



Phosphate Business Unit – Environmental, Health and Safety (EHS) Department

## Walking Working Surfaces Program

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## 1. PURPOSE

The purpose of this program is to establish requirements for providing, inspecting, maintaining, and using safe Walking Working Surfaces.

## 2. SCOPE

This program applies to all Mosaic Fertilizer LLC Phosphate Business Unit facilities. This program covers fixed ladders, stairs, handrails, stair rails, walkways, platforms, barricades, exits/egress, elevators, guardrails, floors, and aisles.

This program does not address Mechanical Integrity inspections of structural members or equipment.

## 3. APPENDICES

The following appendices are associated with this Program:

| Appendix | Appendix Title                                 |
|----------|--|
| A        | Definitions                                    |
| B        | Roles and Responsibilities                     |
| C        | Risk Based Inspection Categories example table |

## 4. GENERAL REQUIREMENTS

4.1. All Mosaic Phosphate facilities shall use a **Risk Based Inspection Strategy** for their Walking Working Surfaces that is based on area specific hazards and the degree of corrosivity in each operating environment. Every Walking Working Surface shall be assessed and placed into one of three categories:

- High Risk - surfaces designated as high risk shall be inspected quarterly
- Medium Risk - surfaces designated medium risk shall be inspected semi-annually
- Low Risk - surfaces designated low risk shall be inspected annually

**NOTE: Refer to Appendix C for a list of examples.**

4.2. Each facility shall designate “Walking Working Surface Inspectors” who receive specific training on how to conduct inspections from the BU training course. WWS Inspectors shall use the inspection form in the Corporate Standard:

<https://doculink.mosaicco.com/Livelink/livelink.exe?func=ll&objId=82376247&objAction=browse&viewType=1> - “WWS Inspection Form - U.S.” to complete and document inspections.

### 4.3. General Rules

- 4.3.1. All openings into which a person can fall, walk or step shall be protected by a hard barricade.
- 4.3.2. Once an opening has been protected by a hard barricade, all personnel within the protected area shall be secured with proper fall protection prior to the start of the job.
- 4.3.3. All stairways, platforms, walkways, and aisles shall be kept clear of tools, trash, product and other obstructions.
- 4.3.4. Floor and walkway surfaces shall be kept in good repair.
- 4.3.5. Walking or standing on pipelines is prohibited unless authorized work requires it.
- 4.3.6. All grating shall:
  - Be cleaned prior to WWS Inspector scheduled inspections
  - Be inspected routinely by the responsible department to ensure it is secure and not damaged or deteriorated
  - Be secured per the Mosaic Engineering Standards and Specifications: *STE05530 Grating Design Guide and STF05530 Grating Fabrication Details* (<https://doculink.mosaicco.com/livelink/lisapi.dll?func=ll&objId=838715&objAction=browse&viewType=1>).
- 4.3.7. Separate from WWS Inspector scheduled events, Walking Working surfaces shall be checked as part of housekeeping inspections.
- 4.3.8. All spills, which create a hazard, shall be cleaned up immediately, or properly barricaded.



#### **4.4. Construction**

- 4.4.1. A standard handrail or cover shall guard holes and openings into which employees may fall, walk, or step.
- 4.4.2. Openings in floors to facilitate piping, equipment, etc. shall be equipped with a toe board when the opening is 1 inch or more. The distance between the toe board and the obstruction shall not exceed 2 inches.
- 4.4.3. All floors, platforms, stairs, fixed ladders, elevators, walkways, structures (or component thereof) intended for use as working or walking surfaces shall be designed, constructed and maintained in accordance with the Standards and Specifications: *STE05530 Grating Design Guide, STF05530 Grating Fabrication Details, STF05520 Details for Pipe Railing for Walking Working Surfaces, STF05521 Details for Angle Railing for Walking Working Surfaces, STE05501 Fixed Ladders Design Guide, and STF05501 Fixed Ladders Fabrication Details* (<https://doculink.mosaicco.com/livelink/lisapi.dll?func=ll&objId=838715&objAction=browse&viewType=1>).

