

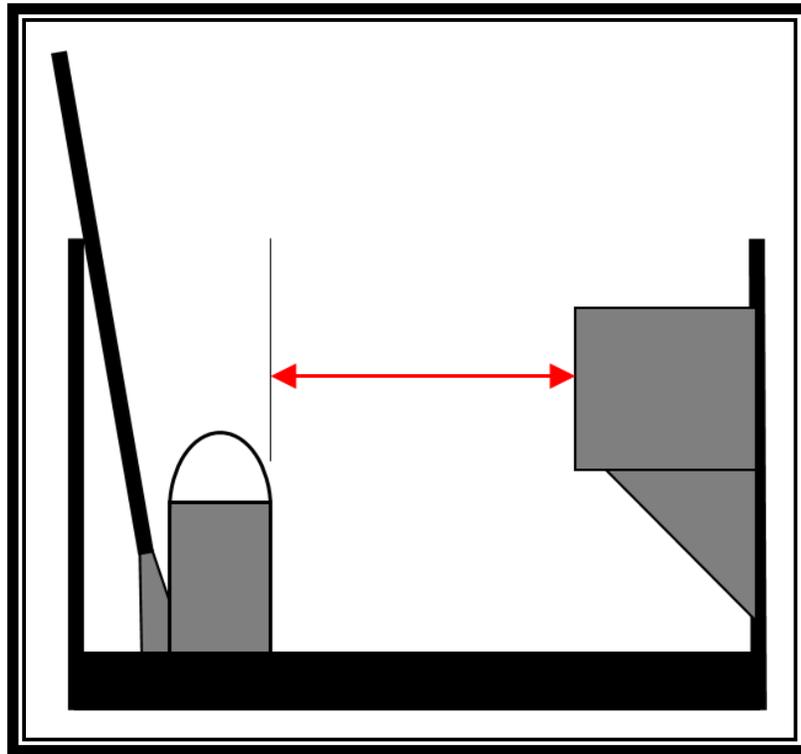
Ergo2.0Mine

Walkway Checklist



**Centers for Disease Control
and Prevention**
National Institute for Occupational
Safety and Health

Walkway Checklist



This checklist assesses slip, trip, and fall hazards on walkways. These hazards may be due to the design of the fixed ladder or issues due to maintenance and upkeep or housekeeping. Some conditions may require the ladder to be removed from service. The checklist is divided into eleven sections including maintenance, uneven surfaces/transition, clearance, inclined walkways/ramps, guardrails, guardrails along elevated and inclined walkways, handrails along elevated and inclined walkways, toe boards, walkways with floor or wall openings, mats, and carpets.

Walkway Checklist Instructions

This checklist package contains four documents. Three documents are necessary to conduct the audit. The third is optional and can be used as needed or when assessing multiple walkways. A description and intended use of each document is provided below.

1. **Walkway Information Page** – This document is required and allows the audit user to record pertinent information to be filed with the audit results and recommendations. A separate Walkway Information Page should be used for each location and time when assessing multiple location or at multiple times.
2. **Walkway Checklist Answer Sheet** – This document is optional and can be used to record responses to the checklist items, thereby allowing the user to reuse the Walkway Checklist document multiple times without the need for additional copies of the checklist items. A separate Walkway Answer Sheet should be used for each location and time when assessing multiple location or at multiple times.
3. **Walkway Checklist** – This document is required and contains all the checklist items and should be used to assess the walkway. The checklist is divided into eleven sections including maintenance, uneven surfaces/transition, clearance, inclined walkways/ramps, guardrails, guardrails along elevated and inclined walkways, handrails along elevated and inclined walkways, toe boards, walkways with floor or wall openings, mats, and carpets. To complete this checklist, you will need a tape measure and an inclinometer (or the built-in inclinometer on your smart device). A separate Walkway Checklist should be used for each stairway audited if the Walkway Checklist Answer Sheet is not used.

4. **Walkway Recommendations** – This document is required and contains all the recommendations for the checklist items. Each recommendation corresponds to the answer “yes” for that item on the Walkway Checklist or the Walkway Checklist Answer Sheet.

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Walkway Information Sheet

Name of Auditor: _____

Location: _____

Date: _____

Time: _____:_____ AM / PM

Operational status of mine: In operation / Not in operation

Brief description of the environment at the location of this stairway (Ex.: wet, dry, inside, outside, transitional area):

Comments:

Walkway Checklist Answer Sheet

Maintenance

- 1.1 _____
- 1.2 _____
- 1.3 _____
- 1.4 _____
- 1.5 _____
- 1.6 _____
- 1.7 _____
- 1.8 _____
- 1.9 _____
- 1.10 _____
- 1.11 _____
- 1.12 _____

