

SECTION 14

MATERIAL HANDLING, STORAGE, AND DISPOSAL

14.A MATERIAL HANDLING

14.A.01 Employees shall be trained in and shall use safe lifting techniques.

14.A.02 Requirements for PPE are covered in Section 5.

14.A.03 Material handling devices shall be available for the material handling needs of an activity.

14.A.04 Whenever heavy or bulky material is to be moved, the material handling needs shall be evaluated in terms of weight, size, distance, and path of movement. The following hierarchy shall be followed in selecting a means for material handling:

- a. Elimination of material handling needs by engineering;
- b. Movement by mechanical device (e.g., lift truck, overhead crane, or conveyor);
- c. Movement by manual means with handling aid (e.g., dollie or cart); or
- d. Movement using safe lifting techniques. > **Reference NIOSH, Work Practices Guide for Manual Lifting.**

14.A.05 Materials will not be moved over or suspended above personnel unless positive precautions have been taken to protect the personnel from falling objects.

14.A.06 Where the movement of materials may be hazardous to persons, taglines or other devices shall be used to control the loads

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being handled by hoisting equipment. These devices shall be nonconductive when used near energized lines.

14.A.07 Banding/Strapping shall not be used as rigging to hoist loads of bundled materials.

14.B MATERIAL STORAGE

14.B.01 All material in bags, containers, bundles, or stored in tiers shall be stacked, blocked, interlocked, and limited in height so that it is stable and secured against sliding or collapse.

- a. Material shall be stacked as low as practical and in no case higher than 20 ft (6 m) unless otherwise specified in this Section.
- b. Storage of flammable and combustible materials is covered in Section 9.
- c. Storage of hazardous and toxic agents is covered in Section 6.
d. Storage of compressed gas cylinders is covered in Section 20.D.03.
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14.B.02 Materials that could become damaged or affected by exposure to the elements shall be adequately covered or stored indoors.

14.B.03 Materials shall not be stored in areas that would interfere with other normal operations.

14.B.04 Materials shall not be stored directly under power lines if at all possible.

14.B.05 Materials shall be stored in a manner that allows easy identification and access to labels, identification markings or

attached documents. If the label or identification marks are not clearly visible, there shall be signage at the storage location which provides the required labeling information.

14.B.06 Material storage shall be in compliance with manufacturer's guidance.

14.B.07~~2~~ Material stored inside buildings under construction shall not be placed within 6 ft (1.8 m) of any hoistway or floor opening, nor within 10 ft (3 m) of an exterior wall that does not extend above the material stored.

14.B.08~~3~~ Accessways shall be kept clear.

14.B.09~~4~~ Unauthorized persons shall be prohibited from entering storage areas. All persons shall be in a safe position while materials are being loaded or unloaded from railroad cars, trucks, or barges.

14.B.10 Materials stored in bins or hoppers that could create an engulfment hazard shall be evaluated and comply with the requirements of EM 385-1-1 Section 34.A

14.B.11 05 . Material shall not be stored on scaffolds, work platforms, or runways in excess of the standards in Section 22.

14.B.06~~12~~ Noncompatible materials shall be segregated in storage.

14.B.13~~07~~ Storage of lumber.

a. Storage of lumber during construction shall be in sections containing a maximum of 1 million board feet with at least a 10 ft (3 m) clearance from buildings.

b. Lumber shall be supported on stable sills and shall be stacked level, stable, and self-supporting.

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c. Reusable lumber shall have all nails withdrawn before it is stacked for storage.

d. Lumber piles shall not exceed 20 ft (6 m) in height; lumber to be handled manually shall not be stacked more than 16 ft (4.8 m) high.

14.B.1408 Storage of bagged materials.

a. Bagged materials shall be stacked by stepping back the layers and cross-keying the bags at least every 10 bags high.

b. Bags of cement and lime shall not be stacked more than 10 high without setback, except when restrained by walls of appropriate strength.

c. The bags around the outside of the stack shall be placed with the mouths of the bags facing the center of the stack.

d. During unstacking, the top of the stack shall be kept nearly level and the necessary setback maintained.14.B.09 Storage of brick.

14.B.15 Storage of brick.

a. Brick shall be stacked on an even, solid surface.

b. Bricks stacks shall not be more than 7 ft (2.1 m) high. when stacked loose brick reaches a height of 4 ft (1.2 m), it shall be tapered back 2 in (5 cm) in every 1 ft (0.3 m) of height above the 4 ft (1.2 m) level.

c. Unitized brick (brick securely gathered into large standard packages and fastened with straps) shall not be stacked more than three units high.

14.B.160 Storage of floor, wall, and partition block.

- a. Blocks shall be stacked in tiers on solid, level surfaces.
- b. When masonry blocks are stacked higher than 6 ft (1.8 m), the stack shall be tapered back one-half block per tier above the 6 ft level.

14.B.~~171~~ Storage of reinforcing and structural steel.

- a. Reinforcing steel shall be stored in orderly piles away from walkways and roadways.
- b. Structural steel shall be securely piled to prevent members sliding off or the pile toppling over.

