

SOLID WASTE MANUAL

Supporting the Safety of Landfills, Recycling Centers and Transfer Stations.

> INVCA | Iowa Municipalities Workers' Compensation Association

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Purpose

Solid waste operators in Iowa are among some of the most safety-conscious managers that Iowa Municipalities Workers' Compensation (IMWCA) safety and risk improvement staff is privileged to work with. IMWCA currently serves most of the publicly-owned solid waste facilities, including landfills, recycling centers, transfer stations and household hazardous waste sites.

To further assist our members in developing and maintaining safe and compliant work environments, IMWCA has developed this electronic manual to help identify requirements of solid waste operations based on their most common exposures.

In this manual, we attempt to identify many of the safety standards that apply to landfill, recycling, composting and transfer station operations under OSHA 1910 General Industry Standards and 1926 Construction Standards. We provide a link to the OSHA standard for further details and key points that operators must consider in developing these programs. We also attach links to Model OSHA programs to help members comply with these regulations.

IMWCA provides free online training that may be used to meet the training requirements of these standards. In some cases, Continuing Education Units (CEU) are available through Kirkwood Community College for mandatory DNR training.

IMWCA wishes to thank the following individuals for their assistance in developing the initial version of this manual:

Scott Smith, Boone County Landfill Becky Perry, Des Moines County Regional Solid Waste Commission Wendy Wittrock, Cass County Environmental Agency Rodger Kaster, Rathbun Area Solid Waste Commission

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General Duty Clause

Section 5(a)(1) of the Occupational Safety and Health Act (the "General Duty Clause") requires an employer to furnish to its employees:

"employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees..."

Employers can be cited for violation of the General Duty Clause if a recognized serious hazard exists in their workplace and the employer does not take reasonable steps to prevent or abate the hazard. The General Duty Clause is used only where no standard applies to the particular hazard. The following elements are necessary to prove a violation of the General Duty Clause:

- a. The employer failed to keep the workplace free of a hazard to which employees of that employer were exposed;
- b. The hazard was recognized;
- c. The hazard was causing or was likely to cause death or serious physical harm; and
- **d**. There was a feasible and useful method to correct the hazard.

See IMWCA Online Learning Course: Safety Awareness Program for Supervisors

Asbestos Awareness - 1910.1001



🔗 www.osha.gov | Search: 1910.1001

Key points:

- Asbestos Containing Materials (ACM) are commonplace in Iowa. Many landfills in Iowa accept ACM for final disposal.
- The employer shall ensure that staff and their supervisors are suitably trained about asbestos and the dangers this material poses to workers.
- Employees shall be provided with applicable personal protective equipment.
- Refresher training shall be provided on an annual basis.

See IMWCA Online Learning Course: Asbestos Awareness

Avoid the Crush Zone - 1910.1001



www.osha.gov | Search: 1910.1001

Key points:

- Landfill active faces and transfer station unloading areas have similar hazards to construction zones in that moving equipment and workers/ customers walking around are often in the same work area. This creates a significant danger because it places people in a potential crush zone.
- A crush zone is any situation in which a person is placed between an operating piece of equipment and an immovable object (i.e., the ground, another piece of equipment, a wall, etc.)
- The employer shall ensure that staff and their supervisors are suitably trained about work zone safety and the dangers associated with crush zones.
- Employees shall be provided with applicable personal protective equipment, including high visibility clothing and/or vests.
- Refresher training shall be provided on an annual basis.

See IMWCA Online Learning Course: Avoiding the Crush Zone

AVOID THE CRUSH ZONE



STAY OUT OF THE CRUSH ZONE

See IMWCA Online Learning Course:

Bloodborne Pathogens Exposure

Bloodborne Pathogens

IWMCA Model Program:

Bloodborne Pathogens - 1910.1030



www.osha.gov | Search: 1910.1030

Key Points:

- Requires that an employer having an employee(s) with occupational exposure as defined by paragraph (b) of this section shall establish a written Exposure Control Plan designed to eliminate or minimize employee exposure.
- Provide training on Bloodborne Pathogens, universal precautions and use of personal protective equipment.
- Make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident.

Cell Phones and Headphones



Employees shall not operate equipment or machinery while talking on cell phones or using non-noise reducing headphones or earbuds.

Chainsaw Operations

Employees working in composting facilities or maintaining fence clearing operations may have to operate chainsaws.