Uneven Surfaces/Transitions

- 2.1 _____
- 2.2 _____

Clearance

- 3.1 _____

Inclined Walkway/Ramp

- 4.1 _____
- 4.2 _____
- 4.3 _____
- 4.4 _____
- 4.5 _____

Guardrails

- 5.1 _____

Guardrails along elevated & inclined walkways

- 6.1 _____
- 6.2 _____
- 6.3 _____
- 6.4 _____
- 6.5 _____
- 6.6 _____

Handrails along elevated & inclined walkways

- 7.1 _____
- 7.2 _____
- 7.3 _____
- 7.4 _____
- 7.5 _____
- 7.6 _____
- 7.7 _____
- 7.8 _____
- 7.9 _____

Toe boards

- 8.1 _____
- 8.2 _____

Walkways with floor or wall openings (for passage of materials, hatch, chute, ladderway, skylights)

- 9.1 _____
- 9.2 _____
- 9.3 _____
- 9.4 _____
- 9.5 _____
- 9.6 _____
- 9.7 _____
- 9.8 _____
- 9.9 _____
- 9.10 _____

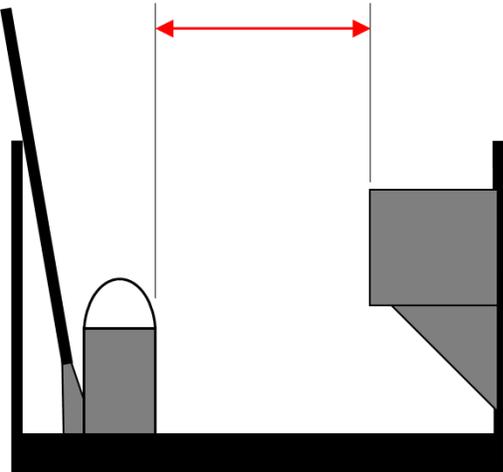
Mats

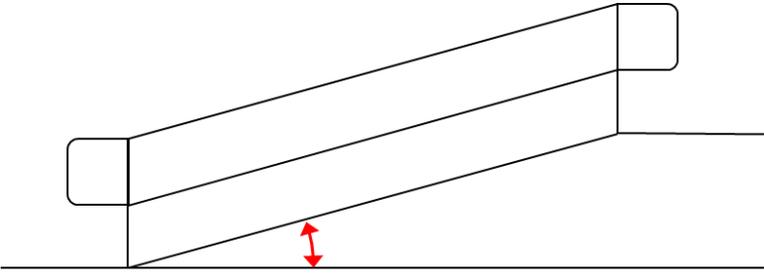
- 10.1 _____
- 10.2 _____
- 10.3 _____
- 10.4 _____

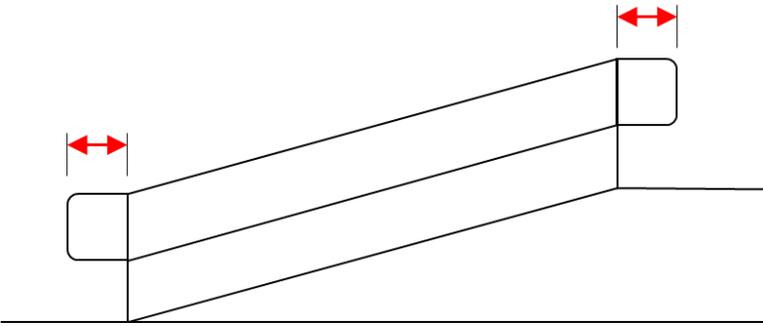
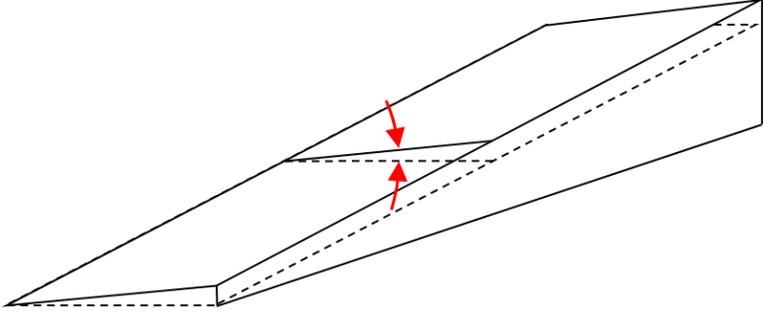
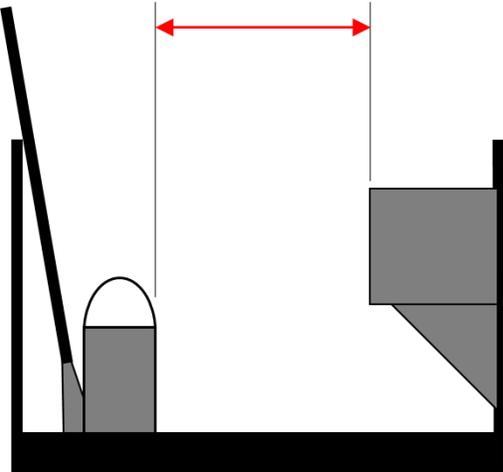
Carpets

