UC Santa Barbara – Crane Safety Program

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Team: General Safety

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Click here to go to FAQ Fact Sheet

Quick Start

UC Santa Barbara’s (EH&S)/General Safety staff manages the campus Crane Safety Program to assure Cal/OSHA compliance for campus Departments, Field Stations, and Contractors when operations are conducted that use University-owned overhead cranes, hoists and rigging. There is a Crane Safety FAQ / Fact Sheet for review of basic questions and application of this program.

Go to the Table of Contents to search for specific program information. Administrative requirements, training requirements, recordkeeping requirements, inspection criterion and inspection procedures, “Operator” safe-work procedures and “Standby Person” safe-work procedures are included.

There are two classes of cranes/hoists defined according to rated load capacities: “Three Tons and Under (≤3Ton)” and “Over Three Tons (>3Ton)”. This program applies to any research, construction, and maintenance activities that utilize such lift equipment. This program governs maintenance, inspection, load testing, rigging inspection / selection, and operator training / qualification requirements for all types of cranes and hoists that are used for lifting/moving equipment and materiel.

Click here for guidance about your, or your departments, Roles and Responsibilities.

Click here for guidance about Administrative and Operating Procedures.

Click here for Inspection Forms and other Program Documentation.
# UC Santa Barbara – Crane Safety Program

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UC Santa Barbara – Crane Safety Program

Purpose/Introduction
The University of California, Santa Barbara (UCSB) owns many cranes and hoists ranging from fractional ton chain-falls, come-a-longs and chain-hoists, to multi-ton overhead cranes. This Program assures compliance with Cal/OSHA regulations for Crane Safety.

Applicability/Scope
This program applies to any overhead lifting device that is attached to any building, research facility or equipment owned or operated by UCSB.

This program outlines Cal/OSHA required load testing for all types of cranes, hoists and associated rigging / lift-gear at UCSB. Cranes rated above three tons require quadrennial load testing. Cranes rated 3-ton and less requires load testing / certification upon installation or upon implementation of this program by owner departments. Load testing must be performed by a Cal/OSHA approved Certificating Agency. Cranes may have their load rating reduced through a documented ‘derating’ process.

This program also outlines the required “Qualification” documented procedure for crane operators, outlines training contents for becoming a “Qualified Person”, and details “Administrative Procedures” to be followed by departments implementing the program, and “Operating Procedures” to be followed by qualified crane operators each time a crane is used. In addition, it also outlines record-retention requirements for various personnel.

Roles/Responsibilities

Departments must:
- Identify all Crane/Hoist and rigging owned by the Department and falling under the requirements of this program.
- Designate one or more to operate the crane "Qualified Person(s) / hoist.
- Provide for and document each "Qualified Person(s) "operator training” prior to allowing them to inspect, maintain and/or operate specific department crane equipment.
- Keep records of training.
- Conduct documented periodic inspections of all Crane/Hoist equipment and associated rigging.
- Assure all cranes and hoist in the department have had an initial documented load test conducted by a Certificating Agency with results of the load test permanently posted on the equipment.
- Assure all cranes and hoists and associated rigging with load capacities greater than 3 tons have a documented annual inspection by a Certificating Agency and a documented quadrennial load test conducted by a Certificating Agency.
- Install and maintain in sight of operators permanent signage on any crane / hoist that has been "derated" for the reduction of the load rating.
- Inform department personnel of planned crane inspection / testing and coordinate these activities between crane owners, EH&S/General Safety and the Certificating Agency.
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- Ensure University faculty, students and staff is not in the proximity of the load test activities during load testing performed by a Certificating Agency.

**Crane Operator / “Qualified Person”:**
- Must be trained on the contents of this program and understand how to apply it to the crane / hoist equipment they operate.
- Must be “Qualified” by their Supervisor through documentation using Attachment 1 which is to be kept in their employee file.
- Must follow the procedures outlined in this program every time a lift is prepared and conducted, or during inspection and maintenance activities.
- Must stop all lifting work and bring to the attention of the Department management any deficiencies, broken equipment or rigging needing repair/replacement before continuing to use deficient equipment.
- Must inform EH&S of any crane / hoist that is being permanently locked out due to equipment hazards, when the use of the crane is no longer needed, or due to lack of Qualified Personnel to operate the crane.
- May be responsible for procuring equipment or repair services as a Department may deem appropriate.
- May be required to “Lock out and Tag out” any deficient equipment according to the procedures outlined in the UCSB “Energy Isolation Program” to assure no unsafe condition.

**Stand-by/Load Positioning Person must:**
- Follow procedures outlined in this program.
- Work under the direction of, and in constant communication with, the Crane Operator / “Qualified Person”.

**EH&S must:**
- Coordinate with owner departments and the Facilities Management department (FM) Compliance Officer for the load testing of cranes / hoists by a Certificating Agency.
- Provide load-testing protocols beyond Cal/OSHA requirements as University Risk Management and client need may dictate.
- Provide for operator training.
- Conduct periodic audits of Crane/Hoist Program compliance.
- Update Crane/Hoist Safety Program as regulations or University requirements change.
Definitions

**Certificating Agency** - Certificating agencies are qualified agencies and/or persons licensed by Cal/OSHA to examine, test, and certify cranes. EH&S/General Safety staff maintains a list of pre-qualified Certificating Agencies as part of program compliance.

**Crane** - A machine for lifting or lowering a load, and moving it horizontally, in which the hoisting mechanism is an integral part of the machine. It may be driven manually or by power and may be a fixed or a mobile machine, but does not include stackers, hoist trolleys, lift trucks, power shovels, backhoes, or excavators.

**Hoist** - An apparatus for raising or lowering a load, but does not include a car or platform riding in guides or horizontal motion.

**Qualified Person** - A person designated by the department who, by reason of training and/or experience, has demonstrated the ability to safely perform all assigned duties. Persons may be deemed “qualified” to operate all or only specific cranes / hoists within a department by their supervisor. “Qualifying” a crane operator is a documented process (see [Attachment 1](#)) as outlined in this program.

**Rigging** - Collectively referred to as “below the hook” devices, are also called ‘lift gear’. May be any device used to carry, position, and secure a load while it is being hoisted or craned.

Types of Cranes / Hoists / Rigging

**CRANES and COMPONENTS:**

**Bridge Crane**

Type of crane which lift objects by a hoist which is fitted in a trolley and can move horizontally on overhead rails riding on top of support beams located well above a floor and a permanent part of a building’s structure.
**Gantry Crane**

Type of crane which lift objects by a hoist which is fitted in a trolley and can move horizontally on a rail or pair of rails fitted under a beam. Unlike Bridge Cranes, Gantry Cranes have legs and rollers integral to the support structure and are supported on a flat surface or may roll on rails embedded into the surface upon which the crane sets.

