

FESHM 10130: SLINGS AND RIGGING HARDWARE

Revision History

Author	Description of Change	Revision Date
Marcel Borcean	Added responsibilities of FESS/FM CRANES for oversight of inspection and repair program.	June 2018
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1.0 INTRODUCTION AND SCOPE

This chapter covers use, inspection and maintenance of purchased slings and rigging hardware for attaching loads to hoists. Devices that are designed and fabricated for a specialized use are covered in [FESHM 10110](#).

This chapter applies to all purchased slings and rigging hardware used at Fermilab and in Fermilab leased spaces, as well to any work and individuals at Fermilab or in Fermilab leased spaces involved with hoisting and rigging activities.

2.0 DEFINITIONS

There are a number of different definitions associated with slings and rigging hardware. ASME B30.9 Section 9-0.2 Definitions should be consulted for a complete list of related terminology and definitions.

Further definitions and terminology are contained in the standards and/or manuals listed below:

- ASME B30.9 - Slings
- ASME B30.20 – Below-the Hook Lifting Devices
- ASME B30.26 – Rigging Hardware
- OSHA 1910 and 1926
- Fermilab ES&H Manual FESHM 10130

Rigging Qualified Person – A person, who by possession of a recognized degree or certificate of professional standing in applicable field, or who by extensive knowledge, rigging training and experience has successfully demonstrated the ability to solve or resolve problems related to rigging and associated rigging work.

3.0 RESPONSIBILITIES

3.1 Division/Section Heads and Project Managers (D/S/P):

- Assuring, through the line management, that employees assigned to perform rigging or crane operation duties are qualified to perform the work assigned. Successful completion of crane training is necessary, but not necessarily sufficient, to deem a person qualified to perform all rigging and crane operation tasks.
- Report new purchases for addition into the inventory to the crane office or new equipment entry in FID.
- Provide an inventory and inspection documentation to FESS Crane Office of all slings.
- Ensuring that all slings and rigging hardware within their areas of responsibility are available for inspection, testing, maintenance, and repairs as required in this document.

3.2 Chief Safety Officer:

- Providing consultation services to D/S Heads and Project Managers regarding safety of operations and training opportunities.

- Auditing D/S/Ps for compliance with this chapter. This may be accomplished through the Tripartite ES&H Assessment process.

3.3 Mechanical Safety Subcommittee:

- Servings in a consulting capacity on all slings.

3.4 Facilities Engineering Services Section:

- Maintaining a Slings and Rigging Hardware inspection service and associated records related to testing, inspection, and repair of the Slings and Rigging Hardware. This includes the distribution of related reports to the landlord D/S/P or their designee if needed.
- FESS will maintain a database of all FERMI owned slings/rigging hardware.
- Arranging for qualified contractor or subcontractors to perform annual inspections, testing, maintenance and repair. FESS will provide oversight of the contractor or subcontractor.

4.0 PROGRAM DESCRIPTION

4.1 Manufacture

1. Slings and rigging hardware shall be manufactured to comply with the applicable sections of ASME B30.20, ASME B30.26, and ASME B30.9.
2. Identification shall be a part of the manufacturing process.
 - a. Each sling shall be marked per B30.9 to show the following:
 - Name or trademark of manufacturer
 - Rated loads for the type of hitch used and the angle upon which it is based
 - Diameter or size of sling
 - b. Rigging hardware shall be marked per B30.26, including manufacturer's name or trademark, size or rated load. See B30.26 for marking requirements of specific hardware types.

Note: Hardware labeled with only country of origin does not comply with this standard.

4.2 Use

1. All slings and rigging hardware shall be used in accordance with the latest editions of ASME B30.20, ASME B30.26, ASME B30.9, OSHA and the Fermilab ES&H Manual.
2. Slings and rigging hardware that appear to be damaged will not be used for any reason. They are to be destroyed and discarded. Equipment should be returned to FESS Crane office for destruction and removal/final disposition from the database.
3. All slings shall be assigned unique identifying IDs by the responsible D/S/P to facilitate sling inspections. All slings shall legibly display the ID as well as the manufacturer's load rating tag or be removed from service. All sling ID information shall be recorded on inspection documents.
4. The rigging qualified person/operator is responsible for ensuring the sling identification is legible and shows the rated capacities for each type of hitch (vertical, basket and choke), prior to each use.

5. Refer to ASME B30.20, ASME B30.26, ASME B30.9 for further information on use and maintenance.

4.3 Inspection

1. Inspections, inventory and maintenance of slings are the responsibility of the D/S/P sling owner. The D/S/P has the option to choose to have FESS/FM Crane Office provide the service. If the FESS/FM Crane Office is selected to conduct the inspections, the D/S/P will make slings available to the inspector on the agreed upon date. Ample notice is required if there is a need to change the inspection method. All documentation must be submitted to FESS/FM Crane Office for either method.
2. All slings and rigging hardware are to be visually inspected prior to every use by the operator (29 CFR 1910.184(d)). Documentation of pre-use inspections is not required.
3. Documented inspections shall be conducted on all slings (ASME B30.9) by a trained, designated person. Links to the inspection forms are provided below in Section 5 of this chapter. FESS/FM Crane Office will provide color coded inspection tags to the division or the contractor performing the inspection. The color-coded inspection tags will be specific to that year of inspection. If the color-coded inspection tag is missing or if the current year color not applied, the equipment should not be used and should be returned back to the D/S/P for re-inspection and tagging. Inspections shall occur at least annually or more frequently dependent upon:
 - frequency of use,
 - severity of service conditions,
 - nature of lifts being made, and
 - experience gained on the service life of slings used in similar applications,
4. Requirements for pre-use and periodic inspection of slings are contained in ASME B30.9 and 29 CFR 1910.184.
5. When rigging hardware is in a condition that is questioned by the inspector, a conservative disposal policy should be utilized and the item in question destroyed and discarded.
6. On occasion, a particular piece of equipment will come with its own rigging. It is permissible to use this rigging as long as the per use and annual inspection criteria is utilized for this equipment.

4.4 Maintenance

Slings and rigging hardware shall be stored in an area where they will not be subjected to mechanical damage, corrosive action, moisture, and extreme temperatures or kinking. Some slings, when stored in extreme temperatures will experience reduced performance. Further consideration should be made with regard to storage and use in extreme conditions.

5.0 FORMS

There are two inspection forms to be used for documenting inspection of slings:

- [Web Sling Inspection Form](#)
- [Wire Rope Sling Inspection Form](#)

These forms can be found on the ESH&Q website or the ESH&Q DocDB using the hyperlinks above.