- 4.4.4. The structural integrity of a floor, platform, stair, fixed ladder, elevator, walkway, structures (or component thereof) intended for use as working or walking surfaces shall not be modified without the written permission or drawings of the engineer.
- 4.4.5. Any opening 12 inches by 12 inches or larger, and having a drop of 4 feet or more requires at least a guardrail (top rail, mid rail and toe board as required).
- 4.4.6. Regardless of height, open-sided floors or platforms above or adjacent to dangerous equipment, attack tanks, acid tanks, sulfur pits, degreasing units or similar hazards requires, at a minimum, a guardrail.
- 4.4.7. A solid guardrail shall be built 6 feet or more from any temporary opening where possible. If the work area is limited, the guardrail should be installed the maximum allowable distance from the opening.
- 4.4.8. Any guardrail closer than 24" to an opening shall also require a toe board when falling objects pose a hazard to people or equipment below.
- 4.4.9. Supplemental guarding on a fixed ladder is required when a fixed ladder is located adjacent to a standard handrail. If fixed ladders are located within 3 feet on the side and four feet behind guardrails on elevated platforms, supplemental guarding shall be added to prevent falling over the standard handrail to the level below.
- 4.4.10. Large wall openings (at least 30 inches high and 18 inches wide) in any wall partition through which a person may fall shall be guarded.

#### **4.5. Housekeeping**

- 4.5.1. Every site shall have a housekeeping program that shall enable scheduled inspections and assist in maintaining clean operating environment to help preserve the integrity of Walking Working Surfaces
- 4.5.2. Inspections can only be completed on assets that are sufficiently clean to allow complete visual inspection of the Walking Working Surface.
- 4.5.3. Leaks / spillage from pumps, process units, etc. shall be controlled and cleaned to prevent elevated corrosion or excessive loading hazards. Repairs shall be scheduled on a priority basis.
- 4.5.4. All Walking Working Surfaces including decks, ladders, stairways, handrails, and landings shall be kept in good repair and free of oil, grease, and any other slippery or foreign material.
- 4.5.5. Work benches shall be maintained in a clean and safe working condition.
- 4.5.6. Where wet processes are used, drainage shall be maintained or gratings, mats, and raised platforms provided.
- 4.5.7. Every floor, working space, and passageway shall be kept free from protruding nails, burrs, splinters, holes or loose boards.
- 4.5.8. Any loose, bent, worn, or broken flooring or grating shall be reported for repair.

- 4.5.9. Parts, old material, scrap, and trash shall be removed from job sites on a daily basis as needed and disposed of in designated containers. Job sites shall be maintained in an orderly fashion during work.
- 4.5.10. Materials shall not be placed around or under safety showers or eyewash stations. Clear access to safety showers and eyewashes shall be kept at all times.
- 4.5.11. Easy access to fire extinguishers, hydrants, alarm push stations and electrical switch boxes, etc. shall be maintained at all times.
- 4.5.12. Oil / grease spills that present a slip or fall hazard shall be cleaned up immediately, or properly barricaded.
- 4.5.13. Oily rags shall be disposed of properly in designated containers.
- 4.5.14. Algae growth that could create a slipping hazard shall be cleaned as needed to assure safe footing.
- 4.5.15. Ladders shall be stored on racks, hooks or in their proper storage location.  
 **Note: Refer to the EHSS PHOS Portable Ladders program for specific details.**
- 4.5.16. Compressed gas cylinders shall be stored properly in an upright position, with caps in place, and bottles chained to a secure location.  
 **Note: Refer to the EHSS PHOS Compressed Air and Gas program for specific details.**
- 4.5.17. Tall weeds and grass shall be removed from and around substations, disconnects, and pumps. A 25-foot clear perimeter shall be maintained.
- 4.5.18. Storage areas, inside and out, shall be kept clean and orderly with no items protruding into walkways or roadways. For outside areas, grass and weeds shall be maintained to minimize hazardous conditions.
- 4.5.19. Material in bags, containers, bundles, or stored in tiers shall be stacked, blocked, interlocked, and limited.
- 4.5.20. Plant roads shall be maintained free of trash and spilled product; and all signs shall be properly maintained and displayed. All intersections shall be kept free of any obstructions that obscure vision.
- 4.5.21. All reagent, fuel and chemical storage areas shall be kept clean and the area within a 25-foot perimeter shall be kept free of dry vegetation.
- 4.5.22. Empty drums (oil, grease, solvents) shall be labeled and stored neatly in designated areas.
- 4.5.23. Broken glass or other sharp objects shall not be handled with your bare hands. Proper handling techniques, such as a broom and pan, should be used.

## 5. SPECIFIC REQUIREMENTS

### 5.1. Fixed Ladders General

- 5.1.1. Areas around all fixed ladders at top and bottom shall be kept free of tripping hazards.
- 5.1.2. Fixed ladder rungs shall be kept free of slippery materials, sharp edges, burrs or projections that may be a hazard

## **5.2. Fixed Ladder Construction**

- 5.2.1. Refer to *PIP STE05501 – Fixed Ladders Design Guide and STF05501 – Fixed Ladder Fabrication Details*.
- 5.2.2. The top rung shall be level with the platform or floor served and a step across distance of 2-1/2 inches to 12 inches (8 inches preferred) shall be maintained.
- 5.2.3. Self-closing swing gates are required at the top of fixed ladders with a landing. Swing gates are made to pass through without using your hands. The rungs of any newly constructed fixed ladder shall have a textured non-slip surface.