- 11.1 _____
- 11.2 _____

Walkway Checklist

Category	Select all conditions present	X = Yes
Maintenance	1.1 No markings present to indicate designated walkway.	
	1.2 Warning or markings on designated walkway are not bright yellow or other noticeable color.	
	1.3 Painted areas on walkways are slippery.	
	1.4 Walkway surface moves, shakes, or is not securely attached.	
	1.5 Walkway surface is damaged or broken resulting in loose pieces on walkway.	
	1.6 Spillage, debris, or other contaminants are present on the walkway surface.	
	1.7 Hoses or pipes run across the walkway.	
	1.8 Tools or equipment are placed in the path of travel on the walkway.	
	1.9 Width of the walkway is less than 22 inches when tools, equipment, guards, pipes, and hoses are placed on the side or along the walkway.	
	 <p>The diagram shows a cross-section of a walkway. On the left, there is a vertical post and a diagonal pipe. In the center, there is a bucket. On the right, there is a vertical post and a rectangular block. A red double-headed arrow is positioned above the bucket, indicating the width of the walkway between the two vertical posts.</p>	
1.10 Pooled liquid is present on the walkway surface.		

Category	Select all conditions present	X = Yes
	1.11 Snow or ice is present on the walkway surface.	
	1.12 Walkway surface is slippery under normal or expected environmental conditions.	
Uneven surfaces/ Transitions	2.1 There is an abrupt change in walkway surface of greater than ¼ inch. 	
	2.2 Where two walkway surfaces meet (such as door thresholds, mats, or transitions from grated metal walkways to concrete pads), there is more than ¼-inch change in height. 	
Clearance	3.1 There is less than 80 inches of vertical clearance along walkway.	
Inclined walkway/ Ramp	4.1 The walkway has an angle of incline (grade) greater than 15° (~27% grade) to the horizontal. 	
	4.2 If the inclined walkway has a rise less than 6 inches, no high contrasting finish is applied to the edges or along the length of the inclined walkway.	
	4.3 If the inclined walkway has a rise greater than 6 inches, handrails are missing or damaged on either side for the entire length of the walkway.	

Category	Select all conditions present	X = Yes
	<p>4.4 Handrails do not extend horizontally onto the landing for at least 12 inches beyond the top and bottom of the inclined walkway.</p> 	
	<p>4.5 The cross slope (slope of walkway perpendicular to direction of travel) is greater than 1°.</p> 	
<p>Elevated walkways</p>	<p>5.1 The elevated walkway is less than 22 inches wide at any point.</p> 	

Category	Select all conditions present	X = Yes
Guardrails along elevated & inclined walkways	6.1 Guardrail has missing or damaged top rail, intermediate rail, post, screen, or mesh along the length of the elevated walkway.	
	6.2 Intermediate guardrail is not approximately halfway between the top guardrail and the elevated walkway surface.	
	6.3 When screen or mesh is used, it does not extend from the top guardrail to the elevated walkway surface for the entire length between posts.	
	6.4 If the top guardrail is made of wire rope, it is not flagged with high visibility material at least every 6 feet.	
	6.5 Height of top guardrail is not between 39 and 45 inches above the elevated walking surface.	
	6.6 The ends of the guardrails overhang the terminal posts and project into the walkway/working surface.	
Handrails along elevated & inclined walkways	7.1 Handrails rotate or move within the fitting.	
	7.2 Handrails have protrusions, burrs, or sharp edges.	
	7.3 Handrails have an obstruction on the top or sides.	
	7.4 There is less than 2-¼ inches of clearance around handrails at any point along the elevated walkway.	
	7.5 Handrails are not continuous with adjacent handrails or are not continuous for the entire length of the elevated walkway.	
	7.6 Handrail height is not consistent above walking surface.	
	7.7 Height of the top handrail is less than 34 inches or more than 38 inches above the walking surface.	
	7.8 If circular handrails, the outer diameter is less than 1-¼ inches or more than 2 inches.	
	7.9 If noncircular handrails, the cross-section is less than 1 inch or more than 2-¼ inches.	

