

WALKING AND WORKING SURFACES SAFETY

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Walking & Working Surfaces

1. PURPOSE AND SCOPE

This document provides the requirements for the **Company Name** Walking Working Surfaces (WWS) program. The objective of this program is to reduce physical hazards in the workplace through ensuring that all walking working surfaces are free of known hazards. **COMPANY NAME** will implement feasible engineering controls and combines work practices and procedures to achieve this objective.

This procedure applies to all persons on **COMPANY NAME** properties and to all **COMPANY NAME** Associates on customer sites.

This procedure provides the general requirements of walking working surfaces, proper guarding of floor and wall openings and holes, fixed industrial stairs and other working surfaces. Ladders and scaffolds are also covered in **COMPANY NAME** procedure EHS-XX.XX and EHS-XX.XX. Fall Protection, including work-platform fall protection is covered in EHS-XX.XX, Fall Protection.

2. DEFINITIONS

2.1. Competent Person

A person who has acquired through training, qualification, experience or a combination of these, the knowledge and skills necessary to perform the task required. One who has been trained to identify hazards in the workplace, or working conditions that are unsafe for employees, and who has the authority to have these hazards eliminated or controlled.

2.2. Floor Hole

An opening measuring less than 12 inches but more than 1 inch in its least dimension, in any floor, platform, pavement, or yard, through which materials but not persons may fall; such as a belt hole, pipe opening, or slot opening.

2.3. Floor Opening

An opening measuring 12 inches or more in its least dimension, in any floor, platform, pavement, or yard through which persons may fall; such as a hatchway, stair or ladder opening, pit, or large manhole. Floor openings occupied by elevators, dumb waiters, conveyors, machinery, or containers are excluded from this definition.

2.4. Platform

A working space for persons, elevated above the surrounding floor or ground; such as a balcony or platform for the operation of machinery and equipment.

2.5. Restraint System

A line from an anchorage, or between anchorages, to which a person is secured in such a way as to prevent the employee from walking or falling off an elevated work surface. Note: A restraint line is not necessarily designed to withstand forces resulting from a fall.

2.6. Rise

The vertical distance from the top of a tread to the top of the next higher tread.

2.7. Runway

A passageway for persons, elevated above the surrounding floor or ground level, such as a footwalk along shafting or a walkway between buildings.

2.8. Standard Railing

Standard railings must consist of a top rail, an intermediate rail, and posts. Railings must have a vertical height of 42 inches (1.07 m) nominal from the upper surface of the top rail to the floor, platform, runway or ramp level. The intermediate rail must be halfway between the top rail and the floor, platform, runway or ramp level. The top rail must be smooth and the ends of the rails must not overhang the terminal posts except where not resulting in a projection hazard.

2.9. Wall Hole

An opening less than 30 inches but more than 1 inch high, of unrestricted width, in any wall or partition; such as a ventilation hole or drainage scupper.

2.10. Wall Opening

An opening at least 30 inches high and 18 inches wide, in any wall or partition, through which persons may fall; such as a yard-arm doorway or chute opening.

3. PROCEDURE

3.1. Housekeeping

3.1.1. Work areas, passageways (access and egress routes), stairs, storerooms, service rooms, and areas around buildings shall be kept clean, orderly and in a sanitary condition.

3.1.1.1. Storage areas shall be kept free from the accumulation of materials that impede access/egress or constitute hazards from fire, explosion or pests.

3.1.2. Floors shall be kept as clean and dry as practicable.

3.1.2.1. Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places shall be provided.

3.1.3. All work areas shall be kept as free from protruding nails, splinters, holes or loose boards as practicable.

3.1.4. Illumination

3.1.4.1. Work areas must be well lit while work is in progress. Illumination intensities must meet the minimum intensities required. (Appendix C).

3.1.4.2. Access and egress routes must be adequately lit at all times.

3.2. Floor Loading

3.2.1. Except slab-on-grade floors and including mezzanines where material may be stored, **COMPANY NAME** locations shall have floor load capacities rated, approved by the building official¹ and marked on plates of approved design which shall be supplied and securely affixed in a conspicuous place in each space to which they relate.