## **5.3. Fixed Ladder Use**

- 5.3.1. No one shall perform work from a fixed ladder unless they have the proper personal protective equipment in accordance with the Phosphate Fall Protection Program.
- 5.3.2. Employees shall face ladders at all times when ascending and descending.
- 5.3.3. Tools, equipment, etc. shall be raised and lowered with an appropriate rope or hoisting device to ensure that three points of contact can be maintained at all times.
- 5.3.4. Only one person at a time is permitted on a fixed ladder.
- 5.3.5. No one may climb a ladder equipped with a ladder safety system without the proper safety harness and attachments. These shall be inspected before each use.


## **5.4. Fixed Industrial Stairs General**

- 5.4.1. Fixed industrial stairs shall be provided from one structure level to another where operations necessitate regular travel between levels and for access to operating platforms at any equipment that requires attention routinely during operations.
- 5.4.2. Fixed industrial stairs shall be provided where access to elevations is daily or at each shift for purposes such as gauging, inspection, regular maintenance, etc. where the work may expose employees to acids, caustics, gases, or other harmful substances. This also applies when the carrying of tools or equipment is normally required.
- 5.4.3. Where the use of fixed ladders is common practice, such as for access to elevated tanks, towers, overhead traveling cranes, etc., they do not need to be replaced by fixed industrial stairs.
- 5.4.4. All fixed industrial stairs (treads / stair rails) shall be kept clean and clear of obstructions.

## **5.5. Fixed Industrial Stairs Construction**

- 5.5.1. Spiral stairways are only permitted for secondary access situations where it is not practical to provide a conventional stairway.
- 5.5.2. Every flight of stairs that have 4 or more risers shall be equipped with standard stair rails.
- 5.5.3. Fixed industrial stairways shall be installed according to Mosaic's PIP *STF05511 Fixed Industrial Stairs*.
- 5.5.4. Fixed industrial stairs shall be strong enough to carry a minimum concentrated load of 1000 pounds. It shall also be able to carry five times the normal anticipated live load.
- 5.5.5. Where doors or gates open directly onto a stairway, a platform shall be installed according to Mosaic's PIP *STF05511 Fixed Industrial Stairs*.

#### **5.6. Handrails General**

- 5.6.1. Handrails shall provide an adequate handhold for employees to grasp in order to prevent falls.
- 5.6.2. A standard handrail shall conform to PIP's: *STF05520 Details for Pipe Railing for Walking and Working Surfaces* and *STF05521 Details for Angle Railing for Walking Working Surfaces* (<https://doculink.mosaicco.com/livelink/llisapi.dll?func=ll&objId=838715&objAction=browse&viewType=1>).
- 5.6.3. The ends of the rails shall not overhang the terminal posts except where such overhang does not constitute a projection hazard.
- 5.6.4. Removable handrails shall be clearly marked with an attached warning sign using wording such as "Danger-Removable Handrails." The sign shall be attached to the removable piece of handrail. All removable handrails shall also be secured (pinned, bolted, welded, etc.) in place preventing them from becoming unintentionally detached and require a tool for removal – similar to equipment guarding.
- 5.6.5. Standard railings and toe boards or fall protection are required when walking or working within six feet of the edge of unguarded flat roofs.  
 **Note: Refer to the Fall Protection program for specific details.**
- 5.6.6. Specific to handrail and other barricading, in addition to visual inspection, inspectors and workers can test integrity by exerting an inward force by way of a physical pull test.

#### **5.7. Handrails Construction**

- 5.7.1. Refer to Mosaic's PIP's *STF05520 Details for Pipe Railing for Walking Working Surfaces* and *STF05521 Details for Angle Railing for Walking Working Surfaces* (<https://doculink.mosaicco.com/livelink/llisapi.dll?func=ll&objId=838715&objAction=browse&viewType=1>) on construction / installation of standard handrails.

- 5.7.2. Handrails and the top rails of the stair rail systems shall be able to withstand, without failure, at least 200 pounds of weight applied within 2 inches of the top edge in any downward or outward direction, at any point along the top edge.