Category	Select all conditions present	X = Yes
Toe boards	8.1 The top of the toe board is less than 3.5 inches above the walking surface.	
	8.2 There is more than ¼-inch clearance between the bottom of the toe board and the walking surface.	
Walkways with floor or wall openings (for passage of materials, hatch, chute, ladderway, skylights)	9.1 When floor openings are not being actively used, they are not protected by a guardrail system on all unprotected sides or they are not closed over with a cover.	
	9.2 Guardrails are removed, missing, or damaged on any exposed side of a floor opening.	
	9.3 Covers over floor openings are open, missing, damaged or nonfunctional.	
	9.4 When floor or wall openings are in use, warning signs are not posted and access to the opening is not guarded by a mine worker.	
	9.5 For hatches or chutes, temporary or removable guardrails are used on more than one side.	
	9.6 For hatches or chutes, the provided trapdoor, cover, or guardrails are open, missing, or damaged.	
	9.7 Wall openings or hoist wells with drops greater than 4 feet are not protected by a removable guardrail, chain, gate, or picket fences when not in use.	
	9.8 For ladderways that pass through the walkway, the trapdoor or cover is open, missing, damaged, or nonfunctional.	
	9.9 For skylights, screen and guardrail on any exposed side is missing or damaged.	
	9.10 There are no marked tie-off points/anchor points near the floor or wall opening.	
Mats	10.1 Contaminants are tracked onto the floor when mats are present.	
	10.2 Mat moves when it is stepped on.	

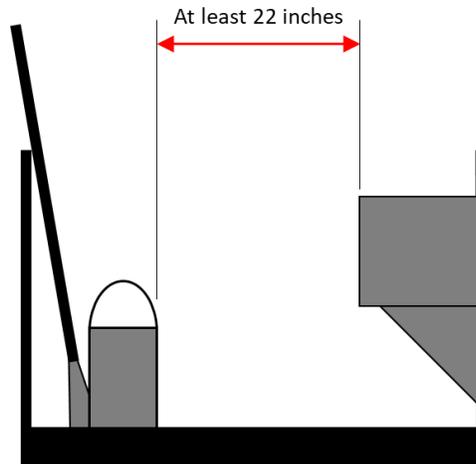
Category	Select all conditions present	X = Yes
	10.3 Mat has frayed, curled, or other edge defects, is buckling, has unsecured seams, worn holes, wrinkles, or otherwise poses a trip hazard.	
	10.4 Adjoining mats overlap or have gaps between them.	
Carpets	11.1 Carpet moves when it is stepped on.	
	11.2 Carpet has frayed edges, unsecured seams, worn areas, holes, wrinkles, or otherwise poses a trip hazard.	

Walkway Recommendations

Maintenance

- **(W Q 1.1 or Q 1.2)** You indicated that there are no markings present to indicate a designated walkway or the markings are not bright yellow or other noticeable color. It is beneficial to demarcate a designated walkway as it 1) encourages mine workers to use the walkway, 2) highlights which areas should be the first priority for clearing contaminants, debris, and snow or ice, and 3) offers an indication to mobile equipment operators working in the area to be cautious as there may be pedestrian traffic. Install bright yellow or high-visibility markings to indicate designated walkways. Routinely examine and maintain markings to ensure they are visible and easily identifiable.
- **(W Q 1.3 or Q 1.12)** You indicated that that the walkway surface or painted areas on the surface are slippery under normal or expected environmental conditions. Install walkways made of or treated with slip-resistant material (such as etching, scoring, droving, brushing, appliques, or coatings). If the walkway must be painted, use abrasive additives, cross grooving, or texturing to keep the surface slip resistant. Routinely examine and maintain the walkway or reapply treatments to maintain adequate traction. Install barriers to physically isolate the walkway from areas where there is spillage of liquid or debris. Routinely examine and maintain barriers to ensure that they prevent leakage onto walkways. Provide alternate routes and restrict access to the area using barricades and signs if the entire walkway is slippery. Only employees aware of the risks and authorized to access the area for cleaning and maintenance should be allowed access. Promptly remove the barricades and signs when the hazard is eliminated.
- **(W Q 1.4 or Q 1.5)** You indicated that the walkway surface moves, shakes, or is not securely attached; or the walkway surface is damaged or broken resulting in loose pieces on the walkway. Unexpected movement of the walkway surface can lead to a loss of balance, and loose pieces on the walkway can lead to slips and trips. If the walkway exhibits excessive movement, remove the walkway from service and barricade the walkway. Allow only those individuals responsible for fixing the walkway to enter. Promptly remove the barricades and signs when the walkway is securely attached and stable. Install walking surfaces that are stable, securely attached, and fit properly. Ensure the surface does not have loose, broken, or cracked pieces. Routinely examine and maintain the walking surface.
- **(W Q 1.6)** You indicated that spillage, debris, or other contaminants are present on the walkway surface. Install barriers to physically isolate the walkway from areas where there is spillage of liquid or debris. Routinely examine and maintain barriers to ensure that they prevent leakage onto walkways. Routinely examine and maintain all walkways and work areas to keep them clear of any spillage, debris, or other contaminants. Promptly clear any debris, accumulation, tools, or other objects from the walkway. Provide alternate routes and restrict access to the area using barricades and signs if the entire walkway has spillage, debris, or other contaminants on it. Only employees aware of the risks and authorized to access the area for cleaning and maintenance should be allowed access. Promptly remove the barricades and signs when the hazard is eliminated.