Key Points:

- a. Chainsaw operators must be trained before using a chainsaw.
- b. Helmet, Face shield, chaps, eye protection and safety-toed boots must be provided by employer and worn by operators.

See IMWCA Online Learning Course: Chainsaw Safety

IWMCA Model Program: Chainsaw and Tree Felling Model Policy

Confined Spaces - 1910.146



www.osha.gov | Search 1910.146

"Confined space" means a space that:

- (1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- (2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and (3) Is not designed for continuous employee occupancy.

See IMWCA Online Learning Course: Confined Space Entry

- Some facilities have pits for servicing conveyors or manholes for leachate pumping systems. In either case, if an employee can enter these. locations an employer should have a confined spaces entry procedure.
- Make sure confined spaces are labeled
- Train employees on recognizing confined spaces and entry procedure.

IWMCA Model Program: Confined Spaces Permit Required

Crane and Hoist Inspections



www.osha.gov

Key Points:

- Have a competent person inspect crane systems annually.
- Have a pre-lift inspection process.



 Rated load marking. The rated load of the crane shall be plainly marked on each side of the crane, and if the crane has more than one hoisting unit, each hoist shall have its rated load marked on it or its load block and this marking shall be clearly legible from the ground or floor.

> See IMWCA Online Learning Course: Indoor Crane and Sling

Defensive Driving

Any employee that operates vehicles on behalf of the employer should have defensive driver training. Employees operating collection vehicles, driving semitrailers to landfills from transfer stations, etc.

IWMCA Model Program: Safe Driver Manual

See IMWCA Online Learning Courses: Defensive Driving Driving in Adverse Weather Winter Driving Survival Driving – Urban Driving Survival Driving – Emergencies and Natural Disasters Space and Time Management Tailgate Topics: There are several Learning topics on driving. Refer to Appendix A



Electrical Safety/NFPA 70 E

Recycling centers, transfer station and landfill maintenance shops can require significant electrical draw. To ensure that employees who service the electrical panels are protected from arc flash, employers should conduct an assessment of arc potential and then provide training and adequate PPE and clothing to protect employees working with the power sources.

- Employers should also ensure that a clear area 30 inches in front and 15 inches on each side of all breaker panels are maintained and all breakers within the panel box are clearly labeled. There should never be an open slot that exposes the panel's electrical bus.
- Facilities may also use electrical drop cords for temporary power to equipment. Do not fasten cords to structure or use a primary power source. Drop cords should be inspected regularly to ensure they are in good condition and heavy enough for the projected use.
- In Household Hazardous Waste collection locations, explosion-proof wiring and fixtures should be used when storing flammables.

See IMWCA Online Learning Course: Electrical Safety Arc Flash Awareness

Ergonomics and Back Injury Prevention

Key Points:



Minimize repetitive motions for prolonged periods

Promote proper lifting techniques



Minimize excessive reaching and bending

See IMWCA Online Learning Course: Back Safety General Ergonomics Workplace Ergonomics

Equipment Operations Safety

Solid waste facilities utilize a variety of on-and off-road equipment. Operating this equipment safely is critical to avoid employee injuries and other types of incidents.

See IMWCA Model Program: Off-Road Vehicle Safety

See IMWCA Online Learning Courses: Backhoe Safety with Trackhoe Supplement Bulldozer Safety Dump Truck Safety Road Grader Safety Snow Plow Safety

Exits - 1910.37



www.osha.gov | Search: 1910.37

All exits should be clearly marked, kept clear and maintained in a working condition. Post evacuation maps when exit routes are not apparent.

See IMWCA Online Learning Course: Emergency Communications in the Workplace

Fall Protection - 1910.22 & 1910.23



2 www.osha.gov | Search: 1910.22 & 1910.23

Key Points:

- The floor of every workroom shall be maintained in a clean and, so far as possible, a dry condition. Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places should be provided where practicable.
- Where mechanical handling equipment is used, sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways and wherever turns or passage must be made. Aisles and passageways shall be kept clear and in good repairs, with no obstruction across or in aisles that could create a hazard.



• Covers and/or guardrails shall be provided to protect personnel from the hazards of open pits, tanks, vats, ditches, etc.