#### **5.8. Stair Rails General**

- 5.8.1. Stair rail systems shall be surfaced to prevent injuries such as punctures or lacerations and to keep clothing from snagging.
- 5.8.2. Stair rails shall be used when ascending or descending stairs.
- 5.8.3. Stair rails shall provide an adequate handhold for employees to grasp to prevent falls.
- 5.8.4. Stair rails shall not be used for other than their intended use.

#### **5.9. Stair Rails Construction**

- 5.9.1. Stairways having four or more risers, or rising more than 30 inches in height – whichever is less – shall have a stair rail along each unprotected side or edge.
- 5.9.2. When the top edge of a stair rail system also serves as a handrail, the height of the top edge shall conform to the Standards & Specifications, PIP's: *STF05520 Details for Pipe Railing for Walking Working Surfaces* and *STF05521 Details for Angle Railing for Walking Working Surfaces* (<https://doculink.mosaicco.com/livelink/llisapi.dll?func=ll&objId=838715&objAction=browse&viewType=1>).
- 5.9.3. Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members shall be provided between the top rail and the stairway steps to the stair rail system.
- 5.9.4. The ends of stair rail systems and handrails shall be built to prevent dangerous projections, such as rails protruding beyond the end posts of the system.
- 5.9.5. For wood stair rails, the posts shall conform to the Standards and Specifications.
- 5.9.6. Winding or spiral stairways shall have a stair rail to prevent using areas where the tread width is less than 6 inches.
- 5.9.7. Screens or mesh, when used shall extend from the top of the stairway step and along the opening between top rail supports.
- 5.9.8. Unprotected sides and edges of stairway landings shall conform to the Standards and Specifications, PIP's: *STF05520 Details for Pipe Railing for Walking Working Surfaces* and *STF05521 Details for Angle Railing for Walking Working Surfaces* (<https://doculink.mosaicco.com/livelink/llisapi.dll?func=ll&objId=838715&objAction=browse&viewType=1>).
- 5.9.9. Handrails and the top rails of the stair rail systems shall be able to withstand, without failure, at least 200 pounds of weight applied within 2 inches of the top edge in any downward or outward direction, at any point along the top edge.

#### **5.10. Walkways General**



- 5.10.1. Material shall be stored, piled, or stacked so that the material is neat, stable and does not protrude into aisles or walkways.
- 5.10.2. Hoses, rope, extension cords, and welding leads shall be kept coiled and out of aisles when not in use. To prevent tripping hazards, any of the above shall be:
  - Ran beneath stairs, walkways, and working platforms whenever possible
  - Securely routed overhead across a walkway or stairway
  - Marked as a tripping hazard with cones or safety tape because no alternative was available to keep them out of the walkway
- 5.10.3. Walkways with outboard railings shall be provided wherever persons are required to walk alongside elevated conveyor belts. Inclined, railed walkways shall be non-skid or provided with cleats.

#### **5.11. Platforms General**

- 5.11.1. Temporary and permanent surfaces on which loads are to be landed shall be of sufficient size and strength to permit employees to work safely.
- 5.11.2. Safe means of access and egress to and from platforms shall be provided and maintained.
- 5.11.3. Platform surfaces four feet above an adjacent level shall be protected by standard railings or adequate guardrails.
- 5.11.4. Every ladder way, Floor or Platform opening shall be guarded by a standard railing with standard Toe board on all sides (except at the entrance to the opening), with the passage through the railing either provided with a swinging gate or offset such that a person cannot walk directly into the opening. Existing chains being used across the passage shall be replaced with swinging gates.

#### **5.12. Platform Construction**

- 5.12.1. Platforms at all locations, temporary or permanent, shall be of substantial construction and provided with guardrails or handrails with toe boards and maintained in good condition.

#### **5.13. Platforms Use**

- 5.13.1. Maximum safe load limits shall be clearly posted for platforms.
- 5.13.2. Maximum safe load limits shall not be exceeded.

#### **5.14. Barricades General**

Refer to the North America Barricading Program for barricade details. Link: [North America Safety Programs](#)

- ~~5.14.1. Barricades shall be easily identifiable.~~
- ~~5.14.2. Red barricade tape shall be used to define areas in which no one except authorized workers are permitted to enter.~~

~~5.14.3. Yellow barricade shall be used to define areas in which workers shall enter with caution.~~

~~5.14.4. Only a single color, red or yellow, shall be used to identify hazards in the same area.~~

#### **5.15. Barricade Construction**

~~5.15.1. Barricades shall completely surround all temporary hazards; examples include: falling objects, overhead work, chemical spills, excavations, etc.~~

