



KURDISTAN REGIONAL GOVERNMENT (KRG)

MINISTRY OF CONSTRUCTION AND HOUSING (MOCAH)

HEALTH, SAFETY AND ENVIRONMENT MANUAL BOOK FOR CONSTRUCTION PROJECTS

(FOR PROJECTS WITH THE BUDGET OF BELOW ONE BILLION IRAQI DINARS)

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Version 1



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ABBREVIATION

KRG	Kurdistan Regional Government
MOCAH	Ministry of Construction and Housing
PPE	Personal Protective Equipment
WHO	World Health Organization
HSE	Health, Safety & Environment
LPG	Liquefied Petroleum Gas
GHP	Good Housekeeping Practices



1 INTRODUCTION

The Health, Safety, and Environment Manual (hereafter referred to as “this Manual”) has been developed to identify the minimum requirements for the government’s committee and supervisory teams in general, Construction Contractors, Subcontractors and their lower-tier subcontractors (hereafter referred to as “Contractor”) which require personnel to perform construction activities at the Ministry of Construction and Housing (MOCAH’s) directorates.

Kurdistan region of Iraq (KRI) has experienced large development in all areas in the past years; however, it is only at the early stages of the transaction and required the improvement of construction health, safety and environment standards in line with accepted international best practice. These standards which also denotes by security or safety affairs for the work environment in engineering projects defined by the World Health Organization (WHO Healthy Workplace Framework and Model https://www.who.int/occupational_health/healthy_workplace_framework.pdf) to ensure the safety of all who work inside the project site in a manner to provide physical, social, and physiological welfare.

Standards related to health, safety and environment should get more priority in MOCAH’s contracts, as many contractors strive to compete on price alone and in order to win contracts; they are forced to cut costs. Unfortunately, cutting construction costs usually results in the relegation of perceived indirect services, such as health, safety and environment management to a low value item on the tender submission and bill of quantities.

This document has been developed by Kurdistan Regional Government (KRG) - Ministry of Construction and Housing (MOCAH) under the supervision of a committee consists of (Eng. Saman Khalid, Eng. Sharmal Abdullah, Eng. Solav Ibrahim, Eng. Bawer Shakir and Eng. Bayar Taqueadeen) and with the minimum requirements for both MOCAH and of contractor’s staff engaged on client projects where MOCAH has been assigned responsibility for health, safety and environment.

2 OBJECTIVE

The purpose of this Manual is to promote the health and safety of MOCAH’s employees and contractor’s staff by imposing standards for control and specific requirements to avoid dangers from specific hazards during contract work on projects with a view to:

- a. Avoiding accidents, diseases and hazard effects on the health of workers arising from work activities required by employer as part of conditions of employment in construction.
- b. Ensuring adequate design and implementation of construction projects.
- c. Providing means of analyzing from the point of view of safety, health and working conditions, construction processes, activities, technologies and operations, and of taking adequate measures of planning, control and execution.

Anyone who works or visiting the workplaces is obliged to comply with this manual’s terms and conditions.



3 DUTIES AND RESPONSIBILITIES

In general terms, the HSE rule prescribes the following major duties for contractors, supervisors, workers, and committees/representatives:

Contractors are responsible for:

- Providing a safe and healthy workplace including the necessary plan, equipment, systems, and tools which are properly maintained.
- Providing information, training, instruction, supervision and facilities to protect the health and safety of workers.
- Establishing, supporting, and consulting with HSE committees and/or Workplace HSE representatives on all matters to improve workplace HSE including regular safety inspections of the workplace.

Supervisors are responsible for:

- Ensuring workers under their direction know and comply with health and safety requirements.
- Ensuring workers under their direction receive adequate supervision.

Workers are responsible for:

- Cooperating with management, supervisors, and the Occupational Health and Safety committee or Workplace Health and Safety representative.
- Following safe work procedures and using mandatory personal protective equipment (PPE).
- Traditional clothes are forbidden to be worn during construction works especially for (working at height, working in excavation, scaffolding works, installation of rebars & shuttering works). These kinds of clothes might cause serious injuries.
- Reporting hazards (such as unsafe situations and activities) to their supervisor immediately.

4 CONTRACTOR MINIMUM REQUIREMENTS

The purpose of this section is to provide health, safety and environment guidance to contractors to assist in complying with Kurdistan Region Government's standard requirements.

Following, minimum requirements are mandatory for the contractors and who works with the Ministry of Construction and Housing;

1- Personal Protective Equipment;

PPE is the personal equipment "that must be worn" by those who are working in construction workplaces to minimize exposure to hazards that may cause serious injuries and illnesses.



- 1- No mandatory PPE worn, No duty.
- 2- PPE shall be provided free of charge to workers as required.
- 3- Instruction on how to inspect PPE shall be provided to workers.
- 4- PPE shall be stored in the shade out of direct sunlight.