![Gantry Crane Image](image1)

**Floor Mounted Jib Crane / Boom Crane**

Jib Cranes consist of a horizontal load supporting boom, which is attached to a pivoting vertical column that is either free standing or building mounted. They enable lifting and lowering of a load within a fixed arc of rotation.

![Floor Mounted Jib Crane Image](image2)

**Wall Mounted Jib Crane / Boom Crane**

A Jib crane permanently mounted to a structure.

![Wall Mounted Jib Crane Image](image3)
Monorail Crane

A crane that travels on a single runway beam permanently attached to a structure.

Anchor Plate (in ceiling)

Rail, Track or Beam

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*Trolley*

**HOISTS:**

*Electric-powered Hoist*

*Air-powered Hoist*
Manual-powered Hoist

(Also known as a “Chain-fall” or “Chain Hoist”)

RATCHETS and COME-ALONGS:

Ratchet Hoist

Come-Along Hoist
RIGGING:

Slings

(May be constructed of chain, nylon webbing, mesh steel webbing, wire ropes, other types of ropes and braided materials.)

Structural and Mechanical Lifting Devices
Program Requirements and Procedures

ADMINISTRATIVE REQUIREMENTS

Program Activities
The Department owning the Crane/Hoist designates all person(s) within their Department who are responsible for the following actions:

- Identifies all cranes owned by the department that must comply with these program requirements.
- Identifies cranes rated over three tons and manages quadrennial load testing.
- Identifies cranes rated under three tons and manages their quarterly inspections.
- Designates “Qualified Person(s)” who may use Crane/Hoist equipment and assures their timely training and application of this program by completing Attachment 1 for each Qualified Person.
- Identifies and Inventories Crane(s), Hoist(s) and rigging owned by the Department that is regulated by this program (Attachment 5).
- Periodically audits departmental compliance with the program.
- Implements crane, hoist and rigging inspection, testing, and operator training. These are conducted and documented using Attachments 2, 3, 4, 5 and 7.
- Assures that the load rating signage is attached to the Crane/Hoist and that rigging capacity signage can be easily determined according to Inspection and Lift Equipment Requirements (Attachment 3).
- Performs and documents annual inspections of lift equipment (Attachment 7).

Load Test Requirements
Upon program inception, initial equipment installation, or when conducting quadrennial load tests, the department’s designated responsible person must:

- Assure that all crane/hoist components and their attachments to structure are engineered to support 125% of maximum load capacity of the equipment component with the lowest load rating. Design of attachment to structure may require a stamp by a Structural Professional Engineer.
- Arrange for an initial load test of 125% rated capacity and performed by a certifying agency (Attachment 6).
- Arrange for initial testing of rigging at 110% - 125% maximum load capacity (to be determined by the Certificating Agency based upon type and use of crane).
- Ensure rigging is tagged or otherwise marked with load capacities (unless it is an alloy chain, when tabulated data may be used).

Load testing by a Certificating Agency
Representative(s) of the Department coordinate the timing, space required, and access to the site with the PI or owner of the crane/hoist. Prior to the load test, a meeting is held with representatives of the Certificating Agency and the Department personnel associated with the use of the crane/hoist. In that meeting the following topics are discussed and documented:

- How the area of the load test is isolated from access by faculty, students, staff, or public.
- The inspection procedures the Certificating Agency will be using.
- The load testing procedures the Certificating Agency will be using.
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- How the Certificating Agency will be transporting load weights and other equipment to and from the testing site.
- The general types of PPE the Certificating Agency will be using.
- During the load tests a representative of the Department or EH&S/General Safety visits the site to verify the procedures determined in the meeting prior to the load test are being used.

Load Rating Reduction
- Load rating reduction is performed by a Certificating Agency and managed as a load test.
- Permanent signage that clearly identifies the reduced-load rating of the crane or hoist is securely attached to the hoist near the hook and maintained by the Department.

Quarterly Program Requirements
- Performs and documents in-house inspection of lift equipment and rigging using Attachments 2 for cranes 3 tons or less (≤3Ton) and Attachment 4 or equivalent for cranes more than 3 tons (>3Ton).
- Removes and/or ‘Locks Out’ deficient cranes or hoists per requirements of the UCB Energy Isolation – Lockout Tagout Program.
- Removes damaged / deficient rigging from service until repaired or rendered unusable prior to disposal.

OPERATOR SAFE-WORK PROCEDURES

Work Practices, Hazard Evaluation and Control
- Performs daily, or prior to each use, inspections of equipment and rigging using a checklist (Attachment 2 or Attachment 4 depending upon the crane’s load rating).
- Does not use deficient crane/hoists and reports deficiencies to designated person(s) within the Department responsible for the ownership/maintenance of the Crane/Hoist.
- Operates cranes safely.
- Does not proceed with lifting operations until all known hazards have been eliminated or controlled.
- Plans the lift, calculates the Crane/Hoist load capacity, and ensures that the Crane/Hoist is used within its limits.
- Monitors for rigging deficiencies during each lift.
- Stops and does not proceed with lifting operations until newly identified hazards have been eliminated.
- Coordinates the lift with the Stand-by / Load Positioning Person with a pre-lift planning discussion.
- Stays in view of the Stand-by/Load Positioning Person at all times during the lift.
- Assures clear communication method(s) with Stand-by/Load Positioning Person.
- NEVER travels on, or stands under, a suspended load.

Rigging and Other Below-the-Hook Devices
- Performs daily or pre-use documented inspections according to the requirements of Attachment 3 and documenting using the checklists in Attachment 4.
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- Protects rigging from damage while in use.
- Properly stores rigging to prevent deterioration and damage.
- Renders unusable and then disposes of deficient rigging.

**Housekeeping**
- Assures the floor space is kept clear of obstacles and slippery surfaces for the operators, riggers, and load positioning personnel.

**Restricted areas**
- Sets up “Restricted Areas” that include the locations of and adjacent to the lift / travel path.
- The lift/travel path of the load is marked by orange cones, yellow tape or other means, to alert persons not aware of the hazards to keep away.
- No one is allowed under a suspended load EVER!

**STANDBY AND LOAD POSITIONING PERSON’S PROCEDURES**
- Follows the direction of the operator.
- Warn persons nearby to stay out of “Restricted Areas”.
- Assures clear communication method(s) with crane/hoist operator.
- Alerts the Crane Operator immediately of any hazards when identified.
- Does not interfere with the lifting operation unless the operator permits it.
- Stays in view of the operator.
- NEVER travels on, or puts any part of their body under, a suspended load.
- May guide the load during lift through rigging rope tied to the load or push bars; uses gloves and does not wrap the rope around the hand or arm.
- NEVER comes in direct contact with the load during a lift.

