelines, by qualified service personnel.
- All laser equipment has optimal temperature and humidity requirements, usually provided by the manufacturer.
- The infrastructure provided for the equipment must conform to the manufacturer's requirements or be approved by them before installation.
- A controlled area shall be established when exposure to laser radiation in excess of the maximum permissible exposure limit is possible. Within the controlled area, all personnel shall adhere to appropriate eye protection procedures during all laser applications.
- PPE - Provide face shields, coveralls and gloves.
- Protect others using screens/curtains/restricted access.
- Display appropriate warning signs.
- If any workers are over-exposed, provide medical examination and consider whether follow-up health surveillance is appropriate.
- Have the right engineered measures like remote controls, screening, interlocks, and clamps to hold material.
- Enforced maximum working periods – routine change of activity.

Laser equipment shall be maintained in a clean and sanitary condition and installed or stored in a dry, well-ventilated area. Routine maintenance, preventive maintenance, and repairs shall be performed according to the manufacturer's guidelines. All laser equipment has optimal temperature and humidity requirements usually provided by the manufacturer. The infrastructure provided for the equipment must conform to the manufacturer's requirements or be approved by them before installation. The manufacturer/supplier shall provide for initial and annual in-service training in laser safety for individuals using laser

systems, to ensure their awareness of laser safety practices and policies, with recorded retained evidence of training.

Standard: 12.2	**Biological**
Standard Requirements	Biological hazards are substances that may be able to provoke an infection, allergy or toxicity. This can include samples of a microorganism, virus or toxin (from a biological source) that can affect human health. They are classified into four risk groups according to their level of risk of infection. If the biological agent to be assessed cannot be classified clearly in one of the following groups, it shall be classified in the highest risk group among the alternatives.

- Group 1 biological agent, is unlikely to cause human disease.
- Group 2 biological agent, can cause human disease and might be a hazard to employees, but is unlikely to spread to the community and in respect of which, there is usually effective prophylaxis or treatment available.
- Group 3 biological agent can cause severe human disease and presents a serious hazard to employees and that may present a risk of spreading to the community, though there is usually effective prophylaxis or treatment available.
- Group 4 biological agent can cause severe human disease and is a serious hazard to employees and that may present a high risk of spreading to the community and in respect of which there is usually no effective prophylaxis or treatment available.
- Cell culture means the in-vitro growth of cells derived from multicellular organisms.
- Micro-organism means a microbiological entity, cellular or non-cellular, capable of replication or of transferring genetic material.

Safety precaution

The business partners (where there are biological hazards) should have a clear understanding of what constitutes a biological agent in their facility and be provided with the appropriate biological agent training for their facility

- Complete a biological risk assessment which identify the hazards and the risks associated with exposure to biological agents..
- Food controls for all employees must exist. Do not eat or drink in the workplace

where there is a risk of contamination by a biological agent.

- There are appropriate and adequate washing and toilet facilities, which may include eye washes and skin antiseptics.
- Clear procedures for taking, handling and processing samples of human origin (where appropriate).
- Staff are provided with suitable work clothing, special protective clothing (where necessary) and personal protective equipment (PPE).
- Removal of suitable work clothing, special protective clothing and PPE are removed on leaving the working area, kept separately from other clothing in a designated area, and checked before and after each use, and cleaned and decontaminated or, if necessary, destroyed.
- Ensuring employees are provided with appropriate information, instruction, supervision and training.
- Where there is a risk of exposure to a biological agent for which an effective vaccine exists, the employer must offer the vaccine (free of charge) to the employee.
- Where there is a risk of exposure to a biological agent the BP must provide a health surveillance.
- Follow strict adherence to the DHCR HSE Biological Spill Procedure, DHCR HSE Hazmat Guidelines and DHCR HSE Waste Guidelines and DHCR Sharp Management Guidelines.

Always have clinical waste secured

Example of bad practice

Sample of a type of a clinical waste bin

- Yellow in color
- Clear signage
- Foot pedal

Chapter	Hospitality	
13	**13.1**	**Food & Beverage**

Sample of a type of general waste bin

- **Grey** in color
- Clear signage

Standard:	**Food & Beverage**
Standard Requirements **13.1**	The business partners shall ensure compliance with the DHCR HSE Food Safety Guideline. It provides clarity on the requirements in relation to managing food safety to help develop occupational health and safety awareness of good practice for all food handlers in the delivering of high food services standards. This will ensure compliance with DM Food Code 2013. The business partners' food safety person in charge (PIC), should follow the day-to-day activities, listed below (this is not an exhaustive list): • Carry out opening and closing checks. • Ensure deliveries are from DM approved suppliers. • Food handlers start work clean, properly dressed, nails short, no septic cuts, are

fit, and hands washed.

- Provide appropriate supervision to eliminate any bad practices.
- Ensure there is no temperature abuse during the management of food (see values reference).
- Ensure thermometers are used properly.
- Ensure there is effective, safe cleaning, pest control, and waste management.
- Ensure all materials are replenished throughout the day.

Food products purchase

The business partner shall ensure:

- Food products are purchased from an approved source and inspected on delivery for the expiration date and signs of spoilage.
- Any damaged food or containers are rejected.
- Perishable food products are stored immediately at proper temperatures.

Food storage

The business partner shall ensure:

- Non-perishable food is stored in clean, dry, properly ventilated areas, and inspected periodically for any signs of spoilage or expiration dates.
- Food is stored in designated areas.
- Food should not be stored in housekeeping and dishwashing areas, or near any sources of potential contamination.
- Food should be stored at least six inches above floor level and away from walls to facilitate cleaning and allow pest control measures.
- Food stocks must be rotated to avoid outdated food from being used. Follow the first in & first out system.
- Food should be stored in a way that avoids cross contamination between cooked and raw foods, washed and un-washed food.
- Food should be covered, labeled, and then stored at proper temperatures for refrigeration (freezing storage less than -18° C, refrigeration 1-4° C, and hot storage above 64° C).
- Monitor the temperature of the refrigerators and freezers, and record it daily.

