



# **Abu Dhabi EHSMS Regulatory Framework (AD EHSMS RF)**

**EHS Regulatory Instrument**

**Code of Practice**

**EHS RI - CoP 34.0 – Safe Use of Lifting  
Equipment and Lifting Accessories**

**Version 2.0**

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## ACKNOWLEDGEMENTS

With gratitude Abu Dhabi EHS Center acknowledges the great support provided by the Executive Council in facilitating the issuance of Abu Dhabi Emirate Environment, Health and Safety Management System (AD EHSMS) and its implementation at Emirate level.

The issuance of the system would not have been possible without the supervision, diligent efforts and productive recommendations of the AD EHS Center Board of Directors.

These documents (Regulatory Instruments) constitute the efforts of the Abu Dhabi EHS Center and the concerned Sector Regulatory Authorities who worked together to integrate all relevant regulatory requirements under *AD EHSMS RF*. The input, contribution and constructive views of all sectors is highly appreciated.

May these documents prove to be beneficial and helpful in system implementation and in expanding the knowledge in the EHS field.



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## Preface

This Abu Dhabi EHS Regulatory Instrument was developed by the Building and Construction Sector Regulatory Authority as the primary Competent Authority for this topic to set the minimum mandatory requirements.

Every effort was made in developing this document so that it does not conflict with existing local or federal laws and regulations. In case of conflict, requirements of the existing local and federal laws and regulations shall prevail, and all concerned are obliged to bring the same to the attention of AD EHS Center for resolution.

This AD EHS Regulatory Instrument has been developed, reviewed and approved, following the process as described in *AD EHSMS Implementation Guideline: The Integration of EHS Requirements in the Emirate of Abu Dhabi*, by the following stakeholders:

- Abu Dhabi EHS Higher Committee;
- Abu Dhabi EHS Center;
- Environment Agency Abu Dhabi;
- Department of Municipal Affairs;
  - Abu Dhabi City Municipality;
  - Al Ain City Municipality;
  - Western Region Municipality;
- Department of Transport – Abu Dhabi;
- Abu Dhabi Water and Electricity Authority;
- Health Authority Abu Dhabi;
- Higher Corporation for Specialized Economic Zones – Abu Dhabi (ZonesCorp);
- Center for Waste Management – Abu Dhabi;
- Abu Dhabi Tourism Authority;
- Abu Dhabi Food Control Authority;
- Abu Dhabi Education Council;
- Regulation and Supervision Bureau; and
- Other Relevant Federal and Local Competent Authorities.

The AD EHSMS consists of the following hierarchy of documents:

- AD EHSMS RF Elements - Mandatory System Requirements

EHS Regulatory Instruments:

- Standards and Guideline Values - Mandatory EHS threshold and exposure levels
- Codes of Practice - Mandatory EHS technical requirements – subject specific
- Mechanisms - Mandatory system implementation processes and procedures

Guidelines:

- Technical Guidelines - Non-mandatory guidance on how to implement an EHS Regulatory Instrument
- AD EHSMS Guidance Documents - Non-mandatory guidance and interpretation of EHSMS System concepts and principles

Further, this document is not intended to conflict with any contractual obligations in effect at the time of its issuance. However, all future contracts shall adhere to applicable requirements stated herein, and existing long term contracts shall be brought into compliance with its requirements as soon as reasonably practicable as stipulated by relevant subject authorities.

This document will be reviewed periodically as part of the continual improvement cycle.

## 1. Introduction

- (a) This Code of Practice (CoP) applies to all employers within the Emirate of Abu Dhabi. This CoP is designed to incorporate requirements set by Abu Dhabi EHS Center and Sector Regulatory Authorities in the Emirate of Abu Dhabi.
- (b) This CoP establishes the requirements and standards so that the risks associated with the use of lifting equipment and lifting accessories are assessed, that control measures are implemented in accordance with the hierarchy of controls and that control measures are taken to prevent injury, illness and disease to persons who might be exposed to risks arising from those activities.
- (c) This CoP applies to the use of all types of lifting equipment and lifting accessories in accordance with the definitions laid out in this section.
- (d) In this CoP the following terms and definitions are used:
- 'Lifting Operation' refers to the operation of lifting or lowering a load using lifting equipment;
  - 'Lifting Equipment' refers to any device used for lifting or lowering a load and typically includes mobile cranes, tower cranes, gantry cranes, crawler cranes, hoists and elevating work platforms;
  - 'Load' refers to any load being lifted or lowered by lifting equipment and typically includes materials, waste materials, plant, equipment and persons;
  - 'Common Lift' refers to any routine or regular lifting operation that is carried out where the lifting equipment, lifting accessory and the load are the same in each case. An example of a common lift is the unloading of steel reinforcement from a delivery lorry at the same radius, using the same crane and lifting accessory;
  - 'Special Lift' refers to any lifting operation which is carried out infrequently or as a 'one-off' on the site and there is change in either the lifting equipment used or the lifting accessory. An example of a special lift is the lifting of air conditioning plant onto the roof of a building which will only be carried out once and will require a detailed lifting assessment;
  - 'Lifting Accessory' refers to any accessory connected to lifting equipment used in connection with lifting or lowering a load, it includes chains, slings, shackles, wire ropes and any accessory that may be used to carry a load such as a concrete skip or man riding basket;
  - 'Signaller/Slinger' refers to any employee connecting a load to lifting equipment or any employee providing directions to the operator of any lifting equipment. Can also be known as 'Rigger'; and
  - 'Appointed Person' refers to a trained and competent person appointed by the employer using lifting equipment to undertake the duties detailed in Section 3.1.4.