**Training Requirements**

Crane Operators receive documented training on the operation of the Crane/Hoist and associated rigging they use before they are allowed to use the equipment. A **Qualified Operator** may train a **Stand-by Person** for a specific and designated lift as long as the Operator discusses all safe-lift aspects and known hazards concerning the lift with the Stand-by Person, and coordinates their lift/rigging planning, prior to conducting the lift.

The Department owning the Crane/Hoist has the option of providing training through:
- A **training provider** outside the University,
- Training within the department by a “Qualified Person”, or
- Training provided by EH&S. Contact EH&S/General Safety at 893-5407 to be directed to the EH&S training provider.

Irrespective of the source, training content and attendance is documented using **Attachment 1**, and kept in a readily accessible location by the Department designee, and the Crane Operator Supervisor, and must be provided upon request to Department management, EH&S, or regulatory agency (e.g. Cal/OSHA).
Record Keeping Requirements

Department Requirements

Training
- Retain Qualifications and Training records for Operators and Stand-by Persons at least ten years after the person has retired or left University employment.

Equipment Inspections
- Retain all daily/pre-use inspections for the last year.
- Retain “Quarterly Inspections” for the last three years.
- For Crane/Hoist and rigging, initial load tests for less than three ton rated cranes, and quadrennial load tests for over three ton rated cranes, tests for all cranes and “job-made” rigging, retain records for the life of the crane/hoist.

EH&S/General Safety - Record Retention Requirements
- Retains indefinitely records of annual shop inspections that include crane/hoists.
- Retains indefinitely records of training provided by EH&S/General Safety and other entities.
- Retains indefinitely copies of load testing and load rating reduction tests until equipment is dismantled / destroyed.

References
Cal/OSHA Subchapter 7. General Industry Safety Orders, Group 13. Cranes and Other Hoisting Equipment; [http://www.dir.ca.gov/Title8/sb7g13.html](http://www.dir.ca.gov/Title8/sb7g13.html)

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UC Santa Barbara – Crane Safety Program

Issued By and Next Review Date

Issued By: John M. Seaman, CSMP - Occupational Safety Team Supervisor

Issue Date: September 1, 2012

Review Date: Three years from publish date/ September 1, 2015

Attachments

Attachment 1: Documentation of Crane Operator Qualifications
Attachment 2: Daily/Pre-Use Crane/Hoist Inspection
Attachment 3: Rigging and Equipment Inspection Criteria
Attachment 4: Rigging Inspection Checklists
Attachment 5: Crane, Hoist and Lift Equipment Inventory - Template
Attachment 6: Certifying Agency / Vendor List
Attachment 7: Annual Crane Inspection Checklist
Attachment 8: FAQ / Fact Sheet – Crane Safety Program
Attachment 1 – Crane Operator Qualification Documentation

To: Personnel File for ____________________________________________

(Print Employee name)

From: ___________________________ Date: ________________

(Print Supervisor name)

This document confirms the Qualification of the above named employee to perform:

(Check all that apply)

☐ Operate/inspect overhead cranes and hoists within their department (T8CCR§5006, 5031)

☐ Inspect rigging, and rig loads to be suspended within their department (T8CCR§5043)

☐ Other: ___________________________________________________

This designation is based on evidence of safe performance of all duties related to crane/hoist operation and verification by another “Qualified Person(s) through:

(Check all that apply)

☐ Training – Appropriate training records1 (including any skill checks or tests) are attached.

☐ Experience – This employee has been safely performing, and has demonstrated skill in crane/hoist operation for _____ years (minimum of five years).

☐ Instruction – This employee has received on the job instruction from me or another employee who is qualified, and has observed this employee’s work while performing this operation, and confirms that the employee has the knowledge to perform crane/hoist work safely.

If, for any reason, as their supervisor, I think that this employee is not performing this operation safely, this qualification will be revoked. Below are signature(s) of responsible person(s) verifying training, experience and/or providing instruction:

Supervisor Signature: ___________________________ Date: ________________

Qualifying Person (if not supervisor): ___________________________ Date: ________________

Employee Signature ___________________________ Date: ________________

CC: EH&S; Supervisor file; Employee and their Personnel File

1 If training is part of the evidence used to qualify this employee, attach records relevant to this qualification.
Attachment 2 – Daily / Pre-use Inspection Checklist

[NOTE – THIS FORM IS ALSO USED FOR DOCUMENTING QUARTERLY INSPECTIONS OF CRANES AND RIGGING RATED 3 TONS AND LESS.]

CRANE/HOIST ID: _______________ LOAD RATING __________________________

OPERATOR/INSPECTOR ________________________________________________

DEPT./OWNER: _______________ DATE/TIME ______________________________

DESCRIBE TASK/PLANNED LIFT: ________________________________________

____________________________________________________________________

____________________________________________________________________

Crane/Hoist Operator's Pre-use Checklist  (Three Tons or Less)

(Complete as appropriate)

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</tbody>
</table>

Quarterly Inspection or When Idle more than One Month.
(Addition to Daily/Pre Use Inspection)

<table>
<thead>
<tr>
<th>Pass</th>
<th>Fail</th>
</tr>
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<tbody>
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</tbody>
</table>

Functional operating mechanisms have been checked for excessive wear.
Readily accessible ropes, brakes, friction clutches, chain drives, and other parts subject to wear have been inspected.
Wire rope which has been idle for a period of a month or more due to shut down or storage of a crane is given a thorough inspection before it is placed in service. This inspection is for all types of deterioration and is performed by a qualified person whose approval is required for use of the crane.
Attachment 3 – Rigging and Equipment Inspection Criteria

To “Pass Inspection”, Departments must assure that all their “Below-the-Hook Lifting Devices” and associated rigging either are immediately removed from service for repair / replacement, or meet the following requirements:

Structural and Mechanical Lifting Devices

The rated capacity of each lifting device must be marked on the main structure where it is visible and legible. If the lifting device comprises several items, each detachable from the assembly, each lifting device must be marked with its rated capacity. At a minimum, a nameplate, name tag, or other permanent marker must be affixed displaying the following data:

- Manufacturer or contractor’s name if fabricated on-site
- Lifting device weight, if over 100 lbs
- Serial number (if available)
- Rated capacity
- Proof of inspection label by hoist and rigging inspector

Rigging Hooks

Marking
The manufacturer’s identification must be forged, cast, or die-stamped on a low-stress and non-wearing area of the hook.