~~5.15.2. Barricades shall completely surround the hazard to prevent a person from becoming confused as to which side of the barricade they are on.~~

#### **5.16. Barricades Use**

~~5.16.1. The Barricade shall be tagged to identify the job, date and person responsible for the barrier.~~

~~5.16.2. Barrier tape can be used as a barrier for holes smaller than 12"X12" or if less than 4' deep. It can also be used as a warning mechanism in conjunction with hard barricades.~~

#### **5.17. Exits / Egress General**

5.17.1. Unless exempted by Code, every story or section shall be provided with access to at least 2 means of egress, one which shall be located on each floor so that entrance to that exit can be reached without having to travel to another floor. All exits shall conform to the current state Building Code and the current Life Safety Code requirements.

5.17.2. Exit routes shall be unobstructed and free of material & equipment.

5.17.3. Employees shall not be required to travel through a room, which can be locked, or towards a dead end to reach an exit.

5.17.4. An exit shall lead outside to a space large enough to accommodate all building occupants.

5.17.5. Exit lighting shall be adequate.

5.17.6. Exits shall be clearly visible and marked by a distinctive sign reading "Exit".

5.17.7. Signs shall be posted along the exit route indicating the direction of travel to the nearest exit.

5.17.8. The line-of-sight to an exit shall be uninterrupted.

5.17.9. Any doorway or passage that might be mistaken for an exit shall be marked "Not an Exit" or with an indication of its actual use.

5.17.10. An exit sign shall be illuminated by a reliable light source or be electroluminescent.

5.17.11. If it is necessary to temporarily block an exit, another means of exit shall be identified.

### **5.18. Elevators General**

- 5.18.1. Elevators shall comply with the current state statutes and operating requirements for elevators.
- 5.18.2. Only authorized personnel shall use elevators during an emergency.
- 5.18.3. Elevators shall be equipped with an emergency alarm, a means of communication, and adequate emergency lights.
- 5.18.4. The elevators maximum load limits shall be clearly posted both inside and outside the car. Elevator load limits shall not be exceeded.
- 5.18.5. Elevators with a safety defect shall not be used.
- 5.18.6. Elevator safety devices shall not be overridden or made inoperable.
- 5.18.7. Elevators shall be thoroughly inspected by a third party from an accredited agency at intervals not to exceed one year. Records shall be kept on file at the location for 2 years. Records of inspection dates and compliance shall be posted in elevators.
- 5.18.8. Elevator landing openings shall be provided with doors, gates or equivalent protection that shall be in place when the elevator is not at that landing, to prevent employees from falling into the shaft.

### **5.19. Guardrails General**

- 5.19.1. Guardrails shall be provided at locations where persons are exposed to floor or wall openings or waterside edges, including bridges or gangway-like structures leading to pilings or vessel moorings or berthing installations, which present a hazard of falling more than 4 feet, or into water.
- 5.19.2. Guardrail ends shall not overhang to constitute a hazard, but this does not prohibit scrollwork, boxed ends or similar non-hazardous projections.

### **5.20. Guardrails Construction**


- 5.20.1. Guardrails shall be capable of withstanding a force of at least 200 lbs. applied in any direction at mid-span of the top rail, or at the upper most point if there is no top rail.

### **5.21. Floors General**

- 5.21.1. Where wet processes are used, or areas are exposed to weather conditions, drainage shall be maintained and false floors, platforms, mats or other dry standing places shall be provided where practicable.
- 5.21.2. To facilitate cleaning, every floor, working place and passageway shall be kept free from protruding nails, splinters, holes, or loose boards.
- 5.21.3. Permanent aisles and passageways shall be appropriately marked.
- 5.21.4. In every building or other structure, used for industrial or storage purposes, the safe allowable loads shall be marked on plates of approved design, which shall be securely affixed in a conspicuous place in each space to which they relate. Such plates shall not be removed or defaced but shall be properly maintained.

- 5.21.5. Trench, manhole or conduit covers and their supports, when located in plant roadways, shall be designed to carry a truck rear-axle load of at least 20,000 pounds.