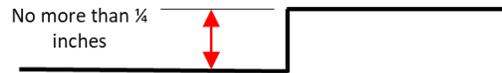
- **(W Q 1.7 or Q 1.8)** You indicated that hoses or pipes run across the walkway or tools or equipment are stored or placed in the path of travel on the walkway. Any obstructions in the path of travel can pose a trip hazard. Remove/reroute any obstructions (such as cables, hoses, pipes, tools, or equipment) in the path of travel. Routinely examine the walkway to ensure it is clear.
- **(W Q 1.9)** You indicated that the width of the walkway is less than 22 inches. Design walkways to allow at least 22 inches of free width for the length of the walkway. Remove/reroute any obstructions (such as cables, hoses, pipes, or equipment) that reduce width. Routinely examine and maintain the walkway.



- **(W Q 1.10)** You indicated that there is pooled liquid present on the walkway surface. Install walkway surfaces, such as gratings, that prevent the pooling/accumulation of liquid in wet process areas. Install drains to route liquid away from walking/working surfaces. Routinely examine and maintain walking surfaces and drains. Provide alternate routes and restrict access to the area using barricades and signs if the entire walkway is covered with liquid. Only employees aware of the risks and authorized to access the area for cleaning and maintenance should be allowed access. Promptly remove the barricades and signs when the hazard is eliminated.
- **(W Q 1.11)** You indicated that snow or ice is present on the walkway surface. Install covered walkways in high traffic areas to prevent accumulation of snow/ice on the walking surface. Provide snow and ice removal tools and supplies such as shovels, brushes, de-icing agent, or a snow blower near where they will be used. Routinely examine and treat surfaces and promptly remove any snow/ice accumulation. Provide alternate routes and restrict access to the area using barricades and signs if the entire walkway is covered with snow or ice. Only employees aware of the risks and authorized to access the area for snow or ice removal should be allowed access. Promptly remove the barricades and signs when the hazard is eliminated.

Uneven surfaces/Transition

- **(W Q 2.1 or Q 2.2)** You indicated that there is an abrupt change in walkway surface of greater than $\frac{1}{4}$ inch along the walkway or where two walkway surfaces meet (such as door thresholds, mats, or transitions from grated metal walkways to concrete pads). Even a small change in height of $\frac{1}{4}$ inch can lead to trips when walking along walkways. Design walking surfaces such that they are level. Ensure adjoining surfaces, floor hardware, door thresholds, carpets, and mats are level. Routinely examine and maintain surface transitions. Repair or provide edge treatments (ramps) if there is greater than a $\frac{1}{4}$ -inch change in height between adjoining surfaces.

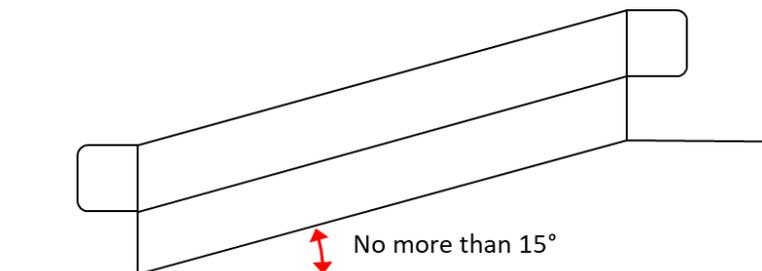


Clearance

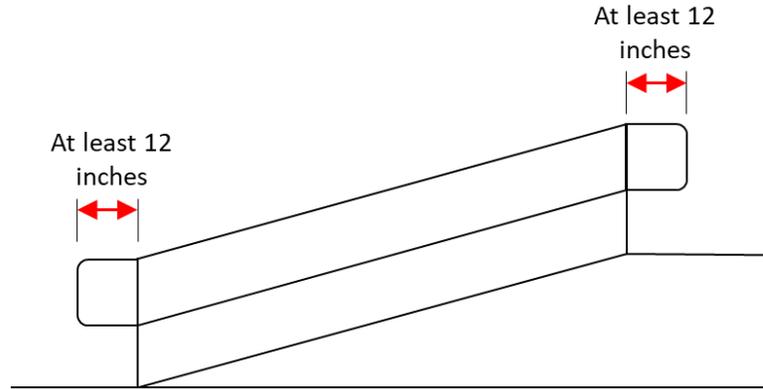
- **(W Q 3.1)** You indicated that there is less than 80 inches of vertical clearance along the walkway. Design walkways and ramps with at least 80 inches vertical clearances. Remove/reroute any obstructions (such as cables, hoses, pipes, or equipment) that result in less than 80 inches of vertical clearance. If 80 inches of vertical clearance is unavoidable, install warning signs indicating low clearance at the start of the walkway and near the low clearance. Provide padding and paint the ceiling in a high visibility color at the location of the low clearance. Routinely examine and maintain warning signs.

