

RULE XI - PROTECTION OF PEDESTRIANS DURING CONSTRUCTION OR DEMOLITION

SECTION 1101. General Requirements

1. **No person** shall use or occupy a street, alley or public sidewalk for the performance or work covered by a building permit except in accordance with the provisions of this Rule.
2. **No person** shall perform any work or any building/structure adjacent to a public way in general use for pedestrian travel, unless the pedestrians are protected as specified in this Rule.
3. Any material, building/structure temporarily occupying public property, including fence, canopies and walkways, shall be adequately lighted between sunset and sunrise.

SECTION 1102. Storage in Public Property

1. Materials and equipment necessary for work to be done under a permit when placed or stored on public property shall not obstruct free and convenient approach to and use of any fire hydrant, fire or police alarm box, utility box, catch basin, or manhole and shall not interfere with any drainage of any street or alley, gutter, and with the safe and smooth flow of vehicular and pedestrian traffic.
2. Materials to be stored at or near construction sites shall be piled or stacked in an orderly manner to avoid toppling over or being otherwise displaced. No materials shall be piled or stacked higher than 1.80 meters, except in yards or sheds intended especially for storage. When piles exceed 1.20 meters in height, the material shall be so arranged that the sides and ends of the piles taper back.

SECTION 1103. Mixing Mortar on Public Property

The mixing of mortar, concrete, or similar materials on public streets shall not be allowed.

SECTION 1104. Protection of Utilities

1. All public or private utilities and services above or below the ground shall be protected from any damage by any work being done under the permit.
2. The protection shall be maintained while such work is being done and shall not obstruct the normal functioning of any such utility.
3. Temporary Light and Power
 - a. Temporary wiring for light, heat and/or power shall be adequately protected against mechanical or over-current failures. All conductive materials enclosing fixed or portable electric equipment, or forming a part of such equipment, shall be properly grounded.
 - b. Temporary electric service poles shall be self-supporting or adequately braced or guyed at all times.

SECTION 1105. Walkway

1. When the **Building Official** authorizes a sidewalk to be fenced or closed, or in case there is no sidewalk in front of the building/structure site during construction or demolition, a temporary walkway of not less than 1.20 meters shall be provided.
2. Such walkway shall be capable of supporting a uniform live load of 650.00 kilogram per sq. meters.

3. Durable wearing surface shall be provided and must remain safe throughout the construction period.
4. Where the sidewalk is permitted by the **Building Official** to be fully occupied and fenced-off or enclosed, a temporary walkway adjacent to the curb line shall be required. Where the street has no sidewalk, a temporary walkway adjacent to the street line not less than 600 millimeters wide shall be provided. Where the RROW is 5.00 meters or less, no temporary walkway shall be allowed.
5. Where only partial occupancy and fencing-off of the sidewalk is necessary, a temporary walkway will not be required provided that a width of at least 600 millimeters of the sidewalk with protective railing on road side shall be left open for the use of pedestrians.

SECTION 1106. Pedestrian Protection

1. Where the walkway occupies part of the roadway or is adjacent to an excavation, protective railings on the street side or on the side of the excavation shall be required.
2. Railings where required, shall be built substantially strong and sturdy and shall not be less than 1.00 meters in height.
3. Fences

Fences shall entirely enclose the construction/demolition site and shall be erected on the building side of sidewalks or walkways and shall be made of approved materials (e.g. G.I. sheet, wooden boards and/or planks, plywood or *Lawanit, sawali*), **not** less than 2.40 meters in height above the curb line. Fences shall be built solid for its full length except for such openings as may be necessary for proper execution of the work. Such openings shall be provided with doors, which shall be kept closed at all times except when in actual use.

- a. When the horizontal distance between the outermost face of the **building**/structure area and the inner edge of the sidewalk is more than one-half (1/2) the height of the building, a 2.40 meters fence is required. (**Figure XI.1.**)
- b. When the horizontal distance between the outermost face of the building and the inner edge of the sidewalk is equal to or less than one-half (1/2) the height of the building, a canopy shall be required in addition to a fence. (**Fig. XI.2.**)