Food preparation

The business partner shall ensure the following:

- Instruct personnel and supervise personal hygiene and food safety during food preparation.
- Wash vegetables and fruits properly.
- Thaw in a microwave (above 75° C) or refrigerator (at 40° C or below) or under running potable water (not above 21° C for not more than four hours).
- Do not thaw under room temperature.
- Do not thaw and refreeze.
- Cook food thoroughly to reach the ideal temperature for different types of food.
- Reheat food at 75° C at least, and serve at a minimum of 65° C.
- Store prepared food protected at proper temperatures to avoid contamination. Do not allow the food to sit uncovered at room temperature.
- Avoid handling any food with bare hands. Use proper and clean utensils like tongs and spoons.
- Separate cutting/chopping boards should be used for:
  - Raw meat
  - Poultry
  - Fish
  - Raw fruits
  - Vegetables and
  - Cooked food

  Exception: If the boards are non-absorbent, and in good condition (no scratches, chips, or cracks), and can be cleaned and sanitized adequately between uses.
- Use clean equipment and utensils during food preparation and avoid cross-contamination.
- Monitor dishwashing and rinsing water temperature to achieve proper sanitation and washing of food utensils.
- For manual washing, sanitize all utensils and equipment either by hot water (minimum of 70° C), or use a sanitizer at appropriate concentrations and exposure time.
- Wash all working surfaces, thoroughly rinse and sanitize them after each user with the proper sanitizer, dilution, exposure time and water temperature.

Food transport, display and serving

The business partner shall ensure the following:

- Food must be transported to different areas protected in temperature-controlled carts.
- Establish safe times for food items to be stored at inpatient care areas.
- Protect food on display from customer contamination by use of easily cleanable counter protector devices.

- Maintain food on display at the correct temperature when hot or cold.

Waste management at a food facility

The business partner shall ensure the following:

- Storage of garbage in leak and pest proof containers with tight fitting covers.
- Store all garbage containers either outdoors or above a smooth surface of non-absorbent material.
- Wash containers and sanitize routinely in an area provided with a floor drain connected to a sanitary sewer.

Pest control at a food facility

The business partner shall ensure:

- Appropriate pest control measures such as sanitation, screens, closure of cracks and holes, etc. to prevent the access and extermination of pests.

Chapter	Governance	
14	**14.1**	**Monitoring & Evaluation**

Standard:	**Monitoring & Evaluation**
Standard Requirements **14.1**	The evaluation of fire, life and health and safety management program will be in accordance with DHCR HSE Regulation to ensure compliance with statute and best practice and elimination of the risks and hazards associated across DHCC. The overall performance improvement outcomes and overall effectiveness of the program will be evaluated by determining the degree that expectations were met as follows: • HSE policy and HSE objectives are being achieved. • Risk controls have been implemented and are effective. • Lessons are being learnt from HSE management system failures, including hazardous events. • Awareness, training, communication, consultation and participation programs for employees and interested parties are effective. The monitoring and measurement of HSE performance shall include the following proactive measures (this is not an exhaustive list): • Compliance with applicable legal and other requirements. • Compliance with external/internal audits.

- HSE committee/governance meetings.
- Emergency drills.
- HSE activities such as awareness sessions.
- Fire safety inspection.
- Waste recycling program.
- Compliance with planned preventive maintenance program of life and safety equipment.
- Inspection schedules and checklists.
- Inventory of critical equipment.
- Equipment inspection checklists.
- Inventory of measuring equipment.
- Calibration records.
- Consumption of water, electricity and raw material.

Application of the rules:

The 2018 HSE Community Guidelines should be read as a general guide for best operating practice to eliminate harm and minimize risk. The guidance should be read in strict compliance with local, national, federal law and international best practice and any DHCC published policies, guidelines and procedures. The above guidance is not a comprehensive program nor an exhaustive list to ensure conformance and it is the legal duty of all business partners, investors, directors, managers, and specialist operations staff to ensure they fully informed of the legislation with strict application of conformance.

Section 21: Regulation 1 and 2

In the instances where an HSE hazard is immediately correctable, the business partner must inform the DHCR HSE of the existence of the OHSE hazard, impact or violation. The DHCR HSE Department shall make a note of the time, place and person informed by verbal notification. If, after 48 hours, the violation has not been corrected, a written notification in the form of an improvement notice will be issued.

DHCR HSE improvement notice

In instances where an HSE hazard is not immediately correctable or when a verbal notification has been ignored, the DHCR HSE Department shall issue an improvement notice. The improvement notice shall provide details of a verbal notification (when applicable), full explanation of the HSE problem, and recommendations for corrective actions, including time frames. The improvement notice may include penalties and will most certainly be escalated to a prohibition notice if it is not complied with within the stipulated time frame. Copies of the improvement notice shall be distributed to the DHCC senior vice president, vice presidents and the tenant.

Prohibition notice

In instances where an HSE violation or non-compliance is of a serious nature and DHCR's HSE Department deem there is significant risk to employees and others or to the building, plant and equipment the DHCR HSE Department will issue a prohibition notice. The prohibition notice shall include all details of the violation or non-compliance and will include details of any corrective action required and the time frame to rectify the situation. The work process, plant or equipment will not re-commence or start up until the prohibition notice is closed out in coordination with DHCR's HSE Department.

Should the business partner fail to comply with the requirements of the improvement notice, punitive action will be taken against the offender.