

Question; Does OSHA require that a lifting beam or spreader beam be engineered and tested??

Below is a letter of interpretation and a page from the ASME standard dealing with this subject if you have any questions please Call Steve at 518-465-3461

June 26, 2002

Mr. Gary Dunbar  
PDQ Tool Services, Inc.  
616 Naval Base Road, Suite 101  
Norfolk, Virginia 23505

Dear Mr. Dunbar:

Thank you for your August 1, 2001 letter to the Occupational Safety and Health Administration (OSHA), which was received in OSHA's Directorate of Compliance Programs (DCP) Office of General Industry Compliance Assistance (GICA) on April 23, 2002. In your letter, you had questions regarding below-the-hook lifting devices used in foundries. Your questions have been restated below for clarity.

**Question 1:** Are crucibles exempt from load testing requirements due to their unusual design?

**Reply:** Depending on the design, crucibles may be a component part of a below-the-hook lifting device. The American Society of Mechanical Engineers (ASME) B30.20 Below-The-Hook Lifting Devices Standard contains standards on the design, maintenance, and inspection of below-the-hook lifting devices. OSHA may apply its General Duty Clause, Section 5(a)(1) of the Occupational Safety and Health Act, if a hazard exists. OSHA would consult ASME B30.20 or other recognized engineering design, maintenance or inspection criteria in determining whether a hazard exists. The crucible itself needs to meet good engineering design and construction. Please consult with the crucible manufacturer to determine appropriate replacement parts and testing requirements.

**Question 2:** Can one worker operate the hoist and the crucible mechanism to pour the molten metal into the molds?

**Reply:** Whether one worker could accomplish this task would depend on several factors such as the design of the crucible mechanism, the crane/hoist device and controllers, etc. For instance, 29 CFR 1910.179(n)(3)(x) states, *"the employer shall insure that the operator does not leave his position at the controls while the load is suspended."*

Therefore, if the operator must leave an overhead or gantry crane control position to pour the molten metal, then that action would be a violation of that particular standard.

**Question 3:** With the absence of any manufacturing markings or capacity rating, what are the minimum allowable inspection and load tests for non-engineered below-the-hook lifting devices?

**Reply:** Non-engineered devices should not be used - only those devices which meet good engineering design, construction, inspection, and use should be used. Please consult ASME B30.20 Below-The-Hook Lifting Devices Standard or other recognized consensus standards for the appropriate design, maintenance, and inspection of below-the-hook lifting devices.

As you may know, the state of Virginia operates its own occupational safety and health program under a plan approved by federal OSHA. While its standards must be "at least as effective" as the federal regulations, they may also be more stringent. In order to obtain Virginia's guidance on this issue, you should contact Commissioner C. Ray Davenport at:

Virginia Department of Labor and Industry  
Powers-Taylor Building  
13 South 13th Street  
Richmond, Virginia 23219  
Phone: (804) 786-9873  
Fax: (804) 371-6524

Thank you for your interest in occupational safety and health. We hope you find this information helpful. OSHA requirements are set by statute, standards and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov>. If you have any further questions, please feel free to contact the [Office of General Industry Enforcement] at (202) 693-1850.

Sincerely,

Richard E. Fairfax, Director  
Directorate of Compliance Programs

## Chapter 20-1 Structural and Mechanical Lifting Devices

### SECTION 20-1.1: SCOPE

Chapter 20-1 applies to the classification, marking, construction, installation, inspection, testing, maintenance, and operation of structural and mechanical lifting devices. Within Chapter 20-1, the structural and mechanical lifters/lifting devices are categorized as supporting lifters, indentation-type pressure-gripping lifters, and friction-type pressure-gripping lifters.

### SECTION 20-1.2: MARKING, CONSTRUCTION, AND INSTALLATION

#### (06) 20-1.2.1 Marking

(a) *Rated Load.* The rated load of the lifting device shall be legibly marked on the main structure or on a tag attached to it where it is visible. If the lifting device is made up of several lifters, each detachable from the group, these lifters shall also be marked with their individual rated loads.

(b) *Identification.* All new structural and mechanical lifting devices shall be marked with, but not limited to, the following information:

- (1) manufacturer's name and address
- (2) serial number
- (3) lifter weight, if over 100 lb (45 kg)
- (4) cold current (amps) (when applicable)
- (5) rated voltage (when applicable)
- (6) rated load [as described in para. 20-1.2.1(a)]
- (7) ASME BTH-1 Design Category
- (8) ASME BTH-1 Service Class

(c) *Repaired or Modified Lifters.* All repaired or modified structural and mechanical lifters shall be provided with identification displaying, but not limited to, the following information:

- (1) name and address of the repairer or modifier
- (2) repairer's or modifier's unit identification
- (3) lifter weight (if altered)
- (4) cold current (amps) (if altered)
- (5) rated voltage (if altered)
- (6) rated load (if altered) [as described in para. 20-1.2.1(a)]

(7) ASME BTH-1 Design Category (if altered)

(8) ASME BTH-1 Service Class (if altered).

#### (d) *Product Safety Labels*

(1) Where size and shape of the lifter allow, all lifters shall have labels, affixed to them in a readable position, that include the appropriate signal word,

according to ANSI Z535.4-1998 (4.13), to bring the label to the attention of the operator. The label should include cautionary language to provide danger, warning, or caution notice to operators and others against

- (a) exceeding the rated load, or lifting loads not specified in the instruction manual
- (b) operating a damaged or malfunctioning unit, or a unit with missing parts
- (c) lifting people
- (d) lifting suspended loads over people
- (e) leaving suspended loads unattended
- (f) removing or obscuring warning labels
- (g) operating without having read and understood the operating manual
- (h) not staying clear of the suspended load
- (i) lifting loads higher than necessary
- (j) making alterations or modifications to lifter

(2) Where size or shape of the lifter prohibits the inclusion of all or any such markings, a label shall be affixed, referring user to consult manufacturer's instruction manual for product safety information.

#### 20-1.2.2 Construction (06)

The manufacturer shall verify that structural and mechanical lifting devices are designed by or under the direct supervision of a qualified person. The design shall be in accordance with ASME BTH-1 and shall consider the stresses resulting from the application of rated load plus the weight of the lifting device.

Structural and mechanical lifting devices shall be designed to ASME BTH-1 Design Category B (static strength criteria) and the proper Service Class (fatigue life criteria) selected for its number of load cycles, unless a qualified person representing the owner, purchaser, or user of the lifting device determines and can demonstrate that ASME BTH-1 Design Category A is appropriate.

Design Category A shall only be designated when the magnitude and variation of loads applied to the lifter are predictable and do not exceed the rated capacity, where the loading and environmental conditions are accurately defined, service is not severe, and the anticipated number of load cycles does not exceed Service Class 0.

(a) *Welding.* All welding shall be in accordance with ANSI/AWS D14.1 and ASME BTH-1.

(b) *Guards for Moving Parts.* Exposed moving parts, such as, but not limited to, gearing, projecting shafts,