

**CS Part 21 Guarding of Walking and Working Areas
Compared With**

1926 Subpart L – Scaffolds:	1926.451 General requirements
1926 Subpart M – Fall Protection:	1926.501 Duty to have fall protection
1926 Subpart P – Excavations:	1926.651 Specific Excavation Requirements
1926 Subpart X – Ladders:	1926.1051 General requirements
	1926.1052 Stairways
	1926.1060 Training requirements

Summary: The significant differences between CS Part 21. Guarding of Walking and Working Areas and the 29 C.F.R. 1926 rules are in:

- Stairway protection systems
- Stairways
- Roof work
- Hatchway and chute-floor openings
- Guardrail specifications for scaffolding and catch platforms
- Runway and ramp specifications
- Specifications for stair rail
- Handrail specifications
- Temporary stairways
- Maintenance
- Catch platform specifications

The comparisons show only those provisions where MIOSHA rules are different than OSHA or where MIOSHA rules are not included in 29 C.F.R.

****means there is a comparable OSHA rule to this paragraph

MIOSHA	OSHA
<p>R 408.42128 Stairway protection systems Rule 2128. Employers shall provide and install all stairway fall protection systems required by this part and shall comply with all other pertinent requirements of this part before employees begin the work that necessitates the installation and use of stairways and their fall protection systems.</p>	<p>No comparable OSHA provision</p>

MIOSHA	OSHA
<p>R 408.42131 Roof work Rule 2131. (1) An employer working on a high-pitched roof shall be provided with and use either roofing brackets and a working plank or a crawling board, regardless of the ground-to-eave height.</p> <p>(2) An employer shall protect employees working on a dome-type roof as prescribed in Part 45. Fall Protection, being R 408.44501 et seq. of the Michigan Administrative Code.</p> <p>(3) The portion of a roof where employees are working shall be kept free of ice, snow, or other slippery conditions.</p>	<p>1926.501 Duty to have fall protection (b)(10) "Roofing work on Low-slope roofs." Except as otherwise provided in paragraph (b) of this section, each employee engaged in roofing activities on low-slope roofs, with unprotected sides and edges 6 feet (1.8 m) or more above lower levels shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems, or a combination of warning line system and guardrail system, warning line system and safety net system, or warning line system and personal fall arrest system, or warning line system and safety monitoring system. Or, on roofs 50-feet (15.25 m) or less in width (see Appendix A to subpart M of this part), the use of a safety monitoring system alone [i.e. without the warning line system] is permitted.</p> <p>1926.501(b)(11) "Steep roofs." Each employee on a steep roof with unprotected sides and edges 6 feet (1.8 m) or more above lower levels shall be protected from falling by guardrail systems with toeboards, safety net systems, or personal fall arrest systems.</p>
<p>R 408.42145 Hatchway and chute-floor openings Rule 2145. (1) A hatchway or chute-floor opening that is less than 39 inches above the floor shall be guarded by either of the following:</p> <p>(a) A hinged cover and a fixed guardrail on not less than 2 sides. When the opening is not in use, the cover shall be closed or a removable guardrail shall guard the exposed side.</p> <p>(b) A removable guardrail on 2 sides and fixed guardrail on the other 2 sides. The removable guardrail shall be kept in place when the opening is not in use.</p> <p>(2) When dumping from mechanical equipment or a wheelbarrow, the exposed edge of the hatchway, chute opening, or open-sided floor shall be protected by a bumper. The bumper shall be not less than 6 inches nominal size and shall be secured to the floor.</p>	<p>No comparable OSHA provision</p>

