



قطر للبترول  
Qatar Petroleum

**STANDARDS PUBLICATION**

**CORPORATE LIFTING EQUIPMENT REGULATION**

**DOC NO: QP- REG-Q-001**

**REVISION (4)**

**CORPORATE HSE SUPPORT**



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Qatar Petroleum

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## **FOREWORD**

This document has been developed by Qatar Petroleum (QP) Corporate HSE Support Dept., in consultation with the Operations (Dukhan, Mesaieed, Offshore and Ras Laffan), Maintenance, Engineering and Materials Depts., and drafted by Corporate Quality and Management System Department and circulated for review by user departments before endorsed by QP Management for use as Corporate Regulation for implementation.

This document is published for QP Departments/ Contractors/ Consultants utilisation. It is emphasised that the document is to be used for QP operations wherever applicable and appropriate.

The document in its present form reflects as far as possible the current QP requirements, taking into account the known available industry practices and the applicable latest national and international codes and standards.

This document is subjected to periodical review to re-affirm its adequacy or to conform to any changes in the corporate requirements or to include new developments on its subject.

It is recognised that there will be cases where addenda or other clarifications need to be attached to the standard to suit a specific application or service environment. As such, the content of the document shall not be changed or re-edited by any user, but any addenda or clarifications entailing major changes shall be brought to the attention of the Custodian Department.

The Custodian of this document is Corporate HSE Support Department (ST). Therefore, all technical comments, views, recommendations, etc on this document should be forwarded to the same and copied to Manager, Corporate Quality & Management Systems Department (QA).

## **1.0 OBJECTIVE**

This regulation is to establish, implement and verify the standard safe working practices in utilising lifting equipment in all areas that fall under QP's jurisdiction.

## **2.0 SCOPE**

This regulation specifies in details:

- The mandatory requirements and recommendations for the safe utilization of all lifting equipment operating in onshore and offshore areas under the jurisdiction of QP and its contractors and sub-contractors within the State of Qatar.
- The experience, qualification and training requirements for lifting equipment personnel, maintenance, inspection, testing, critical lift operation, organizational setup and quality systems for safe use of lifting equipment.

## **3.0 APPLICATION**

This regulation shall be:

- Considered as mandatory requirements applying to all corporate and contractor owned and operated lifting equipment.
- Full implementation of this regulation shall be adopted within three months of the date of its issue.
- Applied to use, purchase, operate, maintain and hire of lifting equipment, at any location within QP's areas and/or premises.
- Implemented by buyers, vendors, users, contractors and sub-contractors, and all QP's operational depts. including projects, with clear identification of their responsibilities to prevent the use of any outdated and/or uncertified lifting equipment.

## **4.0 POLICY**

QP policy is to provide and maintain a safe working environment at all operational areas including projects with continuous improvement in utilising lifting equipment.

- 4.1 In order to achieve this policy, QP shall conduct periodic audits on all areas, including all contractors, to ensure compliance with this regulation and applicable standards.
- 4.2 Lifting operations in all areas shall be subject to risk assessment, and be suitably planned, documented and safely executed by competent approved personnel.
- 4.3 Vessels calling at the Ports of Ras Laffan, Mesaieed and Halul for cargo operations using ship's cranes shall comply with their classification requirements and are hereby exempted from the requirements of this regulation.

- 4.4 Whilst vessel classification is recognised by QP, all cranes and lifting equipment on vessels/barges, contracted, owned and/or operated by QP shall in addition be inspected and certified to conform with this regulation.
- 4.5 No dispensations against this regulation can be given by any party except in an emergency or by waiver, in which cases the relevant QP Department Manager shall grant approval by completing Form LER02 Emergency Release Note or LER03 Request for Waiver as applicable.

Where continuous operations include regular lifting operations on a 24/7 basis, these operations shall be covered by pre-planned Standard Operating Procedures endorsed by Corporate HSE.

## 5.0 TERMINOLOGY

### 5.1 DEFINITIONS

- |  |  |
|--|--|
| <b>Colour Coding</b>   | - QP operates a system whereby all lifting equipment is colour coded with a designated colour. The validity of the colour code is six months and colour coded according to the scheduled inspection period and year.   |
| <b>Competent person</b>  | - A person approved by QP for the particular activity being described.   |
| <b>Contractor</b>  | - An organisation or entity providing products and/or services to QP.  |
| <b>Crane footprint</b>   | - The area contained within 360 degrees of the lifting operation, covering the size of the load and 1.1 x maximum crane boom length.   |
| <b>Dynamic Factor</b>  | - The load factor by which the capacity of a crane is determined for offshore and onshore applications.  |
| <b>Emergency Repair</b>  | - For the purposes of this regulation, an emergency repair of lifting equipment shall only be considered an emergency in situations where the danger to personnel, assets or the environment would be greater if the repair is not carried out.<br>Under no circumstances will an emergency repair be carried out without prior notification and approval of the QP Operations Manager/ and acceptance by STI, whose responsibility is to evaluate the situation based on the facts. |
| <b>Factor of Safety (FOS), Coefficient of Utilisation or Working Coefficient</b> | - It is a factor that is applied to the MBL to determine the WLL. It varies with the product to take account of the susceptibility to damage and considers the type of stresses the item will meet in normal use.  |

**Inspection**

- Any physical activity, related to ensuring that an item of lifting equipment, in its entirety and at a given location or environment, meets the specified design and operating standards and is safe to operate or utilise for a specified period. This includes, but is not limited to, activities such as measuring, testing, recording, checking, analysing, loading and charting one or more characteristics of the equipment.

**Lifting Appliances  
(Lifting Machines)**

- Any manual or powered lifting machine, that is able to raise, lower or suspend loads, and includes the supporting structure and all plant, equipment and gear used in connection with such a machine, but excludes continuous mechanical handling devices (i.e. conveyors).
  - Cranes (mobile, tower, pedestal, etc.),
  - Wall/pillar cranes, derricks, swing jibs and davits,
  - Runway Beams, Monorails, Gin Poles and Gin Wheels,
  - Manual and Powered Hoists and Winches,
  - Chain blocks, Tirlors, pull lifts, trolleys,
  - Powered Working Platforms,
  - Elevators and Lifts,
  - Forklifts, boom trucks, side booms and excavators,
  - Lifting jacks (pneumatic or hydraulic).

**Lifting equipment**

- A generic term used to cover both lifting gear and lifting machines. Lifting equipment shall mean any work equipment for lifting or lowering loads, and includes its attachments used for anchoring, fixing or supporting it. It includes any lifting accessories that attach the load to the lifting machine in addition to the equipment that carries out the actual lifting function.

**Lifting Gear (Lifting  
Accessories or Loose  
Gear)**

- Any item used to connect a load to the lifting appliance but which is not in itself a part of the load or the appliance, such as:
  - Chains and Wire Ropes (Plain),
  - Chain Slings, Wire Rope Slings and Webbing Slings,
  - Rings, Links, Hooks, Shackles, Eye Bolts, Swivels, Blocks, Snatch Blocks,
  - Beam Clamps and Plate Clamps,
  - Lifting Beams / Spreader Beams,
  - Man-baskets.

**Load**

- Means any material, personnel, or any combination of these that are lifted, lowered or suspended by the lifting equipment. The weight of the lifting accessories including the hook block shall be considered as part of the load being lifted.

<b>Minimum Breaking (or Failure) Load (MBL)</b>	- The minimum-breaking load is the calculated load at which a sample of the item will break or fail.
<b>Mode Factor</b>	- A factor applied by the user that takes into account the geometry of a sling assembly to obtain the maximum load that may be lifted for a particular mode of use or a configuration of use.
<b>Offshore and Onshore Locations</b>	- Offshore shall mean the work location where any item of lifting equipment is used, regardless of frequency of utilisation, in a marine environment and islands, including all jetties or load-out facilities (such as those at Doha, Halul Island, Mesaieed and Ras Laffan). Onshore shall mean the work location where any item of lifting equipment is used in a non-marine environment.
<b>Operational Facility</b>	- Any location containing QP assets or processing plants where any lifting operation can create an unsafe situation or a business risk.
<b>Periodic Inspection</b>	- The minimum specified period between one inspection and a repeat or next inspection as detailed in table 15.13.
<b>Proof Load Test (PLT)</b>	- Deliberate application of a predetermined load in excess of SWL to assess the ability of the equipment to withstand operational requirements. This applied proof load shall never exceed the elastic limit of the item being tested. The amount of proof load to be applied will vary depending upon the type of equipment, its SWL, and the applicable standard.
<b>Repair</b>	- A measure whereby the original state of an appliance will be restored by rebuilding or exchanging parts or units. If essential parts with safety functions are to be rebuilt or exchanged, this is considered to be a major repair. This is the case particularly in respect of the exchange of the following: <ul style="list-style-type: none"> <li>• Brakes</li> <li>• Safety gear or catching devices</li> <li>• Over-speed governors</li> <li>• Load carrying parts (e.g. anchorages, open or closed smelters sockets, primary structures etc)</li> <li>• Driving mechanisms and controls.</li> </ul>
<b>Safe Working Load (SWL)</b>	- The maximum load, as certified, that an item of lifting equipment may raise, lower or suspend under particular service conditions. It is the SWL that is marked on the item and that appears on any examination report or test records.
<b>Standard</b>	- Document, established by consensus and approved, that



provides, for common and repeated use, rules, conditions or requirements, recommended practices, procedures, guidelines, specifications, philosophies and datasheets, aimed at the achievement of the optimum degree of order in a given context

- |  |   |
|--|---|
| <b>Sub-contractor</b>                            | - An organisation or entity providing products and/or services to the contractor.   |
| <b>Substantial/Major Alteration</b>              | <p>- A measure whereby either the original state of equipment will be restored or the exchange of existing parts with those of alternative size or style has taken place. The use of interchangeable parts or components is not an alteration if this has been considered within the original design and specification.</p> <p>The following shall be considered substantial/major alterations or any other measure not specifically detailed that affects the safe use of the appliance:</p> <ul style="list-style-type: none"> <li>• Increase of the safe working load or an increase in performance,</li> <li>• Increase of the rated speeds,</li> <li>• Increase of the reach (outreach, lifting height, etc.),</li> <li>• Alteration to safety devices,</li> <li>• Alteration to load carrying parts (e.g. anchorages, spelter sockets, primary structures, etc.),</li> <li>• Alteration to driving mechanisms and controls,</li> <li>• Repair or alteration that affects strength and/ or stability.</li> </ul> |
| <b>Supplier</b>                                  | - An organisation or entity manufacturing and/or selling products and/or services to QP or to the contractor.   |
| <b>Third Party Certification</b>                 | - Any activity related to lifting equipment where it is necessary to obtain a certificate, signed by a qualified, impartial body possessing the necessary competence, professionalism and expertise recognised by governments and international institutions worldwide in both legislative or non-legislative environments, having professional liability and indemnity or insurance issued for the purpose of certification. Refer to 8.5 for the approved TPCAs.  |
| <b>Third Party Certifying Authorities (TPCA)</b> | <p>- An internationally recognised independent, inspection and certification body approved by QP Corporate HSE to:</p> <ul style="list-style-type: none"> <li>• Inspect, test and certify all lifting equipment,</li> <li>• Train and certify lifting equipment personnel.</li> </ul>   |
| <b>Training</b>                                  | - The training of personnel involved in lifting operations such as crane operator, rigging supervisor, forklift operator, rigger, etc. provided by approved TPCAs.  |

- |                                 |  |
|---------------------------------|--|
| <b>Witness</b>                  | - The visual inspection and appraisal by personnel of an approved TPCA, complying with the requirements of this regulation, of any operation or task relating to any item of lifting equipment to ensure compliance in accordance with the relevant standard requirements and to confirm and validate the results. |
| <b>Working Load Limit (WLL)</b> | - The maximum load (as certified based on the design and mechanical properties of the item) that an item of lifting equipment is designed to sustain, i.e. to raise, lower or suspend incorporating an appropriate FOS.  |

## 5.2 ABBREVIATIONS

- |                 |  |
|-----------------|--|
| <b>°C</b>       | - Degrees Centigrade                                   |
| <b>CAR</b>      | - Corrective Action Requests                           |
| <b>cm</b>       | - Centimetre   |
| <b>CMMA</b>     | - Crane Manufacturers Association of America           |
| <b>Dept.(s)</b> | - Department(s)  |
| <b>FOS</b>      | - Factor of Safety                                     |
| <b>GW</b>       | - Gross weight   |
| <b>HMI</b>      | - Hoist Manufacturers Institute, USA                   |
| <b>HND</b>      | - Higher National Diploma                              |
| <b>HSE</b>      | - Health, Safety and Environment                       |
| <b>ID</b>       | - Identification                                       |
| <b>IMCA</b>     | - International Marine Contractors Association         |
| <b>LEEA</b>     | - Lifting Equipment Engineer Association               |
| <b>LOLER</b>    | - Lifting Operations and Lifting Equipment Regulations |
| <b>LSA</b>      | - International Life-Saving Appliance                  |
| <b>MBL</b>      | - Minimum braking (or failure) load                    |
| <b>mm</b>       | - Millimetre   |
| <b>MPI</b>      | - Magnetic particle inspection                         |
| <b>NDT</b>      | - Non destructive testing                              |
| <b>OEI (0)</b>  | - Offshore inspectors                                  |
| <b>OEM</b>      | - Original equipment manufacturer                      |
| <b>PCSA</b>     | - Power Crane and Shovel Association                   |
| <b>PLT</b>      | - Proof load test                                      |
| <b>QMS</b>      | - Quality management system                            |
| <b>QP</b>       | - Qatar Petroleum                                      |
| <b>(A)SLI</b>   | - (Automatic) Safe Load Indicator                      |

<b>ST</b>	- Manager Corporate HSE Support Dept.
<b>STD</b>	- Standard
<b>STI</b>	- Assistant Manager Materials and Facilities Integrity
<b>STI/23</b>	- Senior Lifting Equipment Engineer
<b>SWL</b>	- Safe working load
<b>TPCA</b>	- Third Party Certification Authority
<b>WLL</b>	- Working Load Limit

## **6.0 REFERENCE STANDARDS AND CODES**

- 6.1** Reference in this regulation to a standard, unless inconsistent with the context or subject matter, is a reference to the latest edition of that document, issued by the applicable authority or organization.
- 6.2** Should a conflict arise, the most stringent requirements shall apply, unless specifically approved by STI.
- 6.3** The standards detailed below specify the minimum design, manufacture, installation, operation and inspection requirements acceptable to the QP against identified items of lifting equipment.
- 6.4** Approval/acceptance for the use of other standards may be submitted to STI for consideration on a case by case basis provided:
- A detailed comparison, highlighting all differences, between the proposed and accepted standards is prepared and submitted.
  - All actions as identified by STI to comply with the accepted standards are completed.
- 6.5** In addition to the listed standards, the manufacturers' technical literature applicable to the equipment shall also be readily available.
- 6.6** It is highlighted that QP utilizes and operates the metric weights and measurements system. Where lifting equipment is supplied with imperial weights and measurements calculations for charts and tables, these weights and measurements shall be highlighted and, in addition, conversion tables and charts shall be supplied with calculated metric weights and measurements in accordance with the requirements of BS 350.
- 6.7** It is the responsibility of the concerned QP Dept. and the contractor to ensure that this regulation and relevant standards detailed below are available. Furthermore, it is the responsibility of the respective operations management to ensure that the lifting equipment personnel are aware of the requirements of the standards and any amendments that may be issued from time to time.

## 6.8 REFERENCE STANDARDS

LIST OF STANDARDS		
LIFTING EQUIPMENT' TYPE	BS STANDARDS	OTHER STANDARDS
A' frame	BS 7121-2	LOLER
Beam clamp	BS 13155	LOLER, ASME B30.20
Bundle puller & its lifting points	-----	LOLER
Cargo Net	BS 6756	-----
Chain block	BS EN 13157	-----
Chains- for Lifting	BS EN 818-1,-2,-3,-7	ISO 7592
Chain sling	BS EN 818-4,-5,-6	ASME B30.9, ISO 7593
Containers - Offshore	BS EN 12079-1,-2,-3,	-----
Cranes — Competency for crane inspectors	-----	ISO 23814
Crane (derrick)	BS 327 (not for new design )	ASME B30.8
Crane (electric overhead travelling)	BS 466	ASME B30-2, ASME B30.17 CMAA70, CMAA74 (USA)
Crane (floor/manually operated)	BS 5744	-----
Crane (gantry)	BS 466	ASME B30-2, ASME B30.17
Crane inspections	-----	ISO 9927-1 to 5
Crane (lorry loader)	BS 7121 Part 4	-----
Crane (mobile)	BS 7121 Part 2 BS 7121 Part 3	ASME B30-5, PCSA STD No. 4, SAE - J987
Cranes , Monorails and Under hung	-----	ASME B30.11
Crane (Offshore)	BS 7121 Part 11, BS EN 13852-1 & 2	API Spec 2C, API RP 2D
Crane (pedestal)	-----	ASME B30.4 for Onshore, API Spec 2C for Offshore
Crane (portal jib)	BS 2452	ASME B30.4
Cranes – Safe Use	BS 7121 Part 1	ISO 12480 Parts 1, 3 and 4
Crane (slewing jib)	BS 7333	-----
Crane (slewing jib, Power driven)	BS EN 14985	-----

### Con., LIST OF STANDARDS

LIFTING EQUIPMENT' TYPE	BS STANDARDS	OTHER STANDARDS
Crane (Side Boom)	BS 7121 Part 14	ASME B30.14, SAE - J743
Crane (Stacker)	-----	ASME B30.18
Cranes Stability for All Cranes Except Non-rail Mounted Mobile Cranes	-----	DIN 15019 Part 1, 2
Cranes Steel structures analysis	-----	DIN 15018
Cranes: Testing of Installations – Acceptance	-----	DIN 15030
Crane (tower)	BS 7121- 5	ASME B30.3, B30.4
Cranes - Training of Crane Drivers & Slingers	BS 7121 Part 1	Guidance Note GS39
Davit (general purpose)	BS MA 41	-----
Earthmoving machinery	BS EN 474 All parts BS 6911 All parts	-----
Excavators (Single Bucket type)	BS EN 474 Part 5	PCSA STD No. 4
Eyebolt/ Eye Nuts	BS 4278	ASME B30.26:2004, ISO 3266
Fork Arms for Fork Lift trucks	BS ISO 2330	-----
Forklift	BS EN 1459 / BSI BS ISO 22915-2	
Frames/Skids for transporting	BS EN 12079	-----
Full body harness	BS EN 361	-----
Gangway	BS EN 526	LOLER
Grabs	-----	ASME B30.20, LOLER
Hoist (powered) base mounted	-----	ASME B30.7
Hoist, Manual lever operated	BS EN 13157	ASME B30.21
Hoists Overhead (Under hung)	-----	ASME B30.16
Hoist ring, Links, Swivels	BS EN 1677-4	ASME B30.26
Hook	BSEN 1677-1, 2, 3, 5	ASME B30.10, ISO 7597, ISO 8539
Hopper	BS 1703	LOLER
Jack	BS EN 1494	ASME B30.1
Jumbo Bag	BS EN ISO 21898	
Lever Hoist – Chain	BS EN 13157	ASME B30.21
Lifeboat /rescue boat davit	-----	LSA Code
Lifeboat /rescue boat lifting frame	-----	LSA Code

### Con., LIST OF STANDARDS

LIFTING EQUIPMENT' TYPE	BS STANDARDS	OTHER STANDARDS
Lifeboat /rescue boat lifting points	-----	LSA Code
Lifts - (passenger or goods)	BS EN 81 – 1 BS EN 81 – 2	ISO 4190-2, 4190-3, ISO 7465, ASME A17.1, 17.2, 17.3, 17.4
Lifts – Service	-----	ISO 4190-5,6, ISO 7465
Load cell & Test beds	BS EN ISO 7500-1, BS EN ISO 376	ASTM E 74-02
Loading ramp	-----	ASME-PALD:2005
Man riding basket/Personnel Carrier	BS EN 14502 – 1 BS 7121 Part 1, Part 2	LOLER, ASME B30.23
Mast climbing working platform	BS EN 1495	-----
Mast Hoist for material	BS EN 312	-----
Mobile working platform / Man lift	BS EN 280: 2001	ASME 120, , ASME B30.23 Qatari Standard GS 80 (1988)
Pad eyes (fabricated)	-----	LOLER
Pallet (steel)	BS ISO 6780	-----
Pallet stacker	BS 5777	-----
Pallet truck – Hand Operated	BS ISO 509, BS EN 1757-2	-----
Personnel protective equipment against fall from Height	BS EN 341, 360, 361, 364	-----
Personnel Transfer Net	-----	Billy Pugh Practice
Pipe clamp/hook	-----	LOLER, ASME B30.20
Plate clamp	BS 13155	LOLER, ASME B30.20
Pulley Blocks / Snatch block	BS EN 13157	-----
Round sling (man made fibre)	BS EN 1492-2	ASME B30.9
Rules for Design of cranes	BS 2573-1,	-----
Runway beam	BS 2853	-----
Safe Load Indicators	BS 7262	ISO 10245 Part 1 to 5
Safety Net	BS EN 1263-1 and 2,	-----
Shackle (Alloy steel )	BS 3551	US-FED.SPEC-RR-C-271D
Shackle (Forged steel)	BS 13889	-----
Skip (Baskets, tool boxes, Cylinder Racks)	BS 12079 Part 1	LOLER

**Con., LIST OF STANDARDS**

<b>LIFTING EQUIPMENT' TYPE</b>	<b>BS STANDARDS</b>	<b>OTHER STANDARDS</b>
Spreader beam/bar/frame	BS 13155,	LOLER
Suspended access equipment	BS 2830	-----
Tirfors / Jaw Winch	BS EN-13157	-----
Trolley	BS EN-13157	-----
Turnbuckle & Rigging screws	BS 4429	-----
Vehicle lift	BS EN 1493	-----
Walkway, Stairs, Ladders & their lifting points	BS 5395 –1, 2, 3	LOLER , ISO 14122-2
Water bag	-----	LOLER
Webbing sling (man made fiber)	BS EN 1492-1 and 2	ASME B30.9
Winch (Hand Operated Plate Sided)	BS EN-13157	
Winch (lifeboat & man riding)	-----	LSA Code
Winch (mooring)	BS 7471	-----
Wire rope (Steel)	BS EN 12385-1 to 10 BS EN 13414-1 to 3	API Spec 9A ISO 4309
Wire rope Steel – for Yachts	BS MA 29	-----
Wire Rope, Care and Use	-----	API RP 9B
Wire rope sling (Steel)	BS EN 13414-1	ASME B30.9
Lifting operation & Lifting Equipment	-----	LOLER

## **7.0 RESPONSIBILITIES**

### **7.1 GENERAL**

- 7.1.1 QP recognizes that the protection of the health, safety and environment of its employees and contractors, and the protection and security of its assets are an integral part of QP business policy and the prime responsibility of management and staff at every level.
- 7.1.2 This regulation is aimed to achieve a high level of quality and safety awareness in all lifting operations performed within the jurisdiction of QP and contractors.
- 7.1.3 It is the mandatory requirement of this regulation that no item of lifting equipment shall be utilized to raise, lower, suspend or transport a load, unless a valid certificate verifying suitability for its intended use has been issued by an approved TPCA on six monthly basis and accepted by STI/23.
- 7.1.4 Any item of lifting equipment, not holding a valid certificate from any approved TPCA, shall not be utilized in any QP operational area. Original or approved copy of valid certificate shall be available at the site where lifting equipment is in use.
- 7.1.5 Certification shall be submitted to STI/23 for acceptance with a minimum of 24 hours notice.