See IMWCA Online Learning Course: Fall Protection

Fire Extinguishers - 1910.157



2 www.osha.gov | Search: 1910.157

Key Points:

- The employer shall provide portable fire extinguishers and shall mount, locate and identify them so that they are readily accessible to employees without subjecting the employees to possible injury.
- The employer shall distribute portable fire extinguishers for use by employees on Class B fires so that the travel distance from the Class B hazard area to any extinguisher is 50 feet (15.2 m) or less.
- Portable extinguishers or hose of this section shall be visually inspected monthly.

See IMWCA Online Learning Course: **Fire and Explosion Hazards Fire Prevention**

Forklift Operators - 1910.178



www.osha.gov | Search 1910.178

1910.178(I)(6) The employer shall certify that each operator has been trained and evaluated as required by this paragraph (I). The certification shall include the name of the operator, the date of the training, the date of the evaluation, and the identity of the person(s) performing the training or evaluation.

See IMWCA Online Learning Course: **Forklift Safety**

- IMWCA recommends training skid loader operators under this program.
- Chocking Wheels: Proper chocking of the trailer wheels



are required to ensure that the trailer doesn't move while forklifts are loading.

Flammable Storage - 1910.106



www.osha.gov | Search: 1910.106



Store all flammables in an approved cabinet.

See IMWCA Online Learning Course: Fire and Explosion Hazards

Small Power Tools -1910 Subpart P and 1926 Subpart I



www.osha.gov | Search: 1910 & 1926

Key Points:

- Solid waste facilities require the use of powered hand tools.
- Small power tools include a variety of devices. These tools can use electricity, compressed air, hydraulics, or some type of fuel.
- It is important that supervisors and employees understand the hazards of utilizing these tools.
- Employers must provide training on the safe operation of hand and power tools.

See IMWCA Online Learning Course: Hand and Power Tool Safety **IWMCA Model Program: Forklift**

Hazardous Communications - 1910.1200

🖉 www.osha.gov | Search: 1910.1200

Key Points:

- Employers shall maintain copies of any safety data sheets (formerly referred to as MSDS) that are received with incoming shipments of the sealed containers of hazardous chemicals, shall obtain a safety data sheet as soon as possible for sealed containers of hazardous chemicals received without a material safety data sheet if an employee requests the safety data sheet, and shall ensure that the safety data sheets are readily accessible during each work shift to employees when they are in their work area(s)
- Provide documented training and information on chemicals used in workplace.
- Ensure chemical containers are clearly labeled.
- Chemicals are properly stored-refer to SDS.
- Provide appropriate PPE- refer to SDS.

See IMWCA Online Learning Course: Hazard Communication Safety Data Sheets General Safety Boost Episode 6: Hazard Communication

Insect Stings, Bites and Poisonous Plants



See IMWCA Online Learning Course: Working Outdoors in Warm Weather Climates

Key Points:

- Bees and wasps are attracted to moisture in garbage during summer months and can represent a hazard to employees handling garbage containers, sorting operations or checking wet wells.
- The problem is particularly serious if an employee is allergic to bee stings.
- IMWCA recommends that employees with allergies carry an EpiPen in the event of an exposure and that other staff be trained on administering the dose if the employee becomes incapacitated.

Ladders - 1910.25, 1910.26 & Scaffolding - 1910.28

www.osha.gov | Search: 1910.25, 1910.26 & 1910.28

Key Points:

- Ladders and scaffolding shall be maintained in good condition at all times, the joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the movable parts shall operate freely without binding or undue play.
- Safety feet, outriggers and other auxiliary equipment shall be kept in good condition to insure proper performance.
- Ladders and scaffolding shall be inspected frequently and those which have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as "Dangerous, Do Not Use."

- Use Type I and IA ladders rated for heavy industrial use.
- See IMWCA Online Learning Course: Ladder and Scaffolding Safety Preventing Slips, Trips, and Falls

Additional Resource:

www.osha.gov/SLTC/etools/construction/ falls/4ladders.html www.osha.gov/Publications/OSHA3252/3252.html

Landscape Safety

Many solid waste facilities have employees that are responsible for grounds maintenance. This includes mowing, trimming, and spraying for weeds. Landscape maintenance involves a number of hazards. Employers should ensure that employees are informed about the hazards and properly trained to carry out required duties.



See IMWCA Online Learning Course: Landscape Safety

Lithium and Lithium-Ion Batteries

Dangers associated with lithium and lithium-ion batteries are an increasing trend for solid waste facilities and services. These batteries pose significant fire and/or explosion risks. The risk of serious employee injuries is very high.