MIOSHA	OSHA
<p>R 408.42149 Stairways Rule 2149. (1) A stairway shall be equipped with a stair railing or handrail as follows:</p> <ul style="list-style-type: none"> (a) A stairway which is not more than 44 inches wide and which has enclosed sides shall have a handrail on the right descending side. (b) A stairway which is not more than 44 inches wide and which has 1 open side shall have a stair railing on the open side. (c) A stairway which is not more than 44 inches wide and which has 2 open sides shall have a stair railing on each side. (d) A stairway that is more than 44 inches wide shall have 1 handrail on each enclosed side and 1 stair rail on each open side. (e) A stairway that is 88 or more inches wide shall have 1 handrail on each enclosed side, 1 stair rail on each open side, and 1 intermediate stair rail located in the middle of the stairway. <p>(2)****</p> <p>(3) Debris and other loose material shall not be permitted on a stairway.</p>	<p>No comparable OSHA provisions</p> <p>Equivalent</p> <p>No comparable OSHA provision</p>
<p>R 408.42150 Guardrail specifications for scaffolding and catch platforms Rule 2150. (1) A guardrail shall consist of a top rail, intermediate rail, and supporting posts. The top rail shall have a smooth surface and shall be located not less than 36, nor more than 42, inches above the floor, ramp, platform, or runway. The intermediate rail shall be located halfway between the top rail and the floor, ramp, platform, or runway. The top rail shall not overrun the terminal posts unless such a projection does not constitute a hazard.</p> <p>(2) A top rail and its supporting posts shall be constructed of wood which is not less than 2- by 4- inch nominal size with a 1- by 6- inch or 2- by 4- inch nominal size intermediate rail. The construction and fastenings shall produce a guardrail capable of withstanding a 200- pound capability. A guardrail that is subject to additional loads shall be constructed of heavier stock and the supporting post shall be more closely spaced.</p> <p>(3) Vertical supporting posts shall be placed not more than 8 feet apart.</p> <p>(4) Banding steel shall not be used for guardrail construction.</p> <p>(5) Welded resteel members shall not be used for guardrail construction.</p>	<p>1926 Subpart L – Scaffolds Appendix A – Scaffold Specifications (d) Guardrails shall be as follows:</p> <p>(i) Toprails shall be equivalent in strength to 2 inch by 4 inch lumber; or</p> <ul style="list-style-type: none"> 1 1/4 inch x 1/8 inch structural angle iron; or 1 inch x .070 inch wall steel tubing; or 1.990 inch x .058 inch wall aluminum tubing. <p>(ii) Midrails shall be equivalent in strength to 1 inch by 6 inch lumber; or</p> <ul style="list-style-type: none"> 1 1/4 inch x 1 1/4 inch x 1/8 inch structural angle iron; or 1 inch x .070 inch wall steel tubing; or 1.990 inch x .058 inch wall aluminum tubing. <p>(iii) Toeboards shall be equivalent in strength to 1 inch by 4 inch lumber; or</p> <ul style="list-style-type: none"> 1 1/4 inch x 1 1/4 inch structural angle iron; or 1 inch x .070 inch wall steel tubing; or 1.990 inch x .058 inch wall aluminum tubing. <p>(iv) Posts shall be equivalent in strength to 2 inch by 4 inch lumber; or</p> <ul style="list-style-type: none"> 1 1/4 inch x 1 1/4 inch x 1/8 structural angle iron; or 1 inch x .070 inch wall steel tubing; or 1.990 inch x .058 inch wall aluminum tubing. <p>(v) Distance between posts shall not exceed 8 feet.</p> <p>(e) Overhead protection shall consist of 2 inch nominal planking laid tight, or 3/4-inch plywood.</p> <p>(f) Screen installed between toeboards and midrails or top rails shall consist of No. 18 gauge U.S. Standard wire one inch mesh.</p>