- 7.1.6 In cases of discrepancy, certificates issued by an approved TPCAs from outside the State of Qatar shall require to be verified and endorsed from their local office (in Qatar) prior to mobilization for work in QP operational areas.
- 7.1.7 Any certificate issued by private companies or TPCAs who are not approved, shall not be accepted unless it is endorsed and supported by a valid certificate issued by an approved TPCA.
- 7.1.8 Proper implementation of this regulation depends upon the contribution of various Depts. of QP, contractors and TPCAs. Brief descriptions of the responsibilities are outlined in 7.2 and 8.0 below.

## **7.2 QP DEPTS. / CONTRACTOR**

### **7.2.1 ST Dept.**

ST Dept. Manager delegates the overall responsibility to control, issue, distribute and revise the regulation to STI. STI appoints STI/23 to:

- a) Ensure all QP and QP contractors lifting equipment is registered and inspected and certified in line with this regulation.
- b) Reviews and recommends TPCAs for Corporate HSE approval.
- c) Reviews and accepts TPCA personnel.
- d) Reviews and accepts all QP lifting equipment, all lifting equipment personnel and all certificates prior to use in all QP operational areas.
- e) Ensure appropriate resources for the implementation of the regulation such as approved TPCAs personnel are available and registered in a data-base.
- f) Act in an advisory role for the implementation of the regulation in all QP Depts. and among contractors, including awareness training.
- g) Monitor the performance of contractors, TPCAs and lifting equipment suppliers through audits.
- h) Coordinate between QP Depts. for inspection and testing of lifting equipment.
- i) Arrange audits on QP Depts., contractors and TPCAs to ensure implementation of the regulation.
- j) Reviews and accepts submitted critical lifting plans and method statements.

### **7.2.2 Operational Depts.**

Operational Dept. shall ensure that:

- a) The regulation is implemented by all concerned within the Dept. through a nominated focal point.
- b) The corrective actions are taken on any non-conformity related to lifting equipment and personnel, based upon one of the following:
  - i. Periodic inspection and test reports issued by an approved TPCA.
  - ii. Defects noticed through routine in-house inspections and maintenance.
  - iii. Audit reports.
- c) All contractors/sub-contractors providing services shall comply with this regulation.
- d) Liaison with Corporate Training Dept. for arranging training to their lifting equipment operators and riggers.
- e) There is a liaison with STI/23 to acquire QP equipment identification number.
- f) Completion, approval and execution of generic lifting plans.



- g) Submission of critical lifting plans and method statements where appropriate.

### **7.2.3 Operational/Regional HSE Depts.**

Operational/Regional HSE Dept. shall carry out checks on lifting equipment and on personnel to ensure that uncertified, expired, and unidentified lifting equipment are not in use. Any such equipment shall be immediately removed from service and quarantined, until the discrepancies noted are rectified by the end user/contractor. This shall be ensured by:

- a) Verification of the contractor's equipment and personnel against the supplied documents, prior to mobilization on QP sites.
- b) Onsite surveys of QP and contractors lifting operations.
- c) Monitoring the safety of critical lifting operations.

### **7.2.4 QP Materials Dept.**

QP Materials Dept. shall ensure that:

- a) This regulation is specified to the manufacturer/supplier for any lifting equipment purchases.
- b) All purchased lifting equipment is certified by one of the approved QP TPCAs.
- c) The supplier is delivering lifting equipment to QP Material Dept. along with approved TPCA certificate accepted by STI/23.
- d) There is a liaison with STI/23 to acquire QP equipment identification number.

### **7.2.5 QP Projects Depts.**

QP Projects Depts., either in Engineering Depts. or Operations Engineering Depts. shall ensure that:

- a) All contractors/sub-contractors providing service shall comply with this regulation.
- b) Submission of critical lifting plans and method statements where appropriate.
- c) All new lifting equipment supplied as part of a project shall be tested/ certified by one of the approved TPCAs as listed in 8.5 and accepted by STI/23 prior to handover to the asset owner.
- d) Design calculations and drawings for new equipment installed on QP site are available for TPCA review before certification of the equipment.
- e) If any new lifting equipment is intended to be used as part of construction activities, prior to handover of the lifting equipment to the asset owner, it shall be tested/certified by one of the approved TPCAs as listed in 8.5 and accepted by STI/23 prior to use.
- f) All lifting equipment shall be maintained in a good condition and all inspections and defects recorded in a log book, including the status of the certification by the contractor/controlling dept. until handover to the asset owner.

## **7.2.6 QP Engineering Projects Depts. or Operational Depts.**

QP Engineering Projects Depts. or Operational Depts. shall ensure that all cranes and lifting equipment on construction vessels/barges operating in QP operational areas shall be inspected and certified on a six monthly basis as required by this regulation. This requirement shall be reflected in any contract documentation between QP and the contractor/construction vessel/barge supplier.

## **7.2.7 QP Port Departments**

QP Port Departments shall ensure that the vessels calling at their respective ports and undertaking cargo operations shall comply with respective port regulations and provisions of this standard as may be applicable.

## **7.2.8 Contractor**

Contractor shall ensure that:

- a) The regulation is implemented and followed by all concerned employees through a nominated competent person.
- b) The corrective actions are taken on any non-conformity related to lifting equipment and personnel, based upon one of the following:
  - i. Periodic inspections and test reports by QP's approved TPCA.
  - ii. Defects noticed through routine in-house inspections and maintenance.
  - iii. Audit reports issued by QP's auditors/companies internal audits.
- c) The sub-contractors working with them are complying with the regulation.

## **8.0 THIRD PARTY CERTIFYING AUTHORITIES (TPCAs)**

### **8.1 RESPONSIBILITIES FOR TPCAs SURVEYORS/TRAINERS**

- 8.1.1 TPCAs shall inspect and certify lifting equipment to ensure that it meets the requirements of the manufacturer's technical document, applicable standards and this regulation.
- 8.1.2 The certificate shall be signed by the surveyor who has performed the inspection, and countersigned by an approved TPCA company authority. Computer-generated or rubber stamped signatures are not allowed on the certificates.
- 8.1.3 TPCAs shall colour code lifting equipment after inspection in accordance with this regulation and the approved colour code schedule.
- 8.1.4 TPCA surveyors shall maintain daily record of inspection activities carried out by them in the Surveyors Daily Activity Log book.
- 8.1.5 TPCAs shall provide training packages covering theoretical and practical aspects, for lifting equipment personnel specified in this regulation.
- 8.1.6 TPCAs shall provide training and issue certificates of competency and identification cards such that all lifting equipment personnel meet the minimum training and competency requirements specified in this regulation.
- 8.1.7 TPCAs shall maintain a data-base of approved authorized signatories, surveyors, trainers and lifting equipment personnel that have received certified training.

## **8.2 QUALIFICATION REQUIREMENTS FOR TPCAs SURVEYORS/TRAINERS**

8.2.1 Surveyors performing the certification activity shall meet the following minimum technical qualifications:

- BSc/Diploma in mechanical engineering or an approved equivalent engineering qualification,
- Certified by LEEA or an approved equivalent,
- Minimum of eight years experience in the oil and gas industry (onshore and offshore), of which five years has been spent in inspection and certification of lifting equipment activities,
- Familiar with basic equipment operation, international lifting equipment codes and standards for performing inspection and certification,
- Authorised by the TPCA for performing certification services,
- CVs of the approved TPCA surveyors shall be submitted to STI/23 for acceptance.

8.2.2 Trainers performing the training activity shall meet the following minimum qualifications:

- Diploma in mechanical engineering or an approved equivalent engineering qualification,
- Approved as a trainer from any of the internationally recognised training institutes or equivalent engineering qualifications, with the background of teaching experience related to lifting equipment,
- Minimum 10 years of experience related to lifting equipment training, such as crane and forklift operator training and riggers training,
- Familiar with international lifting equipment standards and codes for inspection and certification,
- Authorised by TPCA for performing training services,
- CVs of the trainers shall be submitted to STI/23 for acceptance.

## **8.3 LIFTING EQUIPMENT CERTIFICATE DETAILS**

All original lifting equipment certificates issued by an approved TPCA shall contain the minimum details given below and as shown in sample formats in Forms LER 04, 05 and 06.

- Owners name and address,
- Manufacturer or supplier name and address,
- The address of the premises at which the examination was made,
- Name and address of the company issuing/endorsing the certificate,
- Unique identification number of the certificate,
- Unique identification number, registration number, brief description and SWL of the equipment,
- Any restrictions on the use or maximum capacity of the equipment,
- For cranes, the maximum capacity and capacity at the existing/as rigged configuration, type of SLI, size of the wire rope, number of falls, clutch and brake holding capacity, slewing details, boom structure etc.,
- Type of examination and date of examination,
- The due date of next thorough examination,
- The due date of next PLT, if applicable,
- Applicable reference standard/code,
- Details of any major repairs/alterations carried out on the equipment,

- Details of inspections/tests previously performed including any NDT,
- Name and signature of the certifying surveyor,
- Name, signature, and designation of the countersigning authority,
- Clearly defined liability clause of the certifying company,
- Measuring units (for loads/weights) shall be metric.

#### **8.4 CERTIFICATES ISSUED FOR TRAINING**

Certificates issued for crane operator, forklift operator, rigging supervisors, rigger, etc. shall have the following minimum details:

- Of the training course.
- The name and address of the certifying TPCA,
- The name and address of the employer,
- Unique identified certificate number and issue date,
- Name and photograph of the person who has undergone and passed the training,
- The TPCA stamp shall be on the photograph,
- Validity of the certificate and course duration,
- Signature of TPCA and trainer.
- Laminated Identification cards shall be issued showing the name of the person, type of training, certificate number and validity of the certificate.

#### **8.5 CORPORATE HSE APPROVED TPCAs**

8.5.1 The following lists the current approved TPCAs:

- American Bureau of Shipping,
- Bureau Veritas,
- Det Norske Veritas,
- Germanischer Lloyds,
- Lloyd's Register,
- TUV Sueddeutschland,
- Velosi Certification.

8.5.2 Any reference in this regulation to the inspection, verification, training and certification of any lifting equipment or lifting equipment personnel, shall mean the issue of such documents by one of the seven (7) approved TPCAs listed above.

8.5.3 QP reserves the right to suspend, add, remove or 'black list' any approved TPCA for whatever period necessary, if it considers the TPCA lacks the required competence or professionalism necessary to adequately perform the duties detailed in this regulation.

### **9.0 GENERAL REQUIREMENTS FOR QP/CONTRACTOR LIFTING EQUIPMENT PERSONNEL**

#### **9.1 QP RIGGING SUPERVISOR**

##### **9.1.1 Physical and Educational Qualifications**

All QP rigging supervisors shall:

- Be at least 35 years of age.

- Physically fit with regard to eyesight, hearing, reflexes and ability to handle lifting gear and equipment.
- A minimum of 10 years rigging experience in the oil and gas industry, with at least three years supervisory experience.
- Have had adequate training and experience and be competent to act as an appointed person or focal point nominated by management to be in overall control of the lifting operations.
- Be educated to a minimum HND or a Diploma in mechanical engineering, or equivalent.
- Be capable of reading, speaking, writing and understanding the English language.
- Have strong administrative and supervisory skills to schedule, monitor and control the lifting equipment personnel and lifting operations.

### 9.1.2 Training and Certification Requirements

- Must hold valid certification in scaffolding, rigging and rigging supervision issued by an approved TPCA and accepted by STI/23.
- All certified and authorized QP rigging supervisors shall hold a laminated identification card with photograph issued by an approved TPCA and accepted by STI/23.
- Must hold certification in LEEA parts 1 and 2 (or equivalent) related to the use, maintenance and statutory testing/inspection, etc of lifting equipment, tools/tackles and loose gear.
- Must have training in fire and safety/first aid with regards to hazardous areas and materials.

### 9.1.3 Responsibilities and Duties

- Directs controls and coordinates activities of subordinates engaged in rigging and lifting activities.
- Assesses lifting operations to provide planning, selection of cranes, lifting gear and equipment, instruction and supervision as is necessary for the task to be undertaken safely.
- Ensures that all lifting equipment is in good working order and that statutory testing/inspection and certification are carried out in line with this regulation.
- Prepares critical lifting plans and submits to STI/23 for acceptance.
- Approves generic lifting plans for use.
- Maintains records of all lifting plans.
- Ensures that all safety rules are applied and adhered to by subordinates and any one else in the work area and fully understands the responsibilities regarding PTW procedures.

## 9.2 CONTRACTOR RIGGING SUPERVISOR

### 9.2.1 Physical and Educational Qualifications

All contractor rigging supervisors shall:

- Be at least 35 years of age.
- Be educated to a minimum secondary level.
- A minimum of 10 years rigging experience in the oil and gas industry, with at least three years supervisory experience.

- Have had adequate training and experience and be competent to act as an appointed person or focal point nominated by management to be in overall control of the lifting operations.
- Be capable of reading, speaking, writing and understanding the English language.
- Have strong administrative and supervisory skills to schedule, monitor and control the lifting equipment personnel and lifting operations.

### **9.2.2 Training and Certification Requirements**

Rigging supervisors shall hold:

- A valid certificate of competence issued by an approved TPCA, and accepted by STI/23.
- Certificates of competency issued without the evidence of appropriate training shall be liable to rejection by QP. The validity of the certificates shall not in any case exceed three years.
- All certified and authorized rigging supervisors shall hold a laminated identification card with photograph issued by an approved TPCA and accepted by STI/23.
- QP has the authority and can demand removal of a rigging supervisor where incompetence or negligence is proven at any time during an operation. (Minimum training three days for fresh hands and two days for the refreshers).

### **9.2.3 RESPONSIBILITIES AND DUTIES**

- Organization and control of the lifting operation,
- Assessment of the lifting operation to provide such planning, selection of cranes, lifting gear and equipment, instruction and supervision as is necessary for the task to be undertaken safely,
- Ensure that accurate weights, radii, heights etc. are established,
- Ensure that the ground is made suitable for taking up the loads to be imposed,
- Ensure that suitable access is provided to the site and any area required for erection and dismantling the crane,
- All hazards such as services (gas, water, electricity etc.) above or below ground are identified and suitable precautions are taken,
- Ensure that adequate inspection and maintenance of the equipment has been carried out,
- Ensure that there is an effective procedure for reporting defects and incidents and taking any necessary corrective action,
- Ensure that both the rigger and the crane operator are familiar with the method of signaling to be used.

## **9.3 CRANE OPERATOR**

### **9.3.1 Physical and Educational Qualifications**

- Be at least 25 years of age,
- Be educated to a minimum secondary level,
- A minimum of five years experience,



- Be capable of reading, speaking, writing and understanding the English language sufficient for the safe operation of the crane,
- Be physically and medically fit with regard to eyesight, hearing and reflexes.

### **9.3.2 Training and Certification Requirements**

- All mobile cranes shall be driven or operated by a person holding a valid Qatar driving license (Grade 4) or as authorized for mobile crane in the new Qatari driving licence or equivalent valid GCC driving licence.
- All cranes shall be operated by a person holding a valid certificate of competence issued by an approved TPCA and accepted by STI/23.
- All certified and authorized crane operators shall hold a laminated identification card with photograph issued by an approved TPCA and accepted by STI/23.
- All certified and authorised crane operators shall only use equipment for which they have received training and to use it in the manner in which they have been trained.
- Minimum training three days for fresh hands and two days for the refreshers.
- The validity of the certificates shall not in any case exceed three years, crane operator certificates of competence shall fall into two categories with the maximum crane capacity, namely:
  - i. Offshore crane operator certificate (crane capacity and type)
  - ii. Onshore crane operator certificate (crane capacity and type).
- Statement of crane capacity and type shall be clearly marked on the certificate.
- An onshore crane operator shall not operate an offshore crane, unless qualified to do so and vice versa.

### **9.3.3 Responsibilities and Duties**

- Correct operation of the crane as per manufacturer's instructions. The crane operator shall ensure that the crane is roadworthy, functioning correctly and is properly maintained each and every time that the crane is operated.
- Setting the crane level prior to lifting and checking that it remains level throughout the operation.
- Establishing which signalling system is to be used and following instructions from only one signaller at a time.
- Stopping operations if given any instructions that would take the crane outside its permitted duties.
- Stopping operations if the signaller is not within his direct sight.
- Stopping operations if visibility is not clear.
- Informing the supervisor of any problems that arise which would affect the lifting operation.
- Recording the daily checks, maintenance and comments relating to the crane's operation in the log book for the crane.
- The crane operator shall know the weight of the load prior to start of lift. No load is to be lifted where the weight is unknown.
- Shall not leave the crane unattended while a load is suspended from the hook.
- Where lifting operations involve the use of lifting equipment in proximity to overhead power lines, it is the responsibility of the crane operator to ensure that it is safe to do so. The crane operator shall ensure that the equipment is operated in such a manner that no item of lifting equipment is within 20 meters proximity of any live overhead power line.

- Put the operation on halt if riggers are not present or are exposed to any potential hazard.
- Perform minimum checks (as applicable for onshore and/or offshore cranes) at the start of a working shift.

## **9.4 RIGGER**

### **9.4.1 Physical and Education Qualifications**

All Riggers shall be:

- Minimum 21 years of age.
- Educated to a minimum secondary level.
- A minimum of three years experience.
- Capable of reading, speaking, writing and understanding the English language sufficient for the fulfillment of their function in a safe manner.
- Physically fit with regard to eyesight, hearing, reflexes and ability to handle lifting gear and equipment.

### **9.4.2 Training and Certification Requirements**

- All riggers utilised in onshore and offshore operational area shall hold a valid certificate of competence issued by an approved TPCA or an internationally recognised body acceptable by TPCA and accepted by STI/23.
- All certified and authorized riggers shall hold a laminated identification card with photograph issued by an approved TPCA and accepted by STI/23.
- Certificates of competency issued without evidence of appropriate training shall be liable to rejection by QP. The validity of the certificates shall not in any case exceed three years. Marine divers and crew who are handling lifting equipment shall undergo riggers training.
- All seafarers involved in lifting operation shall have a valid riggers certificate of competence.
- QP may demand the removal of a rigger where incompetence or negligence is proven at any time during an operation.
- The duration of the training course shall be minimum three days training for fresh candidates and two days training for refresher.

### **9.4.3 Responsibilities and Duties**

It is the rigger's responsibility to ensure that the lifting tackle is functioning correctly and is safe to use, properly maintained, and all maintenance activities are registered and documented. This does not in any way alleviate the responsibility of the management or owners of the lifting tackle, in ensuring that the lifting tackle meets the requirements of this regulation and the appropriate standards. All riggers shall:

- Ensure that both the rigger and crane operator is familiar with the method of signaling to be used,
- Ensure that no load is to be lifted where the weight is not stated or unknown,
- Check that the lifting equipment being used is in good condition, certified for use, correctly colour coded, and of sufficient capacity to carry out the lift,
- Ensure taglines are always attached to loads that are likely to swing,
- Be aware of any obstructions within the crane radius and working area,



- Check that the area around the load to be lifted is clear and that the load is not attached to the floor, transportation cradle or adjacent equipment,
- Ensure that crane hook is position in the above centre of each load before sending any signal to the crane operator,
- Ensure that no personnel standing between two loads, especially if one load will be lifted and repositioned,
- Ensure that escape route is identified,
- Check that no personnel are below the load whilst lifting is in progress,
- Ensure all hands are free of lifting tackle and stand clear before the load strain is taken,
- Clearly indicate to the crane operator where the load has to be moved to or placed and, where possible, he shall follow each load to its destination,
- Warn other personnel in the area of the movement of the load,
- Observe and note other activities within the crane's operating area to avoid the development of any unforeseen hazards,
- When lifting a load, stop hoisting when load reach 10 cm. above the ground to check security and balance of the load, and check the proper function of the crane's hoist brakes,
- Stop the lifting operation if anything out of the ordinary occurs and check that it is safe to continue the operation,
- Solely direct the lifting and loading activities and operations.

## 9.5 FORKLIFT OPERATOR

### 9.5.1 Physical and Education Qualifications

- Minimum 21 years of age.
- Be educated to a minimum secondary level,
- Be capable of reading, speaking, writing and understanding the English language sufficient for the fulfillment of their function in a safe manner.
- Physically fit with regard to eyesight, hearing, reflexes and ability to handle lifting gear and equipment.

### 9.5.2 Training and Certification Requirements

- All forklift operators shall have a valid Qatari driving licence, grade 2 up to six tonnes and grade 4 for above six tonnes or as authorized for a car for a forklift up to 6 tonnes and a loader for a forklift above 6 tonnes in the new Qatari driving licence.
- All forklift operators shall hold a valid certificate of competence issued by an approved TPCA and accepted by STI/23.
- All certified and authorized forklift operators shall hold a laminated identification card with photograph issued by an approved TPCA and accepted by STI/23.
- All certified and authorised forklift operators shall only use equipment for which they have received training and to use it in the manner in which they have been trained,
- The duration of the training course shall be a minimum of three days for fresh candidates and two days for refresher,
- The validity of the certificates shall not exceed three years.

### 9.5.3 Responsibilities and Duties

Forklift operators shall be responsible for ensuring that the forklift is functioning correctly and properly maintained each and every time the forklift is operated.

- Stop the lifting operation if anything out of the ordinary occurs and check that it is safe to continue operation.
- When lifting a load, raise 10 cm stop the load just clear of the ground, to check security and balance of the load, and check the function of the lifting brakes.
- Observe and note other activities within the load operating area to avoid the development of any unforeseen hazards.
- Warn other personnel in the area of the movement of the load.
- Check that the area around the load to be lifted is clear and that the load is not attached to transportation cradle or adjacent equipment.
- Be familiar with the lifting capabilities of the forklift.
- Check that the forklift being used is in good condition and certified for use.
- Ensure that no load is to be lifted where the weight is not stated or unknown.
- Ensure that all equipment controls function correctly.
- Ensure that the load does not block the vision of forklift operation. If unavoidable, safety-watch to be provided during period of load lifts and transfers.

### 9.6 MAN-LIFT APPLIANCE OPERATOR

This section shall cover all operators of man-lifting appliances including but not limited to man-lifting platforms, mobile elevating work platforms, cherry pickers, boom lift, scissor-lifts, etc.

#### 9.6.1 Physical and Education Qualifications

- Minimum 21 years of age.
- Be educated to a minimum secondary level,
- Be capable of reading, speaking, writing and understanding the English language sufficient for the fulfillment of their function in a safe manner.
- Physically fit with regard to eyesight, hearing, reflexes and ability to handle lifting gear and equipment.

#### 9.6.2 Training and Certification Requirements

- For all man-lift appliances that require operators to drive them, the operators shall have a valid Qatari driving licence, grade 2 or as authorised for a car in the new Qatari driving licence.
- All man-lift operators shall hold a valid certificate of training issued by the equipment manufacture or an approved TPCA and accepted by STI/23.
- All certified and authorized manlift operators shall hold a laminated identification card with photograph issued by an approved TPCA and accepted by STI/23.
- All certified and authorised operators shall only use equipment for which they have received training and to use it in the manner in which they have been trained.