Inclined walkways/Ramps

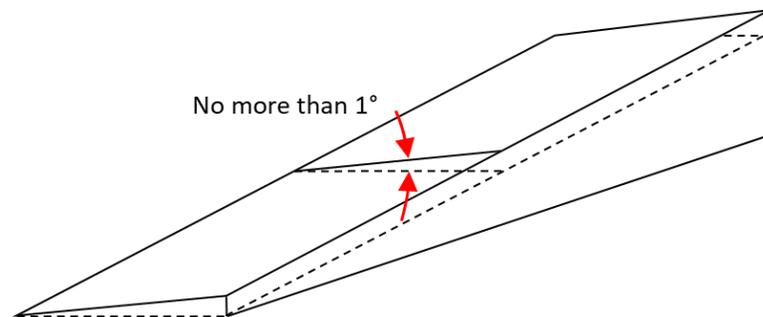
- **(W Q 4.1)** You indicated that the walkway has an angle of incline greater than 15° (27% grade) to the horizontal. Design inclined walkways with angles of incline less than 15° from the horizontal. If possible, replace this inclined walkway with a combination of stairs and level walkways. If replacement is not possible, ensure walkways are constructed of grated metal such as a diamond weave pattern. Walking at these angles increases the frictional requirements for safe walking, particularly when carrying items. Ensure workers are able to maintain 3 points of contact (this means that at any time there should be both feet and one hand supported or both hands and one foot) while walking by providing handrails on both sides and eliminate their need to carry items in their hands by providing tool backpacks and materials handling systems. Special care should also be taken to prevent accumulation of debris and contaminants on inclined surfaces which could increase the risk of slip and fall events.



- **(W Q 4.2)** You indicated that there is no high-contrast finish applied to the edges or along the length of the inclined walkway with a rise of less than 6 inches. Inclined walkways with a low rise or low ramps without handrails pose a trip hazard if not clearly marked. Low ramps also pose a fall hazard if the worker veers off the ramp. Use bright yellow or high-contrast markings along the edge of the ramp less than 6 inches high. Routinely examine and maintain markings to ensure that they are visible and easily identifiable.
- **(W Q 4.3)** You indicated that handrails are missing or damaged on either side of the inclined walkway with a rise greater than 6 inches. Install handrails on both sides of and for the entire length of an elevated inclined walkway/ramp greater than 6 inches high. Routinely examine and repair or replace handrails.
- **(W Q 4.4)** You indicated that handrails do not extend horizontally onto the landing for at least 12 inches beyond the top and bottom of the inclined walkway. Handrail extensions aid transitions from the ramp to the level platform or walkway. Install handrail extensions that extend at least 12 inches beyond the top and bottom. These extensions should return to a wall, guard, or floor, or be continuous to the handrail of an adjacent ramp run. Routinely examine and repair or replace damaged handrails.

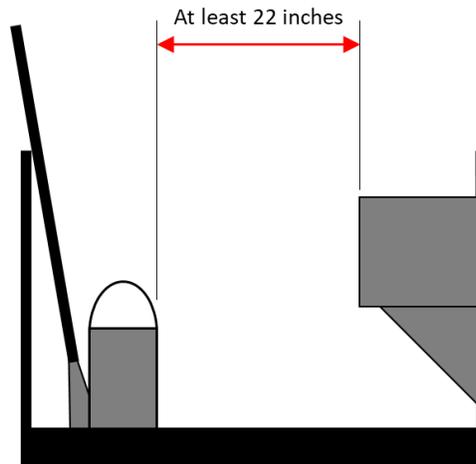


- **(W Q 4.5)** You indicated that the inclined walkway has a cross slope (slope of walkway perpendicular to direction of travel) greater than 1° (approximately 2% grade). Install inclined walkways/ramps that are level from side to side and do not have a cross slope. Routinely examine and maintain the inclined walkway/ramp to ensure it is free from accumulation, damage, or warping.



Guardrails

- **(W Q 5.1)** You indicated that the width of the elevated walkway is less than 22 inches. Design elevated walkways to allow at least 22 inches of free width for the length of the walkway. Remove/reroute any obstructions (such as cables, hoses, pipes, tools, or equipment) that reduce width. Routinely examine and maintain the elevated walkway.