## 5.22. Floors Construction

- 5.22.1. Every stairway floor opening shall be guarded by a standard railing designed, constructed and maintained in accordance with the Standards and Specifications, *STE05530 Grating Design Guide and STF05530 Grating Fabrication Details* (<https://doculink.mosaicco.com/livelink/llisapi.dll?func=ll&objId=838715&objAction=browse&viewType=1>). The railing shall be provided on all exposed sides (except at the entrance to the stairway).
- 5.22.2. A standard railing designed, constructed and maintained in accordance with the Standards and Specifications shall guard every ladder way floor opening. The railing shall be provided on all exposed sides (except at entrance to the stairway), with the passage through the railing either provided with a self-closing swing gate so that a person cannot walk directly into the opening. Existing chain guards need to be replaced with self-closing swing gates.
- 5.22.3. Every hatchway and chute floor opening shall be guarded by a hinged floor opening cover. When the opening is not in use, the cover shall be kept in place. Hard barricade shall be installed prior to opening hatchway or chute floor openings. When in use, the opening shall continue to be guarded with hard barricade to prevent a person from falling through the opening.
- 5.22.4. In addition to fastening clips, Areas of removable grating or floor sections for frequent (greater than once per year) maintenance or servicing of equipment shall require a designed access, equipped with either hinges or a perimeter frame to prevent grating or cover from sliding or shifting off the support structure.
-  **Note: These sections of removable grating shall be painted yellow, similar to curbs and handrail, to differentiate from conventional permanently installed grating.**
- 5.22.5. “Clamping” style grating clips which are held in place via friction and/or clamping force are strictly prohibited.
- 5.22.6. Grating clips must be mechanically fastened into or through the structural steel. All mechanical fasteners must be positively “locked” to the structural steel and cannot loosen or back-off over time.
- 5.22.7. Every skylight floor opening and hole shall be guarded by a standard skylight screen or a fixed standard railing on all exposed sides.
- 5.22.8. Every pit and trapdoor floor opening that are infrequently used, shall be guarded by a floor opening cover of standard strength and construction. Prior to removing the cover and while the pit or trapdoor floor opening poses a fall hazard, hard barricades shall be installed on all exposed sides.


- 5.22.9. Every manhole floor opening shall be guarded by a standard manhole cover that need not be hinged in place. Before removing the cover, hard barricades shall be installed and kept in place while the fall hazard is present.
- 5.22.10. Every temporary floor opening shall have hard barricade installed prior to creating the opening.
- 5.22.11. Every floor hole into which persons can accidentally walk shall be guarded by either a standard railing with standard toe board on all exposed sides or a floor hole cover of standard strength or construction. While the cover is not in place the floor hole shall be protected by red barricade tape.
- 5.22.12. Every floor hole which is greater than 1 (one) inch in its least dimension and not intended for passage of machinery, piping or other equipment that may expand, contract, vibrate or move shall be protected by a cover securely held in place that leaves no openings more than 1 (one) inch wide.
- 5.22.13. Floor holes provided for passage of machinery, piping or other equipment that may expand, contract, vibrate or move that are greater than 1 (one) inch but less than 8 (eight) inches in its least dimension need only be guarded by a toe board or equivalent.
- 5.22.14. Floor grating with dimensions of up to 2 (two) inches in its least dimension is acceptable for locations where drainage is needed and solids shall rapidly plug the grating openings. Factors such as pedestrian traffic and the reduction or elimination of the solids shall be considered prior to selection of this alternative.
- 5.22.15. Every open-sided floor four feet or more above adjacent floor or ground level shall be guarded by a standard railing, designed, constructed and maintained according to the Standards and Specifications, PIPs: *STE05530 Grating Design Guide and STF05530 Grating Fabrication Details* (<https://doculink.mosaicco.com/livelink/lisapi.dll?func=ll&objId=838715&objAction=browse&viewType=1>) on all open sides except where there is entrance to a ramps, stairway or fixed ladder.
- 5.22.16. Regardless of height, open-sided floors above or adjacent to dangerous equipment, open ditches, attack tanks, acid tanks, sulfur pits, degreasing units or similar hazards shall be guarded with a standard railing and toe board.

### **5.23. Walls General**

- 5.23.1. All temporary wall opening shall have hard barricade installed prior to creating the opening.
- 5.23.2. All temporary wall holes shall have red barricade tape at a minimum as a hazard control.

## **5.24. Discovering Unguarded Floor**

5.24.1. The steps below outline the actions that are to be taken when an unguarded floor or wall opening is discovered:

| STEP   | ACTION TO TAKE   |
|--|--|
| 1  | Remain at the opening to warn others and prevent falls   |
| 2  | Do not allow anyone to enter the area without proper fall protection   |
| 3  | Immediately notify management by calling or sending another employee to report the hazard and to initiate the installation of a hard barricade                                 |
| 4  | While the hard barricade is being installed, apply red barricade tape to secure the area, in which only authorized workers with proper fall protection are permitted to enter. |
| 5  | Remain at the opening to prevent and warn others from a fall   |
| 6  | Once the hard barricade has been installed, resume normal duties.  |
|  <b>Warning: Never leave an opening unguarded!</b> |  |

## **5.25. Aisles General**

5.25.1. Sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways and wherever turns or passage shall be made.

5.25.2. Aisles shall be kept clear and in good repair with no obstruction across or in aisles that could create a hazard.