#### 9.6.3 Responsibilities and Duties

Man-lift operators shall be responsible for ensuring that the man-lift is functioning correctly, and properly maintained, and checked against an approved checklist each and every time the man-lift is operated.

- Stop the lifting operation if anything out of the ordinary occurs and check that it is safe to continue operation.

- Observe and note other activities within the operating area to avoid the development of any unforeseen hazards.
- Warn other personnel in the area of the lifting operation.
- Check that the area is clear for operation.
- Be familiar with the lifting capabilities of the man-lift.
- Check that the man-lift being used is in good condition and certified for use.
- Ensure that all equipment controls function correctly.

## **10.0 QP/ CONTRACTOR LIFTING EQUIPMENT REQUIREMENTS**

### **10.1 COLOUR CODING**

- 10.1.1** QP operates a system where all lifting equipment is marked with a designated color according to the scheduled inspection period and year. The validity of the color is six months.
- 10.1.2** Any equipment inspected on a facility outside the scheduled inspection period will be marked with the same color as the rest of the facility so as to avoid any double color coding possibilities.
- 10.1.3** This color is confirmed and validated by memorandum and prominent display boards at each facility.
- 10.1.4** Equipment not marked in accordance with the required color shall not be utilized in any QP operational areas.
- 10.1.5** Red color is reserved for items that are not fit to be used. Items that are scrap shall be marked red and in addition tagged as "SCRAP".
- 10.1.6** Contractors operating within QP operational areas shall comply with QP color code system for contractors as published every six months by STI/23.
- 10.1.7** Mobile and fixed lifting appliances may be prominently marked with the date of inspection in addition to application of the color code.

### **10.2 LIFTING APPLIANCES**

- 10.2.1** All lifting appliances shall be designed, engineered, constructed, installed, tested, operated and maintained in accordance with the specified standards and as specified in this regulation.
- 10.2.2** No lifting appliances shall be used unless an approved TPCA has issued a certificate, verifying its design suitability for its intended use in a specified environment.
- 10.2.3** All lifting appliances shall be assigned unique identification numbers and marked with certified SWL. In addition all items shall be color coded in accordance with QP color coding scheme, which is applicable at the time of utilization. The contractor shall ensure that the equipment bears the current color coding according to the period specified in the QP color coding schedule.

- 10.2.4** A comprehensive register of lifting equipment detailing the following minimum information shall be developed for monitoring periodic inspection requirements.

Equip ID No.	Brief Description of Equipment	SWL	Date of Proof Load Test	Due Date of next Proof Load Test	Date of Inspection	Due Date of next Inspection

- 10.2.5** Maintenance supervisor will be the focal point when equipment arrives on site. He may nominate other personnel for this job.
- 10.2.6** No lifting appliance shall undergo alterations to components or parts that affect its structural integrity or load bearing capacity without the written approval of an approved TPCA or from the original equipment manufacturer.
- 10.2.7** When lifting appliance has undergone repairs that affect the load bearing parts or replacement of parts or components that affect the structural integrity, the lifting appliance shall be re-inspected and certified by an approved TPCA.
- 10.2.8** Safety devices that affect the integrity of a lifting appliance shall not be altered without the written approval of an approved TPCA or the original equipment manufacturers.
- 10.2.9** Where a lifting appliance has suffered major damage or incident, the appliance shall not be repaired without a written repair procedure from the original equipment manufacturer, and shall be retested after the repairs by an approved TPCA to verify the equipment structural integrity.
- 10.2.10** Any lifting appliance, that has been newly installed or relocated, shall undergo approval by TPCA and commissioning tests shall be performed before being used.
- 10.2.11** A complete manufacturer's maintenance and operating manual for lifting appliance shall be available for reference to the operator and maintenance personnel at site/location. The lifting appliance shall be operated and maintained in accordance with the procedures set out in their relevant handbook and manuals.
- 10.2.12** Maintenance activities carried out on the appliance shall be recorded in the log book for contractor equipment and the SAP database for QP lifting equipment.
- 10.2.13** No item of lifting equipment shall be utilized in a location or place where it is impractical to maintain safe clearance.
- 10.2.14** All cranes permanently installed in a location that has slewing limitations or crane boom restrictions (i.e. jack-up rigs or barges) due to structural design (i.e. legs), shall be fitted with an approved and maintained limiting device, in accordance with the relevant standards.
- 10.2.15** A current copy of the applicable standard, as detailed in this regulation, shall at all times be available for reference to personnel utilising lifting equipment.

- 10.2.16** All hazardous moving parts on any item of lifting equipment shall be designed and constructed in such a manner that adequate safety protection to personnel is provided.
- 10.2.17** Where the stability of any lifting equipment is achieved by weights or ballast, they shall be adequate and suitable for the required task, and shall be placed in accordance with a TPCA approved ballast diagram. They shall be firmly secured to prevent accidental displacement.
- 10.2.18** TPCA shall witness 100% SWL test on a yearly basis as specified in tables 15.11,15.12, 15.14 and 15.15 and clearly highlight the condition of brakes and clutches legibly in the certificate.

### **10.3 REQUIREMENTS FOR CRANES**

#### **10.3.1 General**

All cranes shall have the following:

- a) A hoisting limit device that, when actuated, stops the hoisting motion and applies the brake on the hoisting winch automatically.
- b) A luffing limit device that, when actuated, stops the luffing motion and applies the brake on the luffing winch automatically, and that is so arranged as to prevent by-passing of this device in the normal operation of the crane.
- c) Operating levers and switches that are clearly identified and marked. All markings shall be in English or internationally agreed symbols.
- d) Engine stop systems that operate in a manner such that the engine comes to rest with minimum delay.
- e) Check valves shall be fitted to all hydraulic cylinders to prevent cylinder movement in the event of hose failure.
- f) A facility for emergency lowering of loads.
- g) Temperature sensing devices, audio or visual type, or equivalent safeguards to give adequate protection to the prime mover and associated equipment.
- h) An emergency stop with manual re-set capability within crane operator reach.
- i) Motion control levers that return to neutral with a minimum delay upon release - this does not apply to engine throttle lever.
- j) Adequate fire extinguishers of a QP approved size and type.
- k) All pneumatic, hydraulic and electrical connections clearly tagged/marked, corresponding to the markings on the crane circuit drawings.
- l) An emergency escape route for personnel.
- m) Safety latches that automatically close fitted to all integral crane hooks.
- n) A suitable operating cab that adequately protects the crane operator and controls from the elements (weather), is adequately cooled (if possible) and ventilated, and provides a clear and unrestricted view of all operations associated with the crane.
- o) The SWL of the hook block prominently marked and highlighted on the hook.
- p) Where the design of the crane is intended for SWL loads of greater than five tonnes, a calibrated automatic SWL Indicator shall be fitted and a legible metric crane capacity chart prominently displayed.
- q) Outriggers and hooks clearly marked with a red and white chevron pattern.
- r) Crane hooks (for mobile cranes) secured to ensure no swinging occurs in transit.
- s) Maintenance and repair logbook for each crane is to be maintained.
- t) Audible and visual alarms to be installed in onshore cranes, which shall sound continuously when the crane slewing is set on.

- u) No crane shall be utilized for any operation other than that for which it was designed.
- v) Audible and visual alarm fitted on crawler cranes while travelling forward or reversing.

### **10.3.2 Special Restrictions**

- a) No person shall be transported by a crane except in an approved workbasket or personnel transfer net. The operator shall not leave the controls while the personnel or load is suspended.
- b) All cranes utilized at jetties for handling loads shall have a legible metric load chart that has been calculated in accordance with the dynamic factor (load factor) of 1.35 or as recommended by the crane manufacturer, permanently fixed in the crane operator's cabin.
- c) When a crane is being operated, hand signal communication between the rigger and the crane operator shall be conducted in accordance with the standard hand signal requirements, except that voice communication, by radio or telephone between those persons, is permitted as an alternative.
- d) No crane shall be used beyond its statutory test period.
- e) Cranes shall not be used to transport loads unless they are specifically designed for the purpose.
- f) No crane is allowed to lift any weights above the SWL marked up as per the capacity chart.
- g) No crane is allowed to pull or tow weights. No crane is allowed to enter any hazardous zone without permission and verification of zone requirement.
- h) Cranes shall not be utilized when the wind speed is more than 25 knots or where due to the nature of the load it becomes unmanageable due to wind acting on the load or exceeds values set out by the OEM of the crane, whichever is lesser.  
Use of cranes above 25 knots can only be considered on a case-by-case basis, subject to a detailed risk assessment supported by the OEM's certified maximum safe operating wind speed. Under no circumstances are lifting operations permissible in wind speeds in excess of OEM certified maximum safe operating wind speed.  
All lifting operations above 25 knots require a waiver approved by the respective operations manager.
- i) Cranes shall not be utilized to carry out any lifting operations after sunset. Any lifting operations that have to be carried out after sunset or during periods of poor visibility, shall be with the full approval of the QP operational area management and operational HSE. The operational area shall be adequately illuminated to ensure all involved persons and equipment are clearly visible when carrying out the lift. In addition the lifting equipment shall have its own means of illumination to ensure that the operator at all times can see adequately what actions are taking place and the crane itself shall be fitted with lights at all extremities and along the length of the boom where feasible to assist all personnel involved in the operation can be aware of any movement of the crane.
- j) Ground condition shall be assessed before deploying the crane outriggers. Crane pads shall be used to help disperse weight evenly under each of the cranes outriggers
- k) Cranes not in regular use shall be subjected to special checks as per the manufacturer's instructions/applicable standard, prior to being used.



- l) The load bearing components or structures of the crane shall be subjected to MPI or any other suitable NDT examination in the discretion of the competent person following a PLT.
- m) TPCA shall verify the SLI calibration certificates validity before issuing an inspection certificate.

### **10.3.3 Additional Requirements for Cranes Used For Lifting Persons In Suspended Man-Baskets.**

- a) The crane shall have a factor of safety of 10:1 on crane capacity for each personnel lifting operation.
- b) Shall have a rope spooling device.
- c) The crane shall automatically stop all motions when the controls are released.
- d) The crane shall be equipped with wind speed meter.
- e) The crane shall be equipped with a winch that has power lowering. Cranes with free-fall ability shall not be used to personnel lifting, unless the free-fall facility has been locked out.
- f) Load bearing hydraulic cylinders fitted with load hold valves shall stop movement of the crane in case of hose rupture or pipe fracture.
- g) The crane control shall be such that the man-basket can move gently and the working speed shall not exceed 0.5 m/s on all motions.
- h) The crane shall have a control mechanism to lower the man basket to a safe position, in a controlled manner, in the event of power failure or crane's control failure. The operator shall be familiar with this control mechanism.
- i) The wire rope used for hoisting and lowering the man-basket shall have a diameter 12 mm and above.

## **10.4 SIX MONTHLY THOROUGH INSPECTION OF CRANES**

- 10.4.1 Telescopic booms/fly jibs shall be thoroughly and visually inspected on all sides, section by section, in its extended/erected condition.
- 10.4.2 Telescopic boom wear pads are to be checked for their condition.
- 10.4.3 Lattice boom shall be lowered on the boom support cradles for thorough examination.
- 10.4.4 The main and auxiliary hoist, boom and pendant wire ropes etc. shall be thoroughly inspected throughout their complete length.
- 10.4.5 Automatic digital SLI system shall be checked and verified against known weights for all the parameters.
- 10.4.6 Safety devices such as overload cut-off system, anti-two block, jib hoist cut-off, working area control devices, boom locking system, and winch drum locking devices, etc. shall be checked for their correct functioning.
- 10.4.7 Condition of the slewing machinery system including slewing gear, bearing, slewing brake, slewing lock etc. shall be checked.
- 10.4.8 Hook block sheaves/boom head sheaves shall be thoroughly inspected to ensure that there are no visible cracks or any damage.
- 10.4.9 Counter weight locking pins/bolts shall be checked for correct anchorage. The correct number of counter weights shall be fitted on the crane in compliance with the manufacturer's recommendations.
- 10.4.10 The crane maintenance logbook shall be verified for any evidence of repairs or any maintenance work carried out.

10.4.11 Whenever considered necessary by the competent person, NDT shall be carried out on cranes components.

## **10.5 YEARLY THOROUGH INSPECTION AND LOAD TESTING OF CRANES (IN ADDITION TO 10.4)**

- 10.5.1 Line pull test shall be carried out limited to the maximum wire rope pull per line.
- 10.5.2 At least two 100% SWL tests shall be carried out, one with maximum boom length and the other with intermediate boom length at appropriate radii.
- 10.5.3 Thoroughly inspect and PLT if a one year inspection and more are missed.
- 10.5.4 Cranes with a rated capacity that exceeds 500 tonnes shall be subjected to a PLT prior to use.
- 10.5.5 All test certificates for cranes shall have crane capacity charts attached for verification.

## **10.6 FOUR YEAR PLT OF CRANES (IN ADDITION TO 10.4).**

- 10.6.1 Records of any major repairs or replacements shall be verified before commencing the tests.
- 10.6.2 If any wire rope has been replaced, test certificates for the wire rope shall be reviewed and attached to the crane test certificate.
- 10.6.3 At least three 125% SWL tests shall be carried out in different boom length configuration, (shortest boom, intermediate boom and longest boom), at appropriate radii.
  - a. A line pull test shall be limited to the maximum wire rope pull per line in any configuration.
  - b. A test shall be done at the maximum radius and the maximum boom length.
  - c. An overload test shall correspond to 60% or more of the maximum capacity of the crane.
- 10.6.4 Test personnel shall be positioned so that they are unlikely to be injured should there be a mishap. The test area shall be cordoned off to prevent any unauthorised entry to site.
- 10.6.5 When a load is lifted on the main hook with the fly jib fitted, the load on the main hook shall be reduced to allow for the weight of the fly jib and fly hook.
- 10.6.6 All safety switches shall be checked for correct operation. Any safety switch overridden during the test shall be re-set and checked for correct functioning after the load tests.
- 10.6.7 All crane certificates shall be endorsed with the information necessary to ensure there is no ambiguity as to crane rigging at the time of test. This applies to boom length, rope reeving, hook blocks, counterweights, track width, short or long crawlers, with or without fly jib etc.
- 10.6.8 All test certificates for cranes shall have crane capacity charts enclosed for verification.

## **10.7 REQUIREMENTS FOR OFFSHORE CRANES**

### **10.7.1 General**

All cranes on vessels/barges, contracted, owned and/or operated by QP, being used for lifting operations within QP operational areas, in addition to the classification society requirements shall also require certification in line with this regulation, i.e. the inspection interval for these cranes shall include a six monthly thorough inspection.



### **10.7.2 Offshore Cranes**

All offshore cranes shall comply with the following in addition to 10.3.1.

- a) Not to be used for loading, unloading, raising or lowering loads unless:
  - The design and operation of the crane complies with the specified relevant standard.
  - The load cannot be lowered in free fall.
  - A legible metric load chart shall be permanently fixed in the crane operator's cabin.
- b) Have a readily accessible shutdown device in the air intake of any internal combustion engine and exhaust shall be equipped with spark arresting device.
- c) Have fitted or access to, in close proximity (visible to the crane operator), a working and calibrated wind speed indicator of an approved type or provide with an adequate communication in the nearest station monitoring wind speed.
- d) Be equipped with only one automatic safe load indicator that:
  - is so constructed and marked as to enable the crane operator to readily determine the SWL for any working position,
  - gives a visual and audible alarm warning when the load has reached 95% of the SWL for the corresponding radius,
  - has a cut-off system that is fitted with a means of stopping the hoisting and luffing-out motions automatically when the load has reached 100% of the SWL for the corresponding radius,
  - is maintained in good order and checked monthly by a competent person to ensure its accuracy,
  - has a maintenance logbook for monthly checks.
- e) Have a positive boom angle indicator and, where applicable, a boom extension indicator clearly visible to the crane operator.
- f) Be fully thoroughly inspected by an approved TPCA at a maximum of six monthly intervals to ensure compliance with the relevant standards and this regulation.
- g) TPCA shall witness 100% SWL test on a yearly basis as shown in table 15.12 and clearly highlight the condition of brake and clutches legibly in the certificate.
- h) Be provided with VHF radio or any communication system between crane operator and rigger to facilitate rigging instructions for blind lift.
- i) Be provided with VHF radio for communication between crane operator, vessel's captain and control room.
- j) Be provided with approved type life jacket.
- k) Be provided with a BA work/escape set (positive pressure face mask type, 15 minutes duration cylinder and cascade system connection facility).

### **10.7.3 Special Restrictions**

- a) In the case of cranes mounted on floating vessels, a legible metric and/or imperial load chart that has been calculated by the manufacturer in accordance with the following factors, has been permanently fixed in the crane operator's cabin and shows:
  - Vessel list factor, where applicable.
  - Dynamic factor (load test factor) of 1.35 SWL (if the design factor is unknown) for normal loading/unloading.
- b) When a ship, barge drilling rig or pontoon fitted with lifting equipment is engaged in lifting loads and is counter-balanced to reduce heel or trim, the vessel's stability shall be sufficient to absorb the full counter-heeling moment that would be imposed

in the event of loss of the load and to provide an additional margin of stability. All ballasting arrangements shall be under the control of a competent and experienced person.

- c) Cranes shall not be utilised when the wind speed is more than 25 knots or where due to the nature of the load it becomes unmanageable due to wind acting on the load or exceeds values set out by the OEM of the crane, whichever is lesser, or the mean wave height exceeds two meters.

Use of cranes above 25 knots can only be considered on a case-by-case basis, subject to a detailed risk assessment supported by the OEM's certified maximum safe operating wind speed.

Under no circumstances are lifting operations permissible in wind speeds in excess of OEM certified maximum safe operating wind speed.

All lifting operations above 25 knots require a waiver approved by the respective operations manager.

- d) If an offshore crane is being used for raising or lowering personnel, the crane shall have:
- An overall FOS of 10:1 for each lift.
  - A maximum rope speed in single fall not exceeding 0.5 metres per second.
  - Self-sustaining features of a worm gear reduction or any other design of equivalent safety.
  - An 'automatic' type fail-safe brake that operates on a drum.
- e) If an offshore crane is being used for raising or lowering personnel, the operation shall be suspended if the wind speed exceeds 12 knots.
- f) The crane shall not be used to transfer personnel unless those personnel are wearing approved buoyancy vests and are transferred on an approved personnel net/basket. Not more than four persons shall be transferred simultaneously on the personnel transfer net/basket.
- g) Heavy lifting operations and tandem lifts, to be carried out at offshore locations for the purpose of installation and erection of offshore structures or equipment, shall be accepted on a case-by-case basis, following consultation between STI/23 and the concerned QP Dept.
- h) Any onshore crane fitted/operated on vessel/barge shall be derated by 33% of SWL or more before certification by TPCA, and a new load chart shall be provided and fitted in the crane operator's cabin. The manufacturer, or a suitably qualified person appointed by the manufacturer, or TPCA competent person shall be consulted in producing the new load chart. The ASLI shall be reset to perform in accordance with the new safe working loads.

## 10.8 OVERHEAD TRAVELLING CRANES

All overhead travelling cranes shall comply with the requirements of the specified standards, and in addition shall:

- a) Have a limit switch installed for over-hoisting motion of the hook.
- b) Have limit switches/positive end stops with resilient buffers installed for cross travel and long travel movement.
- c) Have anti-collision switches installed if more than one crane is operating on same gantry.
- d) Have lockable breaker switch at easily accessible position.
- e) Have audible warning device fitted for cabin-operated cranes.
- f) Have an overload limit switch system installed.
- g) Have prominent marking of SWL and ID number on the crane bridge.

- h) Be thoroughly inspected by an approved TPCA at the intervals specified in tables 15.11 and 15.13.
- i) Not to be used beyond its statutory test period.
- j) Maintain records of maintenance and periodic safety checks.
- k) Be 100% SWL tested annually and witnessed by TPCA to verify the condition of brakes and clutches of the crane as specified in table 15.11. This is to be highlighted and clearly legible in the certificate.

**NOTE:** All QP owned overhead travelling cranes or similar type of cranes in various QP operational sites shall only be operated by approved personnel.

## **10.9 TOWER CRANE**

10.9.1 A PLT (125% SWL from the original capacity) shall be carried out every:

- a) Four years,
- b) Every erection,
- c) Every extension (in case of permanently mounted or fixed type),
- d) Any major alteration or repair.

10.9.2 The assigned SWL shall be de rated 20% from the original capacity after successful completion of the PLT.

10.9.3 Sign boards, decorations, outline lights, etc...can impose additional loadings on the crane and shall not be fitted unless approved by the manufacturer. The following are minimum safety equipment that shall be provided on the crane:

- a) Automatic safe load indicator,
- b) Load radius indicator,
- c) Motion limiting devices,
- d) Overload cut-out devices,
- e) Level indicator,
- f) Anemometer,
- g) Zoning devices – applicable and mandatory where there are two or more cranes operating in the same area.
- h) A metal box, frame, etc. shall be installed to prevent spilled concrete from falling.
- i) Fire extinguisher shall be available and easily accessible to the driver or operator.
- j) Rail mounted tower cranes shall be fitted with an audible alarm.
- k) All safety devices including limit switches shall be reset according to the derated capacity.
- l) Vertical wire rope lifeline with auto-locking shall be installed for climbing the vertical ladder.

## **10.10 LORRY LOADER CRANE**

Refer to tables 15.11 and 15.15 for conducting PLT; annual certification and maximum pull per line details.

- a) Shall not be used beyond its statutory test period.
- b) Shall not lift any weights above the marked SWL defined in the capacity chart.
- c) Shall not pull or tow weights.
- d) Shall not enter any dangerous zone without permission and verification of zone requirement.
- e) Never move the vehicle with the outrigger in extended position.

- f) Never move the vehicle with the boom in extended or raised position.
- g) Never move the vehicle with the load on the crane (pick and carry is not allowed).
- h) Shall not be operated on tyres without extending the outriggers.
- i) Lorry loader crane (telescopic boom with/without winch system) above five tonnes capacity shall be fitted with either automatic safe load indicator or a device that shows the percentage of the actual loads.
- j) Petrol and LPG-engine lorry loaders shall not be used in areas where there is a risk of a flammable vapour, gas or dust concentration being present.
- k) All lorry loader cranes shall be thoroughly inspected every six months and a yearly PLT of  $1.25 \times \text{SWL}$  at minimum and maximum obtainable radius.
- l) Diesel-powered lorry loader trucks shall only be used in potentially explosive atmospheres if, in addition to protection of the electrical system, the exhaust is protected against spark emission, precautions are taken against the intake of flammable mixtures and hot surfaces are protected.
- m) All lorry loader operations shall be halted where weather conditions are bad enough to adversely affect the performance of the lift truck or expose the operator to danger, e.g. excessive wind speed, poor visibility due to mist or fog, lightning or heavy rain.
- n) An adequate and certified portable fire extinguisher shall be provided within the crane operator reach.
- o) Lorry loader can only be operated by a person with a valid Qatari driving license (Grade 3).