## 2. Training and Competency

- (a) Employers shall ensure that EHS training complies with the requirements of:
- (i) *AD EHSMS RF – Element 05 – Training and Competency;*
  - (ii) *AD EHS RI – Mechanism 7.0 – AD EHS Professional Entity Registration;* and

- (iii) *AD EHS RI – Mechanism 8.0 – AD EHS Practitioner Registration.*
- (b) In accordance with *AD EHSMS RF – Element 01 – Roles, Responsibilities and Self-Regulation Section 3.2.5* employers shall ensure employees required to implement the requirements of this CoP are trained in the use of lifting equipment and lifting accessories and understand the risks associated with using the equipment and the control measures put in place by the employer.
- (c) Employers shall ensure all employees involved in using lifting equipment and lifting accessories are trained to recognise and respond to hazards associated with this type of work.
- (d) Employers shall ensure that all employees who operate lifting equipment hold the appropriate licences from the concerned authority within the UAE.
- (e) Employers shall ensure that all employees operating lifting equipment are trained and approved specifically in the use of that type of equipment through an approved training provider, as per *AD EHS RI – Mechanism 08 – EHS Practitioner Registration.*
- (f) Employers shall ensure that all employees working as signallers/slingers are trained specifically in signalling and slinging techniques through an approved training provider as per *AD EHS RI – Mechanism 08 – EHS Practitioner Registration.*
- (g) Employers shall ensure an overall training programme is planned for both employees and supervisors, and shall include, but not be limited to the:
- (i) general requirements to all employees on the safe working practices associated with lifting equipment and lifting accessories;
  - (ii) clear detailed instruction for those working directly with lifting equipment and lifting accessories; and
  - (iii) details on the care and inspection of lifting equipment and lifting accessories.
- (h) Employers shall maintain a record of the required training that contains the following information:
- (i) name and ID number;
  - (ii) Emirates ID number of the employee;
  - (iii) subject(s) of training;
  - (iv) date(s) of training; and
  - (v) person(s) providing the training.

### **3. Requirements**

#### **3.1 Roles and Responsibilities**

##### **3.1.1 Employers**

- (a) Employers shall undertake their roles and responsibilities in accordance with the general requirements of *AD EHSMS RF – Element 01 – Roles, Responsibilities and Self-Regulation Section 3.2.5.*

- (b) Employers shall undertake their specific roles and responsibilities with regards to lifting equipment and lifting accessories by ensuring the following:
- (i) lifting plans are prepared and as regularly as necessary updated to reflect the type of lifting operations being carried out at the site;
  - (ii) specific lifting plans are developed when special (complex) lists are to be undertaken;
  - (iii) all lifting operations are planned and carried out in accordance with the specific control measures identified in the lifting plan;
  - (iv) all employees undertaking lifting operations are trained and competent;
  - (v) the place where lifting operations are undertaken is safe;
  - (vi) where an employer is to use lifting equipment or lifting accessories provided by another employer they shall ensure that it is inspected by a competent person and declared safe and appropriate for use;
  - (vii) employees undertaking lifting operations have received appropriate medical screening and surveillance as required by *AD EHS RI – CoP 5.0 – Medical Surveillance*; and
  - (viii) shall ensure that lifting equipment used in operations is fit for purpose, appropriately maintained and serviceable, and that any associated risks in using the equipment are identified and mitigated or appropriately controlled.

### 3.1.2 Principal Contractors

- (a) In the case of the Building and Construction Sector, Principal Contractors shall undertake their roles and responsibilities in accordance with the general requirements of *AD EHS RI – CoP 53.0 – EHS Management during “Construction Work”*.
- (b) In addition section 3.1.1, Principal Contractors shall undertake their specific roles and responsibilities with regards to lifting equipment and lifting accessories by ensuring the following:
- (i) that contractors have all available descriptions of the site, including design drawings, site surveys, plans of services and information on the nature and location of hazardous materials, the nature of building materials and the building or structure’s relationship to surrounding properties;
  - (ii) implement control measures to check that lifting operations carried out on their site are undertaken safely;
  - (iii) all relevant authorities and utility service providers are notified and all necessary approvals are obtained before work commences; and
  - (iv) the workplace is secured to prevent unauthorised access.

