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Since 2008

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Protecting Workers during Lashing Operations

The lashing of containers and other cargo aboard vessels is dangerous work. Longshore workers lift and maneuver heavy gear in tight spaces with low headroom and work from elevated locations. Their work is often performed around moving equipment, in areas with poor lighting, and during unfavorable weather conditions. As a result, workers are at risk of potential injury from slips, trips, and falls, being struck and/or crushed by equipment or falling objects, and improper handling of gear.

Marine terminal operators and stevedoring firms are responsible for protecting workers from injury.

Training

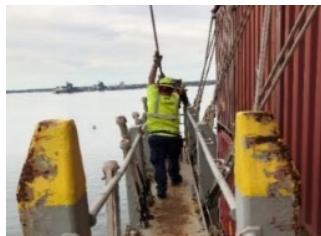
Workers should be trained on how to safely perform lashing duties. In addition, workers should receive instruction on the proper use of material handling equipment and manual handling techniques to reduce back injuries. Instruction should address vessel conditions, work environments, and various types of tasks, and include an opportunity for workers to discuss related workplace concerns, like hazards they have encountered. OSHA recommends holding safety talks before work begins and after it has been completed to review safety procedures and provide workers the opportunity to report unsafe conditions.

It is important that employers assess working conditions. Under OSHA's Marine Terminal and Longshoring Standards, employers must provide:

Safe Accessibility and Work Areas

- Safe access to vessels with gangways properly rigged and trimmed ([29 CFR 1918.22](#)).
- Access ladders, hatch coverings and latching mechanisms that are of appropriate size and in good repair ([29 CFR 1918.24](#) and [1918.31](#)).
- Traffic control patterns that keep workers at a safe distance from motor vehicles and containers being handled by cranes or other powered equipment ([29 CFR 1917.44](#)).
- Walking-working surfaces that are clear and dry to prevent slips, trips, and falls ([29 CFR 1918.91\(b\)](#)).

- Work areas that are free of debris, projecting nails, strapping, and equipment or materials not in use or unnecessary for the work being performed ([29 CFR 1918.91\(a\)](#)).
- Holds, intermediate decks, or other compartments free of unsafe levels of carbon monoxide during roll-on/roll-off operations where exhaust is released by internal combustion engines ([29 CFR 1918.86\(k\)](#) and [1918.94](#)).



Protective Equipment and Systems

- Minimum light intensity of 5 lumens in walking, working, and climbing areas ([29 CFR 1918.92\(a\)](#)).
- Railings that are in good repair and spaced appropriately ([29 CFR 1918.36](#)).
- Personal protective equipment, such as work gloves, hard hats, fall protection, high-visibility vests, and flotation devices appropriate for the job ([29 CFR 1918, Subpart J](#)).
- Equipment, such as inoperable semi-automatic twist locks or turnbuckles, that is in good condition. Defective gear must be removed from service ([29 CFR 1918.62\(a\)\(2\)](#)). See OSHA guidance on [Freeing Inoperable Semi-Automatic Twist Locks \(SATLs\) in Longshoring](#).

Rescue

- Prompt rescue and retrieval of workers from the water in the event that protective systems fail ([29 CFR 1918.100\(b\)](#)).

In addition, employers must protect workers from heat illness where a heat hazard exists and is likely to cause death or serious physical harm ([Occupational Safety and Health Act § 5\(a\)\(1\), 29 USC 654\(a\)\(1\)](#)). Employers should develop a workplace plan that includes acclimatization, medical monitoring, training, and heat alert resources. For more information, see [OSHA's Safety and Health Topics page on Heat](#).

Workers' Rights

Workers have the right to:

- Working conditions that do not pose a risk of serious harm.
- Receive information and training (in a language and vocabulary the worker understands) about workplace hazards, methods to prevent them, and the OSHA standards that apply to their workplace.
- Review records of work-related injuries and illnesses.

