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2-9 SLINGS

2-9.1 Scope

This Hanford Site Hoisting and Rigging Manual (HSHRM) chapter applies to the fabrication, attachment, use, inspection, and maintenance of slings used for lifting purposes. The proper and safe use of slings is governed by the American Society of Mechanical Engineers (ASME) standards and the Occupational Safety and Health Administration (OSHA) regulations. This section implements required criteria from DOE/RL-92-36, and the following standards: ASME B30.9, *Slings*, OSHA 29 CFR 1910.184, *Slings*, and OSHA 29 CFR 1926.251, *Rigging Equipment for Material Handling*. Slings are used in conjunction with lifting equipment described in other chapters of this HSHRM. This chapter implements required criteria from applicable national standards and/or mandatory federal specifications, specifically ASME B30.9, *Slings*.

2-9.2 Accessing Requirements

- a. To access ASME standards, choose one of the following options:
 - [IHS Engineering Standards, Regulations and Technical Specifications](#). The contractor must have paid for access to the specific standard.
 - Purchase standards directly from [ASME](#).
- b. To access OSHA standards, go to:
 - [OSHA 29 CFR 1910.184, Slings](#)
 - [OSHA 29 CFR 1926.251, Rigging Equipment for Material Handling](#)

2-9.3 Implementation

Contractors shall be compliant with OSHA, ASME, this HSHRM, and manufacturers' requirements. Users of this Manual are responsible to implement all applicable requirements. If standards conflict, the user shall adhere to the standard containing the most stringent requirements. In most cases, ASME standards provide the most comprehensive information.

Users should contact a Hanford Hoisting Rigging Committee (HHRC) representative or send an [email](#) requesting a formal interpretation. See Chapter 1-10 for the process to be followed. Notify the HHRC if any inconsistent standards are identified.

This HSHRM does not intend to require retrofitting of existing equipment. However, when any hoisting or rigging equipment is modified, its performance requirements shall be reviewed relative to the requirements within the current HSHRM. The need to meet the current requirements shall be evaluated by a qualified person selected by the owner (user).

2-9.3.1 Temperature Limitations

The working temperature limits listed below (Table 1) shall not be exceeded without the manufacturer's written approval.

Table 1: ASME B30.9 Temperature Limits By Sling Type

| Sling Type | Temperature Limit |
|--------------------------------|---|
| Synthetic Rope Slings | - 40°F to 194°F |
| Synthetic web and round slings | - 40°F to 194°F |
| Wire rope slings | Fiber core - 40°F to +180°F IWRC - 40°F to +400°F |
| Alloy steel chain slings | - 40°F to +400°F |
| Metal mesh slings | -20°F to +550°F |
| Elastomer coated Slings | 0°F to 200°F |
| High-performance round slings | Follow manufacturer's instructions for temperature range |

2-9.4 Sling Protection

Steel slings should be protected from potential damage. Synthetic slings in contact with edges, corners, or protrusions shall be protected from cutting or damage with load-rated cut protection. The load rating must be determined by the cut protection product manufacturer or a qualified person. See ASME B30.9 Nonmandatory Appendix A for guidance.

2-9.5 Hanford Specific Requirements and Practices

2-9.5.1 Prohibited Sling Applications

Slings with eyes formed by folding back the rope (not a Flemish eye loop) and secured with one or more metal sleeves pressed (not forging) over the wire rope junction are prohibited for lifting service.

2-9.5.1.1 Pre-Use Inspection

Prior to use, slings shall be inspected and verified that the periodic inspection is current.

2-9.5.1.2 Sling Identification

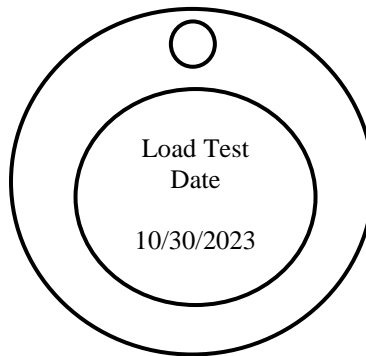
Slings used at Hanford shall have permanently affixed and legible identification markings as prescribed by the manufacturer and that indicate the recommended safe working load for the type(s) of hitch (es) used the angle upon which it is based, and the number of legs if more than one.

2-9.5.2 Inspection and Testing Documentation

2-9.5.2.1 Proof Testing

All slings shall be proof tested (load tested) prior to initial use by the manufacturer or user. Proof test date shall be marked on the sling. Proof test shall never be less than minimum requirements defined in ASME B30.9, *Slings*. A tag indicating date of load test may be affixed to the device for filed verification. See an example in Figure 1.

Figure 1: Example Of A Load Test Tag



2-9.5.3 Periodic Inspections

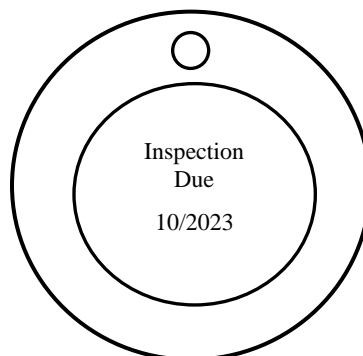
The periodic inspection for all sling types used at Hanford shall be documented by any one of the following methods:

1. Mark a serial number on the sling and maintain inspection records by serial numbers.
2. Institute a comprehensive marking program (such as color coding) to indicate when the next inspection is required.
3. Mark each sling with a tag that indicates when the next periodic inspection is required. This tag becomes the record.

2-9.5.3.1 Periodic Inspection Record Tags

A periodic inspection tag (like the example shown in Figure 2) or a mark on each sling is required to document the inspection, in addition to the other sling identification requirements for each sling type prescribed by ASME B30.9, *Slings*.

Figure 2: Example Of A Periodic Inspection Tag



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