Making sure that you educate employees about these dangers and strategies to minimize them is now at the forefront of solid waste management safety efforts. Solid waste agencies and departments across lowa are developing safety programs that effectively address this issue. Fire departments are also becoming educated about how to respond to lithium related fires associated with solid waste operations.

It is highly recommended that solid waste agencies and departments stay current on this issue and that they also stay in communication with their local fire department(s). Pre-incident planning is more important than ever.

Additional Resource: www.swana.org | www.isoswo.org



The Solid Waste Association of North America and its Iowa chapter, the Iowa Society of Solid Waste Operations, are excellent resources (for their members) to obtain information and guidance. The IMWCA has safety and risk improvement staff that can assist with this issue as well.

Lockout/Tagout - 1910.147



www.osha.gov | Search: 1910.147

Common examples of equipment needing a LO/TO procedure are balers, conveyors, crusher and chippers, compressors and powered hoist.

Key Points:

- This standard covers the servicing and maintenance of machines and equipment in which the unexpected energization or start up of the machines or equipment, or release of stored energy could cause injury to employees. This standard establishes minimum performance requirements for the control of such hazardous energy.
- The employer shall establish a program consisting of equipment specific energy control procedures, employee training and periodic inspections to ensure that before any employee performs any servicing or maintenance on a machine or equipment where the unexpected energizing, startup or release of stored

See IMWCA Online Learning Course: Lockout/Tagout



equipment shall be isolated from the energy source and rendered inoperative.

- The standard does not apply to work on cord and plug connected electric equipment for which exposure to the hazards of unexpected energization or start up of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance.
- Procedures should be written for collection vehicles with hydraulic cylinder compaction units.

Machine Guarding - 1910.212



& www.osha.gov | Search: 1910.212

Common examples of equipment needing guards are balers, conveyors, crusher, chippers, compressors, grinders and fans.

Key Points:

- One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.
- Examples of guarding methods are-barrier guards, two-hand tripping devices, electronic safety devices, etc.
- Emergency shutoff should be maintained and tested to ensure operation.

See IMWCA Online Learning Course: **Machine Guarding**

Materials Handling and Storage - 1910.176



2 www.osha.gov | Search: 1910.176

Key Points:

 Secure storage. Storage of material shall not create a hazard. Bales, containers, bundles, etc., stored in tiers shall be stacked, blocked, interlocked and limited in height so that they are stable and secure against sliding or collapse.

See IMWCA Online Learning Course: **Fire and Explosion Hazards Spill Prevention and Control**

 Use of mechanical equipment. Where mechanical handling equipment is used, sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways and wherever turns or passage must be made. Aisles and passageways shall be kept clear and in good repair, with no obstruction across or in aisles that could create a hazard. Permanent aisles and passageways shall be appropriately marked.

Medical and First Aid - 1910.151

2 www.osha.gov | Search: 1910.151

Key Points:

- In the absence of an infirmary, clinic or hospital in near proximity to the workplace which is used for the treatment of all injured employees, a person or persons shall be adequately trained to render first aid. Adequate first aid supplies shall be readily available.
- Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.



() See IMWCA Online Learning Course: **General Safety Boost Episode 11: First Aid**

Mounting and Dismounting Heavy Equipment



To prevent slips and falls from loaders, bulldozers, tractors, dump trucks and other heavy equipment, IMWCA recommends using the three points of contact method. Three points of contact includes keeping either 2 feet and 1 hand or 2 hands and 1 foot on the equipment during each step up or down.

OSHA Reporting - 300 Logs - 1904.32

www.osha.gov | Search: 1904.32

Many employers with more than 10 employees are required to keep a record of serious work-related injuries and illnesses. Minor injuries requiring first aid only do not need to be recorded. If subject to reporting, an annual summary report must be posted by the employer from February 1 to April 30 each year.

For more information and to obtain the reporting forms, please go to the OSHA.gov website at: www.osha.gov/recordkeeping

Orientation For New and Seasonal Employees

Key points:

- Provide an overview of the solid waste industry for new employees.
- Covers the activities associated with waste management.
- Provide an overview of the entity's safety program.
- Advise employees of hazards and policies.