Inspecting
The operator or qualified person must visually inspect hooks daily or prior to first use, or if the hook is not in regular service. If any of the following conditions are found, remove the hook from service:

- Cracks, nicks, gouges
- Deformation
- Damage from chemicals
- Damage, engagement, or malfunction of latch (if provided)
- Evidence of heat damage
- Wear
- Hook attachment and securing means

Slings

Wire Rope Sling Marking
- Wire-rope slings must be marked with the following information:
  - Name of trademark of manufacturer
  - Work load limit (WLL)
  - Diameter or size
  - Purchase order or serial number
Fabricating
Wire rope purchased to fabricate slings must be made in the United States by a member of Wire Rope Technical Board (except stainless steel). Stainless steel wire rope must be made in the United States and must be 302 or 304 grade stainless steel.

Inspecting
Wire-rope sling users must visually inspect all slings each day they are used or prior to use if the sling has not been in regular service (records are not required). Users must carefully note any deterioration that could result in an appreciable loss of original strength and determine whether further use of the sling would constitute a safety hazard. Slings must be immediately removed from service if any of the following conditions are present:

- Missing or illegible sling identification
- Ten randomly distributed broken wires in one rope lay or five broken wires in one strand in one rope lay
- Wear or scraping of one-third the original diameter of the outside individual wire
- Kinking, crushing, bird caging or any other damage resulting in distortion of the rope structure
- Evidence of heat damage
- End attachments that are cracked, deformed, or worn
- Corrosion of the rope or end attachments

Metal-mesh Slings

Inspecting
Metal-mesh slings must be visually inspected before each use. Metal-mesh slings must be removed from service if any of the following defects are present:

- A broken weld or brazed joint along the sling edge
- A broken wire in any part of the mesh
- Reduction in wire diameter of 25 percent due to abrasion or 15 percent due to corrosion
- Lack of flexibility due to distortion of the mesh
- Distortion of the female handle so the depth of the slot is increased by more than 10 percent
- Distortion of either end fitting so the width of the eye opening is decreased by more than 10 percent
- A 15 percent reduction of the original cross-sectional area of metal at any point around a handle eye
- Any distortion or twisting of either end fitting out of its plane
- Cracked end fitting
- Evidence of heat damage

Synthetic-web Slings

Marking
Hand written or ink embossed markings are not acceptable. Sling tags must be indelibly marked and the lettering must not wear off with use. The markings must remain legible for the life of the sling. Each sling must be marked with the following:

- Manufacturer's name or trademark
- Manufacturer's code or stock number
Type of synthetic web material
Rated loads for the type of hitches used

Inspecting
Synthetic-web slings must be visually inspected before each use. Slings must be removed from service if any of the following defects are visible:

- Acid or caustic burns
- Melting or charring of any part of the surface
- Snags, punctures, tears, or cuts
- Broken or worn stitches
- Wear or elongation exceeding the amount recommended by the manufacturer
- Distortion of fittings
- Knots in any part
- Missing or illegible sling identification

Synthetic Round-slings

Marking
Each polyester round sling must be permanently marked or labeled showing the following:

- Name or trademark of manufacturer
- Manufacturer’s code or stock number
- Rated capacities for the three basic hitches (vertical, choker, vertical basket)
- Core fiber type – if cover(s) is of a different fiber type, both fiber types must be identified
- Length (reach) – bearing point to bearing point
- Each manufacturer must internally identify their product with name or trademark for traceability

Inspecting
Synthetic round slings must be visually inspected before each use and may not exhibit any of the following in order to pass inspection:

- Missing or illegible sling identification
- Acid or caustic burns
- Melting or charring of any part of the surface
- Snags, punctures, tears, cuts or abrasive wear that expose the core yarns
- Broken or worn stitches in the cover which exposes the core yarns
- Wear or elongation exceeding the amount recommended by the manufacturer
- Stretched, cracked, worn, pitted or distortion of fittings
- Knots in any part

Alloy Steel-chain Slings
The following applies to slings made from grade 80 and 100 alloy chain manufactured and tested in accordance with National Association of Chain Manufacturers welded steel chain specifications – 1990. If chain other than this is used, it must be used in accordance with the recommendations of the chain manufacturer.

Marking
The following information may be stenciled or stamped on a metal tag or tags affixed to the sling. Where slings have more than one leg, ensure that the tag is affixed to the master link. Ensure that the working load does not exceed the rated capacity of the sling.

- Wire-rope slings must be marked with the following:
  - Size
  - Manufacturer’s grade
  - Rated load and angle on which the rating is based.
  - Reach
  - Numbers of legs
  - Sling manufacturer
  - Inspection due date label by hoist and rigging inspector

**Inspecting**

Steel-chain sling users must visually inspect all slings before they are used as follows:

- Conduct a link-by-link inspection for the following defects: nicks, cracks, gouges, wear, bent links, stretched links, shearing of links, cracks in any section of link, scores, abrasions, heat damage, rust, corrosion or markings tending to weaken the links. Reject damaged items.
- Check steel-chain slings for uneven lengths when sling legs are hanging free
- Check rings and hooks for bends, distortion, cracks in weld areas, corrosion, and scores, heat damage, or markings tending to weaken the links. Reject damaged items.
- Perform inspection on an individual-link basis. If any link does not hinge freely with the adjoining link, remove the assembly from service.
- Remove from service assemblies with deformed master links or coupling links.
- Remove from service assemblies if hooks have been opened more than 15 percent of the normal throat opening measured at the narrowest point or twisted more than 10 degrees from the plane of the unbent hook.
- Do not straighten deformed hooks or other attachments on the job. Assemblies with such defects must be reconditioned by the manufacturer or discarded.
- Remove from service assemblies with cracked hooks or other end attachments; assemblies with such defects must be reconditioned or repaired prior to return to service.
- Do not use homemade links, makeshift fasteners formed from bolts, rods, and the like, or other nonstandard attachments. Reject if discovered.
- Do not use makeshift or field-fabricated hooks on steel-chain slings. Reject if discovered.