5.25.3. Permanent aisles and passageways shall be appropriately marked. Markings for aisles shall be of reflective or easily seen color composed of dots, squares, strips or continuous lines; but shall define the aisle area. Aisle markings may vary from 2 to 6 inches wide. No painted markings are required of permanent aisles or passageways with dirt floors or floors covered with sand or dust.

5.25.4. In aisles and passageways, barricades shall be used to prevent persons from entering a restricted or hazardous area.

## **5.26. Crossovers**

5.26.1. Crossovers shall be installed over conveyors, other equipment and other areas (e.g. secondary containment walls), when access to adjacent areas is routinely required.

5.26.2. Stairways of a crossover should be equipped with hand and midrails.

5.26.3. The horizontal platform of a crossover should be treated as a fixed platform.

**5.27. Other General**

5.27.1. Vertical work clearances above any stair tread, platform or floor to an overhead obstruction shall be at least 7 feet measured from the tread, platform or floor. Overhead obstructions below 7 feet shall be marked.

5.27.2. Exit signs shall be illuminated with a reliable light source giving a value of 5 foot-candles on the illuminated surface of the sign. Photo luminescent signs are a recommended alternative.

5.27.3. Exit, floor load, and directional signs, etc. shall be audited on an annual basis and replaced as necessary.

**5.28. Sled Mounted Equipment General (Mineral Sites Only)**

5.28.1. Safe access and adequate lighting shall be maintained at all times.

5.28.2. Sleds used for mounting of equipment shall be installed level on a gravel, stone or other type of base elevated above the natural ground conditions.

5.28.3. Switchgears shall be located at a safe distance, no closer than 30 feet, to the pump assembly.

5.28.4. The distance from the top of the sled surface to the natural ground shall not exceed 10 inches.

5.28.5. Rock, stone or other natural material shall be placed around the sled to create a uniform step or an even walking surface from the natural ground to the sled surface. The sled shall then have back fill placed such that the walking surface of the sled is 8" above the backfill.

5.28.6. High and low voltage connections shall be grouped together and located as to minimize trip hazards and damage from mobile equipment.


5.28.7. Drain valves, placed at a location that shall not accumulate discharged material when opened, shall be installed at both the intake and discharge side of the pump.

**5.29. Sled Mounted Equipment Construction (Mineral Sites Only)**

5.29.1. Centrifugal Pumps, Electrical Switchgears and other mining related stationary equipment shall be mounted on sleds to facilitate installation and movement from place to place throughout the mining field.

5.29.2. Sleds shall be constructed of a non-skid surface free of loose material with no open holes. Bear Traps shall be covered over and the covers secured to prevent movement immediately after use.

5.29.3. Edges of the sled, integrated steps and other components which constitute a slip, trip hazard shall be removed if possible or painted yellow to increase visibility.

 **Note:** Note: Minerals is drafting an engineering standard to provide detailed guidance on sled mounted equipment; when published, that standard will supersede the guidance in paragraphs 5.28 and 5.29.

## 6. INSPECTION GUIDANCE

### 6.1. Periodic Inspections

- 6.1.1. In all MSHA covered operations a competent person designated by the operator or supervisor shall examine each working place at least once each shift for conditions that may adversely affect safety or health.
- 6.1.2. Inspections of all platform grating, stairs, and fixed industrial stairs shall be performed per the Risk Based Inspection Strategy and shall be included in the repetitive work order system on an electronic maintenance system. Elevators are to be inspected annually by a third party from an accredited agency.
- 6.1.3. Exit, floor load and directional signs, etc. shall be audited annually and replaced as necessary.
- 6.1.4. Walking Working Surfaces shall be inspected as part of the housekeeping inspections.

## 7. PERSONAL PROTECTIVE EQUIPMENT (PPE)

- 7.1. Standard PPE is the minimum requirement for this program.