See IMWCA Online Learning Course: New Employee Orientation

Personal Protection Equipment Section



Employers should ensure that all personal protective equipment (PPE) meets the applicable ANSI standard for type of PPE. The OSHA standard provides the applicable ANSI standard.

> See IMWCA Online Learning Course: Personal Protective Equipment

Hand Protection - 1910.138

🤗 www.osha.gov | Search: 1910.138

Employers shall select and require employees to use appropriate hand protection when employees' hands are exposed to hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns; thermal burns; and harmful temperature extremes.

See IMWCA Online Learning Course: PPE Hand Safety

Hard Hats - 1910.135

🤣 www.osha.gov | Search: 1910.135

- The employer shall ensure that each affected employee wears a protective helmet when working in areas where there is a potential for injury to the head from impact, or from falling or flying objects.
- In work areas with limited clearance that pose a potential for head injuries but in which a full hard hat would be difficult to utilize, the employer shall ensure that each affected employee wears a protective helmet such as a bump hat.

See IMWCA Online Learning Course: PPE Head Safety

Eye Protection - 1910.133

🔗 www.osha.gov | Search: 1910.133

The employer shall ensure that each affected employee uses appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.

See IMWCA Online Learning Course: PPE Eye and Face Protection

Footwear - 1910.136

& www.osha.gov | Search: 1910.136

- The employer shall ensure that each affected employee uses protective footwear when working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and where such employee's feet are exposed to electrical hazards.
- Provide footwear with puncture resistant soles when exposure exists.
- Provide slip resistant soles when working on wet or slick surfaces.

 See IMWCA Online Learning Course: PPE Foot Protection

Hearing Conservation - 1910.95



Key Points:

- When employees are subjected to sound exceeding 90 decibels, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the listed levels, personal protective equipment shall be provided and used to reduce sound levels within the levels of the table.
- The employer shall administer a continuing, effective hearing conservation program whenever employee noise exposures equal or exceed an 8-hour timeweighted average sound level (TWA) of 85 decibels measured on the A scale (slow response) or, equivalently, a dose of fifty percent. For purposes of the hearing conservation program, employee noise exposures shall be computed in accordance with Appendix A and Table G-16a, and without regard to any attenuation provided by the use of personal protective equipment.

 See IMWCA Online Learning Course: Hearing Conservation
IWMCA Model Program: Hearing Conservation

Hi Visibility Vest

When collecting recycling, collectors working on the right-of -way should wear Hi Visibility vest or other apparel in accordance with DOT requirements. IMWCA also recommends that employees working on the tipping floor of recycling centers or directing traffic on the tipping face of landfills wear break- away hi visibility clothing to remain visible to customers and other employees driving in the area.

See IMWCA Online Learning Course: Personal Protective Equipment **Respiratory Protection - 1910.134**

🤣 www.osha.gov | Search: 1910.134

Common exposures are in household hazardous waste collection sites, grinding or crushing operations (airborne particulates) and compost facilities (mold).

Key Points:

- A respirator shall be provided to each employee when such equipment is necessary to protect the health of such employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protection program, which shall include the requirements outlined in paragraph (c) of this section. The program shall cover each employee required by this section to use a respirator.
- The employer shall provide medical evaluations of employees required to use respirators.
- The employer shall use fit testing procedures for tightfitting respirators to ensure a proper seal.

See IMWCA Online Learning Course: Respiratory Protection

Seatbelts - Buckle Up for Safety

Key points:

- Seat belts and shoulder restraints must be worn at all times in any on, or off road, vehicle that is so equipped. All occupants of vehicles and equipment used on official business shall also be required to use seatbelts.
- Prevents serious injury or death in the event of a collision and/or roll over situation.
- IMWCA requires its members to implement a mandatory seat belt policy.
- See IMWCA Online Learning Course: Tailgate Topics Series - Buckle Up

IWMCA Model Program: Seatbelt/Restraint Model Policy; Safe Driver Manual

Severe Weather

IMWCA recommends that landfills, transfer stations and recycling facilities have severe weather policies to notify employees of approaching storms and provide a plan for tornado shelters. A plan is required by Iowa DNR for all disposal sites.