**Rigging Hardware and Accessories**

**Eyebolts**

**Marking**

- Carbon steel eyebolts must have the manufacturer’s name or identification trademark forged in raised characters on the surface of the eyebolt.
- Alloy steel eyebolts must have the symbol “A” (denoting alloy steel) and the manufacturer’s name or identification mark forged in raised characters on the surface of the eyebolt.
• Eyebolts used for hoisting must be fabricated from forged carbon or alloy steel.
• Carefully inspect each eyebolt before use
• Visually inspect the hole to ensure that there has been no deformation
• Check the condition of the threads in the hole to ensure that the eyebolt will secure and the shoulder can be brought down snug
• Ensure that the shank of the eyebolt is not undercut and is smoothly radiused into the plane of the shoulder or the contour of the ring for non-shouldered eyebolts
• Destroy eyebolts that are cracked, bent, or have damaged threads

**Shackles**

*Marking*

Each shackle body must be permanently and legible marked in raised letters by the manufacturer. Raised or stamped letters on the side of the bow must be used to show the following:

- Manufacturer’s name or trademark
- Size
- Rated capacity, recommended safe working load
- Grade A shackles (regular strength), together with their pins and bolts must be forged from carbon steel.
- Grade B shackles (high strength) together with their pins and bolts must be forged from alloy steel.
- Shackle pins must fit freely (without binding), and seat properly

**Turnbuckles**

Turnbuckles may be used in slinging systems provided that they are engineered, designed, and approved as a part of the sling system. Approved turnbuckles must be marked and identified for use with the sling set for which they were designed and must be load-tested as part of the sling set.

*Marking*

- Manufacturer’s name or trademark and turnbuckle size must be permanently marked on the turnbuckle body.
- Eyebolts must be fabricated from forged alloy steel.
- Eyebolts must be provided with a jam nut of a type that does not depend upon deformation of the threads for security.
- Turnbuckles must be inspected for damage before each use. Damaged threads, jamb nuts, or bent frame members make the unit unsuitable for use.

**Links and Rings**

Links and rings are usually designed and manufactured as a part of the lifting hardware for a specific purpose, such as the peak link on multiple-leg slings. However, the rings and links may also be found on the load-attachment end of slings.

*Marking*

- Rings or links should be marked by the manufacturer with the manufacturer’s name or trademark and ring or link size.
- Rings must be forged or welded from low alloy steel.
• Welded rings or links must be subjected to a nondestructive weld test (NDT) and the results must be documented. (NDT is not required for forged rings or links.)

Swivel Hoist Rings

Marking
• Swivel hoist rings must have the manufacturer’s name or trademark, working load limit (WLL), and recommended torque value permanently marked (forged, stamped, or inscribed) by the manufacturer on the swivel hoist ring. Permanently attached metal tag bearing the same information may also be used.
• Check that swivel hoist rings for hoisting are be fabricated from forged carbon or alloy steel
• Inspect permanently installed hoist rings before each use to ensure free movement of bail and swivel
• Inspect swivel hoist rings thoroughly each before use
• Inspect the hole to ensure that there has been no deformation
• Check the condition of the threads in the hole to ensure that the hoist ring will secure and the bushing can be brought down for a snug fit
• Destroy hoist rings that are cracked, bent, have damaged threads, or do not operate freely

Wire Rope Clips (Clamps)

Marking
• Wire rope clips must be permanently and legibly marked with the size and manufacturer’s identifying mark.
## Attachment 4 – Equipment Inspection Forms

<table>
<thead>
<tr>
<th>Inspection Date</th>
<th>Inspector (print / sign name)</th>
</tr>
</thead>
</table>

### Structural and Mechanical Lifting Devices

<table>
<thead>
<tr>
<th>Each device displays the following: (List details below)</th>
<th>Accept</th>
<th>Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated capacity is marked and legible.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifting device weight,(if over 100 lbs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturer or contractor’s name if fabricated on-site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial number (if available)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proof of inspection label by hoist and rigging inspector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspection Date</td>
<td>Inspector (print / sign name)</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------------------</td>
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</tbody>
</table>

**Rigging Hooks**

The manufacturer’s identification is permanently marked. (List details below)

<table>
<thead>
<tr>
<th>Accept</th>
<th>Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Cracks, nicks, gouges
- Deformation
- Damage from chemicals
- Damage, engagement, or malfunction of latch (if provided)
- Evidence of heat damage
- Wear
- Hook attachment and securing means
<table>
<thead>
<tr>
<th>Inspection Date</th>
<th>Inspector (print / sign name)</th>
</tr>
</thead>
</table>

**Wire Rope Sling**

Wire-rope slings are marked with the following information:
(List details below)

<table>
<thead>
<tr>
<th>Accept</th>
<th>Reject</th>
</tr>
</thead>
</table>

- Name of trademark of manufacturer
- Work load limit
- Diameter or size
- Serial number

Slings must be immediately removed from service if any of the following conditions are present:

<table>
<thead>
<tr>
<th>Accept</th>
<th>Reject</th>
</tr>
</thead>
</table>

- Missing or illegible sling identification
- Ten randomly distributed broken wires in one rope lay or five broken wires in one strand in one rope lay
- Wear or scraping of one-third the original diameter of the outside individual wire
- Kinking, crushing, bird caging or any other damage resulting in distortion of the rope structure
- Evidence of heat damage
- End attachments that are cracked, deformed, or worn
- Corrosion of the rope or end attachments
Metal-Mesh Slings

Metal-mesh slings must be removed from service if any of the following defects are present:
(List details below)

<table>
<thead>
<tr>
<th>Accept</th>
<th>Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>A broken weld or brazed joint along the sling edge</td>
<td></td>
</tr>
<tr>
<td>A broken wire in any part of the mesh</td>
<td></td>
</tr>
<tr>
<td>Reduction in wire diameter of 25 percent due to abrasion or 15 percent due to corrosion</td>
<td></td>
</tr>
<tr>
<td>Lack of flexibility due to distortion of the mesh</td>
<td></td>
</tr>
<tr>
<td>Distortion of the female handle so the depth of the slot is increased by more than 10 percent</td>
<td></td>
</tr>
<tr>
<td>Distortion of either end fitting so the width of the eye opening is decreased by more than 10 percent</td>
<td></td>
</tr>
<tr>
<td>A 15 percent reduction of the original cross-sectional area of metal at any point around a handle eye</td>
<td></td>
</tr>
<tr>
<td>Any distortion or twisting of either end fitting out of its plane</td>
<td></td>
</tr>
<tr>
<td>Cracked end fitting</td>
<td></td>
</tr>
<tr>
<td>Evidence of heat damage</td>
<td></td>
</tr>
</tbody>
</table>
**Synthetic-web Slings**

Each sling is marked with the following:
(List details below)

<table>
<thead>
<tr>
<th></th>
<th>Accept</th>
<th>Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer’s name or trademark</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturer’s code or stock number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of synthetic web material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated loads for the type of hitches used</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Slings must be removed from service if any of the following defects are visible:

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid or caustic burns</td>
</tr>
<tr>
<td>Melting or charring of any part of the surface</td>
</tr>
<tr>
<td>Snags, punctures, tears, or cuts</td>
</tr>
<tr>
<td>Broken or worn stitches</td>
</tr>
<tr>
<td>Wear or elongation exceeding the amount recommended by the manufacturer</td>
</tr>
<tr>
<td>Distortion of fittings</td>
</tr>
<tr>
<td>Knots in any part</td>
</tr>
<tr>
<td>Missing or illegible sling identification</td>
</tr>
</tbody>
</table>
### Synthetic Round slings