### 3.1.3 Signaller/Slings

- (a) Signaller/slengers shall undertake their specific roles and responsibilities with regards to the use of lifting equipment and lifting accessories by ensuring the following:
- (i) shall comply the requirements of *AD EHS RI – CoP 17.0 – Safety Signs and Signals*;
  - (ii) follow a safe system of work when lifting operations are being carried out;

- (iii) report any condition or situation to the employer immediately that could affect lifting operations being undertaken safely;
- (iv) visually inspect lifting accessories prior to each use and immediately report any damage or suspicion of damage to the employer;
- (v) not use any damaged or defected lifting equipment or undertake any lifting operations that are not safe to do so;
- (vi) ensure that lifting accessories are used in accordance with the lifting plan and their individual Safe Working Load (SWL) as per section 3.6 in this CoP; and
- (vii) suspend immediately any lifting operation where there is a loss of and/or breakdown in communication with the operator of the lifting equipment.

### 3.1.4 Appointed Person

- (a) Appointed persons shall undertake their specific roles and responsibilities with regards to the use of lifting equipment and lifting accessories by ensuring the following:
  - (i) appropriate planning of all lifting operations;
  - (ii) that a lifting plan is prepared and regularly updated;
  - (iii) provide advice and guidance to signaller/slingers and lifting equipment operators on the identified safe system of work;
  - (iv) that a schedule of common lifts is developed detailing the means of lifting common loads on the site; and
  - (v) develop procedure to ensure that where special lifts are undertaken arrangements are in place to ensure that lifting operations can be carried out safely.

### 3.1.5 Employees

- (a) Employees shall undertake their roles and responsibilities in accordance with the general requirements of *AD EHSMS RF – Element 01 – Roles, Responsibilities and Self-Regulation* Section 3.2.7.
- (b) Employees shall undertake their specific roles and responsibilities with regards to the use of lifting equipment and lifting accessories by ensuring the following:
  - (i) following any training or certification provided for the use of lifting equipment;
  - (ii) following information provided by the employer regarding general health and safety rules governing the use of lifting equipment and lifting accessories;
  - (iii) observing exclusion zones provided by the employer where lifting operations are being carried out;
  - (iv) reporting any unsafe practices that they may observe in relation to lifting operations;
  - (v) reporting any damage or defect noted or suspected in any item of lifting equipment or lifting accessory; and
  - (vi) taking reasonable care to ensure that neither lifting equipment or lifting accessories are overloaded or used incorrectly.

### 3.2 Appointed Person Requirements

- (a) Employers shall ensure that where any type of crane is being used for lifting operations an appropriately qualified competent person shall be appointed as the 'Appointed Person';
- (b) Qualifications for the Appointed Person shall include consideration of the following:
  - (i) previous experience in the use of a similar type of crane(s);
  - (ii) minimum 5 years' experience in working with lifting equipment;
  - (iii) trained and competent signaller/slinger in possession of a certificate from an approved third party training provider;
  - (iv) previous experience operating cranes or managing lifting operations in a supervisory role; and
  - (v) workplace / site specific induction and experience related directly to the actual lifting equipment in operation at that particular time.
- (c) Employers shall ensure that the appointment of the 'Appointed Person' shall be in writing and recorded as part of the lifting plan.

### 3.3 Lifting Plan Requirements

- (a) Employers shall ensure that a lifting plan is prepared. The lifting plan shall be prepared by the employer using the lifting equipment or in the case of construction work where multiple employers may use the equipment the lifting plan shall be prepared by the Principal Contractor. The Appointed Person shall assist the employer in the preparation of the lifting plan. The lifting plan shall include information on the following:
  - (i) details of the person in overall charge of all lifting operations (the Appointed Person), including relevant experience of this person in planning lifting operations;
  - (ii) a list of responsibilities of those involved in lifting operations including, person in overall control, crane operator and signaller / slinger;
  - (iii) an overview procedure detailing how lifting operations shall be planned, supervised, monitored and reviewed;
  - (iv) details of the crane(s) capacities at various radius;
  - (v) diagrammatic representation / Sketch of the lift – including equipment and personnel placement, distances, maximum weight capacity, radii and other relevant measurements;
  - (vi) copies and a register of all crane operator competency certificates issued by an approved third party training provider;
  - (vii) copies and a register of all signaller/slinger competency certificates issued by an approved third party training provider;
  - (viii) copies of all test certificates for the lifting equipment and accessories to be used, issued by a third party engineer;
  - (ix) a schedule of common lifts to be undertaken by the crane detailing what is to be lifted, weight of load and how connection between the load and the crane shall be made;

- (x) a written procedure detailing how special lifts shall be planned to ensure they can be carried out safely;
- (xi) a written procedure detailing the planned maintenance requirements of each type of crane and the inspections and checks that shall be carried out; and
- (xii) copies of all risk assessments undertaken for crane lifting operations.