See IMWCA Online Learning Course: Working In Extreme Temperatures

Spill Prevention and Control - 1910,120 (Subpart H) HAZWOPER



www.osha.gov | Search: 1910, 120

Key points:

- The best strategy to use for dealing with chemical spills is prevention.
- The employer shall ensure that staff and their supervisors are suitably trained about what to do in case of a chemical spill. This includes how to identify and assess the situation, response measures, and evacuation plans.
- Only employees properly trained to deal with chemical spills should respond to a spill. Employees trained to respond shall be provided with applicable personal protective equipment.
- Refresher training shall be provided on an annual basis.



See IMWCA Online Learning Course: Spill Prevention and Control

Tow Chains, Cables and Straps - 1926.251



Key Points:

- Ensure cables and chains are rated for task.
- Ensure cables and chains are in good condition without kinks or defect.
- Ensure cable clamps are properly installed on cable eye loops.

Trenching and Excavation - 1926.650 Subpart P



www.osha.gov | Search: 1926.650

Key Points:

- Trenching and excavation activities pose significant hazards to employees.
- These activities can create confined space entry issues in which employees can become trapped.
- Supervisors and employees must be trained to properly assess sites and develop a clear operations plan to ensure employee safety.

See IMWCA Online Learning Course: Trenching and Excavation

Weight Restrictions on Collection Routes



IMWCA recommends that each city establish a 45-pound or less lifting limit on each bag or container that employees must lift. This weight was generated by using the NIOSH lifting formula based on weight of load, frequency of stops, height of lift and other variables. The more stops an employee does per day will require a reduction in load limits.

See IMWCA Online Learning Course: Back Safety

Walking and Working Surfaces - 1910.21 & 1910.22

& www.osha.gov | Search: 1910.21 & 1910.22

Employers are responsible for providing safe walking and working surfaces, portable and fixed ladders, scaffolding, fall protection and employee training.

Key Points:

- The floor of every workroom shall be maintained in a clean and, so far as possible, a dry condition. Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places should be provided where practicable.
- The employer must provide, and ensure each employee uses, a safe means of access and egress to and from walking-working surfaces.

Ladders - 1910.23

www.osha.gov | Search: 1910.23

Key Points:

- Ladders shall be maintained in good condition at all times, the joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the movable parts shall operate freely without binding or undue play.
- Safety feet, outriggers and other auxiliary equipment shall be kept in good condition to insure proper performance.
- Ladders shall be inspected frequently and those which have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as "Dangerous, Do Not Use."
- Use Type I and IA ladders rated for heavy industrial use.

See IMWCA Online Learning Course: Preventing Slips, Trips, and Falls



See IMWCA Online Learning Course: Preventing Slips, Trips, and Falls

Step Bolts and Manhole Steps - 1910.24

🤣 www.osha.gov | Search: 1910.24

Key Points:

- Employer must ensure step bolts are uniformly spaced at a vertical distance of not less than 12 inches (30 cm) and not more than 18 inches (46 cm) apart. The spacing from the entry and exit surface to the first step bolt may differ from the spacing between the other step bolts.
- Manhole steps are to be maintained in a safe condition at all times. Inspect for corrosion and damage before each use.

Stairways - 1910.25



Key Points:

- Handrails, stair rail systems, and guardrail systems must be provided.
- Stairs shall have uniform riser heights and tread depths between landings.

Dockboards - 1910.26



www.osha.gov | Search: 1910.26

Key Points:

- Portable dockboards are secured by anchoring them in place or using equipment or devices that prevent the dockboard from moving out of a safe position. When the employer demonstrates that securing the dockboard is not feasible, the employer must ensure there is sufficient contact between the dockboard and the surface to prevent the dockboard from moving out of a safe position.
- Measures, such as wheel chocks or sand shoes, are used to prevent the transport vehicle (e.g. a truck, semitrailer, trailer, or rail car) on which a dockboard is placed, from moving while employees are on the dockboard.

Scaffolding - 1926.451

🤣 www.osha.gov | Search: 1926.451

Key Points:

- Scaffolding shall be maintained in good condition at all times.
- Scaffolding must provide a secure and stable work platform at all times.
- Railings, safety feet, outriggers and other auxiliary equipment shall be kept in good condition to insure proper performance.
- Personal fall arrest systems may be required depending on height on scaffolding (1910.27).