2- First Aid on Site;

First aid is emergency care that must be given immediately to an injured person at the workplace. The reason for first aid is to stabilize injured workers until is taken care of by Medical or Health Centers. In serious cases, first aid may be necessary to keep the victim alive. Employer is expected to provide:



- 1- A suitably stocked first-aid kit for places of works where there are activities with potential to cause harm.
- 2- Information for employees about first-aid arrangements.
- 3- Regular inspection for the first aid kits.

3- Toolbox Meeting

Toolbox meeting will be held on a daily basis at the start of each day or shift to reinforce the focus on safety topics.



- 1- Keep it short. Toolbox talks should be no longer than 5 – 10 minutes.
- 2- Focus on safety topics relevant to the work being done that day.
- 3- Get workers involved by asking questions.
- 4- Have employees inspect tools, equipment and PPE.
- 5- Share lessons learnt from previous incident, accident or near miss reports.

4- Manual Handling;

Manual handling is transporting or supporting of any objects or materials by lifting, holding, carrying, pushing, lowering, or pulling by one or more workers.



- 1- Avoid the need for hazardous manual handling and try to use automation and lifting equipment as much as possible.
- 2- Assess the risk of injury from any manual handling task that cannot be avoided.
- 3- Reduce the risk of injury from manual handling, so far as is reasonably practicable.
- 4- Providing information and training to workers on tasks, the use of equipment and correct handling techniques.

5- Slip, Trip & Fall

In general, slips and trips happen due to a misfortune of footing between the shoe and the walking surface or accidental contact with a fixed or moveable object which may lead to a fall.



- 1- Create Good Housekeeping Practices (CHP).
- 2- Reduce Wet or Slippery Surfaces.
- 3- Avoid Creating Obstacles in Aisles and Walk-ways.
- 4- Create and Maintain Proper Lighting.
- 5- Wear Proper Shoes.
- 6- Control Individual Behavior.

6- Work in Excavations;

Excavation work usually means work involving the removal of soil or rock from a site to form an open face, hole or cavity using hand tools, machinery or explosives. Excavating or trenching works can be highly dangerous and may lead to death or severe injuries if not carried out safely.



- 1- Identify all the underground facilities in conjunction with the relevant authority within the area to gain formal permission.
- 2- Excavation sides must be prevented from collapsing by shoring or battering and safe ladder access must be provided.
- 3- Warning sign in terms of ribbon and poles with reflectable stall day and night must be provided to prevent falls into the excavation.

7- Working At Height;

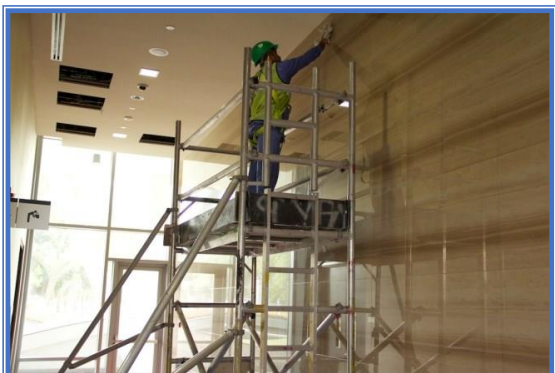
Work at height' means work in any place where, if there were no proper safeguards in place, a person could fall down from a fragile roof or scaffolding and causing a serious injury.



- 1- Safety harnesses for the laborers who works at height must be accurately used.
- 2- Prevention of Falling Materials.
 - a- Toe-boards and others such as mesh guards or protective fans must be used to avoid materials falling.
 - b- Training of Workers how to work safely and more proper.
- 3- Use scaffolding to provide a safe place of work along with safe access.

8- Scaffolding;

Scaffolding is a temporary structure used to support a work crew and materials to assist in the construction, maintenance and repair of buildings, bridges, and all other structures.



- 1- Harnesses must be worn by scaffolders at all times.
- 2- Scaffold ties and sheeting or netting requirements must be carefully considered in accordance with the design.
- 3- Every scaffold must be inspected by a competent person.
- 4- Inspections must be made on at least a weekly basis.

9- Vehicle Traffic Management;

Traffic management is a guidance and control of both stationary and moving traffic, including pedestrians, bicyclists and all types of vehicles.



- 1- Proper reflectable information signs (Road Under Construction or Manintenance) must be provided for the road users.
- 2- Adequate reflectable warning signage must be provided by well ahead at least 500m of the hazards areas.
- 3- Lighting must be checked regularly and maintained immediately as required.
- 4- Positioning and use of safety barriers must take into consideration.
- 5- Flagmen must be made available during the intensive construction working hours on the road to manage the traffic.
- 6- At the end of each working day, the vehicles and equipment should be properly & safely parked out of the road and well barricaded by reflect-able signs and hazard tapes to avoid any potential accident during the night.
- 7- All machines should be mechanically well maintained every day before using it especially brake and lightings.