### 3.4 Planning and Assessment

#### 3.4.1 General Requirements

- (a) Employers shall ensure the following:
  - (i) an assessment of the various risks is undertaken and systems of work are established, which are safe to all parties involved or affected including the public;
  - (ii) that effective procedures and control measures are in place, which are implemented in order to manage activities safely and without risk to health;
  - (iii) that for the Building and Construction Sector the management of lifting operations requirements are included in the Pre-Tender Environment, Health and Safety Plan in accordance with *AD EHS RI – CoP 53.0 – EHS Management during “Construction Work”*; and
  - (iv) that associated safe systems of work, and site rules are included in the Environment, Health and Safety Construction Management Plan (EHS-CMP) in the case of the Building and Construction Sector in accordance with *AD EHS RI – CoP 53.0 – EHS Management during “Construction Work”*.

#### 3.4.2 Risk Assessment

- (a) Employers shall ensure that prior to the undertaking of lifting operations; a risk assessment is conducted to ensure the selection of appropriate control measures. Refer to *AD EHSMS RF – Element 02 – Risk Management*. Risk assessments carried out for lifting operations involving cranes shall form part of the lifting plan and be reviewed and updated regularly.
- (b) Employers shall ensure that risk assessments consider the following general hazards and risks associated with the use of lifting equipment and lifting accessories which shall include, but not be limited to:
  - (i) competency requirements of operators / signaller / slingers;
  - (ii) lifting equipment and accessories testing and certification requirements;
  - (iii) unauthorised use of lifting equipment;
  - (iv) failure of lifting equipment or lifting accessories;
  - (v) a load being dropped whilst suspended;
  - (vi) unstable ground conditions;
  - (vii) collision of lifting equipment where 2 or more devices are being used in close proximity to each other;
  - (viii) visibility;
  - (ix) lifting of people;

- (x) communication;
- (xi) fatigue;
- (xii) employees being struck by the load or lifting equipment;
- (xiii) striking overhead power cables or other services;
- (xiv) falls during the erection of cranes;
- (xv) manual handling risks associated with lifting and moving heavy equipment;
- (xvi) health risks from oils, solvents and greases; and
- (xvii) contact with moving machinery parts during maintenance.

### **3.5 Selection of Lifting Equipment**

- (a) Employers shall ensure during the planning of lifting operations that consideration is given to the type of equipment that is required to carry out the lifting operation safely. The Appointed Person shall be consulted during the selection process and the decision on the type of crane shall be based on the following factors:
  - (i) weight of the load;
  - (ii) frequency and duration of the work;
  - (iii) the working environment (ground conditions, access restrictions, etc.);
  - (iv) mobility of the crane (will lifting operations be carried out in one place or several different locations); and
  - (v) lifting radius.
- (b) Employers shall ensure that the selection of cranes is carried out following the principles of risk assessment selecting the best option for each lifting operation based on the above factors.

### **3.6 Safe Use of Lifting Equipment**

#### **3.6.1 General requirements**

- (a) Employers shall ensure that prior to any lifting operation being carried out the work shall be planned and the safe working method shall be identified and communicated to all employees in a comprehensible manner.
- (b) Employers shall ensure that prior to any lifting operations being undertaken, a risk assessment is conducted to determine typical safe working conditions and safeguards, acceptability limit of each lift and the level of supervision required.
- (c) In the case where cranes are used for lifting operations employers shall ensure that the lifting plan is followed and the correct means of lifting and the correct lifting accessories are used.
- (d) Employers shall ensure that those employees working as lifting equipment operators and signaller/slingers are trained and competent and hold the relevant licence(s) to undertake the type of work safely.

- (e) Employers shall ensure that the area where lifting operations are being carried out is clearly defined and as far as reasonably practicable access of unauthorised persons is prevented.

### 3.6.2 Safe Working Load (SWL)

- (a) Employers shall ensure that the Safe Working Load (SWL) of every item of lifting equipment is known and clearly understood by lifting equipment operators and signaller/slingers. SWL shall be clearly marked on the lifting equipment in a prominent position.
- (b) Employers shall ensure that the SWL of every lifting accessory is clearly marked on the lifting accessory or on a metal tag fixed securely to the lifting accessory. Any lifting accessory without its SWL clearly marked on it shall be removed from service.
- (c) Employers shall ensure that lifting accessories are used in accordance with manufacturer or supplier specifications. As the angle between legs on slings and chains affects its capacity (SWL) employers shall ensure that lifting accessory safe angles of use are clearly understood by signaller/slingers.
- (d) Where it is known or suspected that the SWL of any lifting accessory has been exceeded, employers shall ensure that that lifting accessory is removed from use until it has been thoroughly examined by an approved third party engineer.