<table>
<thead>
<tr>
<th>Inspection Date</th>
<th>Inspector (print / sign name)</th>
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</thead>
<tbody>
<tr>
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</tbody>
</table>

Each polyester round sling is permanently marked or labeled showing the following:
(List details below)

<table>
<thead>
<tr>
<th>Name or trademark of manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer’s code or stock number</td>
</tr>
<tr>
<td>Rated capacities for the three basic hitches (vertical, choker, vertical basket)</td>
</tr>
<tr>
<td>Core fiber type – if cover(s) is of a different fiber type, both fiber types must be identified</td>
</tr>
<tr>
<td>Length (reach) – bearing point to bearing point</td>
</tr>
<tr>
<td>Each manufacturer must internally identify their product with name or trademark for traceability</td>
</tr>
</tbody>
</table>

Slings are removed from service if any of the following defects are visible:

<table>
<thead>
<tr>
<th>Missing or illegible sling identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid or caustic burns</td>
</tr>
<tr>
<td>Melting or charring of any part of the surface</td>
</tr>
<tr>
<td>Snags, punctures, tears, cuts or abrasive wear that expose the core yarns</td>
</tr>
<tr>
<td>Broken or worn stitches in the cover which exposes the core yarns</td>
</tr>
<tr>
<td>Wear or elongation exceeding the amount recommended by the manufacturer</td>
</tr>
<tr>
<td>Stretched, cracked, worn, pitted or distortion of fittings</td>
</tr>
<tr>
<td>Knots in any part</td>
</tr>
</tbody>
</table>
### Alloy Steel-Chain, and Wire Rope Slings

Alloy Steel-chain slings must be marked with the following:
(List details below)

<table>
<thead>
<tr>
<th>Accept</th>
<th>Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td></td>
</tr>
<tr>
<td>Manufacturer’s grade</td>
<td></td>
</tr>
<tr>
<td>Rated load and angle on which the rating is based.</td>
<td></td>
</tr>
<tr>
<td>Reach</td>
<td></td>
</tr>
<tr>
<td>Numbers of legs</td>
<td></td>
</tr>
<tr>
<td>Sling manufacturer</td>
<td></td>
</tr>
<tr>
<td>Inspection due date label by hoist and rigging inspector</td>
<td></td>
</tr>
</tbody>
</table>

### Inspection

- Link-by-link inspection
- Uneven lengths when sling legs are hanging free
- Rings and hooks
- Deformed master links or coupling links.
- Hooks, twisted more than 10° or opened more than 15%.
- Hooks, Cracked
- Homemade links, makeshift fasteners formed from bolts, rods, and the like, or other nonstandard attachments.
- Makeshift or field-fabricated hooks on steel-chain slings.
### Shackles

Raised or stamped letters on the side of the bow show the following:
(List details below)

<table>
<thead>
<tr>
<th>Details</th>
<th>Accept</th>
<th>Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer’s name or trademark</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated capacity, recommended safe working load</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shackle pins fit freely (without binding), and seat properly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspection Date</td>
<td>Inspector (print / sign name)</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------------------</td>
<td></td>
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<tr>
<td></td>
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</tr>
</tbody>
</table>

**Eyebolts**

(List details below)

<table>
<thead>
<tr>
<th>Accept</th>
<th>Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- The manufacturer’s name or identification trademark is forged in raised characters on the surface of the eyebolt.
- There has been no deformation of the eye.
- The shank of the eyebolt is not undercut and is smoothly radiused into the plane of the shoulder or the contour of the ring for non-shouldered eyebolts.
- The threads are secure and the shoulder can be brought down snug.

**Turnbuckles**

(List details below)

<table>
<thead>
<tr>
<th>Accept</th>
<th>Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Manufacturer’s name or trademark and turnbuckle size is permanently marked on the turnbuckle body.
- Eyebolts are provided with a jam nut of a type that does not depend upon deformation of the threads for security.
- Damaged threads, jamb nuts, or bent frame.

Page 34 of 46
<table>
<thead>
<tr>
<th>Inspection Date</th>
<th>Inspector (print / sign name)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Links and Rings</strong></td>
<td><img src="image1" alt="Image of links and rings" /> <img src="image2" alt="Image of links and rings" /></td>
</tr>
<tr>
<td>Rings or links are marked by the manufacturer with the manufacturer's name or trademark and ring or link size.</td>
<td></td>
</tr>
<tr>
<td><strong>Wire Rope Clips</strong> (Clamps)</td>
<td><img src="image3" alt="Image of wire rope clips" /></td>
</tr>
<tr>
<td>Permanently and legibly marked with the size and manufacturer's identifying mark</td>
<td></td>
</tr>
<tr>
<td><strong>Swivel Hoist Rings</strong></td>
<td><img src="image4" alt="Image of swivel hoist rings" /> <img src="image5" alt="Image of swivel hoist rings" /></td>
</tr>
<tr>
<td>The manufacturer’s name or trademark, working load limit (WLL), and recommended torque value permanently marked (forged, stamped, or inscribed) by the manufacturer on the swivel hoist ring</td>
<td></td>
</tr>
<tr>
<td>Hoist rings have free movement of bail and swivel</td>
<td></td>
</tr>
<tr>
<td>There has been no deformation of the hole</td>
<td></td>
</tr>
<tr>
<td>The threads in the hole are in a condition that ensure that the hoist ring will secure and the bushing can be brought down for a snug fit</td>
<td></td>
</tr>
</tbody>
</table>
### Attachment 5 – Equipment Inventory

<table>
<thead>
<tr>
<th>Hoist</th>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Model Number</td>
<td>Serial Number</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Crane</th>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Model Number</td>
<td>Serial Number</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Structural and Mechanical Lifting Devices</th>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Model Number</td>
<td>Serial Number</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rigging Hooks</th>
<th>Type</th>
<th>Quantity</th>
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<tr>
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<td>Serial Number</td>
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<tr>
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<td>Serial Number</td>
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<th>Metal-Mesh Slings</th>
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<th>Quantity</th>
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<td></td>
</tr>
<tr>
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<td>Serial Number</td>
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<tbody>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Model Number</td>
<td>Serial Number</td>
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</table>