3.2.2. **COMPANY NAME** Associates shall not, either intentionally or through lack of care, cause any floor, mezzanine, balcony or work platform to be overloaded.

¹ "Building official" means an official of the regulating body responsible for inspection and enforcement of building design safety codes.

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3.2.3. **COMPANY NAME** Associates, shall not traverse or work on construction site floors that are not structurally complete (all framing and sheath materials required for their intended design strength).

3.3. Aisles and Passageways

3.3.1. 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.

3.3.2. Aisles and passageways shall be kept clear and in good repair, with no obstructions that could create a hazard.

3.3.3. Aisles and passageways shall be defined appropriately with paint, striping, marking pillars, flags, traffic cones or barrels.

3.4. Stairs and Stairways

3.4.1. Stairways or ladders shall be provided wherever there is a break in elevation of 19 inches (48 cm) or more and no ramp, runway, embankment or personnel hoist available.

3.4.2. Additional stairs or ladders shall be provided whenever a single point of access between levels has become blocked or otherwise impassable.

3.4.3. Where doors or gates open directly onto a stairway, provide a platform. The swing of the door must not reduce the width of the stairway to less than 20 inches (50.8 cm)

3.4.4. Stairway Construction

3.4.4.1. Flights of stairs having four or more risers must be equipped with standard stair railings or standard handrails. The width of the stair must be clear of all obstructions except handrails.

3.4.4.2. On stairways less than 44 inches (1.12m) wide, with both sides enclosed, at least one handrail, preferably on the right side descending, shall be provided.

3.4.4.3. On stairways less than 44 inches (1.12 m) wide with one side open, at least 1 stair railing on the open side shall be provided.

3.4.4.4. On stairways less than 44 inches (1.12 m) wide with both sides open, a stair railing on each side shall be provided.

3.4.4.5. On stairways more than 44 inches (1.12 m) wide but less than 88 inches (2.24 m) wide, one handrail on each enclosed side and one stair railing on each open side shall be provided.

3.4.4.6. On stairways 88 inches (2.24 m) or more wide, one hand rail on each enclosed side, one stair railing on each open side, and one intermediate stair railing located in the middle of the stairway shall be provided.

3.4.4.7. Winding stairs must have a handrail that is offset to prevent walking on portions of the tread that are less than 6 inches (15.24 cm) wide.

3.4.4.8. Stair Rail Construction

3.4.4.8.1. Stair Rails must meet the following criteria:

3.4.4.8.1.1. Stair railings must be constructed similar to standard railings, but the vertical height shall be no more than 34 inches (86 cm) nor less than 30

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inches (76.2 cm) from the upper surface of the top rail to the point where the surface of the stair meets the riser below.

3.4.4.8.1.2. For wood railings, the posts must be made from 2-inch (5.08 cm) by 4-inch (10.2 cm) stock and spaced no more than 6 feet (1.8 m) apart.

3.4.4.8.1.3. If the top rail is made of two right-angle pieces of 1-inch (2.54 cm) by 4-inch (10.2 cm) stock, posts may be spaced on 8-foot (2.4 m) centers, with a 2-inch (5.08 cm) by 4-inch (10.2 cm) intermediate rail.

3.4.4.8.1.4. For pipe railings, the posts and top and intermediate rails must have a diameter greater than 1 ½ inch (3.8 cm) and be spaced no more than 8 feet (2.4 m) on center.

3.4.4.8.1.5. For structural steel railings, the posts and top and intermediate rails must be of 2-inch (5.08 cm) by 2-inch (5.08 cm) by 3/8 inch (0.95 cm) angles or other metal shapes of equivalent bending strength with posts spaced not more than 8 feet (2.4 m) on center.

3.4.5. Fixed Stairs

3.4.5.1. Fixed stairs shall be provided:

3.4.5.1.1. Where operations require regular travel from one level to another.

3.4.5.1.2. For access to operating platforms at equipment which requires attention routinely during operations.

3.4.5.1.3. For access to elevations which must be occupied daily or at each shift for gauging, inspection, or regular maintenance.

3.4.5.1.4. For work that may expose Associates to acids, caustics, gases or other harmful substances or work tasks that require carrying tools or equipment by hand.