### 3.6.3 Load Radius Indicators

- (a) Employers shall ensure that all cranes with a variable radius are provided with a load radius indicator. The load radius indicator shall be clearly visible to the crane operator and show the operating radius and the corresponding safe working load.
- (b) Load radius indicators may be incorporated into safe load indicators of the type which display the safe working load.

### 3.6.4 Safe Load Indicators

- (a) Employers shall ensure that every crane with a SWL of 1 tonne or more is fitted with a safe load indicator which emits an audible warning when the crane approaches its safe working load.
- (b) Safe load indicators shall be clearly visible to the crane operator and calibrated to the specific requirements of the crane.
- (c) Employers shall consider using safe load indicators that prevent a crane from exceeding its SWL by restricting the radius operation when the SWL is reached (often referred to as automatic safe load indicators).

### 3.6.5 Means of Communication

- (a) Employers shall ensure that there is an agreed and recognised means of communication between the operator of the lifting equipment and the signaller/slinger. The agreed means of communication shall be documented in the lifting plan and followed by all those involved in lifting operations.

- (b) Where hand signals are used as the means of communication the signaller/slinger shall be within easy viewing distance of the crane operator. Where there is no clear line of site between the signaller/slinger and the crane operator, radio communication shall be used. *Refer to AD EHS RI – CoP 17.0 – Safety Signs and Signals.*
- (c) On tower cranes where the drivers cab is more than 35 metres from the ground level radio communication shall be the mandatory means of communication between the crane operator and the signaller/slinger.
- (d) Employers shall to provide clear instruction to all employees that only the appointed signaller/slingers are to communicate with the crane operator. Crane operators shall also be instructed not to accept signals from any person other than the appointed signaller/slinger.

### 3.6.6 Wind Speed

- (a) Employers shall ensure that an anemometer is available on each worksite, where cranes are used, to measure wind speed. This shall be fitted to the highest point of the crane where reasonably practicable. Handheld anemometers shall only be used as a secondary means of measuring wind speed at ground level.
- (b) Employers shall ensure that provisions are in place to determine wind direction.
- (c) Employers shall ensure that the manufacturer or supplier specifications are available for each crane and that the wind-off speed of each crane is communicated to the crane operator and appointed person.
- (d) Employers shall regularly obtain (at least daily) meteorological reports for the area where cranes are being used for lifting operations.
- (e) In all cases employers shall ensure that lifting operations cease when the recorded wind speed reaches or gusts in excess of 38 km/h (20.5) knots.

### 3.6.7 The Lifting Operation

- (a) Employers shall ensure that lifting accessories are attached to the load only by a trained and competent signaller/slinger holding a recognised approved training certificate.
- (b) Employers shall ensure that slinging techniques take into account the following:
  - (i) where lifting chains are used on metal (eg. steel reinforcement bars or steel beams) the competent person shall ensure that they are protected (eg. double wrapped and timber bites or packers);
  - (ii) cradle lifting shall be prohibited;
  - (iii) lifting accessories shall be used in accordance with the SWL stamped on the lifting accessory or the metal tag secured to the lifting accessory; and
  - (iv) prior to the load being moved into position by the crane the signaller/slinger shall raise the load slightly off its resting level and check that the lifting accessory is secure on the load.
- (c) Employers shall ensure that all lifting operations are carried out in accordance with the lifting plan.

- (d) Employers shall ensure that as far as reasonably practicable loads shall not be lifted over employees or others working on the site. Employers shall never lift loads over members of the general public.

### 3.6.8 Collision of Lifting Equipment

- (a) Employers shall ensure that where two or more pieces of lifting equipment are used within the same radius measures are taken to prevent collision. The lifting plan shall set out the working procedures and all crane operators and signaller/slingers shall be briefed on the specific arrangements.
- (b) In the case of tower cranes working within the same radius employers shall consider the use of an appropriate electronic anti-collision device as far as practicable.
- (c) Where tower cranes are working within the same radius employers shall ensure that an agreed means of radio communication exists between crane operators.
- (d) Employers shall ensure that in the case of tower cranes working within the same radius an emergency radio is provided in the cab of each crane. This radio is to be used in case of emergency only (collision) and shall not be used for general communication.