Guardrails along elevated and inclined walkways

- **(W Q 6.1)** You indicated that the guardrail has a missing or damaged top rail, intermediate rail, post, screen, or mesh along the length of the elevated walkway. Guardrails with top and intermediate rails, posts, screens or mesh should be installed along elevated walkways and conveyor belts, stairs, ramps, scaffolding, mezzanines, aisles, and landings that are 4 feet or more above a lower level or where there is a danger of falling. Routinely examine and maintain guardrails.
- **(W Q 6.2)** You indicated that the intermediate guardrail is not approximately halfway between the top guardrail and the elevated walkway surface. Intermediate guardrails serve as a barrier to prevent workers from slipping off of the walkway between the top rail and the floor. Intermediate guardrails also prevent larger objects from inadvertently falling to the lower level. Install guardrails with intermediate rails that are approximately halfway between the top guardrail and floor. Routinely examine and maintain guardrails.
- **(W Q 6.3)** You indicated that the screen or mesh used does not extend from the top guardrail to the elevated walkway surface for the entire length between posts. Screens and mesh serve as a barrier to prevent workers from slipping off of the walkway between the top rail and the floor. Screens and mesh also prevent larger objects from falling to the lower level. When using screens and mesh, they should be installed from the top guardrail to the floor and along the entire length between posts. Routinely examine and maintain mesh and screens.
- **(W Q 6.4)** You indicated that the top guardrail is made of wire rope and is not flagged with high visibility material at least every 6 feet. Avoid using wire ropes as guardrails. If wire rope is used for top rails of guardrails, ensure that rails have high-visibility flags installed every 6 feet. Routinely examine and replace the wire rope and the flags to maintain visibility.

- **(W Q 6.5)** You indicated that the height of the top guardrail is not between 39 and 45 inches above the elevated walking surface. Install top guardrails between 39 and 45 inches above the floor with an intermediate guardrail approximately halfway between the top guardrail and floor. Routinely examine and maintain guardrails.
- **(W Q 6.6)** You indicated that the ends of the guardrails overhang the terminal posts and project into the walkway/working surface. Projections onto the walking surface can create an obstruction resulting in inadvertent contact by workers. Install guardrails such that they end flush with the posts and do not overhang. Routinely examine and maintain guardrails and remove any portion of a guardrail that projects into the walking/working surface.

Handrails along elevated and inclined walkways

- **(W Q 7.1)** You indicated that handrails rotate or move within the fitting. Handrails that move and rotate do not provide adequate stability and offer little assistance when recovering from a fall. Install handrails securely in their fitting. Routinely examine and maintain handrails to ensure that they do not rotate or move.
- **(W Q 7.2)** You indicated that handrails have protrusions, burrs, or sharp edges. Clothing can get snagged on the protrusions, burrs, or sharp edges. There is also a risk of a puncture, cut, or laceration from handrails that have protrusions, burrs, or sharp edges. Routinely examine and maintain handrails to ensure that they are free from protrusions, burrs, or sharp edges.
- **(W Q 7.3 or Q 7.4)** You indicated that handrails have an obstruction on the top or sides, or there is less than 2-¼ inches of clearance around handrails at any point along the elevated walkway. Handrails with obstructions limit the usable length of the handrail. Install handrails that have no obstructions on the top or sides with at least 2-¼ inches of clearance from the nearest object. Routinely examine and maintain handrails.
- **(W Q 7.5)** You indicated that handrails are not continuous with adjacent handrails or are not continuous for the entire length of the elevated walkway. Continuous handrails can provide support to workers as they traverse the walkway and be of assistance when recovering from a fall. Install handrails that are continuous with the adjacent handrail and at a consistent height (34–38 inches above the floor) for the length of the handrail. Routinely examine and maintain handrails and the surrounding flooring.
- **(W Q 7.6 or Q 7.7)** You indicated that the height of the top handrail is less than 34 inches or more than 38 inches above the walking surface or that handrails are not at a consistent height above the walking surface. Consistent handrail height can provide support to mine workers as they traverse the walkway and be of assistance when recovering from a fall. Install handrails that are continuous with the adjacent handrail and at a consistent height (34–38 inches above the floor) for the length of the handrail. Routinely examine and maintain handrails and surrounding flooring.

- **(W Q 7.8 or Q 7.9)** You indicated that for circular handrails, the outer diameter is less than 1-¼ inches or more than 2 inches; or for noncircular handrails, the cross-section is less than 1 inch or more than 2-¼ inches. Providing handrails with a cross-section that is easy to grip can help prevent and recover from falls. Install circular handrails with diameters between 1-¼ and 2 inches or noncircular handrails with cross-section dimensions that are between 1 and 2-¼ inches. Ensure handrails do not have protrusions, burrs, or sharp edges. Routinely examine and maintain handrails.

Toe boards

- **(W Q 8.1 or Q 8.2)** You indicated that the top of the toe board is less than 4 inches above the walking surface or there is more than a ¼-inch clearance between the bottom of the toe board and the walking surface. Toe boards less than 3.5 inches high may not be high enough to prevent the foot from sliding off the edge or to prevent objects from rolling off the elevated walkway or platform. A gap (not more than ¼ inch) is required at the bottom of the toe boards to remove accumulation of contaminants from the walkway, but a larger gap would allow larger objects to fall to the lower level, potentially injuring those working below. Install toe boards that are at least 3.5 inches high and have less than a ¼-inch gap between the toe board and the walking surface. Routinely examine and maintain toe boards for missing or damaged sections.