<table>
<thead>
<tr>
<th>Synthetic Round slings</th>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Model Number</td>
<td>Serial Number</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alloy Steel-Chain, and Wire Rope Slings</th>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Model Number</td>
<td>Serial Number</td>
</tr>
<tr>
<td>Shackles</td>
<td>Type</td>
<td>Quantity</td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
<td>----------</td>
</tr>
<tr>
<td>Eyebolts</td>
<td>Type</td>
<td>Quantity</td>
</tr>
<tr>
<td>Turnbuckles</td>
<td>Type</td>
<td>Quantity</td>
</tr>
<tr>
<td>Links and Rings</td>
<td>Type</td>
<td>Quantity</td>
</tr>
<tr>
<td>Swivel Hoist Rings</td>
<td>Type</td>
<td>Quantity</td>
</tr>
<tr>
<td>Wire Rope Clips (Clamps)</td>
<td>Type</td>
<td>Quantity</td>
</tr>
</tbody>
</table>
Attachment 6 – Crane / Hoist Certifying Agency – Vendor List

**Crane Inspection Service – Contracted through Facilities Management Department (FM) Compliance Officer**

*Preferred Aerial & Crane Technology*
*State of California Accreditation #337*
1121 E. Marshall Place  Long Beach, CA  90807
Phone: (562)988-1654
FAX: 562)988-1694
[batchelor@cs.com](mailto:batchelor@cs.com)

*MCA Engineers, Inc.*
*State of California Accreditation #327*
1721 Pacific Avenue Suite 160  Oxnard, CA  93033
Phone: (805)605-4165

*Fairweather Pacific, LLC*
*State of California Accreditation #376*
4567 Telephone Road  Ventura, CA  93001
Phone: (805)658-5600
FAX:

**Other Crane Inspection Services**

*Southwest Aerial & Crane Inspection Company*
*State of California Accreditation #376*
731 Tressy Avenue Glendora, CA  91740
Phone: (909)374-4584
Fax: (626)852-9632
[bobo123@earthlink.net](mailto:bobo123@earthlink.net)

*Tilley Crane Inspections*
*State of California Accreditation #33*
P. O. Box 28178  Anaheim, CA  92809
Phone: (714)970-1367
Fax: (714)970-1312
[tilleycrane@SBCGlobal.net](mailto:tilleycrane@SBCGlobal.net)
Attachment 7 – Annual Crane Inspection Form

If the crane has more than one hoist a separate annual inspection form is filled out for each hoist.

Crane Inspected ___________________ Load Rating ________________________________

Date ________________________________
If more than one hoist on the crane, specific hoist inspected:

1. Crane hooks have been inspected for the following:
   Cracks; Deformation of throat opening more than 15 percent in excess of normal opening; More than 10 degree twist from plane of unbent hook.

   The following hook(s) has been removed from service on this date:________________
   ____________________________________________________________________________

2. Wire ropes have been inspected for proper lubrication, excessive wear, broken strands, and proper reeving

   The following rope(s) has been removed from service on this date:__________________
   ____________________________________________________________________________

   Conditions such as the following are sufficient reason for replacement:

<table>
<thead>
<tr>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>In running ropes, 6 randomly distributed broken wires in one rope lay, or 3 broken wires in one strand in one lay.</td>
<td></td>
</tr>
<tr>
<td>Wear of 1/3 the original diameter of outside individual wires.</td>
<td></td>
</tr>
<tr>
<td>Kinking, crushing, bird caging, or other damage resulting in distortion of the rope structure.</td>
<td></td>
</tr>
</tbody>
</table>

   Evidence of any heat damage.

<table>
<thead>
<tr>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reductions from nominal diameter of more than:</td>
<td></td>
</tr>
<tr>
<td>1/64 inch for diameters up to 5/16 inch</td>
<td></td>
</tr>
<tr>
<td>1/32 inch for diameters 3/8 inch to 1/2 inch</td>
<td></td>
</tr>
<tr>
<td>3/64 inch for diameters 9/16 inch to 3/4 inch</td>
<td></td>
</tr>
<tr>
<td>1/16 inch for diameters 7/8 inch to 11/8 inch</td>
<td></td>
</tr>
<tr>
<td>3/32 inch for diameters 1 1/4 inch to 1 1/2 inch</td>
<td></td>
</tr>
</tbody>
</table>

   In standing ropes, more than 2 broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection.

   Reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wires.
3. Examination of structure or parts by electronic, ultrasonic, or other nondestructive methods has conducted by a State Certified agency if necessary.

State Certified Agency __________________________________________________________

Print Name of Inspector ______________________________________________________

Date of Inspection / Signature _____________/________________________________________

4. Wire rope which has been idle for a period of a month or more due to shut down or storage of a crane is given a thorough inspection before it is placed in service. This inspection is for all types of deterioration and is performed by a qualified person whose approval is required for further use of the rope.

Qualified person who conducted the inspection ______________________________________

Date of inspection / Signature _____________/________________________________________

Specific rope inspected __________________________________________________________
The UC Santa Barbara Crane Program assures compliance with Cal/OSHA regulations for Crane Safety. The program applies to any overhead lifting device that is attached to any building, research facility or equipment owned or operated by UC Santa Barbara, and to anyone who operates the device. Cal/OSHA requires load testing, equipment inspections, documented training for operators and standby persons for all types of cranes and hoists.

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What’s a Crane?
A machine for lifting or lowering a load and moving it horizontally, in which the hoisting mechanism is an integral part of the machine. It may be driven manually or be powered and may be a fixed or a mobile machine, but does not include stackers, industrial lift trucks, power shovels, backhoes, or excavators.

What’s a Hoist?
An apparatus for raising or lowering a load by the application of a pulling force, but does not include a car or platform riding in guides, a monorail or any other type of horizontal moving device. Note that a hoist is an integral part of any crane, but also may be used alone and not part of a crane.

Does this Program apply to my department?
If your department owns, uses, or has in place a crane or hoist of any load rating, whether in use or not used, then this Program applies to your department.

My department has a crane or hoist that is no longer used / needed. What do I have to do to comply with this program?
If your department owns but no longer uses a crane or hoist, upon request EH&S/General Safety staff will come out to your department and ‘lock out and tag out’ your crane / hoist so that it can no longer be used. If your department chooses to have this done, then inspections and load testing of the “moth-balled” equipment and rigging is no longer required by Cal-OSHA or this program. However, if the equipment is to be used again, it will need to be re-load tested and inspected by a Certificating Agency before use. Contact EH&S/General Safety at 893-5407 should you wish to ‘mothball’ your crane / hoist equipment.

Does this Crane Safety Program apply to the overhead lifting equipment your Department operates?
Equipment attached to building structure that lifts, or equipment that is mobile or moveable and lifts but is not classed as an “industrial lift truck”, rigging equipment selection, inspection, maintenance and use are all governed under this program. Learn more about equipment governed under this program by reviewing the “Types of Cranes / Hoists / Rigging” section of the program.
My Department has Lifting Equipment regulated by the Crane Safety Program. What do we do to implement the program?