MIOSHA	OSHA
<p>R 408.42154 Runway and ramp specifications</p> <p>Rule 2154. (1) A ramp or runway that is used exclusively by employees as a means of access to or egress from a walking or working surface shall be in compliance with all of the following provisions:</p> <ul style="list-style-type: none"> (a) Be capable of supporting not less than 2 times the maximum intended load. (b) Consist of a minimum of two 2-inch by 10-inch nominal size planks placed side by side or other material of equal width that provides equivalent strength if guardrails are not required. (c) Consist of a minimum of three 2-inch by 10-inch nominal size planks placed side by side or other material of equal width that provides equivalent strength if guardrails are required. (d) Not be constructed steeper than the ratio of 1 foot of vertical rise to 2 feet of horizontal run. (e) Have a slip-resistant surface or have cleats which are not more than 2 inches by 4 inches nominal size and which are uniformly spaced not more than 24 inches apart. (f) Be constructed to avoid excessive deflection and springing action. (g) Be secured at each end to prevent displacement. (h) Not be used for the storage of materials or equipment. (i) Be maintained free of debris, other loose materials, and slip or trip hazards. <p>(2) A ramp or runway used by employees with wheelbarrows shall be in compliance with both of the following provisions:</p> <ul style="list-style-type: none"> (a) Be constructed and used as prescribed in subrule (1)(a), (d), (e), (f), (g), (h), and (i) of this rule. (b) Consist of three 2-inch by 10-inch nominal size planks placed side by side or other material of equal width that provides equivalent strength. <p>(3) A ramp or runway used by concrete buggies, fork lift trucks, or other motorized material handling equipment shall be in compliance with all of the following provisions:</p> <ul style="list-style-type: none"> (a) Be capable of supporting not less than 4 times the maximum intended load. (b) Be not less than 5 feet wide. (c) Be constructed and used as prescribed in subrule (1)(a), (d), (f), (g), (h), and (i) of this rule. <p>(4) A ramp or runway constructed of 2 or more planks placed side by side shall have the planks securely fastened together.</p>	<p>1926.501(b)(6) "Ramps, runways, and other walkways." Each employee on ramps, runways, and other walkways shall be protected from falling 6 feet (1.8 m) or more to lower levels by guardrail systems.</p> <p>1926.651(c)(1) Structural ramps. 1926.651(c)(1)(i) Structural ramps that are used solely by employees as a means of access or egress from excavations shall be designed by a competent person. Structural ramps used for access or egress of equipment shall be designed by a competent person qualified in structural design, and shall be constructed in accordance with the design.</p> <p>1926.651(c)(1)(ii) Ramps and runways constructed of two or more structural members shall have the structural members connected together to prevent displacement.</p> <p>1926.651(c)(1)(iii) Structural members used for ramps and runways shall be of uniform thickness.</p> <p>1926.651(c)(1)(iv) Cleats or other appropriate means used to connect runway structural members shall be attached to the bottom of the runway or shall be attached in a manner to prevent tripping.</p> <p>1926.651(c)(1)(v) Structural ramps used in lieu of steps shall be provided with cleats or other surface treatments on the top surface to prevent slipping.</p>

MIOSHA	OSHA
<p>R 408.42155 Specifications for stair rail Rule 2155. (1) A stair railing shall consist of a stair rail, a vertical support, and an intermediate rail or its equivalent to prevent an employee from falling through the opening between the stair rail and the stairs. The stair rail shall parallel the slope of the stairway.</p> <p>(2)****</p> <p>(3) The vertical post shall be constructed of not less than 2- by 4-inch nominal-sized lumber and shall be spaced not more than 6 feet apart.</p> <p>(4) An intermediate rail or midrail shall be constructed of not less than 1- by 6-inch or 2- by 4-inch nominal sized lumber and shall be installed midway between the stair rail and the treads.</p> <p>(5) to (9)****</p> <p>(10) Other material may be used if the stair railing meets the 200-pound side thrust requirement.</p> <p>(11) A stairway that has 4 or more risers or rises more than 30 inches (76cm), whichever is less, shall be equipped with at least 1 handrail and at least 1 stair rail system along each unprotected side or edge. When the top edge of a stair rail system also serves as a handrail, the provisions of R 408.42156(3) of these rules apply.</p> <p>(12) Winding and spiral stairways shall be equipped with a handrail that is sufficiently offset to prevent walking on those portions of the stairways where the tread width is less than 6 inches (15cm).</p>	<p>No comparable OSHA provisions</p> <p>Equivalent</p> <p>No comparable OSHA provisions</p> <p>Equivalent</p> <p>No comparable OSHA provision</p>
<p>R 408.42156 Handrail specifications Rule 2156. (1) to (3)****</p> <p>(4) A handrail shall be supported by brackets to a distance of not less than 1 1/2 inches from any object. The assembly of handrail and brackets shall withstand a load of not less than 200 pounds applied in any direction.</p> <p>(5) to (7)****</p>	<p>Equivalent</p> <p>No comparable OSHA provision</p> <p>Equivalent</p>