Walkways with floor or wall openings

- **(W Q 9.1)** You indicated that when floor openings are not being actively used, they are not protected by a guardrail system on all unprotected sides or they are not closed over with a cover. Fatalities have occurred from mine workers falling into floor openings. Install guardrails on all unprotected sides (with no more than 1 side being removable) or hinged covers over holes, manholes, chutes, trapdoors, or other floor openings through the walking surface. Also install and clearly mark tie-off points/anchor points for use when the floor opening is open. Routinely examine and maintain guardrails and covers to ensure that they are closed when not in use and are free from damage.
- **(W Q 9.2 and Q 9.3)** You indicated that guardrails are removed, missing, or damaged on any exposed side of a floor opening or covers over floor openings are open, missing, damaged, or nonfunctional. Fatalities have occurred from mine workers falling into floor openings. Install guardrails on all unprotected sides (with no more than one side being removable) or hinged covers/trapdoors over hatches, chutes, manholes, or other floor openings through the walking surface. Also install and clearly mark tie-off points/anchor points for use when the floor opening is open. Routinely examine and maintain guardrails and covers to ensure that they are closed when not in use and are free from damage.
- **(W Q 9.4)** You indicated that when floor or wall openings are in use, warning signs are not posted and access to the opening is not guarded by a mine worker. When floor or wall openings are in use, barricade the area and place clearly visible warning signs to limit access. Also, station a mine worker close to the opening to warn others of the hazard present. Install and clearly mark tie-off points/anchor points for use when the floor opening is open. Use a fall restraint system or a personal fall arrest system when working around an open floor opening.

- **(W Q 9.5 or Q 9.6)** You indicated that temporary or removable guardrails are used on more than one side of the hatch or chute; or the trapdoor, cover, or guardrails are open, missing, or damaged. Install guardrails on all unprotected sides (with no more than one side being removable) or hinged covers/trapdoors over hatches, chutes, manholes, or other floor openings through the walking surface. Also install and clearly mark tie-off points/anchor points for use when the hatch or chute is open. Routinely examine and maintain guardrails and covers to ensure that they are closed when not in use and are free from damage.
- **(W Q 9.7)** You indicated that the wall opening or hoist well with a drop greater than 4 feet is not protected by a removable guardrail, chain, gate, or picket fence when not in use. Install a chain, gate, removable guardrail, or fence across the access opening of hoisting areas or at wall openings that is 4 feet or more above a lower level. Also install and clearly mark tie-off points/anchor points for use when the wall opening or hoist well is open. Routinely examine and maintain guards to ensure that they are closed when not in use and are free from damage.
- **(W Q 9.8)** You indicated that the trapdoor or cover of the ladderway that passes through the walkway is open, missing, damaged, or nonfunctional. Install a trapdoor or other adequate guarding around ladderways that pass through walkways. Routinely examine and maintain trapdoors and guarding to ensure that they are closed when not in use and are free from damage.
- **(W Q 9.9)** You indicated that screen and guardrail on any exposed side of the skylight are missing or damaged. Install screens and guardrails on all exposed sides of skylights. Routinely examine and maintain screens and guardrails.
- **(W Q 9.10)** You indicated that there are no marked tie-off points/anchor points near the floor or wall opening. Install and clearly mark tie-off points/anchor points so fall restraint or personal fall arrest systems can be used when the wall or floor opening is actively being used. Routinely examine the tie-off points.

Mats and Carpets

- **(W Q 10.1)** You indicated that contaminants are tracked onto the floor when mats are present. Routinely clean and replace mats to prevent them from getting saturated with material and ensure the mats remain securely attached to the floor. If mats are inadequate in capturing the contaminants, install walkway surfaces such as gratings that prevent the pooling/accumulation of contaminants. Ensure the grating is stable and that the edges of the grating are level with the adjoining surfaces.
- **(W Q 10.2 or Q 10.3 or Q 11.1 or Q 11.2)** You indicated that the mat or carpet moves when stepped on or has frayed, curled, or other edge defects, is buckling, has unsecured seams, worn holes, or wrinkles. These conditions pose a trip hazard. Install carpet and mats securely to prevent movement. Routinely stretch carpets and inspect and maintain mats and carpets to ensure that they are not frayed, curled, buckled, have unsecured seams, worn holes, wrinkles, or other defects that may pose a tripping hazard.
- **(W Q 10.4)** You indicated that adjoining mats overlap or have gaps between them. Install adjoining mats such that they are flush and do not overlap as they can pose a trip hazard. Routinely examine and maintain mats.



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