### 10.11 FORKLIFT

All forklifts including electrically/battery operated shall comply with the requirements of the specified standards and the manufacturers operation and maintenance manuals, and additionally:

- a) Forklifts shall be fitted with Qatar traffic registered number plate.
- b) Forklifts shall not be driven on public roads.
- c) Fork arms shall not be distorted or perforated.
- d) Forklifts shall not be used to lift a load greater than the maximum designed SWL.
- e) Forklifts shall not be used to lift loads unless the pneumatic tyres are inflated to the correct pressure.
- f) The inflation pressure for each tyre shall be shown prominently on the lift truck.
- g) All lift trucks shall be fitted with audible warning devices such as horn and reverse horn to warn other personnel in the vicinity.
- h) Forklifts shall be provided with suitable lights at the front and rear if the lift truck has to be driven at night or in areas with insufficient natural or artificial light. Consideration shall be given to fitting a flashing yellow light on the top of the lift truck.
- i) All lift truck operations shall be halted where weather conditions are bad enough to adversely affect the performance of the lift truck or expose the operator to danger, e.g. excessive wind speed, poor visibility due to mist or fog, lightning or heavy rain.
- j) Petrol and LPG-engine lift trucks shall not be used in areas where there is a risk of a flammable vapor, gas or dust concentration being present.
- k) Battery-powered lift trucks shall only be used where there is a risk of a flammable vapor, gas or dust concentration being present if they have been suitably protected.

- l) Diesel-powered lift trucks shall only be used in potentially explosive atmospheres if, in addition to protection of the electrical system, the exhaust is protected against spark emission, precautions are taken against the intake of flammable mixtures and hot surfaces are protected.
- m) If an attachment fitted may alter the characteristics of the lift truck, an approved TPCA, in consultation with the supplier or manufacturer, shall carry out necessary de-rating.
- n) The attachments shall be securely fastened and care taken to ensure that the attachments or securing device do not foul any part of the mast structure during raising or lowering of the attachment.
- o) All forklifts shall be thoroughly inspected by an approved TPCA at a maximum interval of six months for offshore and onshore locations.
- p) The SWL shall be prominently displayed on all forklifts.
- q) No forklift shall be used beyond its statutory test period.
- r) Use of forklifts for transport of personnel is strictly forbidden.
- s) All forklifts shall be annually tested to 100% SWL for offshore and onshore.
- t) All forklifts shall be fitted with adequate and certified portable fire extinguisher.

## **10.12 GRABS**

Grabs shall be initially PLT to 1.25 x SWL and shall comply with the following requirements;

- a) Wire rope installed in the grab shall be replaced within 500 working hours in regardless of the condition of the wire rope.
- b) Pad eyes attached to the grab shall be PLT to 2 x GW at an interval of every four years.
- c) A logbook shall be provided and available for the monitoring of the grab's working hours.
- d) All grabs shall be inspected and tested as shown in table 15.11.

## **10.13 MAN LIFT/WORKING PLATFORM/SCISSOR LIFT**

10.13.1 Man lift operation shall not be carried out with wind speeds in excess of 12 knots.

10.13.2 Personnel riding in the man-riding basket shall wear an STI/23 acceptable safety harness secured to the handrail of the appliance.

10.13.3 All working platforms (hydraulic, pneumatic and electric) shall comply with the specific standards, manufacturer manuals and this regulation.

10.13.4 The following points shall be considered for SWL calculation of working platform.

- a) Average personnel weight shall be 100 kgs.
- b) Average working tools weight shall be 25 kgs. per person
- c) Tare weight of the equipment.

10.13.5 All working platforms shall be:

- a) Thoroughly inspected by an approved TPCA at a maximum interval of six months for offshore and onshore locations.
- b) PLT to 125% SWL after major alteration/repair and thereafter every four years.
- c) 100% SWL test yearly.

## **10.14 LIFTS (PASSENGER AND CARGO)**

All lifts (passenger and cargo) shall comply with the requirements of the specified standards and the manufacturer operation and maintenance manuals, and in addition:

- a) All lifts (passenger and cargo) shall be fully inspected, function tested and witnessed by an approved TPCA at a maximum interval of six months for offshore and onshore locations.
- b) The number of persons permitted at one time inside the lift and SWL shall be prominently displayed on all lifts.
- c) Lifts (passenger and cargo) shall not be used beyond the statutory test period.
- d) All lifts (passenger and cargo) shall have a logbook in which the operator records the maintenance, safety checks and comments relating to the operation.

## **10.15 DAVITS**

Davits are used throughout QP operational areas on many types of equipment. Use of the davit is normally determined by the type of equipment it is fitted to

10.15.1 Davits on manways, piping, end covers, etc, shall be PLT at initial installation and then preserved for long term storage. Visual inspection of the davits shall then be carried out prior to use.

10.15.2 Davits used frequently on relief valve and filter change outs, etc, shall be PLT at initial installation, visually inspected annually and prior to use.

## **10.16 WINCHES**

### **10.16.1 General Requirements**

All winches, including air-driven winches, shall comply with the requirements of the specified standards, and in addition the following shall apply:

- a) Winch control shall be manned at all times while the winch is in use.
- b) All winches shall be thoroughly inspected by an approved TPCA at a maximum interval of six months.
- c) No winch shall be used beyond its statutory test period.
- d) All winches shall have a maintenance logbook.
- e) The wire rope size shall never exceed the manufacturer's recommended size.
- f) All winches used in marine, offshore and onshore environments shall be tested to 100% SWL as shown in table 15.11, 15.14 and 15.15. The applied load and % of maximum pull per line tested shall be clearly specified in the winch certificate and thorough examination and PLT certificates.
- g) All winches shall be fitted with safety guard to protect the operator.
- h) All winches shall be marked with SWL.

### **10.16.2 Winches for Man-Riding Basket**

In addition to requirements of 10.16.1 above, all man-riding winches:

- a) Shall be fitted with a high tensile strength steel wire rope of a capacity of 10 x SWL of the winch.
- b) Shall have a rope spooling device.



- c) Shall have a manual hand brake in addition to an automatic brake system.
- d) Shall be fitted with an emergency stop device.
- e) Shall be constructed so that the brake mechanism is permanently applied at all times when the operating controls are in the neutral position.
- f) Shall be fitted with upper and lower travel limit switches, in addition to an overload protection.
- g) Shall not be fitted with a free fall mechanism
- h) Shall be clearly marked 'MAN-RIDING ONLY' with SWL.
- i) Shall be used only with a certified man basket for all personnel lifting operations.
- j) Each person riding in the man-riding basket shall have a safety line secured to the hoist hook.
- k) The winch wire rope shall be replaced every four years, irrespective of the condition of the rope.

#### **10.16.3 Winches for Man-Riding Using Body Harness.**

Man-riding operations using body harness shall be conducted only if there is no other reasonably practical and safe means of completing the task.

In addition to the requirements of 10.16.1 and 10.16.2 above, the following shall be included:-

- a) Body harness shall be certified and having the hook attachment in the front of the body.
- b) The body harness shall have a minimum SWL of 100 kg and shall have a design FOS of 10:1 before breaking.
- c) The maximum load to be lifted shall be 100 KG.
- d) The winch shall having a minimum 10 mm high tensile strength steel wire rope of a capacity of 10 x SWL of the winch.
- e) No simultaneous operation that can interfere with man riding operation shall be allowed.
- f) The winch used for man riding, shall not be used for lifting any other item, simultaneously.
- g) Effective communications shall be established at all times during the man riding operations. The communication shall be undertaken by experienced and competent persons familiar with signs, signals, and procedures used in each particular operation.
- h) In case of failure of the communication mechanism, the hoist operator shall stop the movement of the man riding and shall resume the operation only after clearly directed to do so.
- i) As a contingency plan, specific instructions must be available and followed for protection and rescue operations.

#### **10.16.4 Flare Tip Winches**

In addition to requirements of 10.16.1 above, all winches used to lower flare tips are used infrequently and then usually during a plant shutdown. For such situations the wire rope shall be removed from the winch and preserved in a relaxed coiled condition and

the winch preserved for long term storage at the location. Prior to use the winch shall be reassembled, inspected and tested at 125% SWL.

## **10.17 LIFEBOAT, RESCUE BOAT, WINCHES AND DAVITS**

### **10.17.1 DAVITS**

All davits shall be checked in accordance with the following criteria:

- a) Conduct visual and thorough examination at an interval of every six months.
- b) Carried out PLT to  $2.2 \times \text{SWL}$  before being put into use, after construction, repair and after re-installation.
- c) During PLT, integrity of davit structure shall be inspected for any deformation or propagation of cracks in the metal. NDT shall be carried out before and after conducting the PLT.

### **10.17.2 WINCHES**

All winches shall be checked in accordance with the following criteria:

- a) Winch shall be thoroughly examined every six months,
- b) Winch shall be tested at 100% SWL annually,
- c) Winches shall be PLT to 1.1 SWL dynamic and 1.5 SWL static prior to first use and every four years as shown in table 15.13.
- d) The winch speed shall be checked while lowering the lifeboat with load as manufacturer's recommendations,
- e) The winch wire rope shall be renewed every four years irrespective of its condition or as manufacturer's recommendations whichever is earlier,
- f) Winch limit switch shall be checked during inspection,
- g) Functioning of winch brake system shall be checked and its condition to be highlighted on the certificate.

### **10.17.3 LIFEBOAT & RESCUE BOAT**

Lifeboat & Rescue Boat shall be checked in accordance with the following criteria:

- a) Lifting points or hooks on the life/rescue boat shall be inspected every six months.
- b) Lifeboat and Rescue Boat lifting frame shall be PLT to  $2.5 \times \text{gross weight}$ .
- c) Lifeboat lifting points or hooks shall be PLT to  $1.1 \times \text{SWL}$  ( in dynamic test condition) prior to first use and every four years as shown on table 15.13.
- d) The following shall be required for rescue boat if lifted/lowered with personnel:
  - Rescue boats shall have a minimum of two (2) lifting points.
  - Maximum number of persons permitted shall be clearly marked in addition to SWL.
  - Rescue boats lifting points shall be PLT to  $2.5 \times \text{gross weight}$  prior to first use and every four years as shown in Table 15.13.



## **10.18 RUNWAY BEAM**

- 10.18.1 Runway Beam shall be PLT on initial installation before being put into use, after re-installation at the site, and at the discretion of the surveyor.
- 10.18.2 The visual and thorough examination shall be carried out at six month intervals.
- 10.18.3 Following thorough and visual examination and if defects are evident, the TPCA may instruct to carry out further tests, examinations, MPI at his discretion to assess the integrity of the equipment.

## **10.19 VEHICLE LIFT**

All vehicle lifts or hoists used for raising and lowering transport vehicles such as cars, motorcycles, lorries, buses, trams, rail vehicles, industrial trucks etc. shall be designed, constructed, operated and maintained in accordance with applicable standards and this regulation. The different types of vehicle lift are: single and multi-column lifts, single and multi-cylinder lifts, mobile column lifts, scissors and parallelogram lifts, short stroke lifts which support vehicle wheels, chassis or other designated lifting points.

- a) Vehicle lift or hoist shall be designed or equipped in such a way that the load can be restrained and held.
- b) Unintentional descent shall be prevented by means of self-blocking drives, automatic brakes, a load pressure brake system, or non-return valves at the supporting cylinder.
- c) Braking mechanisms shall operate automatically after the control device has returned to the 'Neutral' or 'Off' position or when the drive power is interrupted.
- d) Braking mechanisms shall be designed in a way that the operator cannot alter their constructionally-defined effect without the aid of tools.
- e) Control devices shall be designed and arranged so that they are within easy reach of a standing operator, and so that the operator is not jeopardized by the load or the motion of the lift or of parts of the lift.
- f) The control position to operate the vehicle lift shall be designed and arranged so that the operator can watch the load carrying device and the load whilst in motion, as well as the space under the load carrying device and the load.
- g) All vehicle lifts shall be equipped with an emergency stop device and it shall stop the motion of all the lifting devices immediately it is activated.
- h) The maximum admissible average speed for lifting and lowering shall not exceed 0.15 m/s.
- i) The rated load shall be distributed on the four corners of a rectangle with the width equating to wheel track and the length to wheel base.
- j) The steel wire ropes used for rope drives shall comprise a minimum of 114 single wires and the nominal tensile grade of each wire shall be at least 1570 N/mm<sup>2</sup> but not exceed 1960 N/mm<sup>2</sup>.
- k) The tensile grade of terminations shall be a minimum of 80% of that of the wire rope. Splices, aluminum press ferrules, non-ageing steel press ferrules, or wedge socket anchorages shall be used for the wire rope terminations.

- l) The MBL of chain used for chain drives shall be at least four times the maximum possible static load, with the rated load in the most unfavorable position. Chain wheels and sprockets with undercut teeth shall not be used.
- m) All hydraulic and pneumatic jacks shall be fitted with security devices against overloading, and these devices shall be set to the lowest possible value between 100% and 125% of the rated load.
- n) All hydraulic and pneumatic cylinders, pipes and their connections which can be exposed to the maximum pressure limited by the pressure relief valve shall resist at least two times this pressure in case of hydraulic drives and three times this pressure in case of pneumatic drives without showing permanent deformations.
- o) All hydraulic and pneumatic hoses and their connections shall be dimensioned to resist a bursting pressure that is at least three times the set pressure of the pressure relief valve.
- p) Every refillable hydraulic system shall have adequate means of filters to aid the proper and continued working of the safety devices.
- q) The direction of motion shall be identified by symbols or words and shall be attached to the control device or immediately alongside it.
- r) Pulleys and wheels for ropes and chains shall be provided with derailment protection. This shall be designed such that the rope or chain cannot pass between the derailment protection and the pulley or wheel.
- s) Hydraulic or pneumatic cylinders that directly carry the load-carrying device shall have a mechanical stop or an overflow, which limits the lifting height.
- t) The jacks shall be designed to work at a rated load in a temperature range of -20°C to +50°C.
- u) All vehicle lifts shall be fully thoroughly inspected by an approved TPCA at a maximum interval of six months for offshore and onshore locations.
- v) The SWL shall be prominently displayed.
- w) Vehicle lifts shall not be used beyond the statutory test period.
- x) Use of vehicle lifts other than for their intended use is strictly forbidden.
- y) All vehicle lifts shall be tested to 100% SWL every year for offshore and onshore.

## **10.20 VEHICLE MOUNTED DRILLING RIG**

- 10.20.1 All operating levers/switches/gauges shall be identified and operable. Operator shall be safely protected at the operating panel area.
- 10.20.2 Emergency stops to be fitted within operator's reach.
- 10.20.3 The ground condition shall be assessed before deploying the outriggers which shall be marked with red and white chevron patterns.
- 10.20.4 The load bearing components, the mast structure, the drilling lifting capacity and the auxiliary single joint lifting equipment shall be PLT and inspected by an approved TPCA.
- 10.20.5 Petrol driven engines are not allowed in QP fields. Diesel driven engines shall be certified for working in hazardous zones, fitted with automatic shut off valve (Chalwyn) on engine air intake and spark arrestor on exhaust.
- 10.20.6 SWL shall be marked on the drilling mast and on the single joint lifting winch.

10.20.7 All hoses and connections shall be pressure rated, safely routed and secured.

## **10.21 JACKS (MOBILE OR MOVABLE) AND ASSOCIATED LIFTING EQUIPMENT**

All mobile or movable jacks for raising and lowering loads shall be designed, constructed, operated and maintained in accordance with the applicable standards and this regulation.

- a) Jacks shall be designed or equipped in a way that the load can be restrained and held.
- b) Unintentional descent shall be prevented by means of self-blocking drives or automatic brakes or load pressure brake system or non-return valves at the supporting cylinder.
- c) Braking mechanisms shall operate automatically after the control device has returned to the 'Neutral' or 'Off' position or when the drive power is interrupted.
- d) Braking mechanisms shall be designed such that the safety functionality cannot be compromised.
- e) The maximum admissible average speed of descent for a jack, loaded with the rated load, shall be 0.15 m/s.
- f) All hydraulic and pneumatic jacks shall be fitted with security devices against overloading and these devices shall be set to the lowest possible value between 100% and 125% of the rated load.
- g) All hydraulic and pneumatic jack cylinders, pipes and their connections which can be exposed to the maximum pressure limited by the pressure relief valve shall resist at least two times this pressure without showing permanent deformation.
- h) All hydraulic and pneumatic jack hoses and their connections shall be dimensioned to resist a bursting pressure that is at least three times the set pressure of the pressure relief valve.
- i) A pressure relief valve shall be fitted between the pump and the non-return valve and its allowed tolerance is between 100% and 125% of the rated load.
- j) Every refillable hydraulic system shall have adequate means of filters to aid the proper and continued working of the safety devices.
- k) The direction of motion shall be identified by symbols or words and shall be attached to the control device or immediately alongside it.
- l) The lift pad shall have a rough surface or be designed in such a way to counteract any tendency of the load to slip off.
- m) The jacks shall be designed to work at a rated load in a temperature range of -20°C to + 50°C.
- n) All jacks shall be fully thoroughly inspected by an approved TPCA at a maximum interval of six months for offshore and onshore locations.
- o) The SWL shall be prominently displayed on all jacks.
- p) Jacks shall not be used beyond the statutory test period.
- q) Use of jacks other than for their intended use is strictly forbidden.
- r) All jacks shall be tested to 100% SWL annually for both offshore and onshore locations.
- s) All jacks shall be PLT to 1.25 x SWL after major alteration or repair and at four yearly intervals thereafter.

## **10.22 A-FRAME**

A-frames shall be inspected and PLT in accordance with tables 15.11, 15.13 and 15.16. Any pad eyes attached to the frame shall be tested to 2 x SWL. After PLT, NDT shall be carried out to ensure that all welds around the pad eye are free from any crack.

### **10.23 DIVING OPERATIONS RELATED TO LIFTING EQUIPMENT**

During diving operations the following will apply (in addition to the relevant IMCA requirements):

- a) Any crane when used in conjunction with diving operations shall have an audio alarm and visual device (e.g. mirror) indicating that there is a minimum of three (3) turns of wire rope left on the hoisting drums.
- b) Where diving operations are being carried out, lifting equipment not associated with the diving operations shall not be operated or utilised if there are divers within the vicinity.
- c) During any diving operation where the use of submerged lifting equipment is required, adequate and suitable voice communication between the diver(s), diving supervisor, crane operator and rigger shall be established.
- d) During any diving operation where the use of submerged lifting equipment is required, the lifting equipment shall be adequately and suitably illuminated or identifiable to the diver(s).
- e) Any item of lifting equipment operated or utilised in submerged applications shall be registered in a logbook.
- f) On each and every occasion that lifting equipment is used, it shall be checked for adequacy and suitability, and after each use it shall be washed with fresh water and greased or protected as necessary. The logbook shall highlight what actions were taken and be signed and dated on each occasion.

None of the above actions relieve the duties of the diving supervisor, whose responsibility is to ensure that the lifting equipment used during each and every dive is safe and adequate for the task.

NOTE: For wire ropes and slings refer to 10.25.2 dd) and 10.25.2 ee)

### **10.24 LIFTING APPLIANCES FIXED ON WELLHEAD JACKET INSTALLATIONS**

All lifting appliances fixed on wellhead jackets shall comply with the requirements of the specified standards, and in addition the following shall apply:

- a) All lifting appliances shall be fully thoroughly inspected at a maximum interval of six months by QP employed OEI (0) offshore inspectors who have undergone the training to do so and have valid certification.
- b) All lifting appliances fixed on wellhead jacket installations shall be tested to 100% SWL as shown in table 15.14. The applied load and % of maximum pull per line tested shall be clearly specified in the thorough examination and PLT certificate.
- c) PLT on the lifting appliances shall be carried out every four years as shown in table 15.12 and witnessed by an approved TPCA.
- d) No equipment shall be used beyond its statutory test period.
- e) All lifting appliances shall have a maintenance logbook controlled by OEI.
- f) Wire ropes that are fitted to lifting appliances shall be thoroughly cleaned and lubricated as per manufacturer's recommendation or at a maximum of six monthly intervals if it is necessary.

- g) Wire ropes that are fitted to lifting appliances shall be renewed every four years irrespective of their condition.

## **10.25 LIFTING TACKLE**

10.25.1 All lifting tackle shall be clearly marked, die-stamped or tagged as appropriate with a unique identification number and it's SWL. All items shall be colour coded in accordance with QP colour coding scheme applicable at the time of utilisation.

All lifting tackle on vessels/barges, contracted, owned and/or operated by QP, being used for lifting operations within QP operational areas, in addition to the classification society requirements shall also require certification in line with this regulation, i.e. the inspection interval for these cranes shall include a six monthly thorough inspection.

All lifting tackle shall be:

- a) Thoroughly inspected by an approved TPCA at a maximum of six monthly intervals.
- b) Thoroughly inspected and tested to 100% SWL if the six monthly inspections were missed.
- c) Thoroughly inspected and PLT if a one year inspection and more were missed.

10.25.2 **The following lifting tackle shall be examined and tested;**

### **1. Beam Clamp**

- Shall be inspected and PLT in accordance with tables 15.12, 15.13 and 15.16.
- And shall be free from any deformation, permanent elongation, visible cracks and any evident wear at pins, bolts, threads, pivots, or other moving parts.

Note: Any fabricated clamp without design calculation shall be PLT to three x SWL.

### **2. Bundle Puller**

Be inspected and PLT in accordance with tables 15.12 and 15.16 and be free from any deformation, particularly on the lifting point.

Note: Single lifting point bundle puller shall be subjected for approval of STI/23.

### **3. Cargo Basket, Skip, Container, Cylinder Rack and Lifting Frame**

All cargo baskets, skips, containers, cylinder racks and lifting frames used for transportation of materials, equipment or plant shall be designed, constructed, operated and maintained in accordance with the applicable standards and this regulation. In addition the following shall apply:

- Be inspected and PLT in accordance with tables 15.12 and 15.16.
- Protruding parts such as door handles, hinges, hatch cleats etc. shall be so placed or so protected that they do not catch the lifting set or other structures.
- Provided with pad eyes designed for a total vertical force of three times the gross weight of the container. The force shall be considered as evenly distributed between (n-1) pad eyes where 'n' are the actual number of pad eyes.
- Single point lifting shall not be used for transportation from onshore to offshore and vice versa.
- Door locking devices shall be secured enough against opening of the doors during transport and lifting.
- Fitted with data plates clearly marked with the owner's ID, maximum tare weight, SWL, and maximum gross weight rating in kilograms, the unique identification mark of the competent person and the date of inspection.
- Area for colour coding shall be clearly identified.

- A minimum of four lifting point pad eyes, minimum 19 mm thick, unless designed for specific purpose.
- Wire rope sling legs of at least 19.0mm diameter with termination fitted with hard thimble eyes on both ends.
- Master link (if fitted on the sling) of minimum dimension 270 mm x 140 mm.
- Shackles fitted with proper locking arrangement to avoid accidental detachment. Hooks shall not be used in place of shackles.
- The container number shall be prominently displayed on all sides of the container in characters of a contrasting colour not less than 75mm high. For open-sided containers it may be necessary to attach panels specifically to carry the container number.
- The information markings such as gross weight, tare weight, and SWL shall be marked in characters of a contrasting colour not less than 50mm high on two faces of the container.
- Lifting slings at a rating of 1.3 times the specified maximum gross weight of the container to which the sling is to be fitted.

**Note:** Five legs wire rope sling shall not be used with containers for transportation from onshore to offshore or vice versa as the 5<sup>th</sup> leg acts as a single point which is not acceptable. Five legs sling shall be replaced with long four legs wire rope sling.

### 4. ISO Containers

ISO containers employed for transportation of cargo and food to offshore locations shall be subject to the same requirements as containers.