See IMWCA Online Learning Course: Preventing Slips, Trips, and Falls

Fall Protection and Falling Object Protection - 1910.28 & 1929



www.osha.gov | Search: 1910.28 & 1929

Key Points:

• With some exceptions, the employer must ensure that each employee on a walking-working surface with Solid Waste Manual | 22

an unprotected side or edge that is 4 feet (1.2 m) or more above a lower level is protected from falling by one or more of the following:

- Guardrail systems;
- Safety net systems; or
- Personal fall protection systems, such as personal fall arrest, travel restraint, or positioning systems.
- Covers and/or guardrails shall be provided to protect personnel from the hazards of open pits, tanks, vats, ditches, etc.

Fall Protection Systems and Falling Object Protection - 1910.30

🔗 www.osha.gov | Search: 1910.30

Key Points:

Before any employee is exposed to a fall hazard, the employer must provide training for each employee who uses personal fall protection systems or who is required to be trained as specified elsewhere in this subpart.

- The employer must ensure that each employee is trained by a qualified person.
- The employer must train each employee in at least the following topics:
 - The nature of the fall hazards in the work area and how to recognize them;
 - The procedures to be followed to minimize those hazards;
 - The correct procedures for installing, inspecting, operating, maintaining, and disassembling the personal fall protection systems that the employee uses; and
 - The correct use of personal fall protection systems and equipment.

See IMWCA Online Learning Course: Fall Prevention

Welding and Cutting - 1910.252



& www.osha.gov | Search: 1910.252

Key points:

- Cutting or welding shall be permitted only in areas that are or have been made fire safe. When work cannot be moved practically, as in most construction work, the area shall be made safe by removing combustibles or protecting combustibles from ignition sources.
- The employer shall insist that cutters or welders and their supervisors are suitably trained in the safe operation of their equipment and the safe use of the process.
- Employees exposed to the hazards created by welding, cutting, or brazing operations shall be protected by personal protective equipment in accordance with the requirements of 1910.132. Appropriate protective clothing required for any welding operation will vary with the size, nature and location of the work to be performed.
- Provide proper ventilation or respirators when necessary.



See IMWCA Online Learning Course: Welding, Cutting, and Brazing Safety **Compressed Gas Safety**

Resources:

www.OSHA.gov www.iowaworkforce.org/labor/iosh/ www.public-health.uiowa.edu/worksafe/services/ www.cdc.gov/niosh/

APPENDIX A: *At-a-Glance: Online Learning Referenced Courses*

A

Arc Flash Awareness Asbestos Awareness Avoiding the Crush Zone

B

Backhoe Safety with Trackhoe Supplement Back Safety Bloodborne Pathogens Bulldozer Safety

C

Compressed Gas Safety Confined Space Entry

D

Defensive Driving Driving in Adverse Weather Dump Truck Safety

Ε

Electrical Safety Emergency Communication in the Workplace Eye and Face Protection

F

Fall Protection Fire and Explosion Hazards Fire Prevention Forklift Safety

G

General Safety Boost Episode 11: First Aid General Safety Boost Episode 1: Ergonomics General Safety Boost Episode 6: Hazard Communication General Safety Boost Episode 7: Slip Hazards

Η

Hand and Power Tool Safety Hazards Communications Hearing Conservation

Indoor Crane and Sling

J K

L Ladder Safety Lockout/Tagout

M Machine Guarding

N New Employee Safety Orientation

0

P

Personal Protective Equipment PPE Eye and Face PPE Hand Protection PPE Head Protection PPE Foot Protection Preventing Slips, Trips, and Falls

Q

R

Respiratory Protection Road Grader Safety

S

Safety Awareness Program for Supervisors Safety Data Sheets Scaffolding Safety Snow Plow Safety Space and Time Management Spill Prevention and Control Street Sweeper Safety Survival Driving - Emergencies and Natural Disasters Survival Driving - Urban Driving

T

Tailgate Topics - Avoiding Accidents Tailgate Topics - Buckle Up Tailgate Topics - Distracted Driving: Drop it & Drive Tailgate Topics - Driving Defensively Tailgate Topics - Drowsy Driving Tailgate Topics - Emotional Driving Tailgate Topics - Hang Up and Drive: Cell Phones + Driving Tailgate Topics - Intersections Tailgate Topics - Safe Backing Tailgate Topics - Safe Following Tailgate Topics - Winter Driving Tailgate Topics - Winter Driving

U V

W

Welding, Cutting, and Brazing Safety Winter Driving: Braking and Special Consideration Winter Driving: Comprehensive Winter Driving: Weather Conditions & Preparations Working Outdoors in Warm Weather Workplace Ergonomics