



EM 385-1-1, 2008

Change #5

Major Changes and Rationale

Section 15, Rigging



## Major Changes and Rationale, Change #5 (EM 385-1-1, Section 15, Rigging)

- Para. 15.A.01.c: change wording from “safe working load” to “rated capacity”
  - Falls in line with ASME standards; clearer
- Para. 15.A.05: Speaks about when lifting, that the hook shall be a closed hook but refers you now to 15.H.07.c, which discusses the use of miscellaneous type hooks (sorting, pelican, etc)
  - We get a lot of questions asking if open sorting hooks, or Pelican hooks, etc can be used. Most people read 15.A.05 and don’t ever get to 15.H.07.c. It’s just an easy reference.
- Para. 15.A.07: “Custom designed grabs, hooks, clamps and other lifting accessories...shall be marked to indicate the rated capacity (see above terminology) and shall be proof tested before initial use, to 125% of their rated load.”
  - Word “initial” inserted to clarify that they only have to be load tested to 125% once, prior to the very first time they are used.
- Para. 15.A.08: “Structural and mechanical lifting devices shall be; designed, tested and used in accordance with ASME B30.20, Below the Hook Lifting devices.”
  - New Requirement to clarify requirements for this equipment; identifies the industry standard and indicates that this equipment is held to a standard.



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- Deleted current 15.B.01, which stated that the “Rigging Lift Supervisor” shall also meet the requirements of this section.
  - We felt it was understood that the Rigging Lift Supervisor would also meet requirements for Qualified Rigger.
- Para.15.B.01, new: “Be able to communicate effectively with the crane operator, the lift supervisor, signal person, and affected personnel on site;”
  - Changed “flagman” to “signal person” due to OSHA terminology; changed “employees” to “personnel” which is not as limiting, includes anyone on site, not just employees.
- Para. 15.B.01.c: “Have basic knowledge and understanding of equipment operating characteristics, capabilities and limitations and one whose competence in this skill has been demonstrated through training and experience satisfactory to management personnel. Prior to the specific activity or task documentation of rigger qualifications shall be provided to the GDA. >NOTE: The term “rigger” or “qualified rigger” in this manual refers to the function performed, and in no way relates to the worker’s job classification or position.”
  - Requires *demonstrated* training and experience; Rigger qualifications are to be submitted and accepted by GDA which further indicates that this individual MUST meet certain criteria to act in this capacity. Last statement clarifies that the function is not to be confused with the activity of rigging.



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- Para 15.B.02, add the following: “In addition, Qualified Riggers shall be able to demonstrate knowledge and proficiency to appropriate management personnel in the following:
  - a. Personnel roles and responsibilities;
  - b. Site preparation (terrain, environment);
  - c. Rigging equipment and materials;
  - d. Safe Hoisting Equipment Operating procedures;
  - e. Principles of safe rigging;
  - f. Environmental hazards (overhead interferences);
  - g. Rigging and handling the load;
  - h. Identification of hoisting-related hazards;
  - i. The hazards associated when employee is required to be in the fall zone to handle a load.”
    - The additional wording provides clarification of the areas that a qualified rigger should be able to demonstrate knowledge and skill in – hazard identification is key to successfully performing their mission.



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- Para 15.D.03, added the following:

“Wire rope clips attached with U-bolts shall have the U-bolts on the unloaded (dead) or short end of the rope. The clip nuts shall be retightened immediately after initial load carrying use and at periodic intervals thereafter. > **See Figure 15-1.** Use only wire rope clips made from forged steel of the single-saddle (U-bolt) or double-saddle type clip. Do not use malleable cast-iron clips with wire ropes utilized for hoisting. Refer to the clip manufacturer or a qualified person for spacing, number of clips and torque values.”

- “frequent” changed to “periodic” as standard wording for inspections; New wording comes from ASME industry standards;
- Delete Table 15-1, # Clips and Proper Torque Values
  - Wording above requires the clip manufacturer or a QP should determine the number of clips, spacing and torque values and it would be more specific/current to consult their information than place a table in the EM 385-1-1.



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- Para 15.F (and throughout 15.F): Changes from “Fiber Rope (Natural and Synthetic)” to Synthetic Rope Slings.
  - Updated terminology which meets industry wording.
- Para 15.F.02: Synthetic rope slings shall not be used if frozen. When using synthetic rope slings in chemically active or excessively hot environments, consult with the sling manufacturer or Qualified Person.
  - Changed wording to match industry standards and manufacturer recommendations. Rather than just prohibiting use if it has been subjected to acids or excessive heat, a QP can make a determination as to whether it can be used based on manufacturer recommendation.
- Para 15.H.06.c, change wording: “Shackles shall be inspected visually by the user (or other designated person) prior to each use and periodically.”
  - Corrected a typo; added requirement for “frequent” inspection by the user (prior to each use) per the ASME. For semi-permanent and inaccessible locations where frequent inspection are not feasible, they shall have periodic inspections performed.



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- Para 15.H.10.f, delete “Eyebolts shall only be loaded in the plain of the eye and shall not be loaded at angles of less than 45 degrees to the horizontal.”; Change 15.H.10.g to 15.H.10.f: “Shoulderless eye bolts shall not be loaded at an angle.”
  - The deleted requirement was limiting in that some manufacturers allowed loading at less than 45 degrees. This was confusing. It was removed and the next paragraph put in its place – which was a much stronger statement.
- Appendix Q, Add new definition: “**Rated Capacity (rated load):** the maximum allowable working load established by the rigging hardware manufacturer. The terms “rated capacity” and “working load limit” are commonly used to describe rated load.”
  - This definition is the current terminology in the ASME standards and this simplifies several terms used.