

pipe with inside diameter varying from  $\frac{3}{4}$ " to  $1\frac{1}{2}$ ", according to the weight of the filling material, the size of the panels, and the exposure of the guard to collision with trucks, etc. Any panel which measures more than 42 inches in both width and length shall be substantially supported across its narrowest dimension at intervals of not more than 42 inches.

(c) The filling material shall be bolted, riveted, or welded or otherwise securely attached to the frame in such a manner that no sharp points or edges shall be exposed.

1. Bolts and rivets shall be at least  $\frac{3}{16}$  inch in diameter and shall be spaced not more than 10 inches apart. Where welded construction is used, it shall be such as will give equivalent strength.

2. Flat bars or strips used for clamps shall not be smaller than  $\frac{3}{4}$ " x  $\frac{1}{8}$ " of metal or 1" x 1" if of wood.

3. Perforated or solid sheet metal may be bolted, riveted or welded directly to the angle iron frames.

(d) Guards shall be securely and permanently fastened in place, and so maintained, except as specifically otherwise provided.

(e) All metal shall be free of burs and sharp cutting edges and all wood used in guard construction shall be of planed lumber, sound, free from loose knots and splinters.

**History:** Cr. Register, February, 1962, No. 74, eff. 3-1-62.

## PART II

**Ind 1.04 Passageways and working spaces.** (1) Adequate passageways and gangways shall be provided.

(2) Adequate working space shall be provided for the safe operation of every machine, and such working space shall not be obstructed, either by storing or piling material or other objects.

(3) In so far as the nature of the work will reasonably permit, floors, passageways, gangways and areas around machine shall be reasonably even, kept in good repair, free from obstructions over which persons may trip, and means provided to furnish secure footing.

**History:** Cr. Register, February, 1962, No. 74, eff. 3-1-62.

**Ind 1.05 Elevated walks, runways and platforms.** (1) Every elevated walk, runway, platform or other surface on which employees work shall be substantially constructed and so maintained, and so far as the nature of the work will reasonably permit, kept free from obstructions or substances over which or on which persons may stumble, slip or fall.

(2) In all other cases where a slipping hazard exists, a non-slip surface or other effective means to prevent slipping, where the nature of the work will reasonably permit, shall be provided.

(3) Every platform, or other surface on which employees work, more than 24 inches in height shall be equipped with standard guard rails and toeboards unless guarded by location.

(a) Exception: Guard rails and toeboards will not be required on the loading or unloading sides of shipping platforms with the exception of lumber yard platforms where guard rails only will be required. However, it is recommended that protection be furnished in all cases wherever possible.

(4) Every permanent elevated platform shall be provided with one of the following means of access:

(a) A stairway, the steps of which shall have a uniform rise of not more than 8 inches, a uniform tread of not less than 9 inches and equipped with handrails and maintained in accordance with section Ind 1.06.

(b) A fixed vertical ladder, the side rails of which extend at least 42 inches above the platform.

(c) A fixed inclined ladder equipped with handrails on both sides and from 30 inches to 36 inches high measured vertically from the nose of the tread.

(d) Exception: This rule does not include platforms supporting single units of equipment which receive no attention other than oiling or repairs, nor does it include platforms used exclusively in connection with such equipment as steam traps and sprinkler valves. However, it is recommended that permanent ladders or stairways be used wherever possible.

**History:** Cr. Register, February, 1962, No. 74, eff. 3-1-62.

**Ind 1.06 Stairways or steps.** (1) Stairways or steps not required as exits by the Wisconsin State Building Code shall have a uniform rise of not more than 8 inches and a uniform tread of not less than 9 inches.

(2) Every stairway or steps of 4 or more risers shall be equipped with a substantial smooth handrail from 30 inches to 36 inches high, measured vertically from the nose of the tread and placed on the right hand side as one descends the stairs and on the open side, if any. If 5 feet or more in width, or open on both sides, they shall have a handrail on each side. Handrails shall extend the entire length of the stairway and shall have a continuous clearance of at least 1½ inches.

(a) Exception: Portable steps used in connection with erection or other shop operations shall have a uniform rise and tread, but not necessarily that specified above, and need have a rail on one side only.

(3) Interior stairways or steps which are more than 8 feet wide shall be divided by center rails into widths of not more than 8 feet nor less than 3 feet 8 inches.

(4) Exterior stairways or steps shall have a handrail at each side and if the stairway or steps is more than 50 feet wide, one or more intermediate handrails shall be provided.

(5) Railings on open sides of stairways or steps shall be provided with an intermediate member at mid-height, or with vertical members having a maximum spacing of 11 inches or its equivalent in safety.

**Note:** See chapter Ind 51 of Building Code of the Industrial Commission for stairways as required exits.

(6) Every stairway or steps shall be maintained in good repair, free from protruding bolts, screws, nails, etc., unnecessary material, dirt and slippery conditions. Treads shall be renewed when the surface, including the nosing, shows wear to the extent of ½ inch or more.

(7) Stairways shall not be used for storage purposes, and any equipment shall be so located that its presence or use will not unnecessarily obstruct or interfere with free passage.

(8) All metal treads shall have a surface which will reasonably prevent slipping.

**History:** Cr. Register, February, 1962, No. 74, eff. 3-1-62.

3 Mis (2) 427

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3 Mis (2) 544