3.4.5.2. Spiral stairways are not permitted except for limited use and secondary access where a conventional stairway is not practical.

3.4.5.3. Winding stairways may be installed on tanks and similar round structures where the diameter of the structure is not less than five (5) feet (1.5 m).

3.4.5.4. Fixed stairways must be designed and constructed to carry a load of 5 times the normal live load anticipated but never less than a concentrated load of 1000 pounds (2200 kg).

3.4.5.5. Fixed stairways must have a minimum width of 22 inches (0.56 m). The stair treads must be slip-resistant and the nosings must be of nonslip finish.

3.4.5.6. Welded bar grating treads without nosings are acceptable when the leading edge is noticeable by personnel descending the stairway and that the tread is serrated or nonslip.

3.4.5.7. Stairway platforms must be no less than the width of a stairway and a minimum of 30 inches (0.76 m) in length measured in the direction of travel.

- 3.4.5.8. Standard railings shall be provided on the open sides of all exposed stairways and stair platforms. Provide handrails on at least one side of closed stairways preferably on the right side descending.
- 3.4.5.9. Vertical clearance above any stair tread to an overhead obstruction must be at least 7 feet (2.1 m) measured from the leading edge of the tread.
- 3.4.5.10. Fixed stairs shall be installed at angles to the horizontal of between 30 and 50 degrees. Any uniform combination of rise/tread dimensions that result in a stairway at an angle to the horizontal within the permissible range may be used. The rise height and tread width shall be uniform throughout any flight of stairs including any foundation structure used as one or more treads of the stairs and shall not exceed ¼ inch (0.64 cm) in variation. The following table gives examples of rise/tread dimensions that produce a stairway within the permissible range, however the combinations are not limited to those listed below.

Permissible Range Rise/Tread Dimensions For Fixed Stairs		
Angle to horizontal	Rise in inches (cm)	Tread run in inches (cm)
30° 35'	6½ (16.9 cm)	11 (27.9)
32° 08'	6¾ (17.1)	10¾ (27.3)
33° 41'	7 (17.8)	10½ (26.7)
35° 16'	7¼ (18.4)	10¼ (26.0)
36° 52'	7½ (19.1)	10 (25.4)
38° 29'	7¾ (19.7)	9¾ (24.8)
40° 08'	8 (20.3)	9½ (24.1)
41° 44'	8¼ (21.0)	9¼ (23.5)
43° 22'	8½ (21.6)	9 (22.9)
45° 00'	8¾ (22.2)	8¾ (22.2)
46° 38'	9 (22.9)	8½ (21.6)
48° 16'	9¼ (23.5)	8¼ (21.0)
49° 54'	9½ (24.1)	8 (20.3)

3.5. Floor and Wall Openings

3.5.1. Hatchways and Chutes

- 3.5.1.1. Hatchways and chutes must be guarded by one of the following items:
- 3.5.1.2. A hinged floor opening cover of standard strength and construction equipped with standard railings or permanently attached so as to leave only one side exposed. When not in use, the cover shall be closed or the hatchway/chute guarded.
- 3.5.1.3. A removable railing with a toeboard on not more than 2 sides of the opening and fixed standard railings with toeboards on all other exposed sides. Removable railings must be in place when opening is not in use.