All ISO containers having wooden flooring shall not be used for any offshore use. These floors shall be fabricated from steel, be in good working condition, hygienic and waterproof. ISO corner block shall not be used for offshore. Container shall be fitted with approved pad eyes.

### 5. Cargo Net

All cargo net made of steel wire rope or manmade fibre rope shall be:

- PLT to two x SWL
- Thoroughly examined every six (6) months.

### 6. Chain

In addition to the relevant standard all chains to be used for general lifting purposes, hoists and other lifting appliances, the following shall apply:

- Manufacturer's certificate of test shall be submitted to give the following information and detail:
  - i. Name and address of the manufacturer or his authorized representative, including date of issue of certificate and authentication;
  - ii. Quantity, identification and description of the chain of which the test sample is representative;
  - iii. Nominal size of the chain, in mm;
  - iv. Manufacturing proof force, in kN;
  - v. Breaking load, in kN (i.e. confirmation that the specified MBL was met or exceeded);
  - vi. Total ultimate elongation at fracture as a percentage (i.e. confirmation that the specified minimum total ultimate elongation has been met or exceeded).



- A fine tolerance chain shall only be used in hoists and other similar lifting appliances;
- A medium tolerance chain shall be used in chain slings and for general lifting services.
- The repair of chain in a welded chain is prohibited unless carried out by the manufacturer using butt or flush butt welding process.
- Approved TPCA can issue a certificate based on their visual thorough examination and confirmation that all the above requirements have been complied.

### 7. Chain Sling

In addition to the relevant standard the following shall apply:

- Each new chain sling shall be thoroughly examined and PLT as shown in table 15.16.
- In service chain sling shall be examined thoroughly and as far as is reasonably practicable from any of the following;
  - i. Chain sling markings (i.e. identification and/or the working load limit)
  - ii. Cuts, nicks, gouges, cracks, excessive corrosion, bent or distorted links
  - iii. Wear (up to 10% nominal diameter)
  - iv. Distortion of upper or lower terminals
- Unknown chain sling shall remove from service or shall be certified provided that the chain link and all terminal fittings are known or identifiable.

Refer to table 15.3 for the chain sling WLL.

### 8. Eyebolt

There are three basic types of eyebolt, namely Dynamo eyebolt, Collar eyebolt and Eyebolt with link

- Eyebolt less than 12 mm in metric thread diameter or 3/8 inch in imperial thread diameter are not allowed to be use in QP.
- Each eyebolt shall be subjected to an axial PLT as shown in table 15.16, which it shall withstand without showing any visible permanent set.
- After removal of the proof load, eyebolt shall be free from any visible flaw or defect.
- Every thorough examination, eyebolt shall be inspected for any of the following defect:
  - i. Broken or damaged thread
  - ii. Wear, stretch, distortion and cracks at the crown of the rings
  - iii. Bended or distorted shank

### 9. Gangway

Gangway shall be constructed with four lifting point pad eyes. The following criteria shall be applied for periodic inspection of gangways:

- Every six months thorough visual inspection of structure, pad eyes, gratings and braces, etc., shall be carried out.



- PLT shall be conducted every four years.
- MPI or any other NDT shall be carried out in a load bearing parts to ensure free from any cracks.

Notes: For longitudinal structure, a test weight of 2 x SWL shall be uniformly distributed over the full length. The recorded deflection at any point shall not exceed 1/500 of its span.

For pad eyes, a test weight of 2.5 x SWL shall be uniformly distributed along the gangway.

### 10. Hoist Ring

The use of hoist ring in QP area is subject for the approval of STI/23.

- Hoist ring shall be examined and tested as shown in tables 15.12 and 15.16.
- Below are brand, type or model name of hoist ring restricted to be used in QP are;
  - i. Crosby – Swivel hoist ring, HR-125M
  - ii. Crosby – Swivel hoist ring, HR-125
  - iii. Crosby – Hoist ring to chain, HR-125C
  - iv. Crosby – Hoist ring to web, HR-125W

### 11. Hooks

All hooks shall be subjected to PLT by any approved TPCA before being put to service. The hook shall be able to withstand the proof load application without permanent deformation when the load was applied for a minimum of 15 seconds. The hook shall also be verified with the following;

- Bending and twisting of more than 10 degrees from the plane of the unbent hook.
- Increase of throat opening by more than 15%.
- Any wear exceeding 10% of the original section of the hook or its load pin.
- Any crack, nicks or gouges.
- Inoperative latch (if provided).

Hooks found to be in any of the above condition shall be removed from its service until repaired or replaced.

- i. Lateral hinged hooks such as “Shur-lock” hooks are restricted in QP operational areas. STI/23 shall be consulted upon special use of the same.
- ii. Any hook operated or utilized in submerged applications shall be checked for adequacy and suitability, and after each use it shall be washed with fresh water and greased or protected as necessary.

### 12. Hopper

Hoppers shall be constructed having four corners each having a lifting point. The four lifting points shall withstand the PLT of 2.5 x gross weight without sign of any deformation or defects.

### **13. Jumbo Bags**

All jumbo bags complete with lifting straps shall be rated for the content weight and have a minimum FOS of 5:1.

- Jumbo bags shall not be reused or re-circulated.
- Jumbo bags shall have four lifting points from lifting straps that are completely encircling the bag.
- Jumbo bags shall be lifted by using a four leg sling. Bag shall not be lifted by a single leg sling or a single loop.
- Jumbo bags shall be inspected before transporting/lifting to ensure that it is in good condition. Any bag showing signs of damage or distortion shall not be used.
- Jumbo Bags shall be protected from sunlight and moisture at storage areas.
- Jumbo Bags shall not be dragged or lifted by sharp edges.
- Jumbo Bag manufacturer's safe handling and stacking instructions shall always be followed..
- Jumbo Bags shall be certified as per the relevant standard.
- A batch testing procedure as detailed underneath shall be followed for certification of the bags.
  - One bag marked with an ID number, from a lot shall be break load tested.
  - The bag shall be filled with material to its capacity and the test load shall be suspended using two 5 tonne webbing slings wrapped over the bag.
  - Actual breaking load shall be recorded using a calibrated load cell.
  - The break test certificate number shall be referred on the certificate issued for the remaining bags (with unique ID nos.).
  - The details such as ID no., SWL, Break test certificate no., class of use (single trip only) shall be marked on each bag.

### **14. Link**

Master link, intermediate link and all links shall be PLT as shown in tables 15.12 and 15.16.

A visual examination shall be carried out to ensure that the links are free from the following:

- Wear and distortion
- Crack, nicks or gouges.

### **15. Loading Ramp**

Lifting posts, hoists, slings, sheaves, and shackles shall be inspected and certified every six months as in lifting tackle records.

- PLT shall be conducted every four years. The test weights that correspond to 200% of the maximum expected load on the ramp shall be placed in the ramp as uniformly distributed load for safe testing. There shall be no visible permanent deformation after this test.
- The pad eyes shall be tested with 2.5 x gross (empty) weight of the ramp and MPI shall be carried out on all pad eyes.

- PLT of the ramp every four years or after major alteration or repair to 200% of maximum expected load.
- SWL shall be clearly marked on the ramp.
- If the loading ramp forms a part of the vessel, the appropriate marine classification societies are responsible for the issue of a certificate of inspection for their satisfactory use.

### 16. Man-Riding Basket

All man-riding baskets shall have a minimum design FOS of 10 x the maximum gross weight and shall be designed, constructed, operated and maintained in accordance with the applicable standards and the following requirements:

- The floor of the man basket shall be of non-slip steel plate construction to avoid any slippage.
- The man-riding basket shall be minimum two meters in height to allow the occupants to stand upright inside the platform.
- Shall have a mid rail at a height of 1.1 meter from basket floor level. A hand rail from inside the basket shall be provided at the mid rail level, with a clearance of 100 mm from any member of the basket.
- Shall have a solid cover plate or expanded metal mesh with openings of 12.5 mm or smaller from toe board to mid rail to avoid any objects falling from the basket.
- Shall have a toe board of 100 mm height around the bottom of the basket. If a solid cover plate is used, toe board may not be required.
- Shall have diagonal members (as stiffeners) provided from bottom corner to mid rail on all sides of the basket.
- Constructed with a door that when used shall swing inward for opening and be equipped with a positive locking system. Door hinges shall be protected against damage from impact loads.
- A suitable fender shall be fitted on all sides of the basket.
- Provided with pad eyes designed & aligned diagonally.
- Pad eyes shall be tested to three x gross weight.
- Shall have a snag resistant tag line, fitted properly.
- Fitted with data plates clearly marked with the owner's ID, tare weight, SWL, gross weight in metric units and dates of PLT and visual examination..
- The basket shall be marked prominently with the maximum number of persons permitted in addition to the SWL,.
- Shall have an area clearly earmarked for colour coding.
- All personnel using a man riding basket shall wear an approved safety harness, which shall be attached to a safety lifeline. The safety lifeline shall be tied to the crane hook block.
- Single point lifting is not acceptable.
- Man baskets shall be lifted with steel wire rope slings or chain slings terminated with Shackles, having a SWL of minimum 10 x (Gross weight of the basket)

### 17. Pad Eyes

- All pad eyes shall be constructed to a minimum of 19 mm plate thickness, pad eyes which is less than 19 mm shall be subject for discussion and approval of STI/23.

- Pad eyes shall be PLT on initial installation before being put into use, after re-installation at the site, and at the discretion of the surveyor. Following PLT MPI shall be carried out.
- The visual and thorough examination shall be carried out at six monthly intervals.
- Following thorough and visual examination and if defects are evident, the TPCA may instruct to carry out further tests and NDT at his discretion to assess the integrity of the pad eyes.
- There are three different pad eyes categorisation, namely:
  - i. Permanent pad eyes
    - Pad eyes permanently attached to any lifting appliances with design calculation.
    - Each pad eye shall be tested to two times SWL
  - ii. Fabricated pad eyes
    - Pad eyes attached to any lifting equipment without proper design calculation or unknown pad eyes (missing identification).
    - Each pad eye shall be tested to three times SWL
  - iii. Temporary Pad Eyes
    - Pad eyes intended for lifting of offshore jackets, modules, etc.
    - Requirements for PLT can be waived provided the concerned QP Dept. or contractor can demonstrate that the pad eyes have been designed, installed and inspected in accordance with QP Specification for Fabrication, Installation and Erection of Offshore Structures (ES-S-20).

### 18. Pallet (Steel)

- Pallets used within QP area shall be constructed with four lifting points.
- Pallets shall be PLT to two times SWL.
- Unknown pallets and pallets with missing data plate or identification mark shall not be used in QP. These pallets shall be PLT, thoroughly examined and certified by any approved TPCA.

### 19. Personnel Transfer Net

The personnel transfer nets used at offshore locations for transportation of personnel shall have a FOS of 10:1 and shall be designed, constructed, operated and maintained in accordance with the applicable standards and this regulation.

- Each offshore personnel transfer net inspection criteria shall be as follows:
  - i. Visually inspect safety load line when attaching to crane
  - ii. Inspect the crane hook positive locking device for correct functioning and condition
  - iii. Ensure that a snag resistant tag line is properly fitted
  - iv. Inspect top and bottom lifting ring for excessive wear, cracks or corrosion
  - v. Check the sidewall rigging line splices both top and bottom for wear and ultraviolet degradation such as blistering, discoloration or cracks etc.
  - vi. All synthetic ropes shall have a minimum of three tuck splice.
  - vii. Visually inspect stabiliser and safety load line unit for any visual damage including external cover.
  - viii. Check cover on bottom platform ring for tears or cuts. Damage of bottom platform cover may require additional examination.

- ix. Manufacturer's recommendations shall be followed for life cycle applications relative to replacement of personnel carriers.
  - x. The transfer net shall be marked prominently with the maximum number of persons permitted in addition to the SWL.
- Operational Practices
    - i. Any offshore facility carrying out personnel transfers with a personnel carrier shall have a written procedure for this task.
    - ii. A pre-use inspection shall be conducted prior to any personnel carrier transfer.
    - iii. Cranes assigned to personnel lifting duties shall be suitable for this purpose as per API RP 2D.
    - iv. Crane operators assigned to personnel lifting duties shall be certified and competent to perform this task.
    - v. A snag resistant tag line shall be fixed to all personnel carriers.
    - vi. An anti-spin device shall be fixed between the load line and the upper master link. The anti-spin device shall be of a sufficient capacity to support the personnel carrier application.
    - vii. Crane hooks used for personnel transfers shall have a positive locking latch.
    - viii. Only approved personnel carriers shall be used for lifting personnel as per API RP 2D.
    - ix. Personnel carriers shall not be used as a workbasket.
    - x. Only a limited amount of light personal luggage is permitted inside the carrier when personnel are being transferred.
    - xi. Personnel carriers shall not be used in bad weather conditions.
    - xii. Before any attempt is made to lift personnel with a carrier, clear instructions shall be given to all persons involved.
    - xiii. Any person suffering from acute seasickness or vertigo shall not be transported by personnel carrier.
    - xiv. All personnel riding on a personnel carrier shall wear an approved life vest.
    - xv. All personnel riding on a personnel carrier shall stand on the outer rim, evenly spaced and adjacent to a sidewall opening in the netting, facing inward.
    - xvi. Passenger's forearms shall be interlocked on inside of sidewall netting.
    - xvii. If crane operator's view of the primary signalmen is obstructed, the personnel carrier shall not be moved until alternative communication or signal devices are placed in service.
    - xviii. A designated primary landing zone shall be marked in a safe area as determined by a job hazard analysis.
    - xix. The crane operator shall not lift any person who does not comply with the operator's instructions.
    - xx. An experienced escort shall be provided for persons who are not confident performing a personnel carrier transfer.
    - xxi. Injured, ill, or unconfident persons shall ride in a sitting position, on the inside of the personnel carrier, with a qualified person as an escort.

### 20. Pipe Clamp/Pipe Hook

All pipe clamps and pipe hooks shall be thoroughly examined and PLT as stated in tables 15.12 and 15.16.

Unknown or fabricated pipe clamps and pipe hooks shall be PLT to three x SWL.

## **21. Plate Clamp**

There are two basic designs of plate clamp, i.e. horizontal plate clamps and universal (vertical) plate clamps.

These plate clamps are to be inspected and tested as shown in tables 15.12 and 15.16.

- Horizontal plate clamps, used in pairs and handling plates in the horizontal position only. Horizontal plate clamps shall be inspected for the following:
  - i. Wear in the hook ring
  - ii. Loose connection to jaw/rocker arms that could indicate wear or distortion of load bolt connector.
  - iii. Wear/deformation on the jaw or swivel toe
- Universal (vertical) plate clamps, used in handling plates in the vertical position. Vertical plate clamps shall be inspected for the following:
  - i. Wear or distortion in the hook ring
  - ii. Deformation or bend in the jaw pin
  - iii. Wear, cracks or deformation in the main body
  - iv. Operation of cam-assembly locking lever and jaw spring.

## **22. Round Sling (Man Made Fibre)**

STI/23 is limiting the use of round sling, below are the guidelines:

- Round sling shall not be used to heavy or critical lift
- Round sling shall not be used to any transportation
- Round sling shall only be used inside warehouse or workshop
- Round sling shall be discarded after a maximum period of four years after initial use.

Unknown round sling and/or without label shall be withdrawn and cannot be used within QP premises.

## **23. Safety Harness/Fall Arrestor**

The inspection criteria shall be as follows:

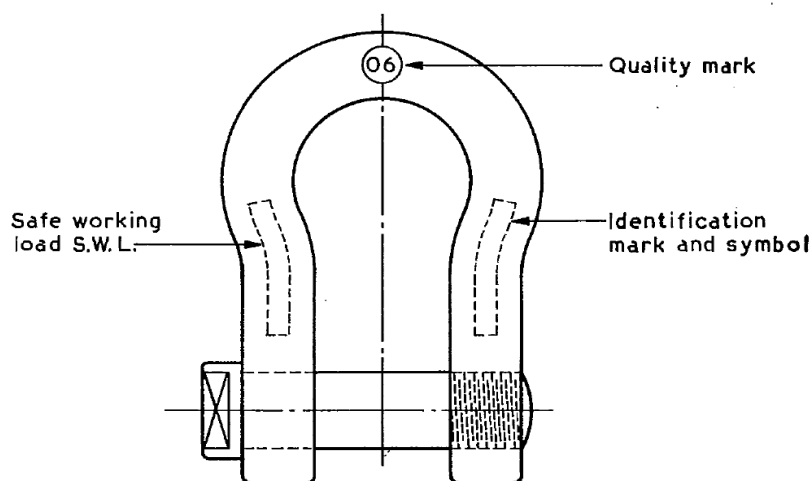
- Six monthly visual inspections shall be carried out by an approved TPCAs.
- Check visual indicator dial and ensure the block has not been involved in a previous fall or multiple shock loadings. This will be obvious by the amount of red showing on the dial or with other models, the red button being flush.
- Examine the 'Saflok' top hook and check for any distortion or wear and ensure the safety latch engages correctly.
- Examine the top shackle and check for distortion or wear between shackle pin and body.
- Examine complete body casting and check for cracks/impact damage that may affect the workings of the block.
- If the block is the retrieval type, ensure the winding handle is still attached.
- Pull out the cable and check for broken wires, wear and corrosion. Pay particular attention to the portion of wire below the neoprene buffers, as this tends to be a moisture trap.

- Examine the thimble eye in wire and swivel eye in hook and check for any wear or distortion.
- Examine bottom hook and check for any wear or distortion and ensure safety latch engages correctly.
- Examine the webbing on the safety harness and check for any wear or cuts.
- Ensure all stitching is intact and metal fittings have not abraded the webbing.
- Examine the buckles/clasp etc. for any visual damage and ensure it fastens correctly.
- TPCA and manufacturer's issued certificate of conformity or test certificates shall be submitted for STI/23 review and acceptance.
- Fall arrestors to be listed for verification to STI/23.
- QP Safety to check the safety harness and fall arrestors prior to use.
- Safety harness shall be discarded after four years regardless of condition.

**Note:** It is a mandatory requirement to use the full body harness with shock absorbing double lanyard and snap hooks in QP operational areas.

### 24. Shackle

- Shackles with the capacity of less than two tonnes shall not be used for lifting within QP operational area.
- All shackles shall be individually inspected and PLT as detailed in table 15.12 and 15.16.
- In addition all shackles shall be inspected for:
  - i. Body bend, nick, crack and wear.
  - ii. Pin for any wear, crack, nick and deformation.
  - iii. Pin hole alignment,
  - iv. Pin sits and fits correctly
  - v. Markings as below:



- Unknown or unidentified shackles shall not be certified and utilised in QP.

### 25. Sheave Block

All sheave block shall be examined and tested as detailed in tables 15.12 and 15.16. In addition sheave block shall be examined for the following;



- Visible cracks, flaws, deformation or other defects on side plates, side straps, sheaves and head fittings.
- Sheave grease ports are clean, unblocked, turn freely and lubricated.
- If fitted with beackets, check for wear, stretch or crack.

## **26. Spreader Beam/Lifting Beam/Lifting Bar**

- Spreader beam, lifting beam or lifting bar shall be examined and tested as shown in tables 15.12 and 15.16.
- After PLT, MPI or any other NDT shall be carried out in a load bearing parts (pad eyes or any lifting point) to ensure free from any cracks.
- All spreader beam or lifting beam shall be PLT every four years.

## **27. Swivel**

Swivels shall be examined and tested as shown in tables 15.12 and 15.16.  
Extra care shall be taken in using swivel which is not intended to rotate under load.  
This type of swivel is for positioning devices only.

## **28. Turnbuckle**

Turnbuckles are usually supplied with different end fittings, eye, jaw, stub and hook. And the most common which are being used is the jaw and eye type.

- Safe working load of the turnbuckle depends or determined on the thread diameter.
- Turnbuckles shall be subjected to a PLT equal to twice the SWL, which it shall withstand without showing signs of any permanent deformation. Each piece to be tested shall be in the fully extended (open) position, in the manner in which working load is applied in service.

## **29. Webbing Sling (Flat Woven/Man-Made Fibre)**

- All webbing slings shall be supplied with an approved TPCA certificate of a break test to ensure a minimum FOS of 7:1.
- Also shall be fitted with a label (laminated type) that gives the following minimum information:
  - i. SWL and distinguishing mark(s).
  - ii. The material used to manufacture the sling.
  - iii. Name or unambiguous trade mark of the manufacturer.
  - iv. Mode factors for choke hitch, basket hitch with legs parallel and basket hitch with legs at 0-45 degrees.
  - v. Minimum FOS of 7:1.
- Webbing slings shall not be colour coded with enamel or spray paint directly. Attach a label or circular disk to indicate the current colour coding system.
- Webbing sling can only be used for a maximum four (4) years within QP operational area from the initial use.

### **30. Wire Rope**

- All wire rope shall be supplied with an approved TPCA certificate of a break test to confirm the minimum FOS.
- Wire rope to be installed in any lifting appliances shall be accepted by STI/23.
- All wire rope shall comply with the following requirements:
- Wire rope must have a certificate that will give at least the following information:
  - i. Certificate number,
  - ii. Name and address of the manufacturer,
  - iii. Quantity and nominal length of rope,
  - iv. Standard to which the rope conforms,
  - v. Minimum breaking force,
  - vi. Date of issue of the certificate and authentication,
  - vii. Measured diameter of rope,
  - viii. Measured breaking force of rope.
- All wire rope used for lifting operations that involve submergence in water shall be discarded after one year regardless of the condition.
- Wire rope can only be used for a maximum of four (4) years within QP area from the initial use or installation.
- Extension usage of wire rope is at the discretion of STI/23.

### **31. Wire Rope Sling**

- All wire rope slings shall be supplied with an approved TPCA certificate of a break test to ensure a minimum FOS of 5:1.
- Each wire rope sling shall be examined and PLT as detailed in tables 15.12 and 15.16.
- Certificate of multi-leg wire rope sling shall provide detail of master link and other terminal fittings for verification. Without this detail, the certificate will not be endorsed.
- Certificate detail shall be written in full detail without abbreviation and acronyms.
- All wire rope slings used for lifting operations that involve submergence in water shall be discarded after one year regardless of the condition.
- Wire rope slings can only be used for a maximum of four years within QP area from the initial use or installation.
- Extension usage of wire rope slings is at the discretion of STI/23.

## **11.0 CONTROL OF GENERAL AND CRITICAL LIFTING OPERATIONS**

### **11.1 GENERAL LIFTING OPERATIONS**

All lifting operations shall be carried out by competent persons using the appropriate equipment in a safe manner taking into consideration all of the following requirements:

- a) details of the lift, location and associated risk,
- b) planned, considering the equipment and manpower certification requirements,
- c) documented for any HSE, PTW and audit requirements, Form LER01 can be used as appropriate,
- d) a risk assessment is completed,

- e) a toolbox talk is completed,
- f) executed with approved and certified personnel and equipment.

## **11.2 RISK ASSESSMENT**

A risk assessment, specific to the site and lift, shall be carried out by a competent person to identify all potential risks associated with the lifting operation. The competent person shall determine the nature and extent of any measures required to mitigate risk.

A contingency plan and escape route to mitigate any eventuality shall be in place.

The risk assessment shall be documented and reviewed by the area operational HSE.

## **11.3 CRITICAL LIFTS**

This section specifies the minimum requirements for the execution of critical lifts.