MIOSHA	OSHA
<p>R 408.42157 Temporary stairways</p> <p>Rule 2157. (1) All wooden components that are necessary to construct and guard a temporary stairway shall be of construction-grade lumber.</p> <p>(2) The minimum size of stringers shall be 2 by 8 inches unless notched. If notched, the stringers shall have a plate or equivalent means which provides the same strength that an uncut 2-inch by 8-inch stringer provides.</p> <p>(3) The minimum width of a temporary stairway shall be 22 inches.</p> <p>(4) Each tread shall rest on 2-inch by 4-inch cleats or be notched into the stringer, to provide a bearing surface for the full width of the tread.</p> <p>(5) For a temporary stairway between 22 and 36 inches wide, a minimum of a 2-inch by 6-inch plank shall be used for a tread.</p> <p>(6) For a temporary stairway between 36 and 54 inches wide, a minimum of a 2-inch by 8-inch plank shall be used for a tread.</p> <p>(7) For a temporary stairway over 54 inches wide, a 2-inch by 10-inch plank shall be used for a tread.</p> <p>(8) If the width of a temporary stairway is more than 88 inches, an additional notched stringer shall be provided at the middle of the stairway.</p> <p>(9) The total vertical rise of a temporary stairway shall not be more than 12 feet, unless stair platforms are provided.</p> <p>(10) The rise shall be not less than 6 inches nor more than 8 inches.</p> <p>(11) The ratio of rise to tread width shall be uniform for all sets of stairs.</p> <p>(12) Each tread shall be constructed and maintained of solid, 1-piece lumber and repairs shall be made with solid 1-piece lumber.</p> <p>(13) The sides of a temporary stairway shall be guarded as required by the provisions of R 408.42155 and R 408.42156, except that a stairway used as access to material storage trailers is required to be guarded on only 1 side.</p> <p>(14) If used during construction, permanent steel or other metal stairways and landings with hollow pan-type treads that are to be filled with concrete or other materials shall be filled to the level of the nosing with solid material. This requirement shall not apply during the period of actual construction of the stairways. Metal landings shall be secured in place before filling. Such temporary treads and landings shall be replaced when worn below the level of the top edge of the pan.</p> <p>(15) A stairway shall be free of hazardous projections, such as nails, sharp top rails, and handrail projections.</p> <p>(16) A stairway shall have a minimum vertical clearance of 7 feet from any overhead object, unless the overhead object is padded and caution signs or paint is used on the object, as prescribed in Part 22. Signals, Signs, Tags, and Barricades, being R 408.42201 et seq. of the Michigan Administrative Code.</p>	<p>No comparable OSHA provision</p>

MIOSHA	OSHA
<p>R 408.42157(17) Except during stairway construction, foot traffic is prohibited on skeleton metal stairs where permanent treads or landings are to be installed at a later date, unless the stairs are fitted with secured temporary treads and landings long enough to cover the entire tread or landing area.</p> <p>(18) Treads for temporary service shall be made of wood or other solid material and shall be installed the full width and depth of the stair.</p>	<p>No comparable OSHA provisions</p>
<p>R 408.42159 Maintenance</p> <p>Rule 2159. (1) A floor, platform, stair tread, or landing shall be maintained free of tripping or slipping hazards.</p> <p>(2) Material used to repair floors, platforms, stair treads, or landings shall meet the design strength of the original component.</p> <p>(3)****</p>	<p>No comparable OSHA provision</p> <p>Equivalent</p>
<p>R 408.42160 Catch platform specifications</p> <p>Rule 2160. If a catch platform is installed as a means of fall protection for an employee or employees working on a roof, the catch platform shall be in compliance with all of the following provisions:</p> <p>(a) Consist of a minimum of three 2-inch by 10- inch nominal size planks placed side by side or other material of equal width that provides equal strength.</p> <p>(b) Be installed a maximum of 18 inches beneath the eave line of the roof.</p> <p>(c) Have a guardrail that meets the requirements of R 408.42150 installed on the outer exposed edge and each end. An additional intermediate rail, solid material, or a screen shall be installed between the catch platform and the midrail.</p>	<p>1926.451 General requirements (h)(2)(v) A canopy structure, debris net, or catch platform strong enough to withstand the impact forces of the potential falling objects shall be erected over the employees below.</p> <p>1926.451(h)(3) Canopies, when used for falling object protection, shall comply with the following criteria:</p> <p>1926.451(h)(3)(i) Canopies shall be installed between the falling object hazard and the employees.</p> <p>1926.451(h)(3)(ii) When canopies are used on suspension scaffolds for falling object protection, the scaffold shall be equipped with additional independent support lines equal in number to the number of points supported, and equivalent in strength to the strength of the suspension ropes.</p>

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