10- Pedestrian Segregation;

Creating a safe walk (Pathway) zones by clearly defining pedestrian pathways.



- 1- Safe pedestrian walkways must be established using barriers and baulk timbers.
- 2- Pedestrians must be segregated from vehicles along all main routes.
- 3- Walkways shall be kept clear of debris and leveled to provide safe access.

11- Lifting Operations;

Lifting operation is a mechanical process concerned with the lifting and lowering of various loads in all construction projects.



- 1- All cranes must be in a good condition and tested by a third-party at least every 12 months.
- 2- Crane operators must be in possession of a recognized competency certificate and physically fit.
- 3- Loads should be slung only by trained and competent persons.

12- Fire Prevention;

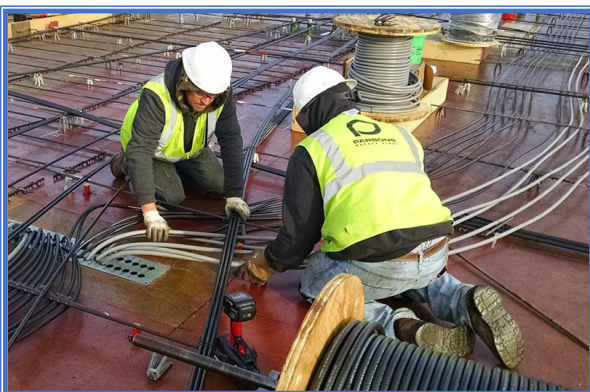
The goal of fire prevention is to educate the workers to take basic precautions to prevent potentially harmful fires and be educated about surviving them on the work sites.



- 1- Combustible construction materials shall be stored away from sources of heat and ignition.
- 2- Flammable liquids, Liquid Petroleum Gas (LPG) and other bottled gases must be strictly controlled.
- 3- Means of raising the alarm must be established on the site and in the offices.
- 4- Clear responsibilities must be assigned to personnel on site.

13- Electrical Safety;

Electrical safety is a method of organizational measures and technical means to avoid harmful and dangerous effects on workers from electric current, electric arc, electromagnetic field and static electricity.



- 1- Electrical tools must be checked before use to ensure they are not damaged.
- 2- Cables must be in good condition and free from makeshift repair or damaged sheathing.
- 3- Persons using electrical tools must be trained and briefed on the risks and control measures associated with electricity.
- 4- Electrical tools must be adequately stored to minimize damage.

14- Access and Housekeeping;

Housekeeping is not just cleanliness. It includes keeping work areas neat and tidy, maintaining a workplace free of slip and trip hazards, and removing of waste materials.



- 1- Rubbish must be cleared on a regular basis in order to facilitate safe access around the site.
- 2- Trip hazards such as trailing cables must be minimized along main access routes.
- 3- Materials should be stacked safely on a proper and level base.
- 4- Clear signage must be posted whenever a particular area or a walkway is not safe for people.

15- Site Security;

Providing an appropriate level of site security benefits for both of the owners and contractors, as it will protect the site and restrict entry to only authorized personnel.



- 1- The site must be fenced to prevent persons entering the site as far as reasonably possible.
- 2- Night shift guard must be available in the workplace to protect materials and equipment in site from any potential thefts. Taking in consideration the day and night during weekends and holidays.

5 THE COLOR LANGUAGE

This section includes some essential advices for both supervisor directorate and contractors' staffs which should keep and implement in project site.

A- Signage Colors;

MOCHA and its contractor must ensure that their staff and workers are aware of the different types of signage, their color coding and meanings. All signs will have a pictogram as well as text indicating the condition required. For example;






Red	Prohibitive	(Must not do)
No Smoking, No unauthorized entry, Do not touch, No vehicles, etc.		
Blue	Mandatory	(Must do)
Wear hard hat, Wear eye protection, Wear hearing protection, Sound home, etc.		
Yellow	Caution	(Hazard warning)
Fragile roof, High voltage, Asbestos, Forklift trucks, Low headroom, etc.		
Green	Safe Condition	(The Safe way)
First aid, Escape route, Assembly Point, Eye wash, Emergency phone, etc.		

- Some signs may contain a combination of two or more conditions for example;



B- Safety Helmet Color;

The color of safety helmet depends on site, department, company, industry and sometimes geography. However, below are some of the helmet colors.

Color	Image	For
White		Managers, Engineers, Supervisors and Foremen.
Blue		Electricians, Carpenters and other technical operators apart from civil workers.
Orange		Lifting operatives, Banksman slingers / signalers or traffic marshals but mainly lifting operatives wear orange hard hats so the crane operator can pick them out from other operatives. Also, can be used by road crews.
Yellow		General laborers and earth moving operators.
Grey		Site Visitors.

6 REFERENCES

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<http://programmeofficers.co.uk/Preston/CoreDocuments/LCC162.pdf>

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