1. Conduct an initial inventory of all crane / hoist equipment under Department ownership.
2. Determine which equipment stays ‘in use’ and which is to be permanently ‘locked out’ by EH&S/General Safety staff and / or disposed of.
3. Arrange for EH&S/General Safety staff to permanently ‘lock out’ unused crane / lift equipment or remove to “I believe this is now called Overstock and Surplus”.
4. Determine what program requirements apply to each piece of functioning equipment based upon lift capacity (≤3Ton or >3Ton).
5. Schedule with EH&S/General Safety staff and contact the Facilities management Department (FM) Compliance Officer. They will contract with a “Certificating Agency” an initial Inspection / Maintenance / Load Testing of your department’s equipment and rigging.
6. Identify “Qualified Operators and Stand-by Persons” within Department for training.
7. Schedule training of “Qualified Operators” with EH&S/General Safety staff.
9. Destroy and dispose of unwanted or damaged-beyond-repair lift equipment and rigging.
10. Set up and maintain Records of all Crane Safety Program activities.
11. For all Cranes / Hoists - Conduct quarterly documented inspections, and annual documented inspections.
12. For “Cranes Over 3 Ton Capacity” - Arrange for documented annual inspections and quadrennial load testing, and required maintenance which must be completed by a certified crane mechanic/contractor, also known as a ‘Certificating Agency’.

The crane is rated more than 3 tons. What do I have to do?
The Administrative Requirements section of the Crane Program describes how the crane’s Owner-Department must document the following activities for cranes rated more than 3-tons:

- Schedule an initial load test performed by a Certificating Agency through the FM Compliance Officer.
- Perform daily (or before use) inspections (Attachment 2).
- Perform thorough quarterly in-house inspections (Attachment 2 & Attachments 4).
- Arrange for annual certification-inspection by a Certificating Agency (this can serve as one of the quarterly inspections and documentation is provided by the Certificating Agency). This is contracted for by the FM Compliance Officer.
- Arrange for quadrennial load tests by a Certificating Agency by contacting the FM Compliance Officer. (This can serve as one of the quarterly and annual inspections and documentation is provided by the Certificating Agency).
- Remove deficient cranes from service until they are repaired.
- Identify Owner-Department person(s) who are “Qualified Operators” to inspect and operate cranes.
- Assure “Qualified Operators” are properly trained on crane safe-work practices and procedures according to the program training requirements.
- Maintain records of program activities relating to each Department-Owned crane.
The Crane is rated three tons (or less). What do I have to do?

The Administrative Requirements section of the Crane Program describes how the crane’s Owner-Department must document the following activities for cranes rated 3-tons or less:

- Arrange for an initial load test performed by a Certificating Agency through the FM Compliance Officer.
- Perform daily (or before use) inspections (Attachment 2).
- Perform thorough quarterly in-house inspections (Attachment 2 & Attachments 4).
- Remove deficient cranes from service until they are repaired.
- Identify Owner-Department person(s) who are "Qualified Person(s) to inspect and operate cranes.
- Assure “Qualified Operators” are properly trained on crane safe-work practices and procedures according to the program training requirements.
- Maintain records of program activities relating to each Department-Owned crane.

If we only have a hoist, what do we have to do?

- Perform daily inspections each day the hoist is used (Attachment 2).
- Remove deficient hoists from service until they are repaired.
- Identify Owner-Department person(s) who are "Qualified Person(s) to inspect and operate hoists.
- Assure “Qualified Operators” are properly trained on hoist safe-work practices and procedures according to program training requirements.
- Maintain records of program activities relating to each Department-Owned hoist.

What if we want the Crane or Hoist to be load-rated for more or less weight than its manufactured load-rating?

Any crane or hoist may be ‘derated’ to a lesser load rating, but deration must be done by a Certificating Agency with appropriate documentation kept on file. The derated load-rating must be plainly posted on the lifting-device with permanent signage.

If the load rating is to be increased beyond the manufactured load rating, such a system must be engineered by a structural engineer who signs-off and ‘stamps’ the higher load-rating for the lifting-device. The re-engineered system must be load-tested by a Certificating Agency with appropriate documentation kept on file. The higher-rated load-rating must be plainly posted on the lifting-device with permanent signage. Significant cost in engineering / rebuilding the crane or hoist and its support structure are likely to be incurred to re-rate a crane / hoist system to a higher load capacity than originally designed.
Who do I contact for Load Testing?
Each Owner-Department is responsible to assure their cranes / hoists are current in certification / inspection by contracting with a Cal-OSHA approved “Certificating Agency”. This is contracted for by the FM Compliance Officer upon receiving a request from the owner department. Initial load testing (all cranes / hoists), and annual inspection services combined with quadrennial load testing (for cranes larger than 3-tons) must be performed by a Cal/OSHA qualified Certificating Agency. See Attachment 6 of the Crane Program for a list of Crane Inspection Certificating Agencies approved by EH&S for campus use.

What about Rigging?
“Below-the-Hook” rigging requires quarterly documented inspections by trained “Qualified Person(s)”, must be inventoryed, and must have a load rating label on the device by the manufacturer. This process may be documented using Attachments 3, 4, and 5.

Who needs to be trained?
“Qualified Person(s) and Stand-by Persons” must be trained on the safe use and inspection of the crane/hoist(s) they work with through a documented training process. As an option, a person may be designated “Qualified Operator” by their supervisor, PI, or Department Manager who have the qualifications and experience themselves to understand the hazards associated with the lift equipment, and the “Qualified Operator’s” skills / knowledge to safely work around those hazards. Either way, a “Qualified Operator” is documented by completing Attachment 1 and keeping it in the person’s file and the crane log book.

Who do I contact to provide training / program support?
Operator Training can be conducted by EH&S or a contractor. Contact the EH&S/General Safety staff @ 893-5407, for scheduling EH&S training, finding a qualified trainer, or to seek other program support.

How are Crane Equipment, Rigging Inspections and Load Testing arranged to be done by a “Certificating Agency”? 

1. The Facilities Management Department (FM) Compliance Officer funds and contracts with vendors for all required load testing / inspection, and maintains documentation of the inspections.

2. The FM Compliance Officer will contact departments when a crane / rigging inspection need is identified. The FM Compliance Officer will coordinate with departments to schedule inspections and load testing by an EH&S-approved certified crane inspection contractor at a time convenient for the department’s planned use of the crane / hoist.
3. EH&S/General Safety staff partners with the crane-owner department to guide inspections / load testing, and is on site for initial inspection and load testing along with the department’s responsible person.

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