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- 3.5.2. Where work requires the feeding of material into an opening, fall protection or a restraint system shall be provided. (See Loading & Unloading at an Elevated Platform below.)
- 3.5.3. Open-sided Floors and Platforms
- 3.5.3.1. All open-sided floors or platforms 4 feet (1.2 m) or more above an adjacent floor or ground level must be guarded by a standard railing on all open sides except where there is entrance to a ramp, stairway, or fixed ladder.
- 3.5.3.2. Open-sided floors, walkways, platforms or runways above dangerous equipment, water or hazardous chemicals must be guarded with a standard railing and toeboard.
- 3.5.3.3. A toeboard must be provided whenever a person can pass beneath the open sides or there is moving machinery or equipment from which materials could fall.
- 3.5.4. Loading & Unloading at an Elevated Platform
- 3.5.4.1. If it is necessary for Associates to be near an unguarded platform edge higher than 4 feet, in order to facilitate transfer of materials to or from that platform:
- 3.5.4.1.1. the EHS Representative shall approve the operation;
- 3.5.4.1.2. fall protection or a restraint system² that prevents the Associate from crossing the unguarded edge shall be used.
- 3.5.5. Skylight Openings
- 3.5.5.1. Skylight floor openings and holes shall be guarded with a standard skylight screen or a fixed standard railing on all exposed sides.
- 3.5.5.2. Skylight screens must be capable of withstanding a load of at least 200 pounds (440 kg) applied perpendicularly at any one area on the screen.
- 3.5.5.3. The screen must be constructed so that under ordinary loads or impacts it will not deflect downward sufficiently to break any glass below it.
- 3.5.5.4. If the screen is constructed of grillwork, openings not more than 4 inches (10.16 cm) long or slatwork with openings not more than 2 inches (5.08 cm) wide with length unrestricted are permitted.
- 3.5.6. Pits and Trapdoors
- 3.5.6.1. Pit and trap door floor openings shall be guarded with floor opening covers.
- 3.5.6.2. When the cover is not in place, the pit or trapdoor shall be guarded on all exposed sides by removable railings or by an Associate acting as a lookout.
- 3.5.7. Manholes
- 3.5.7.1. Manhole openings shall be guarded with a standard manhole cover.
- 3.5.7.2. Manhole covers and their supports, when located in plant roadways, must comply with local highway requirements or be designed to carry a truck rear-axle load of at least 20,000 lbs (9,100 kg).

² A restraint system must consist of a body belt or full harness and a non-elastic rope or cable attached securely at at least waist-height.

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3.5.7.3. When the manhole cover is not in place, protect the opening on all exposed sides by removable railings or by an Associate acting as a lookout.

3.5.8. Floor Holes & Openings

3.5.8.1. Floor holes into which a person could accidentally walk shall be guarded with:

3.5.8.1.1. A standard railing with toeboard on all exposed sides, or

3.5.8.1.2. A cover protected by a removable railing.

3.5.8.1.3. When the cover is not in place, the pit or trapdoor must be protected on all exposed sides by removable railings or by an Associate acting as a lookout.

3.5.8.2. Floor holes into which a person could not accidentally walk (access obstructed by fixed machinery, equipment or walls) shall be protected by a cover that leaves no openings greater than 1 inch (2.54 cm) wide and that is securely held in place.

3.5.9. Runways

3.5.9.1. Runways shall be guarded by a standard railing on all open sides 4 feet (1.2 m) or more above floor or ground level.

3.5.9.2. Runways used for special purposes, such as oiling, shafting, or filling tank cars, may omit the railing on one side as required for performing work, provided that the runway is at least 18 inches (46 cm) wide. Each condition must be reviewed before beginning work.

3.5.9.3. Toeboards shall be provided wherever tools, machine parts or materials are used and may fall onto personnel below.

3.5.10. Trench and Conduit Covers

3.5.10.1. Trench or conduit covers and their supports, when located in plant roadways, must be designed to carry a truck-rear-axle load of at least 20,000 pounds (9,100 kg).

3.5.11. Temporary Floor Openings

3.5.11.1. Temporary floor openings must have either standard railings or be constantly attended by an Associate. The opening must have a cover constructed of any material that meets strength requirements. Covers that project more than 1 inch above the floor level must have edges that are chamfered to an angle with the horizontal of not over 30 degrees. Handles, hinges, bolts, or other parts must be flush with the floor or cover surface.

3.5.12. Wall Openings

3.5.12.1. Wall openings from which there is a drop of more than 4 feet (1.2 m) shall be guarded by one of the following:

3.5.12.1.1. An extension platform onto which materials can be hoisted for handling. This platform must have side rails or equivalent guards.

3.5.12.1.2. A railing, roller, picket fence, half door, or equivalent barrier with a grab handle on each side of the opening with the center of the handle located approximately 4 feet (1.2 m) above floor level. The handle must withstand a

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load of at least 200 lbs (440 kg) applied in any direction (except upward) at any point on the top rail or corresponding member.