### 3.7 Emergency Procedures

- (a) Employers shall develop emergency plans that take account of all creditable emergency scenarios that could arise from lifting operations, in compliance with the requirements of *AD EHSMS RF – Element 06 – Emergency Management*.
- (b) Employers shall, as a minimum, consider the following scenarios when planning emergency procedures:
- (i) recovery of a collapsed crane operator or erector from a tower crane;
  - (ii) employee becoming suspended by their safety harness following a fall during the erection or maintenance of a tower crane;
  - (iii) overturning of a crane / lifting equipment whilst lifting;
  - (iv) load being snagged during lifting operations;
  - (v) security of the load being compromised during lifting operations; and
  - (vi) any other foreseeable emergency situation that may occur.

### 3.8 Crane Type Specific Requirements

#### 3.8.1 Tower Cranes

- (a) Employers shall ensure the following with regards to the erection and use of tower cranes:
- (i) crane bases shall be checked and signed off by a competent engineer before the erection of crane mast sections commences;
  - (ii) only competent tower crane erectors are to be employed in the erection of tower cranes;

- (iii) all electrical connections to the tower crane shall be made by a competent electrician in accordance with *AD EHS RI – CoP 15.0 – Electrical Safety*;
- (iv) all electrical cables feeding the tower crane distribution board shall be steel wire armour protected;
- (v) tower crane erectors shall wear safety harnesses and clip on when working at height, in accordance with *AD EHS RI – CoP 23.0 – Working at Heights*, during the erection of tower cranes;
- (vi) all erection components such as temporary platforms shall be removed from the crane by the crane erector prior to handover in accordance with the manufacturer's instructions;
- (vii) a hand over certificate shall be provided by the tower crane erector when the erection work is completed;
- (viii) prior to use and after the issuance of the hand over certificate from the crane erector a full test of the crane shall be undertaken by an approved third party engineer;
- (ix) the crane manufacturer's erection and operating manual shall be available on site;
- (x) where an anemometer is fitted to a tower crane a repeater shall be fitted at the base of the crane or in the project site office;
- (xi) rest platforms shall be provided throughout the mast at a frequency of at least every 9 meters. Rest platforms shall be provided with appropriate edge protection in accordance with *AD EHS RI – CoP 23.0 – Working at Height*; and
- (xii) where self-climbing tower cranes are used the climbing section shall be lowered after use in accordance with the manufacturer's instructions.

### 3.8.2 Excavators used as Cranes

- (a) Employers shall ensure the following with regards to excavators used as cranes:
  - (i) any excavator used as a crane with a safe working load greater than one tonne shall have check valves fitted to the boom and outward reach of the excavator arm;
  - (ii) if used as a crane with a variable safe working load greater than one tonne the excavator shall be fitted with an automatic safe load indicator;
  - (iii) excavators used as cranes shall be subject to annual thorough examination and testing requirements;
  - (iv) lifting shall only be carried out with the excavator arm in the outward reach mode only;
  - (v) any excavator used as a crane shall have the safe working load clearly marked on the machine or displayed in the cab; and
  - (vi) lifting operations shall be permitted only from the certified lifting point of the excavator boom, under no circumstance are the teeth of an excavator bucket to be used to lift loads.

### 3.8.3 Truck Mounted Mobile Cranes

- (a) Employers shall ensure the following with regards to the setting up and use of truck mounted mobile cranes:
- (i) truck mounted mobile cranes shall be set up on ground that is level, stable and compacted;
  - (ii) where truck mounted mobile cranes are to be set up near excavations, culverts, made-up-ground or close-by to building foundations a competent engineer shall be consulted for advice on crane location and control measures to be taken;
  - (iii) outrigger and base plates shall always be used with truck mounted mobile cranes in accordance with the manufacturers operating manual;
  - (iv) the area around the truck mounted mobile crane shall be set up as an exclusion zone for all unnecessary personnel;
  - (v) control measures implemented to eliminate the risk of crushing persons between the counter weight and any other surface during slewing operations;
  - (vi) truck mounted mobile cranes shall never be used free-on-wheels to move loads around the site unless specifically permitted and detailed in the manufacturer's operating manual;
  - (vii) when left unattended truck mounted mobile cranes shall be switched off and the key shall be removed from the ignition to isolate the crane;
  - (viii) safe access for the truck mounted mobile crane operator shall be provided and the area around where the crane is used shall be kept clear of obstruction; and
  - (ix) windows and windscreen shall be maintained in good condition, if glass is broken the crane shall be taken out of service until it can be repaired.

### 3.8.4 Crawler Cranes

- (a) Employers shall ensure the following with regards to the setting up and use of crawler cranes:
- (i) whilst crawler cranes are tracking the jib shall be reduced to the minimum radius;
  - (ii) where work on the jib is carried out such as adding or removing sections and the jib is laid flat in the horizontal position it shall be appropriately supported with props to prevent collapse;
  - (iii) crawler crane tracks shall be regularly maintained in accordance with the manufacturer's operating manual; and
  - (iv) barriers and warning signs shall be set up around crawler cranes to prevent personnel accessing areas where lifting operations are being carried out.