Lifting operations are classified as critical if any one of the following conditions applies:

- a) Any load dimension exceeds 12 metres or the load is of a complex shape where the COG is difficult to ascertain.
- b) Lifts that exceed 50 tonnes in weight.
- c) Lifts which exceed 30 metres in height.
- d) Lifts which require full boom extension or maximum radius.
- e) Lifts requiring use of more than one crane simultaneously.
- f) Lifts where the equipment/load consists of thin/fragile members susceptible to deformation during lifting.
- g) Lifts where the crane footprint is in operational facilities.
- h) Personnel lifts, lifts over pipelines, near overhead electric power lines, where lifting operation can endanger the safety of the plant or crane.
- i) Lifts where safety of personnel and equipment are at risk, which is a concern raised by any responsible authorities.

### **11.3.1 Critical Lifting Plan/Method Statement**

A lifting plan/method statement, including a duly completed Form LER01, shall be submitted to STI/23 for acceptance prior to undertaking the operation, at least seven working days in advance and shall cover the following as a minimum:

- a) The plan shall address all the foreseeable risks and identify the procedures, responsibilities and any resources required, so that the lifting operation is carried out safely and logically.
- b) A sketch, including plan and elevation, shall be prepared to scale, detailing the sequence of operation. This shall also show the layout of the equipment/load to be lifted, positioning of the crane/s and load, before, during and after the lift, attaching the lifting gears and tag lines, etc.
- c) The sequence of the operation to include site preparation, arrival of the equipment on site, any necessary erection, positioning of the crane, lifting and placing of the load(s), and dismantling the crane(s) after lift, to moving off site.
- d) Crane and lifting gear with a capacity of 25% above the maximum estimated weight of the load to be handled at as-rigged configuration shall be selected for the lift.
- e) Relevant calculations supporting the safety limits of operation shall consider the effects of dynamic loading and weather conditions. The estimation of the load shall

include the weight of hook block, weight of all lifting gear and the weight of the wire rope below boom tip.

- f) When a load is to be lifted using the main hook, whilst the fly jib is installed, the weight of the fly jib and the fly hook shall be removed from the lifting capacity of the main hook.
- g) The crane configuration such as boom length, height of lift, radius, available capacity for the intended lift and actual load to be handled at that configuration shall be clearly stated on the plan. The FOS to be calculated and stated on the plan.
- h) The plan shall ensure that there is adequate site access for safe operation of the lifting equipment. Consideration shall be given to safe positioning of the outriggers or crawlers.
- i) The compactness of the ground or foundations shall be assessed such that the crane can operate within level at all times. The bearing pressure shall be calculated taking into account the dead weight of the crane, weight of the load, and any other dynamic factors and shall not exceed the bearing capacity of the supporting ground or foundations.
- j) The crane and associated lifting gear shall have valid certificates available.
- k) All the lifting personnel such as rigging supervisor, riggers and the crane operator shall have valid certificates available.
- l) A clear copy of the crane capacity chart (in metric units and English language) shall be available.
- m) All lifting operations involving the lifting of personnel shall be subject to a pre-approved standard operating procedure (method statement), endorsed by Corporate HSE, taking all risks into consideration. This SOP shall be attached to the PTW prior to any lift.

### **11.3.2 Critical Lift Equipment Restrictions**

- Cranes above 10 years of age used for critical lift shall be assessed by STI/23 on a case by case during the submission of lifting plan for acceptance.
- For cranes that are dismantled and erected at site, a checklist based on manufacturer's instruction covering the assembly and erection of the crane shall be used.
- Erection of the crane shall be witnessed by one of the approved TPCA, and the same TPCA shall endorse the checklist.
- For critical lifts above 50 tonnes, the cranes shall be load tested and certified with a test load of at least 25% above the actual load to be lifted. The certification shall cover verification to maximum line pull as per manufacturer's documentation or load chart, and details of the test shall be clearly specified in the certificate. This testing and certification must be carried out within seven working days prior to the lifting operation.
- The operation of cranes may be suspended in adverse weather conditions such as storms, high sea states, strong wind, heavy rains, dust or fog or poor light impairing the visibility.
- Demarcation of, and any special precautions taken to maintain, a safe working area to prevent entry of unauthorized personnel to the site.

### **11.3.3 Responsibilities for Critical Lift**

- A competent person, having adequate practical, theoretical knowledge, experience of planning in lifting operations must plan the lifting operation.

- The plan shall nominate a person in charge of the lifting operation. Clear identification and assignment of the responsibilities, including name, for all the activities shall be stated in the plan.
- A 'Lifting Team', comprising site engineer/job officer, rigging supervisor, crane operator, rigger and a safety officer, are essential for the operation. The nominated person in charge of the lifting operation must make the decisions for the critical lift operation ensuring that the lifting operation is carried out to the approved plan.
- The plan shall ensure provision of suitably trained and certified crane operator, rigging supervisor and riggers who are aware of their duties and responsibilities.
- The nominated person in charge of the lifting operation shall conduct a 'Tool box talk' prior to the lifting operation briefing all the persons involved.
- Suitable means of communication shall be established for the lifting operation.

#### **11.3.4 Generic Plan**

To assist QP operational areas in conducting critical lifts using a single crane to carry out routine day to day maintenance activities the following additional requirements to section 11.3 apply:

##### **a) SINGLE MOBILE CRANE OPERATION**

- valid for single continuous lifting operation,
- lifts of five tones or less,
- maximum boom length of 30 meters,
- operating within 80% of the crane rated capacity with the specified crane configuration.

Form LER07 can be used for this lifting plan.

Generic lifting plans shall be approved by a QP rigging supervisor or a critical lift plan will have to be prepared and submitted for STI/23 review and acceptance.

##### **b) FIXED CRANE OPERATION**

Lifting plans shall be developed for each crane location covering all foreseeable lifts to be performed. These lifting plans shall be submitted for STI/23 one-off acceptance.

These lifting plans shall be reviewed whenever any plant changes have taken place in the crane location and resubmitted for STI/23 acceptance.

## **12.0 INSPECTION FREQUENCIES**

### **12.1 GENERAL REQUIREMENT**

- 12.1.1 All lifting equipment shall be fully inspected and certified by an approved TPCA before being put into service, and at all subsequent periodic inspections as per Tables 15.11, 15.12 and 15.13.
- 12.1.2 For all lifting appliances the first and all subsequent inspections shall include all functional tests, overload and safety tests.
- 12.1.3 Periodic inspection of lifting equipment shall also include the following:
  - A thorough inspection of all components.
  - NDT of all lifting connections, attachments and structural components, as necessary.
- 12.1.4 In the event of a major repair, the periodic inspection shall include a thorough inspection of all internal parts and components after dismantling, and is to be complimented by a PLT.

- 12.1.5 All lifting tackle shall be subjected to testing with a PLT test or breaking strength test before being put into service as shown in table 15.16 and relevant standards.
- 12.1.6 The first inspection of all lifting tackle shall be performed at the vendor's, manufacturer's or factory premises and shall consist of a PLT or breaking strength test and inspection after the test, witnessed and certified by an approved TPCA.
- 12.1.7 The subsequent lifting tackle frequency of inspection shall be six (6) months in every case.
- 12.1.8 All subsequent periodic inspections shall include a thorough visual examination that will be complemented by a PLT when repairs or modifications have been conducted. These shall be witnessed and certified by an approved TPCA.
- 12.1.9 All lifting tackle shall be subjected to inspection by a competent rigger, each and every time it is used. Where, in the opinion of the rigger, it is unsafe for use that item will be immediately removed from the worksite.
- 12.1.10 All lifting appliances shall be inspected and function tested by a competent operator for correct functioning (special attention shall be paid to safety systems) at intervals not exceeding seven (7) days. Where the lifting appliance is subject to infrequent use, it shall be inspected and function tested by a competent operator before each occasion on which it is used.

## **12.2 PLT FOR SPECIFIC LIFTING EQUIPMENT**

Tables 15.11, 15.12 and 15.16 specify the PLT requirements for specific type of lifting equipment.

## **12.3 TESTING EQUIPMENT**

### **12.3.1 Test Weights**

Test weights shall be calibrated and certified by an approved TPCA and inspected every six months. The inspection criteria are as follows:

- Shall be equipped with adequate number of pad eyes (a minimum of two lifting points) and suitable arrangements for attaching the lifting sets as appropriate
- Shall be equipped with pad eyes designed for a total vertical force of three times the gross weight of the test weight. The force shall be considered as an evenly distributed between (n-1) pad eye where 'n' is the actual number of pad eyes.
- The gross weight of the test weight shall be marked in characters of a contrasting colour not less than 50 mm high on two sides of the test weight.

### **12.3.2 Load Cells**

Load cell calibration and verification shall be, but is not limited to, the following as a minimum requirement:

- a) The load cell shall be calibrated by a recognized and approved laboratory and witnessed by an approved TPCA.
- b) The calibration of the load cell shall be verified at not more than 12 monthly intervals.
- c) The certificates of calibration and verification shall be available with the equipment.
- d) The verification of a load cell shall be made using a tensile test machine that itself has been calibrated and verified yearly.
- e) The minimum grade of accuracy shall be as per the applicable standards.



### **12.3.3 Water Bags**

Water bags shall be tested at 100% SWL and certified by an approved TPCA, before being put into use and inspected every six months as shown in table 15.12.

### **12.3.4 PLT Machine Calibration And Verification**

Criteria for PLT machine calibration and verification shall be, but is not limited to, the following as a minimum requirement:

- a) The PLT machine or tensile test machine shall be calibrated by a recognised and approved laboratory and witnessed by an approved TPCA.
- b) The calibration of the machine shall be verified at not more than 12 monthly intervals.
- c) The certificates of calibration and verification shall be displayed adjacent to the machine.
- d) In addition the machine shall also be marked with the lower limit of verification, i.e. the smallest force that can be applied by the machine for test purposes.
- e) The verification of the machine shall be executed using equipment that itself has been calibrated and verified.
- f) The minimum grade of accuracy shall be as per the applicable standards.

### **12.3.5 NDT Requirements**

DT shall be carried out on all lifting equipment such as cranes, forklifts, containers, skips, baskets, cradles, cylinder rack, pallets etc., after PLT as required by the relevant standards and the discretion of the TPCA.

## **13.0 QUALITY REQUIREMENTS**

### **13.1 CONTRACTOR'S REQUIREMENTS**

**13.13.1** A contractor working for QP shall establish an approved QMS that shall address the requirements of this regulation for effective implementation and safe working practices at any QP operational area.

**13.13.2** Contractor shall recognize the need for implementing the regulation through their QMS. As a minimum the QMS shall identify and implement the following activities related to lifting equipment:

- a) Responsibility and authority
- b) Procedures for implementing the regulation,
- c) Purchasing and hiring control,
- d) Inspection, testing and maintenance,
- e) Control of non-conformity,
- f) Corrective and preventive actions,
- g) Handling, storage, preservation, receipt and Issue,
- h) Management of heavy and tandem lifts,
- i) Quality records,
- j) Internal audits,



k) Training of personnel.

**13.2** QP reserves the right to conduct system audits on all contractors for verifying compliance to the regulation during the contract period. Prior notice for such audits shall be given by QP. The contractor shall, when requested by QP auditor, provide the required documents or assistance necessary to facilitate the success of the audit.

Reference documents for audits shall be:

- a) This regulation,
- b) Contractor's own quality system/procedures,
- c) Applicable standard for equipment/personnel,
- d) ISO 19011 series standard for auditing.

The auditors shall report negative audit findings to the contractor in the form of Corrective Action Requests (CAR) for immediate corrective action. Audit findings shall be treated as confidential. A follow-up audit will be conducted at an agreed date for verification of the corrective actions, wherein the auditor will close out all satisfactorily completed CARs.

QP auditors will conduct periodic surveillance audits on the contractor to monitor continued compliance to this regulation.

Where major non-compliance with the requirements of this regulation or associated standards are identified, the contractor shall be required to stop all work associated with the item(s) of lifting equipment, and shall be required to rectify the non-compliance to the satisfaction of the auditor and QP prior to recommencing any operation.

### **13.3 QP REQUIREMENT**

Audits on QP Depts. shall also be conducted in the same manner as in 13.1 above in consultation with the respective Dept. heads.

### **14.0 INCIDENTS**

The objective of incident reporting and investigation is to prevent similar or associated incidents occurring in future.

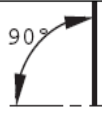
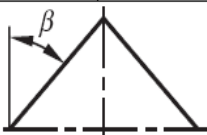
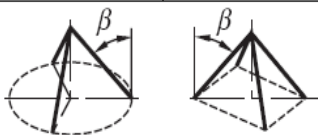

All incidents related to lifting equipment shall follow QP's corporate procedure for incident management QPR-STM-001.

All matters relating to lifting equipment incidents shall be copied to:

Senior Lifting Equipment Engineer (STI/23)  
Corporate HSE Dept.  
Royal Plaza, Al Saad Area, Doha, Qatar  
Telephone: 4138124  
Facsimile: 4138148  
Mobile: 5537805

## 15.0 STANDARD TABLES (WEIGHTS IN METRIC TONNES)

**TABLE 15.1: CAPACITY CHART FOR WIRE ROPE SLINGS - STEEL CORE**

	One-leg sling	Two-leg sling		Three and four-leg sling		Endless sling
Angle to the vertical	0°	0° to 45°	over 45° to 60°	0° to 45°	over 45° to 60°	0° -
						
	Direct	Direct	Direct	Direct	Direct	Choke hitch
Nominal rope diameter mm	Working load limits t					
8	0,750	1,05	0,750	1,55	1,10	1,20
9	0,950	1,30	0,950	2,00	1,40	1,50
10	1,15	1,60	1,15	2,40	1,70	1,85
11	1,40	2,00	1,40	3,00	2,12	2,25
12	1,70	2,30	1,70	3,55	2,50	2,70
13	2,00	2,80	2,00	4,15	3,00	3,15
14	2,25	3,15	2,25	4,80	3,40	3,70
16	3,00	4,20	3,00	6,30	4,50	4,80
18	3,70	5,20	3,70	7,80	5,65	6,00
20	4,60	6,50	4,60	9,80	6,90	7,35
22	5,65	7,80	5,65	11,8	8,40	9,00
24	6,70	9,40	6,70	14,0	10,0	10,6
26	7,80	11,0	7,80	16,5	11,5	12,5
28	9,00	12,5	9,00	19,0	13,5	14,5
32	11,8	16,5	11,8	25,0	17,5	19,0
36	15,0	21,0	15,0	31,5	22,5	23,5
40	18,5	26,0	18,5	39,0	28,0	30,0
44	22,5	31,5	22,5	47,0	33,5	36,0
48	26,0	37,0	26,0	55,0	40,0	42,0
52	31,5	44,0	31,5	66,0	47,0	50,0
56	36,0	50,0	36,0	76,0	54,0	58,0
60	42,0	58,0	42,0	88,0	63,0	67,0

**TABLE 15.2: CAPACITY CHART FOR WIRE ROPE SLINGS – FIBRE CORE**

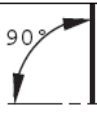
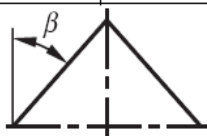
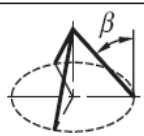
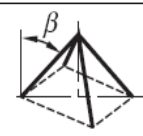

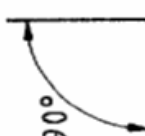
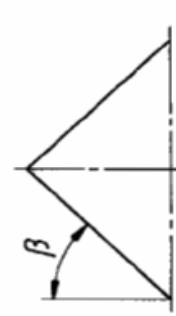
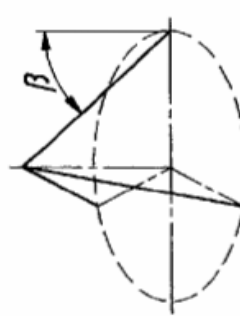
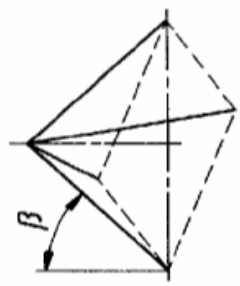
	One leg sling	Two leg sling		Three and four leg sling		Endless sling
Angle to the vertical	0°	0° to 45°	over 45° to 60°	0° to 45°	over 45° to 60°	0° -
						
	Direct	Direct	Direct	Direct	Direct	Choke hitch
Nominal rope diameter mm	Working load limits t					
8	0,700	0,950	0,700	1,50	1,05	1,10
9	0,850	1,20	0,850	1,80	1,30	1,40
10	1,05	1,50	1,05	2,25	1,60	1,70
11	1,30	1,80	1,30	2,70	1,95	2,12
12	1,55	2,12	1,55	3,30	2,30	2,50
13	1,80	2,50	1,80	3,85	2,70	2,90
14	2,12	3,00	2,12	4,35	3,15	3,30
16	2,70	3,85	2,70	5,65	4,20	4,35
18	3,40	4,80	3,40	7,20	5,20	5,65
20	4,35	6,00	4,35	9,00	6,50	6,90
22	5,20	7,20	5,20	11,0	7,80	8,40
24	6,30	8,80	6,30	13,5	9,40	10,0
26	7,20	10,0	7,20	15,0	11,0	11,8
28	8,40	11,8	8,40	18,0	12,5	13,5
32	11,0	15,0	11,0	23,5	16,5	18,0
36	14,0	19,0	14,0	29,0	21,0	22,5
40	17,0	23,5	17,0	36,0	26,0	28,0
44	21,0	29,0	21,0	44,0	31,5	33,5
48	25,0	35,0	25,0	52,0	37,0	40,0
52	29,0	40,0	29,0	62,0	44,0	47,0
56	33,5	47,0	33,5	71,0	50,0	54,0
60	39,0	54,0	39,0	81,0	58,0	63,0

TABLE 15.3: CAPACITY CHART FOR ALLOY GRADE 80 CHAIN SLINGS

Working load limits, $t$ , for							
Nominal size of sling mm	Single-leg slings		Two leg slings		Three- and four-leg slings		Endless slings in choke hitch Factor 1,6
	 90°	 $\beta$	 $\beta$	 $\beta$	Factor		
					$0^\circ < \beta \leq 45^\circ$	$45^\circ < \beta \leq 60^\circ$	
	Factor 1,4	Factor 1,0	Factor 2,1	Factor 1,5			
4	0,5	0,71	0,5	1,06	0,75	0,8	
5	0,8	1,12	0,8	1,6	1,18	1,25	
6	1,12	1,6	1,12	2,36	1,7	1,8	
7	1,5	2,12	1,5	3,15	2,24	2,5	
8	2	2,8	2	4,25	3	3,15	
10	3,15	4,25	3,15	6,7	4,75	5	
13	5,3	7,5	5,3	11,2	8	8,5	
16	8	11,2	8	17	11,8	12,5	
18	10	14	10	21,2	15	16	
19	11,2	16	11,2	23,6	17	18	
20	12,5	17	12,5	26,5	19	20	
22	15	21,2	15	31,5	22,4	23,6	
23	16	23,6	16	35,5	25	26,5	
25	20	28	20	40	30	31,5	
26	21,2	30	21,2	45	31,5	33,5	
28	25	33,5	25	50	37,5	40	
32	31,5	45	31,5	67	47,5	50	
36	40	56	40	85	60	63	
40	50	71	50	106	75	80	
45	63	90	63	132	95	100	

NOTE. The convention for marking of slings should be to indicate WLLs below 1 t in kilograms.

NOTE: The convention for marking of slings should be to indicate WLLs below 1 t in kilograms.

Note: The above SWL limits apply only to normal conditions of use in straight configurations with equally loaded legs, and are based on the 'Uniform Load Method of Rating'. Never exceed the Manufacturer's recommended SWL limits.



TABLE 15.5: CAPACITY CHART FOR ROUND SLINGS (BS EN 1492-2).




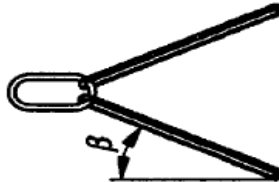
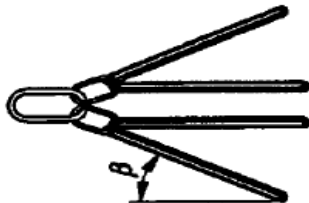
Working load limits in tonnes							
WLL of roundsling in straight lift	Colour of roundsling cover	Straight lift	Choked lift	Basket hitch		Two leg sling	Three and four leg slings
							
		$M = 1$	$M = 0,8$	Parallel	$\beta =$ 0 to 45° $M = 1,4$	$\beta =$ 0 to 45° $M = 2,1$	$\beta =$ 45° to 60° $M = 1,5$
1,0	Violet	1,0	0,8	2,0	1,4	2,1	1,5
2,0	Green	2,0	1,6	4,0	2,8	4,2	3,0
3,0	Yellow	3,0	2,4	6,0	4,2	6,3	4,5
4,0	Grey	4,0	3,2	8,0	5,6	8,4	6,0
5,0	Red	5,0	4,0	10,0	7,0	10,5	7,5
6,0	Brown	6,0	4,8	12,0	8,4	12,6	9,0
8,0	Blue	8,0	6,4	16,0	11,2	16,8	12,0
10,0	Orange	10,0	8,0	20,0	14,0	21	15,0
Over 10,0	Orange						
M = Mode factor for symmetrical loading. Handling tolerance for slings or parts of slings indicated as vertical = 6°.							