3.5.12.1.3. Wall opening grab handles must not be less than 12 inches (30.48 cm) in length and must be mounted to provide 3 inches (7.62 cm) of clearance from the side frame of the wall opening.

3.5.12.1.4. If there is an exposure to falling material, a toeboard shall be provided.

3.5.13. Window Openings

3.5.13.1. Window openings at a stairway landing, floor, platform, or balcony, from which there is a drop of more than four feet (1.2 m) and where the bottom of the opening is less than 3 feet (0.9 m) above the platform or landing, must be guarded by standard slats, grill or railing.

3.5.14. Dockboards

3.5.14.1. Dockboards shall be secured to prevent shifting position prior to use.

4. RESPONSIBILITIES

4.1. COMPANY NAME EHS Headquarters:

- 4.1.1. Assists with the determination of walking working surfaces hazards and appropriate controls.
- 4.1.2. Shall serve as the interpretation contact for this procedure.

4.2. Site Manager or Field Manager:

- 4.2.1. Implements the walking working surfaces program at their site.
- 4.2.2. Ensures that walking working surfaces hazards are eliminated when feasible.
- 4.2.3. Ensures that all warning signs or labels are legible.
- 4.2.4. Promptly reports any new walking working surfaces hazards brought to their attention.
- 4.2.5. Immediately stops work after identifying a potential hazard, if necessary.
- 4.2.6. Ensures that Associates and contractors exposed to walking working surfaces hazards have received proper notification and training.
- 4.2.7. Communicates to Associates the right to stop work as potential WWS hazards are identified with the expectation that the proper notification process is followed.
- 4.2.8. Notifies EHS of changes or modifications to processes and equipment so that exposure profiles may be reviewed for accuracy.

4.3. Site EHS Representative with Region EHS Manager support:

- 4.3.1. Reviews walking working surfaces and ensures that the appropriate controls are in place to prevent hazards for Associates and contractors.
- 4.3.2. Reviews and updates the site-specific information in Appendix A annually.
- 4.3.3. Ensures that Appendix B or a similar inspection is completed at least monthly.
- 4.3.4. Ensures that Associates are properly trained in the walking working surfaces procedure.

4.3.5. Maintains all documentation and records Associated with this program.

4.4. All Associates:

4.4.1. Are responsible for adhering to the rules and guidelines in this procedure.

4.4.2. Must report any deficiencies immediately.

5. TRAINING

5.1. **All Associates must be trained in the hazards Associated with walking working surfaces.**

5.2. **Training must ensure the Associate’s understanding of the hazards Associated with walking working surfaces.**

5.3. **Training shall be conducted before any new job, before the introduction of new equipment or material that may present walking working surfaces hazards, per the COMPANY NAME Training Matrix, or as needed to ensure proficiency.**

6. AUDITING

6.1. **COMPANY NAME** EHS Headquarters will review the walking working surfaces program annually to ensure the continued effectiveness of the policy and procedures.

7. APPENDICES

7.1. Appendix A – Site Specific Walking Working Surfaces Information

7.2. Appendix B – Walking Working Surfaces Self Inspection

7.3. Appendix C – Minimum Illumination Intensities

8. REFERENCE DOCUMENTS AND LINKS

8.1. EHS-XX.XX Ladders

8.2. EHS-XX.XX Fall Protection

8.3. EHS-XX.XX Scaffolding

9. RECORD RETENTION

9.1. Reserved

APPENDIX A - SITE-SPECIFIC INFORMATION

Name and Location of Site: _____

Name of Site Manager: _____

Name of EHS Representative: _____

Location of walking working surfaces inspection records.: _____

Stonewater Consulting

Information Completed By: _____ Date: _____

Reviewed & Approved By: _____ Date: _____

Site Manager Signature

APPENDIX B - WALKING-WORKING SURFACES SELF-INSPECTION

General Work Environment

	Is a documented, functioning housekeeping program in place?
	Are all worksites clean, sanitary, and orderly?
	Are work surfaces kept dry or is appropriate means taken to ensure that the surfaces are slip-resistant?
	Are all spilled hazardous materials or liquid cleaned up immediately and according to proper procedures?