### 3.8.5 Gantry Cranes

- (a) Employers shall ensure the following with regards to the use of gantry cranes:
- (i) where gantry cranes are used in the same bay and there is the possibility of collision between cranes an anti-collision system shall be installed; and

- (ii) in the design of gantry crane installations employers shall consider all reasonably practicable means to ensure the safety of the lifting zone in relation to persons and plant.
- (b) Employers shall ensure that the rated load capacity of the crane, hoist, chain, cable, slings, or other components will not be exceeded.
- (c) The rated load of all cranes shall be plainly marked on each side of the crane. If the crane has more than one hoisting unit, each hoist load block shall be marked with its rated load. This marking shall be clearly legible from the ground floor.
- (d) Each overhead crane shall have the directions of its bridge and trolley movements displayed on the underside of the crane.
- (e) That nobody pushes or pulls on the load. The load shall hang vertically below the hoist at all times.
- (f) That the hoist is located directly above the load to be lifted. Slings, load chains and other lifting devices are securely seated on the hook and no twist that could cause the load to swing.
- (g) That the load will not be suspended over personnel at any time and under no circumstances may anyone ride the hook or load.
- (h) Ensuring that an appropriate lock-out/tag-out system, in line with the requirements of *AD EHS RI – CoP 24.0 – Lock Out / Tag Out*, shall be established and used throughout the installation to indicate equipment that is not to be used due to inspection discrepancies, on-going maintenance operations, or other reasons.
- (i) Shall ensure that the gantry cranes shall not be operated until all safety devices have been activated and tested/adjusted if involved in the maintenance work.
- (j) Shall ensure that remote emergency stops are installed for cranes used for critical lifts where the crane operator's view is restricted/ obstructed.
- (k) Shall ensure that only certified (licensed) and trained operators shall be authorized to use/operate cranes.
- (l) During periods of inactivity the crane operating mechanisms shall be appropriately disabled by the operator (powered off, ignition key removed etc.). Only licensed operators or appointed personal shall be able to power up and operate the crane.

### 3.9 Goods and Passenger Hoists

- (a) Employers shall plan the use of hoists on site and ensure that hoists are appropriate for purpose and erected in accordance with the manufacturers/suppliers recommendations.
- (b) Employers shall ensure that all persons involved with erecting hoists shall be competent and experienced in carrying out the work.
- (c) Where working at height is carried out by those erecting hoist masts and hoists employers shall ensure that the requirements of *AD EHS RI – CoP 23.0 – Working at Height* are complied with.

- (d) Prior to the hoist being used for the first time employers shall ensure that a handover certificate is provided by the hoist installer and a thorough examination and test of the hoist is carried out by an approved third party engineer.
- (e) Employers shall ensure the following:
- (i) hoist mast sections are tied to the structure in accordance with the manufacturers/suppliers recommendations;
  - (ii) safety devices are provided to prevent the over-run of the hoist at the top of the mast section;
  - (iii) the hoist base is securely fenced to prevent persons being struck by the descending hoist;
  - (iv) material hoists are used only for the carriage of materials, it is strictly prohibited to carry persons on a hoist designed only for material use;
  - (v) landing points shall as far as reasonably practicable be provided with interlocking gates fitted at each level;
  - (vi) the SWL of each hoist shall be clearly marked on the hoist and communicated to the hoist operator;
  - (vii) hoist operators shall be trained on safe working procedures and emergency procedures for the hoist(s) they are operating;
  - (viii) passenger hoists shall be thoroughly examined and tested every six months in accordance with Section 3.11 of this CoP;
  - (ix) the hatch in the roof of a passenger hoist shall be kept closed and where reasonably practicable be fitted with an interlock to prevent the hoist being used with the hatch in the open position; and
  - (x) under no circumstances shall materials be allowed to protrude through the open hatch in the roof of passenger hoists.

### 3.10 Other Lifting Equipment

- (a) Employers shall ensure that any other equipment used for lifting such as pump trucks, manual lift pallet jacks and winches are used in accordance with this CoP. In particular employers shall ensure:
- (i) correct selection and suitability of other lifting equipment;
  - (ii) employees are trained to use other lifting equipment and understand the safe working load requirements and safe operating procedures; and
  - (iii) other lifting equipment shall be subject to thorough examination and testing requirements.