## 8. TRAINING

- 8.1. The following table outlines the training required for Walking Working Surfaces:



**Phosphate Business Unit – Environmental, Health and Safety (EHS) Department**  
**Walking Working Surfaces Program**

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| <b>Audience</b>  | <b>Training Elements / Topics</b>   | <b>Frequency</b> | <b>Method</b> |
|--|---|------------------|---------------|
| All employees who are exposed to walking/working hazards | <ul style="list-style-type: none"><li>• Maintaining a housekeeping program.</li><li>• Emergency exits and lighting.</li><li>• Load marking of floors &amp; platforms (exceeding load limits).</li><li>• Building Code requirements.</li><li>• Fixed ladders, stairs, railings, platforms, walkways, aisles, floors, toe boards (design and maintenance requirements).</li><li>• Elevators (design &amp; maintenance requirements).</li><li>• Barricades (when to use and what type).</li><li>• Causes of slips, trips and falls.</li><li>• Guarding (how to apply to all walking/working exposures).</li><li>• Misc. (work clearances).</li><li>• Signs (exit, floor load, directional, etc.)</li></ul> | Initial          | CBT           |
| Qualified WWS Inspectors                                 | Specifics on the inspection criteria and dimensions to be utilized and typical examples.  | Every 2 Years    | ILT           |

## **8.2. Retraining**

8.2.1. In addition, an employee shall receive additional training (or retraining) if any of the following conditions exist:

- Program requirements change
- Changes in the workplace render previous training obsolete
- Inadequacies in the employee's knowledge is of concern

## **8.3. Training records**

8.3.1. Training records shall be maintained by the Phosphate Learning Management System (LMS).

8.3.2. Training records shall be maintained as per the Mosaic Record Control policy.

 **Reference: *Mosaic Document and Record Control Policy***

## 9. SELF-ASSESSMENTS

- 9.1. Site self-assessment shall be conducted in accordance with the MMS requirements.
- 9.2. The following should be included as part of the self-assessment:
  - A review of this document for accuracy and applicability
  - An evaluation of site compliance through field observations / audits
  - A review of the Risk Register for any entries related to the Program
  - A review of recent site and / or BU related incidents
  - A review of compliance with training requirements as per the Training Matrix
- 9.3. Document results of self-assessment and corresponding corrective actions.

 **Note: *Recommend any changes to the Program EHS Project Management Office (PMO) via the PMO Change Request form***

## 10. PROGRAM REVIEW

- 10.1. Phosphate EHS team shall review this program every seven (7) years and update as required.

## 11. RECORD RETENTION

- 11.1. Refer to the Mosaic Record Control policy for further information.

**Reference: *Mosaic Document and Record Control Policy***

## 12. REFERENCES

| References (Number and title)  |
|--|
| OSHA 29 CFR 1910.22 – 1910.30<br>1910.28(b)(9)<br>1917.111 – 1917.125<br>1918.32<br>Publication 3124 – Stairways & Ladders |
| MSHA 30 CFR 56.11001 – 56.11017  |

**Phosphate Business Unit – Environmental, Health and Safety (EHS) Department**  
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| References (Number and title)  |
|--|
| NFPA 101: Life Safety Code   |
| EHSS-Phos Program – Fall Protection  |
| Mosaic Document and Record Control Policy  |
| Applicable State Building Codes  |
| Applicable State Elevator Codes  |
| Mosaic Engineering PIPs<br>( <a href="https://doculink.mosaicco.com/livelink/lisapi.dll?func=ll&amp;objId=838715&amp;objAction=browse&amp;viewType=1">https://doculink.mosaicco.com/livelink/lisapi.dll?func=ll&amp;objId=838715&amp;objAction=browse&amp;viewType=1</a> ):<br>STE05530 Grating Design Guide<br>STF05530 Grating Fabrication Details<br>STF05520 Details for Pipe Railing for Walking Working Surfaces<br>STF05521 Details for Angle Railing for Walking Working Surfaces<br>STE05501 Fixed Ladders Design Guide<br>STF05501 Fixed Ladders Fabrication Details |

### 13. REVISION LOG

| Rev. No. | Rev. Date  | Revised By                   | Reason for Revision   |
|----------|------------|------------------------------|---|
| 0        | 05/14/2007 | Safety Dept.                 | Initial release   |
| 1        | 12/09/2009 | Brent Roberts                | Taylor Abel   |
| 1        | 09/19/2011 | D. Allen                     | Reformat for ISO  |
| 2        | 03/06/2012 | Foster Thorpe                | EHS   |
| 3        | 11/20/2014 | Operational Controls Manager | (7) Livelink: Change Request Process                            |
| 4        | 05/31/2019 | EHS PMO                      | EHS Director; Phosphate   |
| 5        | 06/17/2020 | EHS PMO                      | Corporate Standard Update                                       |
| 6        | 2/15/2024  | EHS PMO                      | Approved Field Request  |
| 7        | 5/15/2025  | EHS PMO                      | Align barricade requirements to the new NAB Barricading Program |