Walkways

	Are aisles and passageways kept clear?
	Are aisles and walkways marked as appropriate?
	Are wet surfaces covered with non-slip materials?
	Are holes in the floor, sidewalk or other walking surface repaired properly, covered or otherwise made safe?
	Is there safe clearance for walking in aisles where motorized or mechanical handling equipment is operating?
	Are materials or equipment stored in such a way that sharp projections will not interfere with the walkway?
	Are spilled materials cleaned up immediately?
	Are changes of direction or elevation readily identifiable?
	Are aisles or walkways that pass near moving or operating machinery, welding operations or similar operations arranged so Associates will not be subjected to potential hazards?
	Is adequate headroom provided for the entire length of any aisle or walkway?
	Are bridges provided over conveyors and similar hazards?

Floor and Wall Openings

	Are floor openings guarded by a cover, a guardrail, or equivalent on all sides (except at the entrance to stairways or ladders)?
	Are toeboards installed around the edges of permanent floor openings (where persons may pass below the opening)?
	Are skylight screens of such construction and mounting that they will withstand a load of at least 200 pounds (440 kg)?
	Are grates or similar type covers over floor openings such as floor drains of such design that foot traffic or rolling equipment will not be affected by the grate spacing?
	Are unused portions of service pits and pits not in use either covered or protected by guardrails or equivalent?
	Are manhole covers, trench covers and similar covers, plus their supports designed to carry a truck rear axle load of at least 20,000 pounds (9,100 kg) when located in roadways and subject to vehicle traffic?

Stairs and Stairways

	Are standard stair rails or handrails on all stairways having four or more risers?
	Are all stairways at least 22 inches (56 cm) wide?
	Do stairs have landing platforms not less than 30 inches (0.76 m) in the direction of travel and extend 22 inches (56 cm) in width at every 12 feet (3.6 m) or less of vertical rise?
	Do stairs angle no more than 50 and no less than 30 degrees?
	Are step risers on stairs uniform from top to bottom?

	Are steps on stairs and stairways designed or provided with a surface that renders them slip resistant?
	Are stairway handrails located between 30 (0.76 m) and 34 inches (0.86 m) above the leading edge of stair treads?
	Do stairway handrails have at least 3 inches (7.6 cm) of clearance between the handrails and the wall or surface they are mounted on?
	Where doors or gates open directly on a stairway, is there a platform provided so the swing of the door does not reduce the width of the platform to less than 21 inches (0.53 m)?
	Where stairs or stairways exit directly into any area where vehicles may be operated, are adequate barriers and warnings provided to prevent Associates from stepping into the path of traffic?
	Do stairway landings have a dimension measured in the direction of travel, at least equal to the width of the stairway?

Elevated Surfaces

	Are signs posted, when appropriate, showing the elevated surface load capacity?
	Are surfaces elevated more than 30 inches (0.76 m) above the floor or ground provided with standard guardrails?
	Are all elevated surfaces (beneath which people or machinery could be exposed to falling objects) provided with standard 4-inch (10.16 m) toeboards?
	Is a permanent means of access and egress provided to elevated storage and work surfaces?
	Is required headroom provided where necessary?
	Is material on elevated surfaces piled, stacked or racked in a manner to prevent it from tipping, falling, collapsing, rolling or spreading?
	Are dock boards or bridge plates used when transferring materials between docks and trucks or rail cars?

APPENDIX C - MINIMUM ILLUMINATION INTENSITIES

<u>FOOT CANDLES</u>	<u>AREA OR OPERATION</u>
5	General construction area lighting.
3	General construction areas, concrete placement, excavation and waste areas, accessways, active storage areas, loading platforms, refueling, and field maintenance areas.
5	Indoor: warehouses, corridors, hallways, and exitways.
5	Tunnels, shafts, and general underground work areas: (Exception: minimum of 10 foot-candles is required at tunnel and shaft heading during drilling, mucking, and scaling. Cap lights approved by the Mine Safety and Health Administration are acceptable for use in the tunnel heading).
10	General construction plant and shops, such as batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active storerooms, mess halls, indoor toilets, and workrooms.
30	First aid stations, infirmaries, and offices.