14.B.~~182~~ Storage of cylindrical material.

- a. Structural steel, poles, pipe, bar stock, and other cylindrical materials, unless racked, shall be stacked and blocked so as to prevent spreading or tilting.
- b. Pipe, unless racked, shall not be stacked higher than 5 ft (1.5 m).
- c. Either a pyramid or battened stack shall be used.
- d. Where a battened stack is used, the outside pile or pole shall be securely chocked. Battened stacks shall be tapered back at least one pile or pole in each tier.
- e. Unloading of round material shall be done so that no person is required to be on the unloading side of the carrier after the tie wires have been cut or during the unlocking of the stakes.

14.C HOUSEKEEPING

14.C.01 Work areas and means of access shall be maintained safe and orderly.

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- a. Sufficient personnel and equipment shall be provided to ensure compliance with all housekeeping requirements.
- b. Work areas shall be inspected daily for adequate housekeeping and findings shall be recorded on daily inspection reports.
- c. Work will not be allowed in those areas that do not comply with the requirements of this Section.

14.C.02 All stairways, passageways, gangways, and accessways shall be kept free of materials, supplies, and obstructions at all times.

14.C.03 Loose or light material shall not be stored or left on roofs or floors that are not closed in, unless it is safely secured.

14.C.04 Tools, materials, extension cords, hoses, or debris shall not cause tripping or other hazards.

14.C.05 Tools, materials, and equipment subject to displacement or falling shall be adequately secured.

14.C.06 Empty bags having contained lime, cement, and other dust-producing material shall be removed periodically as specified by the GDA.

14.C.07 Form and scrap lumber and debris shall be cleared from work areas and accessways in and around building storage yards and other structures.

14.C.08 Protruding nails in scrap boards, planks, and timbers shall be removed, hammered in, or bent over flush with the wood at the time it is disassembled.

14.C.09 Storage and construction sites shall be kept free from the accumulation of combustible materials.

- a. Weeds and grass shall be kept down.
- b. A regular procedure shall be established for the cleanup of the areas as specified by the GDA.
- c. Rubbish, brush, long grass, or other combustible material shall be kept from areas where flammable and combustible liquids are stored, handled, or processed.

14.C.10 Accumulation of liquids, particularly flammable and combustible liquids, on floors, walls, etc., is prohibited. All spills of flammable and combustible liquids shall be cleaned up immediately.

14.D DEBRIS NETS

14.D.01 When used with personnel safety nets, debris nets shall be secured on top of the personnel safety net but shall not compromise the design, construction or performance of the personnel nets.

14.D.02 A competent person shall determine and document the size, weight and height of fall of anticipated debris. The debris netting shall have a mesh of the size and strength sufficient to contain the expected debris without penetration when properly supported.

14.D.03 Materials, scraps, equipment, tools and debris that have fallen into the net shall be removed as soon as possible from the net and at least before the next work shift.

14.D.04 Nets and debris shall be protected from sparks and hot slag resulting from welding and cutting operations.

14.D.05 Inspection of debris nets.

- a. Debris nets shall be inspected by a competent person in accordance with the manufacturer's recommendations.

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b. Inspections shall be conducted after installation, at least weekly thereafter, and following any alteration, repair or any occurrence that could affect the integrity of the net system. Inspections shall be documented and maintained on site.

c. Defective nets shall not be used; defective components shall be removed from service.

d. When welding or cutting operations occur above the nets, frequency of inspections shall be increased in proportion to the potential for damage to the nets.

14.E MATERIAL DISPOSAL

14.E.01 Waste material and rubbish shall be placed in containers or, if appropriate, in piles.

a. All containers holding waste material, piles, or stacked material shall be labeled as a waste.

b. Waste material shall be piled or stacked so to prevent engulfment or material avalanche and away from any traffic areas or walkways.

14.E.02 Waste materials and rubbish shall not be thrown down from a height of more than 6 ft (1.8 m), unless the following are complied with:

a. The materials or rubbish are dropped through an enclosed chute constructed of wood or equivalent material. Chutes for debris shall be enclosed, except for openings equipped with closures at or about floor level for the insertion of materials. The openings shall not exceed 4 ft (1.2 m) in height measured along the wall of the chute. Openings shall be kept closed when not in use.

b. When debris cannot be handled by chutes, the area into which the material is dropped shall be enclosed with barricades not less than 42 in (1.1) in height. Barricades shall be

positioned to keep personnel from all debris landing areas. Signs warning of the hazard of falling material shall be posted at all debris landing areas and at each level exposed to falling debris.

14.E.03 See Section 9 for burning requirements.

14.E.04 Separate covered, self-closing, nonflammable/non-reactive containers shall be provided for the collection of garbage, oily, flammable, and dangerous wastes.

- a. The containers shall be labeled with a description of the contents.
- b. The contents shall be properly disposed of daily.

14.E.05 Hazardous material waste (i.e., vehicle and equipment oils and lubricants, containers and drums for solvents, adhesives, etc.) shall be collected, stored, and disposed of in accordance with Section 06.B.03, Federal, State, and local requirements.