TABLE 15.6: CAPACITY CHART FOR ALLOY STEEL- DEE SHACKLES (BS 3551)

$W =$ safe working load		$d =$ $0.40 \sqrt{W}$	$D =$ $0.45 \sqrt{W}$	$w =$ $0.78 \sqrt{W}$	$s =$ $1.48 \sqrt{W}$	$e =$ $0.90 \sqrt{W}$
ton	cwt	in	in	in	in	in
1	2	$\frac{1}{2}$	$\frac{5}{8}$	$1\frac{1}{8}$	$2\frac{1}{8}$	$1\frac{1}{4}$
2	5	$\frac{5}{8}$	$\frac{3}{4}$	$1\frac{1}{4}$	$2\frac{1}{2}$	$1\frac{1}{2}$
3	0	$\frac{3}{4}$	$\frac{7}{8}$	$1\frac{1}{2}$	$2\frac{7}{8}$	$1\frac{3}{4}$
4	10	$\frac{7}{8}$	1	$1\frac{3}{4}$	$3\frac{1}{4}$	2
5	12	1	$1\frac{1}{8}$	2	$3\frac{3}{4}$	$2\frac{1}{4}$
7	10	$1\frac{1}{8}$	$1\frac{1}{4}$	$2\frac{1}{8}$	$4\frac{1}{8}$	$2\frac{1}{2}$
9	0	$1\frac{1}{4}$	$1\frac{3}{8}$	$2\frac{3}{8}$	$4\frac{1}{2}$	$2\frac{3}{4}$
10	10	$1\frac{3}{8}$	$1\frac{1}{2}$	$2\frac{5}{8}$	5	3
14	5	$1\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{3}{4}$	$5\frac{3}{8}$	$3\frac{1}{2}$
16	15	$1\frac{5}{8}$	$1\frac{7}{8}$	3	$5\frac{3}{4}$	$3\frac{3}{4}$
19	10	$1\frac{3}{4}$	2	$3\frac{1}{4}$	$6\frac{1}{8}$	4
21	5	$1\frac{7}{8}$	$2\frac{1}{8}$	$3\frac{5}{8}$	7	$4\frac{1}{4}$
24	5	2	$2\frac{1}{4}$	$3\frac{7}{8}$	$7\frac{3}{8}$	$4\frac{1}{2}$
27	0	$2\frac{1}{8}$	$2\frac{3}{8}$	$4\frac{1}{8}$	$7\frac{3}{4}$	$4\frac{3}{4}$
30	0	$2\frac{1}{4}$	$2\frac{1}{2}$	$4\frac{1}{4}$	$8\frac{1}{4}$	5
35	0	$2\frac{3}{8}$	$2\frac{3}{4}$	$4\frac{1}{2}$	$8\frac{3}{4}$	$5\frac{1}{2}$
40	0	$2\frac{5}{8}$	3	5	$9\frac{3}{4}$	6
50	0	$2\frac{7}{8}$	$3\frac{1}{4}$	$5\frac{1}{2}$	$10\frac{5}{8}$	$6\frac{1}{2}$
65	0	$3\frac{1}{4}$	$3\frac{3}{4}$	$6\frac{1}{4}$	12	$7\frac{1}{2}$
80	0	$3\frac{5}{8}$	$4\frac{1}{4}$	7	$13\frac{3}{8}$	$8\frac{1}{2}$

Figure 5.1 (Dee Shackle)

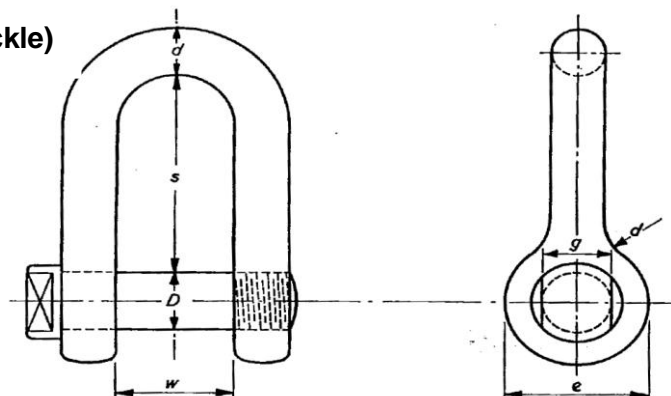
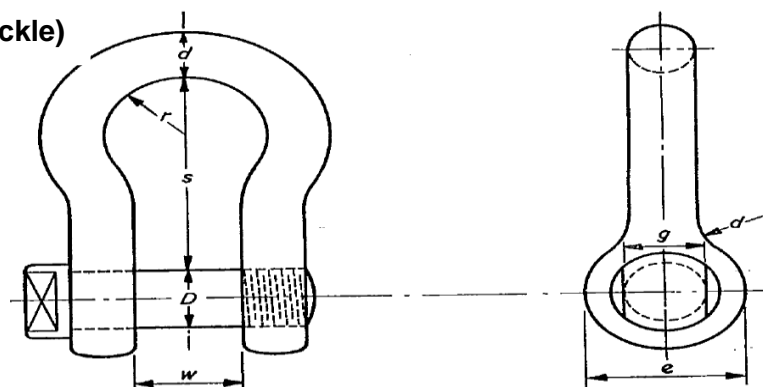




TABLE 15.7: CAPACITY CHART FOR ALLOY STEEL - BOW SHACKLES (BS 3551)

$W = \text{safe working load}$		$d = 0.43\sqrt{W}$	$D = 0.46\sqrt{W}$	$w = 0.78\sqrt{W}$	$2r = 1.14\sqrt{W}$	$s = 1.91\sqrt{W}$	$e = 0.91\sqrt{W}$
ton	cwt	in	in	in	in	in	in
1	2	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{7}{8}$	$1\frac{1}{4}$	$2\frac{1}{8}$	$1\frac{1}{4}$
1	17	$\frac{5}{8}$	$\frac{3}{4}$	$1\frac{1}{8}$	$1\frac{5}{8}$	$2\frac{3}{4}$	$1\frac{1}{2}$
3	0	$\frac{3}{4}$	$\frac{7}{8}$	$1\frac{3}{8}$	2	$3\frac{3}{8}$	$1\frac{3}{4}$
4	2	$\frac{7}{8}$	1	$1\frac{5}{8}$	$2\frac{1}{4}$	$3\frac{7}{8}$	2
5	10	1	$1\frac{1}{8}$	$1\frac{3}{4}$	$2\frac{1}{2}$	$4\frac{1}{4}$	$2\frac{1}{4}$
7	0	$1\frac{1}{8}$	$1\frac{1}{4}$	2	$2\frac{7}{8}$	$4\frac{7}{8}$	$2\frac{1}{2}$
8	10	$1\frac{1}{4}$	$1\frac{3}{8}$	$2\frac{1}{4}$	$3\frac{1}{4}$	$5\frac{3}{8}$	$2\frac{3}{4}$
10	15	$1\frac{3}{8}$	$1\frac{1}{2}$	$2\frac{1}{2}$	$3\frac{1}{2}$	6	3
12	15	$1\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{3}{4}$	$3\frac{7}{8}$	$6\frac{5}{8}$	$3\frac{1}{2}$
14	5	$1\frac{5}{8}$	$1\frac{7}{8}$	3	$4\frac{3}{8}$	$7\frac{3}{8}$	$3\frac{3}{4}$
17	5	$1\frac{3}{4}$	2	$3\frac{3}{8}$	$4\frac{3}{4}$	$8\frac{1}{8}$	4
19	10	$1\frac{7}{8}$	$2\frac{1}{8}$	$3\frac{5}{8}$	$5\frac{1}{8}$	$8\frac{3}{4}$	$4\frac{1}{4}$
22	10	2	$2\frac{1}{4}$	$3\frac{3}{4}$	$5\frac{1}{2}$	$9\frac{3}{8}$	$4\frac{1}{2}$
25	0	$2\frac{1}{8}$	$2\frac{3}{8}$	$3\frac{7}{8}$	$5\frac{5}{8}$	$9\frac{1}{2}$	$4\frac{3}{4}$
30	0	$2\frac{3}{8}$	$2\frac{5}{8}$	$4\frac{3}{8}$	$6\frac{3}{8}$	$10\frac{3}{4}$	$5\frac{1}{4}$
35	0	$2\frac{5}{8}$	$2\frac{7}{8}$	$4\frac{3}{4}$	7	$11\frac{7}{8}$	$5\frac{3}{4}$
40	0	$2\frac{3}{4}$	3	5	$7\frac{3}{8}$	$12\frac{3}{8}$	6
50	0	3	$3\frac{1}{4}$	$5\frac{1}{2}$	8	$13\frac{1}{2}$	$6\frac{1}{2}$
65	0	$3\frac{1}{2}$	$3\frac{3}{4}$	$6\frac{3}{8}$	$9\frac{3}{8}$	$15\frac{3}{4}$	$7\frac{1}{2}$
80	0	$3\frac{7}{8}$	$4\frac{1}{4}$	7	$10\frac{3}{8}$	$17\frac{1}{2}$	$8\frac{1}{2}$

Figure 5.2 (Bow Shackle)



**TABLE 15.8: CAPACITY CHART FOR ALLOY STEEL SHACKLE  
(US FED SPEC RRC-C-271)**

Dia. Bow	Dia. Pin	Inside Width	Inside Length		Safe Working load	Width of Bow	weight per 100 Pieces	
			Chain Type	Anchor Type			Screw Pin	Safety Pin
Inches	Inches	mm	mm	mm	metric tones	mm	kgs	kgs
3/16"	1/4"	10	—	22	<b>0.33</b>	16.5	2.25	—
1/4"	5/16"	12	—	28	<b>0.50</b>	20	5	—
5/16"	3/8"	13	27	31	<b>0.75</b>	21	7.75	—
3/8"	7/16"	16	31	36	<b>1</b>	26	14	—
7/16"	1/2"	18	37	43	<b>1.50</b>	29	19	—
1/2"	5/8"	22	43	51	<b>2</b>	32	34	38
5/8"	3/4"	26	51	64	<b>3.25</b>	43	63	70
3/4"	7/8"	31	59	76	<b>4.75</b>	51	95	100
7/8"	1"	36	73	83	<b>6.50</b>	58	155	170
1"	1 1/8"	43	85	95	<b>8.50</b>	68	230	260
1 1/8"	1 1/4"	47	90	108	<b>9.50</b>	75	324	380
1 1/4"	1 3/8"	51	94	115	<b>12</b>	83	440	480
1 3/8"	1 1/2"	57	115	133	<b>13.50</b>	92	600	700
1 1/2"	1 5/8"	60	127	146	<b>17</b>	99	750	850
1 3/4"	2"	74	149	178	<b>25</b>	126	1400	1600
2"	2 1/4"	83	171	197	<b>35</b>	146	1892	2100
2 1/2"	2 3/4"	105	203	254	<b>55</b>	185	3715	4200
3"	3 1/4"	127	230	330	<b>85</b>	190	—	6900
3 1/2"	3 3/4"	146	267	381	<b>120</b>	238	—	12000

TABLE 15.9: CAPACITY CHART FOR EYEBOLTS - COLLAR EYEBOLT (BS 4278)

Safe working load (axial)	Metric thread dia.	$B = 1.5E$	$C = E$	$D = 0.5E$	$E^*$	$F = 0.6E$	$G = 1.33E$	$H = 1.17E$	$J$	$K = 0.17E$	$L = 0.6E$
tonnes	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
0.4	12	22	15	7	15	9	20	18	1	3	9
0.8	16	29	20	10	20	12	26	23	1	3	12
1.6	20	40	27	14	27	16	36	32	1	5	16
2.5	24	52	35	17	35	21	46	40	2	6	21
4.0	30	65	44	22	44	26	58	51	2	7	26
6.3	36	81	54	27	54	32	72	63	3	9	32
8.0	42	90	60	30	60	36	80	70	3	10	36
10.0	48	101	68	34	68	40	90	79	3	11	40
12.5	52	115	76	38	76	46	102	89	3	13	46
16.0	56	128	86	43	86	51	114	100	4	14	51
20.0	64	144	96	48	96	58	128	112	4	16	58
25.0	72	162	108	54	108	65	144	126	4	18	65

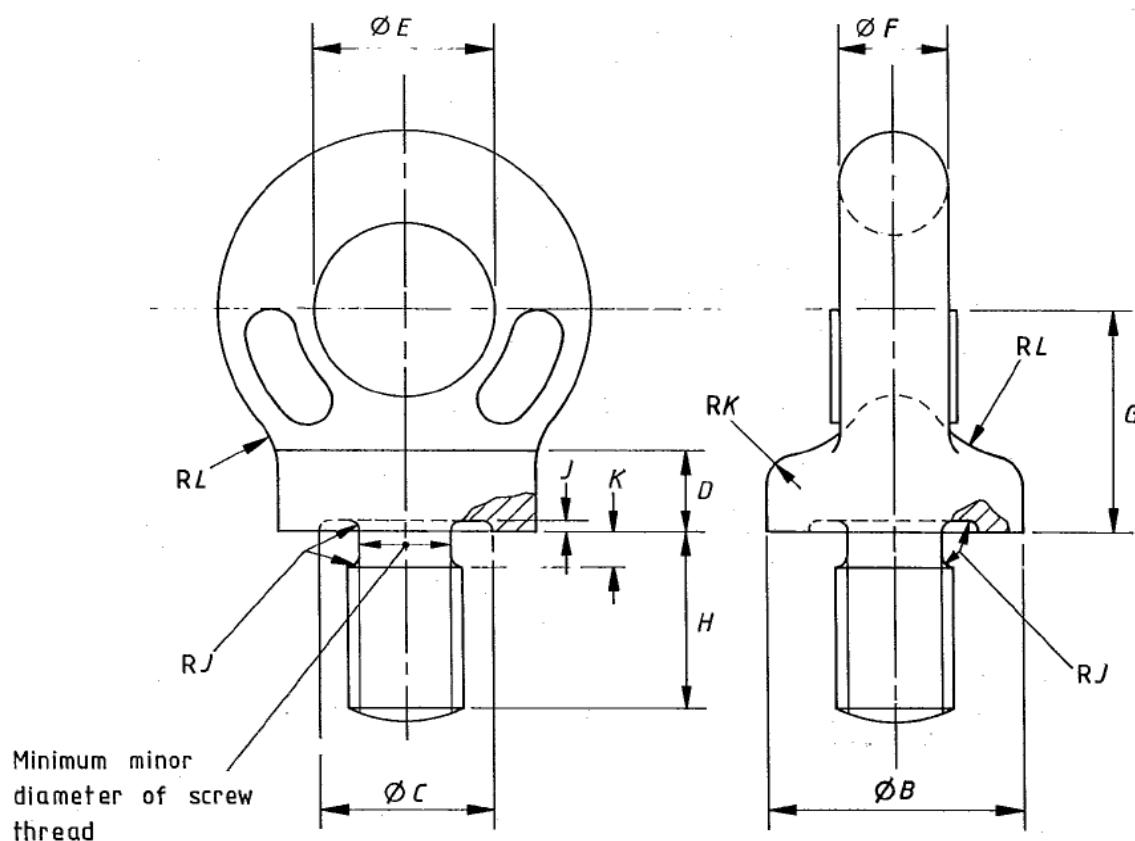


Figure 6.1 (Collar Eyebolt)

TABLE 15.10: CAPACITY CHART FOR EYEBOLTS - DYNAMO EYEBOLT (BS 4278)

Safe working load (axial)	Metric thread dia.	$B$ $= 0.8E$	$C$ $= 0.64E$	$D$ $= 0.23E$	$E^*$	$F$ $= 0.38E$	$G$ $= 1.2E$	$H$ $= 0.8E$	$J$	$K$ $= 0.11E$
tonnes	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
0.32	12	17	14	5	22	9	27	18	1	3
0.63	16	23	18	6	29	11	34	23	1	3
1.25	20	32	25	9	40	15	47	32	1	5
2.0	24	40	32	12	51	19	60	40	2	6
3.2	30	51	41	14	64	24	76	51	2	7
5.0	36	63	50	18	79	30	95	63	3	9
6.3	42	70	56	20	88	33	105	70	3	10
8.0	48	79	63	22	99	37	118	79	3	11
10.0	52	89	71	26	112	42	134	89	3	13

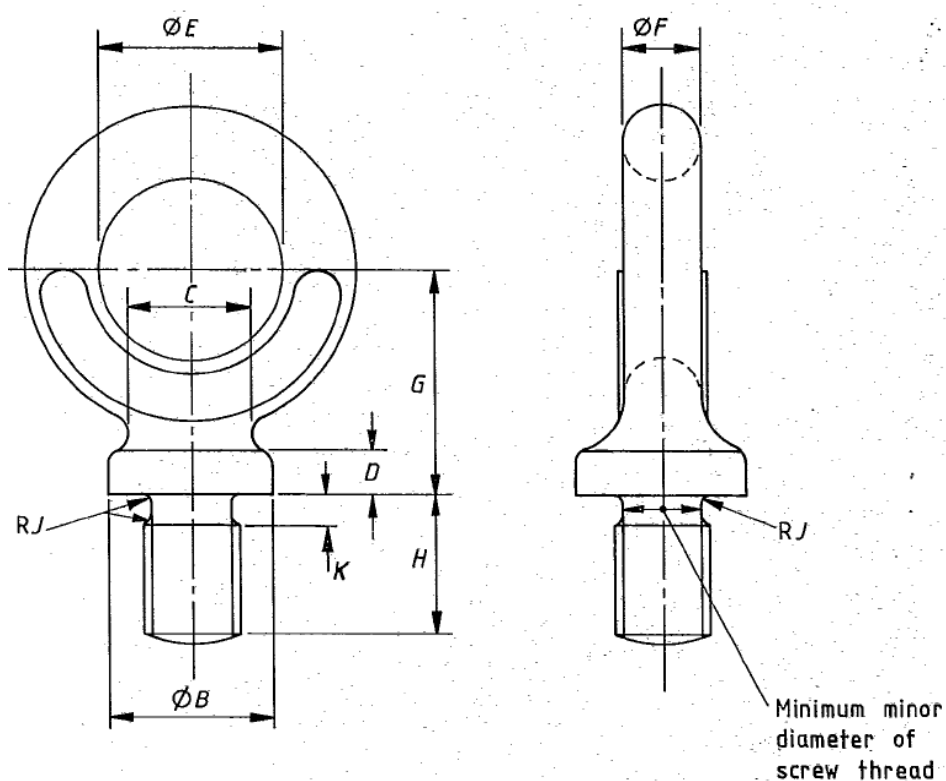


Figure 6.2 (Dynamo Eyebolt)

**TABLE 15.11: INSPECTION AND TEST REQUIREMENTS FOR VARIOUS LIFTING EQUIPMENT (LIFTING APPLIANCES)**

		INSPECTION							
		ON INITIAL SUPPLY	6 MONTHLY	ANNUALLY	EVERY 4 YEARS	AFTER MAJOR REPAIR	EVERY INSTALLATION		
'LIFTING EQUIPMENT' TYPE								LEGEND:	
1	"A" frame	☒	○	-	☒	☒	-	○	Thorough visual inspection
2	Chain block / Manual Hoist*	☐	○	◆	☐	☐	-	○	Thorough visual inspection
3	Crane (derrick)	☒	○	◆	☒	☒	-	◆	100% SWL test & thorough visual inspection
4	Crane (electric overhead travelling)	☒	○	◆	☒	☒	-		
5	Crane (floor)	☒	○	◆	☒	☒	-		
6	Crane (gantry)/(jib)	☒	○	◆	☒	☒	-	●	110% SWL test dynamic & thorough visual inspection
7	Crane (lorry loader)	☒	○	☒	☒	☒	-	☒	125% SWL test & thorough visual inspection
8	Crane (mobile)	☒	○	◆	☒	☒	-	☐	150% SWL test & thorough visual inspection
9	Crane (pedestal)	☒	○	◆	☒	☒	-	⌘	200% SWL test & thorough visual inspection
10	Crane (tower) **	☒	○	◆	☒	☒	☒	■	220% SWL test & thorough visual inspection
11	Davit (general purpose)	☐	○	-	☒	☒	-	⊙	250% SWL test & thorough visual inspection
12	Forklift	☒	○	◆	☒	☒	-	△	300% SWL test & thorough visual inspection
13	Gin Pole	☒	○	◆	☒	☒	-	▶	Calibration to be witness by TPCA
14	Grabs	☒	○	-	☒	☒	-		
15	Hoist (powered)	☒	○	◆	☒	☒	-	*	For SWL up to 20 t
16	Jack	☐	○	◆	☐	☐	-	**	All tower cranes to be de-rated by 20% from Rated SWL after successful proof load tests to 125% SWL
17	Lever Hoist*	☐	○	◆	☐	☐	-		
18	Lifeboat / rescue boat davit	■	○	-	■	■	-		
19	Life/Rescue boat lifting frame	⊙	○	-	⊙	⊙	-		
20	Lifeboat lifting points	●	○	-	●	●	-		
21	Rescue Boat lifting Points	⊙	○	-	⊙	⊙	-		
22	Lifts - (passenger or goods)	☒	○	◆	☒	☒	-		
23	Load binder	⌘	○	-	-	⌘	-		
24	Mast climbing working platform	☒	○	◆	☒	☒	☒		
25	Mobile working platform	☒	○	◆	☒	☒	-		
26	Pallet truck – Hand Operated	☒	○	◆	☒	☒	-		
27	Pallet stacker	☒	○	◆	☒	☒	-		
28	Runway beam	☒	○	○	○	☒	☒		Note:
29	Side Boom	☒	○	☒	☒	☒	-		A load test may be carried out as deemed necessary by the surveyor during any inspection
30	Suspended working platform	☒	○	◆	☒	☒	-		
31	Test Machines (load cell)	▶		▶	-	-	-		
32	Tirfors	☐	○	◆	☐	☐	-		
33	Trolley	☐	○	-	☐	☐	-		
34	Vehicle lift	☒	○	-	☒	☒	-		
35	Winch (All Type)	☒	○	◆	☒	☒	☒		
36	Winch (lifeboat & man riding)	☐	○	◆	☐	☐	☐		

Note:

A load test may be carried out as deemed necessary by the surveyor during any inspection

**TABLE 15.12: INSPECTION AND TEST REQUIREMENTS FOR LIFTING TACKLE/LOOSE GEAR.**

		INSPECTION					
		ON INITIAL SUPPLY	6 MONTHLY	ANNUALLY	EVERY 4 YEARS	AFTER MAJOR REPAIR	EVERY INSTALLATION
'LIFTING EQUIPMENT' TYPE							
1	Beam clamp	□	○	-	-	□	-
2	Bundle puller	☒	○	-	☒	☒	
3	Bundle puller (lifting points)	⌘	○	-	⌘	⌘	-
4	Cargo basket	⊙	○	-	⊙	⊙	-
5	Cargo net	⌘	○	-	-	⌘	-
6	Chain	▼	○	-	-	-	
7	Chain sling	☆	○			☆	
8	Container	⊙	○		⊙	⊙	
9	Cylinder rack	⊙	○		⊙	⊙	
10	Eyebolt/eye nuts	☆	○				
11	Frame/skid	⊙	○		⊙	⊙	
12	Gangway or Walkway	⌘	○		⌘	⌘	
13	Gangway lifting point	⊙	○		⊙	⊙	
14	Hook	☆	○				
15	Hopper	⊙	○		⊙	⊙	
16	Links / Hoist rings	☆	○				
17	Load cell	◆	○	◆		◆	
18	Loading ramp	⌘	○		⌘	⌘	
19	Man riding basket	△	○		△	△	△
20	Pad eyes (fabricated w/ design)	⌘	○			⌘	⌘
21	Pad eyes (fabricated w/o design)	△	○			△	△
22	Pallet (steel)	⊙	○			⊙	
23	Personnel transfer net	⌘	○		⌘		
24	Pipe clamp/hook	⌘	○			⌘	
25	Plate clamp	⌘	○			⌘	
26	Round sling (man made fibre)	⌘	○				
27	Safety harness & fall arrestor	◆	○				
28	Shackle	☆	○				
29	Skip	⊙	○		⊙	⊙	
30	Sheave block	⌘	○			⌘	
31	Spreader (beam/bar/frame)	⬡	○		⬡	⬡	
32	Swivel	☆	○				
33	Turnbuckle	⌘	○				
34	Water bag	◆	○	◆		◆	
35	Webbing sling (man made fibre)	☆	○				
36	Wire rope	▼	○				
37	Wire rope sling	☆	○				

### LEGEND:

◆	100% SWL test & thorough visual inspection
●	110% SWL test & thorough visual inspection
☒	125% SWL test & thorough visual inspection
□	150% SWL test & thorough visual inspection
⌘	200% SWL/GW test & thorough visual inspection
■	220% SWL test & thorough visual inspection
⊙	250% SWL/GW test & thorough visual inspection
△	300% SWL/GW test & thorough visual inspection
▼	Sample to be Tested to destruction
☆	Up to 25 t SWL: 2XSWL Above 25 t SWL: 1.22XSWL + 20 t
⬡	Up to 10 t SWL: 2XSWL 10t to 160 t SWL: 1.04XSWL + 9.6 t Above 160 t SWL: 1.1XSWL

### Note:

A load test may be carried out as deemed necessary by the surveyor During inspection.