#### 3.10.1 Mobile Elevating Work Platforms

- (a) Employers shall ensure the following with regards to the use of mobile elevating work platforms (MEWPs):
- (i) operators of MEWPs shall be trained and competent to use the equipment;
  - (ii) MEWPS shall be subject to a 6 monthly thorough examination and testing;

- (iii) working platforms of MEWPs shall comply with the requirements of *AD EHS RI – CoP 23.0 – Working at Height*;
  - (iv) safety harnesses shall be worn at all times by employees working from the platform of a MEWP;
  - (v) MEWPs shall only be used when the ground conditions are favourable for this type of device;
  - (vi) step ladders or hop-ups shall never be used from the working platform of a MEWP;
  - (vii) employees shall not be allowed to leave the working platform whilst in an elevated position, eg. climbing off the platform to gain access to an elevated place of work;
  - (viii) wind speeds shall be monitored and the wind-off speed shall be in accordance with the manufacturer's instructions;
  - (ix) MEWPs shall have the safe working load of the platform clearly marked on the equipment; and
  - (x) MEWPs shall be fitted with an emergency lowering device in the event of power failure or other malfunction.
- (b) Employers shall ensure that a detailed risk assessment is prepared for the use of MEWPs which shall include identification of the hazards associated with using the equipment as well as detailed procedures to be taken in the event of an emergency situation.

### 3.11 Thorough Examination and Testing

- (a) In accordance with *UAE Ministerial Order No. (32) 1982 Article (20)* employers shall ensure that all lifting equipment is thoroughly examined and tested at least every 12 months.
- (b) Employers shall ensure that only third party testing engineers approved by the Ministry of Labour are used to thoroughly examine and test lifting equipment and thoroughly examine lifting accessories.
- (c) Employers shall ensure that in the case where lifting equipment is used for lifting persons it shall be thoroughly examined and tested at least every 6 months.
- (d) Employers shall ensure that in the case of cranes with a variable radius a maximum SWL test is carried out at least once in every 4 years in line with the following examples:
  - (i) where a crane has a maximum SWL of 40 tonnes it shall be tested at 25% over this SWL (50 tonnes); and
  - (ii) other annual tests carried out can impose a 25% overload at a greater radius where the SWL is reduced, eg. where a crane has a maximum SWL of 40 tonnes at 10 meters and 4 tonnes at 30 meters it can be tested at 30 meters with 5 tonnes (SWL plus 25%) and still rated with a 40 tonne SWL at 10 meters.

- (e) Employers shall ensure that cranes are thoroughly examined and tested before they are brought into service after being erected in a new location (eg. tower cranes) or after a modification is made to any structural component of the crane (eg. adding jib sections to a crawler crane).
- (f) Employers shall ensure that lifting accessories are thoroughly examined by an approved third party engineer at least every 6 months.

### 3.12 Inspection of Lifting Equipment and Lifting Accessories

- (a) Employers shall ensure that a register of all lifting equipment and lifting accessories in use is maintained at each work site.
- (b) Employers shall ensure the following inspections are carried out:
  - (i) daily visual inspections of lifting equipment carried out by the lifting equipment operator in accordance with the manufacturer's recommendations;
  - (ii) weekly detailed inspections of lifting equipment carried out by the lifting equipment operator recorded formally in the lifting equipment inspection register;
  - (iii) daily visual inspections of lifting accessories carried out by the signaller/slinger or other competent employee; and
  - (iv) weekly detailed inspections of lifting accessories carried out by the signaller/slinger or other competent employee and recorded formally in the lifting accessory inspection register.
- (c) Employers shall ensure that periodic inspections by the lifting equipment supplier / owner are undertaken in accordance with the lifting equipment manufacturer's recommendations.

### 3.13 Maintenance of Lifting Equipment and Lifting Accessories

- (a) In order to reduce the risks associated with wear and/or deterioration employers shall ensure:
  - (i) a planned and preventative maintenance programme is developed for lifting equipment and lifting accessories based on the manufacturer's recommendations; and
  - (ii) the maintenance schedule is reviewed frequently based on maintenance and failure findings.

## 4. Record Keeping

- (a) Employers shall maintain records in accordance *AD EHSMS RF – Element 09 – Compliance and Management Review*.
- (b) Appropriate records for the following activities shall be maintained by the employer:
  - licenses of operators;
  - lifting equipment and accessories third party testing and certification evidence;
  - records of repairs / servicing / maintenance; and
  - log books and inspection check sheets.

## 5. References

- *UAE Ministerial Order No. (32) 1982*
- *AD EHSMS RF – Element 01 – Roles, Responsibilities and Self-Regulation*
- *AD EHSMS RF – Element 02 – Risk Management*
- *AD EHSMS RF – Element 09 – Compliance and Management Review*
- *AD EHS RI – CoP 6.0 – Emergency Management Requirements*
- *AD EHS RI – CoP 15.0 – Electrical Safety*
- *AD EHS RI – CoP 17.0 – Safety Signs and Signals*
- *AD EHS RI – CoP 23.0 – Working at Height*
- *AD EHS RI – CoP 53.0 – EHS Management during “Construction Work”*

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