

STATE OF CALIFORNIAGavin Newsom, *Governor*

DEPARTMENT OF INDUSTRIAL RELATIONS
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September 12, 2019

Reef Mowers
5330 Alta Bahia Court
San Diego, CA 92109

RE: Title 8 regulations regarding slings, knuckle-boom cranes and lifting equipment
Dear Mr. Mowers,

Federal OSHA forwarded two letters, dated May 21, 2019, that they received from you and asked Cal/OSHA to address your questions. In your letters, you provided photographs and detailed descriptions, and requested clarification about (1) the use of polyester slings in caustic environments; (2) the application of crane regulations to knuckle-boom crane operations; and (3) whether synthetic slings are considered "below-the-hook equipment."

In your letters, you asked the following three questions:

Question 1

Would 'synthetic' material handling bags equipped with lifting straps, used to hoist liquid and solid concrete washout waste and other debris around job-sites that are exposed to vapors and caustic substances, be applicable to OSHA sections such as the ones listed below?

1910.184(i)(6)

Environmental conditions. When synthetic web slings are used, the following precautions shall be taken:

1910.184(i)(6)(i)

Nylon web slings shall not be used where fumes, vapors, sprays, mists or liquids of acids or phenolics are present.

1910.184(i)(6)(ii)

Polyester and polypropylene web slings shall not be used where fumes, vapors, sprays, mists or liquids of caustics are present.

Response to Question 1

The regulations you reference are federal OSHA regulations contained within Title 29 of the Code of Federal Regulations (CFR). As such, Cal/OSHA does not have the authority to provide clarification for these specific regulations. However, those same requirements are contained in the California Code of Regulations, title 8, subsections 5048(f)(1) and 5048(f)(2) within Article 101 of the title 8 General Industry Safety Orders. Pursuant to subsection 1616.1(aa), the use of slings with cranes and derricks in construction must comply with Article 101 of the General Industry Safety Orders.

§1616.1. Operation.

* * * * *

(aa) The use, care and maintenance of slings shall be in accordance with General Industry Safety Orders, Group 13, Article 101.

Subchapter 7. General Industry Safety Orders
Group 13. Cranes and Other Hoisting Equipment
Article 101. Slings

§5048. Synthetic Web Slings.

* * * * *

(f) Environmental Conditions. When synthetic web slings are used, the following precautions shall be taken:

- (1) Nylon web slings shall not be used where fumes, vapors, sprays, mists or liquids of acids or phenolics are present.
- (2) Polyester and polypropylene web slings shall not be used where fumes, vapors, sprays, mists or liquids of caustics are present.

The lifting straps of the material handling bags you describe are considered slings and section 5048 would apply. Straps made from polyester or polypropylene are prohibited when caustic vapors, sprays, mists or liquids are present.

According to Safety Data Sheets (SDS) from CEMEX and Redi-Mix, the pH of liquid concrete is in the range of 12 to 13, which is considered caustic. However, through the process of carbonation, the pH of concrete will return to a neutral level of seven over time. Additionally, when liquid concrete is mixed with water, as in concrete washout, the pH could be considerably higher than 12 or 13. Therefore, you must test the pH of the liquid washout to determine whether slings are exposed to caustic substances. If you determine the washout is caustic, polyester and polypropylene web slings must not be used if they are exposed to any fumes, vapors, sprays, mist, or liquid of the washout.

Question 2

“Would an articulating knuckle boom truck crane, equipped with an automatic overload protection device, and used to hoist steel containment pans containing concrete liquids and solid waste from construction sites be covered by the crane standard?”

Response to Question 2

The California Code of Regulations, title 8 that apply to the operation of articulating “knuckle boom” cranes are found in both Group 13 of the General Industry Safety Orders and Article 15 of the Construction Safety Orders. The regulations of either of these subchapters could apply, depending on the type of work performed.

Question 3

“Would steel equipment containment pans hoisted with liquid and solid materials be considered ‘below-the-hook’ equipment and or require any labeling for rigging compliance?”

Response to Question 3

The term “*below-the-hook equipment*” that you reference in your question is not used in the California Code of Regulations, title 8. From the description and photographs you provided, it appears the steel containment pans consist of a tapered square pan attached to a four-legged bridle with slings. Pursuant to California Code of Regulations, title 8, subsection 5042(a)(15), all slings in use must have identification markings.

§5042. Safe Operating Practices. (a) Whenever any sling is used, the following practices shall be enforced:

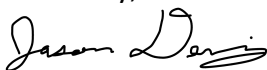
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(15) Employers shall not use slings without affixed and legible identification markings.

Additionally, specific requirements for marking the various types of slings, such as chains, wire ropes, or synthetic material with their rated capacities are found in Article 101 of the California Code of Regulations, title 8 General Industry Safety Orders. Therefore, the four-legged bridle attached to the steel containment pans are required to have legible markings indicating their rated capacity.

Thank you for your interest in occupational safety and health. Please feel free to contact me if you have any further questions.

Sincerely,



Jason Denning
Principal Safety Engineer
Research and Standards

cc: Eric Berg, Deputy Chief
Philip Yow, Senior Safety Engineer