**TABLE 15.13: INSPECTION AND TESTING FREQUENCIES OF LIFTING EQUIPMENT**

LIFTING EQUIPMENT TYPE		FREQUENCY FOR	
		PROOF LOAD TEST	INSPECTION
1	<b>All Lifting Tackle:</b> <ul style="list-style-type: none"> <li>Chain, chain sling ,wire rope, wire rope sling, webbing sling</li> <li>Rings, links, hooks, shackles, eyebolts, swivels, blocks, snatch blocks, turnbuckles</li> <li>Beam and plate clamps, frames, pallets, cargo nets, pipe clamp</li> <li>Water bag, load cell</li> </ul>	<ul style="list-style-type: none"> <li>On initial supply</li> <li>After substantial alteration or major repair</li> <li>At the discretion of the Surveyor</li> </ul>	Every six (6) months
2	<ul style="list-style-type: none"> <li>Waste skips, tool boxes, containers, baskets, cylinder rack, steel pallet, frame</li> <li>Spreader bar / lifting beams, gangways</li> <li>Support structures or scaffold steel structures for Worker Access platforms</li> <li>Loading ramp, bundle puller</li> </ul>	<ul style="list-style-type: none"> <li>On initial supply</li> <li>Every four (4) years</li> <li>After substantial alteration or major repair</li> <li>At the discretion of the Surveyor</li> </ul>	Every six (6) months
3	<b>Lifting Appliances:</b> <ul style="list-style-type: none"> <li>Pedestal cranes, mobile cranes, gantry crane, side boom, floor crane, jib crane, lorry loader crane, tower cranes</li> <li>Overhead travelling cranes, wall / pillar cranes, derricks,</li> <li>Winches, hoist (air and electric), Grabs, powered working platforms, vehicle lifts or hoists, forklift, hand operated pallet truck, pallet stacker</li> <li>Mobile or movable jacks and associated 'Lifting equipment'</li> <li>Chain blocks, tirsors, pull lifts, trolleys</li> </ul>	<ul style="list-style-type: none"> <li>On initial supply</li> <li>Every four (4) years</li> <li>After reinstallation, substantial alteration or major repair</li> <li>At the discretion of the Surveyor</li> </ul>	Every six (6) months
4	<ul style="list-style-type: none"> <li>Runway beams, pad eyes, gin pole and gin wheels</li> </ul>	<ul style="list-style-type: none"> <li>On initial installation.</li> <li>After reinstallation, substantial alteration or major repair</li> <li>At the discretion of the Surveyor</li> </ul>	Every six (6) months
5	<ul style="list-style-type: none"> <li>Lifts – (passenger or goods)</li> </ul>	<ul style="list-style-type: none"> <li>On initial supply</li> <li>Every four (4) years</li> <li>After substantial alteration or major repair</li> <li>At the discretion of the Surveyor</li> </ul>	Every six (6) months
6	<ul style="list-style-type: none"> <li>Lifeboat , life rafts , escape capsule &amp; work boat lifting points, davits / winches and support structure</li> </ul>	<ul style="list-style-type: none"> <li>After initial installation</li> <li>Every four (4) years</li> <li>After substantial alteration or major repair</li> <li>At the discretion of the Surveyor</li> </ul>	Every six (6) months

**TABLE 15.14: MAX. PULL PER LINE FOR TESTING WINCHES OFFSHORE BASED  
WINCHES INSTALLED ON**

S No	Description	Period of verification	% Max Pull / line
1	Offshore Platform and Rigs	Annual	100% SWL
2	Vessel and Barges – used for lifting purpose	Annual	100% SWL
3	Pedestal Cranes	Annual	100% SWL
4	Overhead Travelling Crane	Annual	100% SWL
5	Davits– Hydraulic and Pneumatic, Electrical & Manual Hoists	Annual	100% SWL
6	Derrick Cranes	Annual	100% SWL
7	Pillar Cranes -With Electric , Pneumatic & Manuals Hoist	Annual	100% SWL

**TABLE 15.15: MAX PULL PER LINE FOR TESTING WINCHES ONSHORE BASED –  
WINCHES INSTALLED ON**

S No	Description	Period of verification	%Max Pull / line
1	Side Boom	Annual	125% SWL
2	Self Loader (Hydraulic)	Annual	125% SWL
3	Lorry Loader	Annual	125% SWL
4	Cranes – Mobile	Annual	100% SWL
5	Cranes – Overhead Travelling	Annual	100% SWL
6	Cranes – Davit	Annual	100% SWL

**TABLE 15.16: PROOF LOAD TEST REQUIREMENTS FOR VARIOUS LIFTING EQUIPMENT**

S No	Lifting equipment Type	Proof Load Requirement
1	<ul style="list-style-type: none"> <li>Chain Sling, wire rope slings and webbing slings</li> <li>Rings, links, hooks, shackles swivels, eye bolts, <ul style="list-style-type: none"> <li>SWL up to 25 tonnes</li> <li>SWL above 25 tonnes</li> </ul> </li> </ul>	<p>2 x SWL</p> <p>1.22 x SWL +20 tonnes</p>
2	Single sheave/pulley blocks SWL up to 13 tonnes	4 x SWL (Line pull)
3	Multiple sheave /pulley blocks with <ul style="list-style-type: none"> <li>SWL up to 25 tonnes</li> <li>SWL from 25 tonnes To 160 tonnes</li> <li>SWL exceeding 160 Tonnes</li> </ul>	<p>2 x SWL</p> <p>0.933 x SWL + 27 Tonnes</p> <p>1.1 x SWL</p>
4	Beam clamps	1.5 x SWL
5	Beam trolleys	1.5 x SWL
6	Chain blocks manual hoist	Up to 20 t SWL 1.5 x SWL Above 20 t SWL 1.25 x SWL
7	Chain hooks and fittings Grade 80	2.0 x SWL
8	Chain, Grade 80	2.0 x SWL
9	Lifeboat & Rescue boat Davits,	2.2 x SWL
10	Lifeboat & Rescue boat Lifting frame	2.5 x SWL
11	Lifeboat & Rescue Boat Winches	1.5 x SWL (Static) 1.1 x SWL (Dynamic)
12	Lifeboat lifting points	1.1 x SWL (Dynamic)
13	Rescue boat lifting points	2.5 x GW
14	Electric Overhead Travelling Cranes Pedestal crane	1.25 x SWL
15	Fabricated pad eyes and clamps with design calculation	2.0 x SWL
16	Fabricated pad eyes and clamps without design calculation	3.0 x SWL
17	Forklift trucks	1.25 x SWL
18	Lever Hoists (Pull Lifts)	Up to 20 t SWL 1.5 x SWL Above 20 t SWL 1.25 x SWL
19	Lifts (personnel and goods)	1.25 x SWL

**cont., TABLE 15.16: PROOF LOAD TEST REQUIREMENTS FOR VARIOUS LIFTING EQUIPMENT**

S No	'Lifting equipment' Type	Proof Load Requirement
20	Lifting beams/ spreaders beams with <ul style="list-style-type: none"> <li>SWL up to 10 tonnes</li> <li>SWL above 10 tonnes up to 160 tonnes</li> </ul>	$2 \times \text{SWL}$ $1.04 \times \text{SWL} + 9.6$
21	Mobile work platforms	$1.25 \times \text{SWL}$
22	All Crane	$1.25 \times \text{SWL}$
23	Plate clamps	$2.0 \times \text{SWL}$
24	Hoists powered	$1.25 \times \text{SWL}$
25	Runway beams	$1.25 \times \text{SWL}$
26	Tirfors with wire rope Wire ropes for tirfors with end connection	$1.5 \times \text{SWL}$ $2.0 \times \text{SWL}$
27	Winch (davit)	$1.25 \times \text{SWL}$
28	Winch (manual)	$1.25 \times \text{SWL}$
29	Winch (man- riding)	$1.50 \times \text{SWL}$
30	Winch (pneumatic, Hydraulic and Electrical)	$1.25 \times \text{SWL}$
31	Gangway Lifting points Distributed loads	$2.5 \times \text{SWL}$ $2 \times \text{GW}$
32	Plain Steel Wire rope	Tested to destruction
33	Containers, Work baskets, skips, cargo Containers Up to 25,000 kg, Above 25,000 kg	$2.5 \times \text{GW}$ $2 \times \text{GW}$
34	Vehicle lifts or hoists	$1.25 \times \text{SWL}$ (Dynamic Test)
35	Mobile or movable jacks and associated 'Lifting equipment'	$1.25 \times \text{SWL}$ (Dynamic Test) $1.5 \times \text{SWL}$ (Static Test)
36	Man-riding basket	$3 \times \text{GW}$

## 16.0 FORMS

The following forms shall be used in the implementation of this regulation.

### 16.1 FORM LER01: USE OF LIFTING EQUIPMENT DURING GENERAL AND CRITICAL LIFT

FORM LER01 USE OF LIFTING EQUIPMENT DURING GENERAL AND CRITICAL LIFT					
Attach the form duly reviewed and signed, by QP Contract Focal Point to the Lifting Plan					
S No	REQUIREMENTS			DETAILS	
1	Contact /Project title				
	Name of Contractor company				
	Contract Number				
	Contract Manager				
	Tel No.		Mobile No.		Fax No
	Address of Contractor company				
	QP Contract Focal Point (Name & Ref indicator)				
	Tel No.		Mobile No		Fax No
2	Details of lifting equipment to be used (Use extra sheet if required)				
	Equipment	Certificate Number		Validity Of Certificates	
3	Details of lifting personnel to be used				
		Name	Certificate Number	Validity Of Certificates	
	Crane operator				
	Rigging Supervisor				
	Rigger				
	Rigger				
	Rigger				
4	<u>Brief description &amp; location of the planned lift</u>				
	Estimated duration of work				
5	Are Certificates for all equipment and personnel for this lift provided			YES	NO
6	Reviewed by : QP Contract Focal Point	Name	Signature	Date	

**CORPORATE LIFTING EQUIPMENT REGULATION****DOC. No. QP-REG-Q-001****Rev. 4****16.2 FORM LER02: EMERGENCY RELEASE NOTE**

FORM LER02 EMERGENCY RELEASE NOTE		
Due to operational urgencies, the following Lifting equipment purchased on emergency basis is being released to the User Department without normal inspection and Certification requirements being fulfilled.		
Material Requisition No		Date
Purchase Order No		Date
Dept. Rep. Requesting Release		
Date of Emergency Release Note		
ID. No	Description of Equipment	Nature of Urgency / Remarks
<b>NOTE:</b> The above equipment has been released without routine inspection and certification and issuing tag no. at R&D Dept. It is the responsibility of the user Dept. to ensure that the equipment is made available for routine inspection and certification and the issuing of a tag no. at the earliest opportunity, in compliance with the QP Lifting equipment Technical Regulation. This shall be arranged in coordination with:  <b>Senior Lifting equipment Engineer (STI/23)</b> <b>Corporate HSE ST Department (Tel. No. 4138124, Fax No. 4138124)</b>		
<b>Requesting Dept:</b>  Print Name:  Designation:  Signature:	<b>Approved by Requesting Dept. Manager:</b>  Print Name:  Designation:  Signature:	<b>Released by R&amp;D:</b>  Print Name:  Designation:  Signature:
<b>DISTRIBUTION:</b>		Original to be kept at R&D Section
		cc: End User Dept and STI/23





# CORPORATE LIFTING EQUIPMENT REGULATION

DOC. No. QP-REG-Q-001

Rev. 4

## 16.3 FORM LER03: REQUEST FOR WAIVER

FORM LER03 REQUEST FOR WAIVER								
SPONSORING DEPT. REPRESENTATIVE:					Telephone No.:			
Print Name:					Fax No.:			
Signature:					Designation :			
FOR QP DEPARTMENTS:								
AREA OF OPERATION (Tick as appropriate and write Section underneath)	OFFSHORE				ONSHORE			
	PS2	PS3	NFA	Halul	Mesaieed	Refinery	Dukhan	RLC
FOR CONTRACTORS:								
PROJECT OR CONTRACT No.	COMPANY NAME		REPRESENTATIVE		AREA OF OPERATION			
					ONSHORE		OFFSHORE	
EQUIPMENT DESCRIPTION					ID No.		CERTIFICATE No.	
PERIOD WAIVER REQUIRED:			FROM:			TO:		
REASON FOR REQUESTING WAIVER:								
APPLICABLE CLAUSE OF QP-REG-Q-001:								
RESTRICTION PARAMETER TO BE IDENTIFIED TO ENSURE SAFE OPERATION:								
REVIEW BY OPERATIONAL HSE:					REVIEW BY STI:			
Signature:					Signature:			
Date:					Date:			
Requested by Ops Dept. Rep.			Approved by Dept. Manager			Accepted by STI/23		
Print Name:			Print Name:			Print Name:		
Ref. Ind:			Ref. Ind:			Ref. Ind:		
Signature:			Signature:			Signature:		
Date:			Date:			Date:		



# CORPORATE LIFTING EQUIPMENT REGULATION

DOC. No. QP-REG-Q-001

Rev. 4

## 16.4 FORM LER04: CRANE CERTIFICATE (Sample Format)

### CERTIFICATE OF TEST & THOROUGH EXAMINATION OF CRANE

Certificate No.:

Date of Inspection:

Name and Address of the Owner:		Place of Inspection:	Ref. Standard:
		Maker & Date of Manufacture:	
Registration No.:	Owner No.:	Model No.:	Serial No.:

Crane Details:				
Description of Test:	(i) Length of Jib	(ii) Radius	(iii) Test Load	(iv) S.W.L.

Date of Last Examination	Date of Next Examination	Date of Last Proof Load Test	Date of Next Proof Load Test

Authorized Name: \_\_\_\_\_



Surveyor's Name: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

Surveyor's Signature: \_\_\_\_\_

**THIS IS TO CERTIFY THAT** the above competent surveyor thoroughly examined & tested the lifting equipment in the above-mentioned place as per QP Lifting equipment Technical Regulation and Reference Standards. The liabilities and insurance is as per (name of approved TPCA) General Conditions of Services.



# CORPORATE LIFTING EQUIPMENT REGULATION

DOC. No. QP-REG-Q-001

Rev. 4

## Cont., 16.4 FORM LER04: Annex to Certificate of Test & Thorough Examination of Crane

Certificate No.:

Date of Inspection:

NO.	DESCRIPTION	CONDITION / REMARKS	RE-INSPECTION
1.	Safe Load Indicator		
2.	Radius / Angle Indicator		
3.	Level Indicator		
4.	Boom Structure		
5.	Duty Chart in Cab		
6.	Derricking Interlock		
7.	Fly Jib		
8.	Main Hoist Winch		
9.	Main Hoist Wire Ropes		
10.	Auxiliary Hoist Winch		
11.	Auxiliary Wire Ropes		
12.	Outrigger		
13.	Tyres		
14.	Turntable Bearing		
15.	Swing Machinery		
16.	Controls		
17.	Sheaves		
18.	Brakes		
19.	Steering		
20.	Anti-2 Block System		
21.	Hydraulic System		
22.	Electrical System		
23.	Caution Rotary Light		
24.	Reverse Horn / Light		
25.	Fire Extinguisher		
26.	Spark Arrestor		
27.	Safety Belt		
28.	Maintenance		
29.	General Condition		

COMMENTS:

Surveyor's Name & Signature: \_\_\_\_\_

Company  
Seal



## CORPORATE LIFTING EQUIPMENT REGULATION

DOC. No. QP-REG-Q-001

Rev. 4

### 16.5 FORM LER05: LIFTING APPLIANCES (Sample Format)

#### CERTIFICATE OF TEST & THOROUGH EXAMINATION OF LIFTING APPLIANCES

Certificate No.:

Date of Inspection:

Name and Address of the Owner:		Place of Inspection:	Ref. Standard:
		Maker & Date of Manufacture:	
Registration No.:	Owner No.:	Model No.:	Serial No.:

Equipment Details:		
Description of Test:	(i) Proof Load Applied	(ii) S.W.L.

Date of Last Examination	Date of Next Examination	Date of Last Proof Load Test	Date of Next Proof Load Test

Authorized Name:

Company  
Seal

Surveyor's Name

Authorized Signature

Surveyor's Signature

**THIS IS TO CERTIFY THAT** the above competent surveyor thoroughly examined & tested the lifting equipment in the above-mentioned place as per QP Lifting equipment Technical Regulation and Reference Standards. The liabilities and insurance is as per (name of approved TPA) General Conditions of Services.



# CORPORATE LIFTING EQUIPMENT REGULATION

DOC. No. QP-REG-Q-001

Rev. 4

## Cont, 16.5 FORM LER05: Annex to Certificate Test & Thorough Examination of Lifting Appliances

Annex to Certificate No.:

Date of Inspection:

NO.	DESCRIPTION	CONDITION / REMARKS	RE-INSPECTION
1	Space Bars and End Covers		
2	Controls / Operational Controls		
3	Brake / Clutch		
4	Wire Rope Drum, Rope Guide & Sheaves		
5	Motor / Electric System		
6	Air System		
7	Hydraulic System		
8	Main Gears & Reduction Gears		
9	Drum Guard		
10	Main Hoist Wire Rope		
11	Labels and Tags		
12	Tyres and Wheels		
13	Steering System		
14	Turntable Bearing		
15	Gauge in Cab		
16	Boom		
17	Lowering Speed		
18	Hoisting Speed		
19	Personnel Basket		
20	Spark Arrestor		
21	Light / Rotary Light		
22	Fire Extinguisher		
23	Counter Weight		
24	Mast and Fork Carrier		
25	Fasteners		
26	Load Chain		
27	Forks		
28	Release Hook		
29	Limit Load Devices		
30	Davit Arm Structure		

Modify the format to add / delete details, to cover specific check points, for the type of equipment being certified.

COMMENTS:

Surveyor's Name & Sign: \_\_\_\_\_

Company  
Seal

**CORPORATE LIFTING EQUIPMENT REGULATION****DOC. No. QP-REG-Q-001****Rev. 4****16.6 FORM LER06: LIFTING LOOSE GEAR (Sample Format)****CERTIFICATE OF TEST & THOROUGH EXAMINATION OF LIFTING GEAR**

Certificate No.:

Date of Inspection:

Name and Address of the Owner:		Place of Inspection:		
Maker or Supplier:		Ref. Standard:		
ID No.:	Qty.	Description	Proof Load Applied	SWL /or Gross Weight

Date of Last Examination	Date of Next Examination	Date of Last Proof Load Test	Date of Next Proof Load Test

Authorized Name: \_\_\_\_\_ Surveyor's Name: \_\_\_\_\_

Company  
Seal

Authorized Signature: \_\_\_\_\_ Surveyor's Signature: \_\_\_\_\_

**THIS IS TO CERTIFY THAT** the above competent surveyor thoroughly examined & tested the lifting equipment in the above-mentioned place as per QP Lifting equipment Technical Regulation and Reference Standards. The liabilities and insurance is as per (name of approved TPCA) General Conditions of Services.



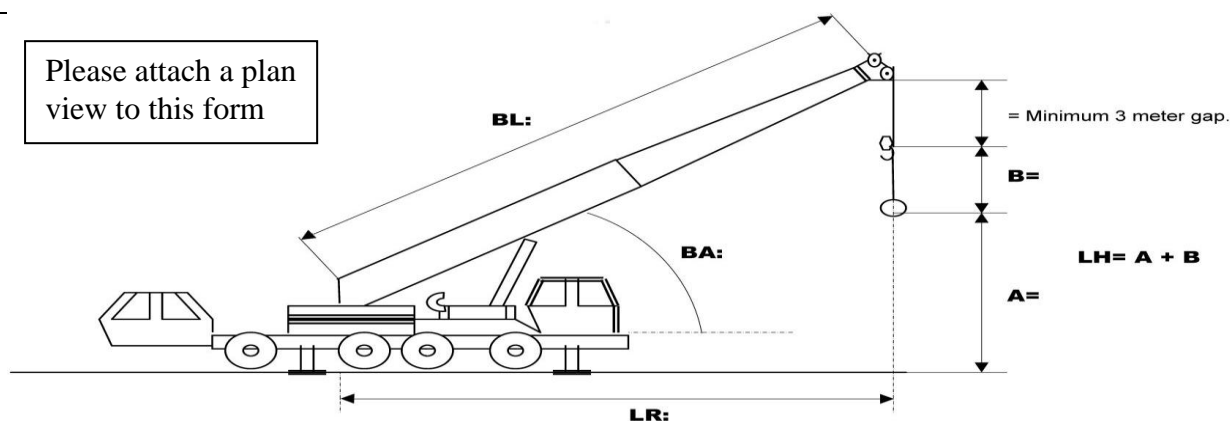
**16.7 FORM LER07: GENERIC LIFTING PLAN (QP USE ONLY) DETAILED IN 11.3.4**

**GENERIC LIFTING PLAN DETAILS** (For critical lifts up to 5 Tonnes, max boom length of 30 metres using mobile lifting equipment).

CRANE DETAILS	LIFTING TACKLE DETAILS	LIFTING ITEM DETAILS
1.1 Crane Name & Type	2.1 Slings SWL & Quantity	3.1 Dimensions (LxWxH)
1.2 No. of falls as rigged	2.2 Shackles SWL & Quantity	3.2 Actual Weight
1.3 Lifting Height (LH)	2.3 Spreader Bar, SWL	3.3 Weight Of Lifting Tackle
1.4 Lifting Radius (LR)	2.4 Other appliance, SWL	3.4 Weight of Hook Block
1.5 Boom Length (BL)	<b>SAFETY FACTOR FOR THE LIFT = 1.6 / 3.5 (SHALL BE &gt; 125%)</b>	3.5 Total Weight (=3.2+3.3+3.4)
1.6 Capacity As Per Load chart (for above configuration)	Risk assessment conducted Date:	Tool box talk conducted

4. Brief description of the lift (including location and date of lift).

Please attach a plan view to this form



Crane Operator	Name	Staff No./Ref. Ind.	Signature	Date
Prepared by	Name	Staff No./Ref. Ind.	Signature	Date
Approved by QP Rigging Supervisor	Name	Staff No./Ref. Ind.	Signature	Date
Checked by HSE	Name	Staff No./Ref. Ind.	Signature	Date

- A. Attach STI/23 accepted certificates for crane, lifting gear and all lifting personnel.
- B. Cordon off the foot print of the crane to prevent unauthorised entry to lift site and mark escape route.
- C. All the lifting gear/appliances shall have SWL of 25% in excess of the total weight to be lifted.
- D. This plan is valid for 7 days from date of approval.
- E. Use for this lift operation only as detailed above.

**REVISION HISTORY LOG**

**Revision 4**

**Date: 26/10/2009**

<b>Item Revised:</b>	<b>Reason of Change/Amendment: Major Updating and Rewriting</b>
	<p><b><u>Changes/Amendments Made:</u></b></p> <p>This regulation is revised to include the new corporate requirements and latest developments on worldwide standards referenced in the same, regarding Lifting Equipment.</p> <p>It was also revised to satisfy the requirements of the standardisation procedures (QP-PRC-A-001 and QP-GDL-A-003) in document numbering, formatting and layout.</p>

**Note:**

The revision history log shall be updated with each revision of the document. It shall contain a written audit trail of the reason(s) why the changes/amendments have occurred, what the changes/amendments were and the date at which the changes/amendments were made.

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