- File a complaint asking OSHA to inspect their workplace if they believe there is a serious hazard or that their employer is not following OSHA's rules. OSHA will keep all identities confidential.
- Exercise their rights under the law without retaliation, including reporting an injury or raising health and safety concerns with their employer or OSHA. If a worker has been retaliated against for using their rights, they must file a complaint with OSHA as soon as possible, but no later than 30 days.

For additional information, see OSHA's Workers page ([www.osha.gov/workers](#)).

How to Contact OSHA

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to help ensure these conditions for America's workers by setting and enforcing standards, and providing training, education and assistance. For more information, visit [www.osha.gov](#) or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.

Injury Source	Safety Requirements and Best Practices (Citations to relevant OSHA standards are included below)
Incorrect Handling of Materials	<ul style="list-style-type: none">Train workers on safe lifting techniques that include:<ul style="list-style-type: none">Keeping loads closeRaising and lowering objects slowly and steadilyMaking frequent trips, rather than carrying too much weight at onceUsing a partner or mechanical means to carry heavy, long, or awkward-shaped gearUsing their legs to bear the weight and not their backTurning with their feet instead of twisting at the waistMinimizing time spent looking upPositioning their bodies to reduce leaning over cables or rails when hooking turnbucklesCarrying with two hands and distributing weight evenlyStaging loads above knee height (off the ground) and below shoulder heightProvide workers with appropriately sized tools or equipment to prevent overreaching or overextending (e.g., lashing gear that is the proper type, length, and diameter for the job).Work in teams of two to ensure better control of rods and turnbuckles.Instruct workers not to throw gear, pull chains for long distances, or exert themselves to break turnbuckles or loosen chains.
Slips, Trips, and Falls	<ul style="list-style-type: none">Keep deck surfaces and lashing bridges free of debris and equipment (e.g., clear of lashing straps, D-rings, chains, reefer cords, corner castings, pad eyes, pipes and fittings) (29 CFR 1918.91(a)).Remove water, oil, snow, ice, and grease from decks as soon as possible (20 CFR 1918.91(b)). Employers should utilize non-skid surfaces and supply workers with slip-resistant footwear.Ensure gangways are installed and maintained in accordance with 29 CFR 1918.22.

Injury Source	Safety Requirements and Best Practices (Citations to relevant OSHA standards are included below)
Slips, Trips, and Falls (cont.)	<ul style="list-style-type: none"> Train workers to identify and report unsafe holes or openings in walking and working surfaces. Openings must be appropriately covered, and missing, broken, or poorly fitting grates or hatch covers repaired or replaced to prevent injury (20 CFR 1918, Subpart D). Provide and require the use of fall protection during containerized cargo operations when there is a fall hazard. Where fall protection is required, workers must be trained so they understand the use and application limits of fall protection systems, proper connection, anchoring and tie-off techniques, methods of use, and proper methods of equipment inspection and storage (29 CFR 1918.85(j) and (K)(12)). Repair or replace missing or broken railings; standing on railings is prohibited (29 CFR 1918.85(j)). Maintain adequate lighting levels (5 lumens), providing supplemental lighting when necessary (29 CFR 1918.92).
Struck by Gear or Equipment	<ul style="list-style-type: none"> Ensure workers wear employer-provided gloves with good grip during unlashing and stowage of turnbuckles (29 CFR 1918.105(a)(1)). Ensure the appropriate size lashing bars are used and that the bars are not left hanging unattended. Remove damaged lashing bars from service (29 CFR 1918.62(a)). Whenever possible, avoid having workers perform activities above their head. Supply workers with hard hats when there is the potential for objects to fall on their head from above (29 CFR 1918.103). Instruct workers on the proper tension or placement of chains, binders, ratchet straps, or breaking bars. Establish safe zones and train workers to remain within those areas when working around cranes, yard hustler trucks, forklifts, and trailers, and when on vehicle ramps (29 CFR 1917.44, 1918.86(a) and (c)). Prevent items (e.g., cargo and lashing gear) from being stacked or placed in a way that would lead them to fall, collapse, or otherwise cause a hazard to those working in the area.



**Occupational
Safety and Health
Administration**

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: 1-877-889-5627.



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