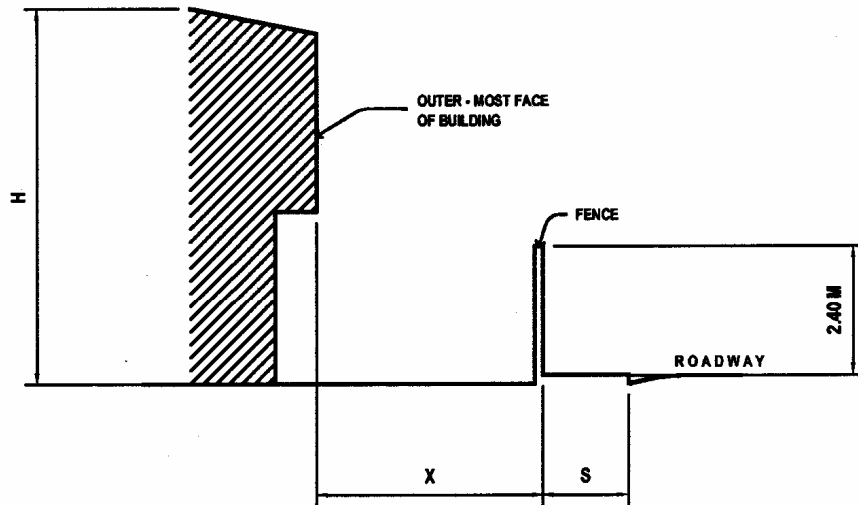
4. Canopies

- a. The protective canopy shall have a clear unobstructed height of 2.40 meters above the walkway and shall be made of sufficient strength and stability to sustain safely the weight of materials that may be placed thereon, and to withstand shocks incident to the handling of such materials or their preparation for use, and accidental jars from trucks passing or delivering materials.
- b. When the canopy is used for the storage of materials or for the performance of work of any kind, substantial railings not less than 1.00 meters high and solid toe boards **not** less than 300 millimeters high shall be placed along the street side and ends of the canopy. The canopy shall be capable of safely sustaining a load of 4800 Pascal or the intended load to be placed thereon, whichever is bigger.
- c. The deck flooring of a canopy shall consist of planking not less than 50 millimeters in thickness, closely laid. All members of the canopy shall be adequately braced and connected to resist displacement of members or distortion of the framework.

- d. Canopies shall be constructed solid for its entire length except for such openings as may be necessary for loading purposes. Such openings shall be kept closed at all times except during actual loading operation.
- e. Unless the top deck of the canopy is built solidly against the face of the building/structure to be constructed/demolished, the vertical face of the canopy supports next to the building shall be solidly fenced throughout, except for such openings as may be necessary for the execution of work. Such openings shall be provided with sliding or swinging gates which shall be kept closed at all times except when in actual use. (**Figs. XI.3., XI.4., XI.5., XI.6.**)
- f. The street side of the canopy shall be kept open for a height of not less than 2.40 meters above the curb. The underside of the canopy shall be properly lighted at night with not less than 100-Watts bulb every 6.00 meters of its length and at each change of grade or elevation of the sidewalk surface.
- g. When a wall of the building abuts or fronts a street, fans or catch platforms shall be erected along that wall at the level of the first floor of the building above the street level. Fans or catch platforms shall be erected at the level of other floors of the building as may be necessary to prevent nuisance from dust or danger from falling debris or materials.
- h. When the horizontal distance between the outermost face of the building and the outer edge of the sidewalk is less than one-half (1/2) the height of the building, a protective device such as a net or screen extending from the uppermost part of the construction/demolition to ground level shall be required in addition to a fence and canopy. (**Fig. XI.7.**)
- i. Wherever required, protective netting/covering shall be of approved and substantially strong material such as 2 millimeters diameter G.I. wire, 38 millimeters mesh nylon net, or canvas.
- j. Where a wall of the building abuts or fronts a street, dust screens shall be erected to cover the entire wall so as to prevent nuisance from dust.
- k. For medium and high-rise buildings six (6) storeys and higher, all protective and safety devices/facilities shall be completely installed including safety belts, safety nets and canopies for the safety of workers, pedestrians, nearby residents and motorists.

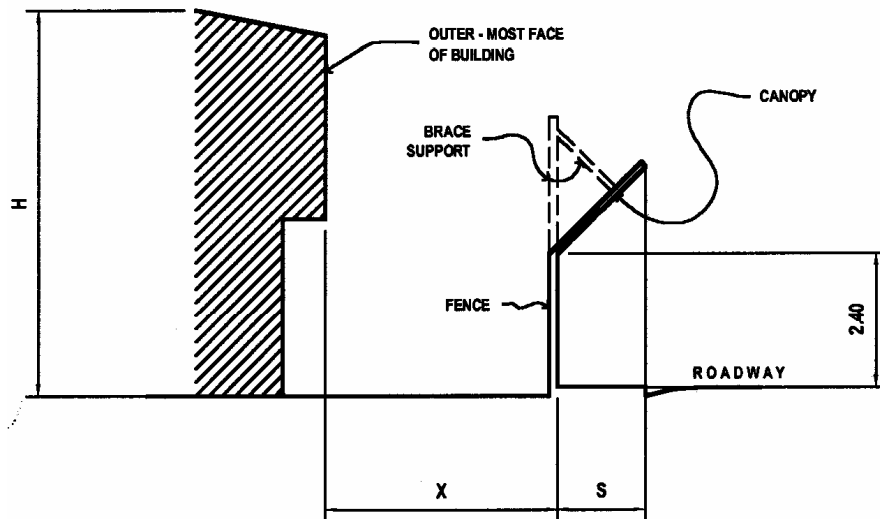
5. Warning Signs and Lights

- a. At every construction/demolition site, warning signs shall be conspicuously posted around the property. Warning signs shall be adequately illuminated at night for the protection of unwary pedestrians.
- b. All entrances/exits to and from the construction/demolition site shall be kept closed at all times except during actual passage of men, materials or equipment.
- c. All warning signs and lights shall be properly maintained even when operations are not in progress.



WHEN: $X > H/2$ ONLY A FENCE IS REQUIRED

Figure XI.1.



WHEN: $X \leq H/2$ FENCE AND CANOPY IS REQUIRED

Figure XI.2.

**PROTECTION OF PEDESTRIANS,
NEARBY RESIDENTS AND THE PUBLIC
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Annotation. The necessary lights, warning devices and safety barriers should be properly installed, operated and maintained in the areas to be used by the general public during construction.

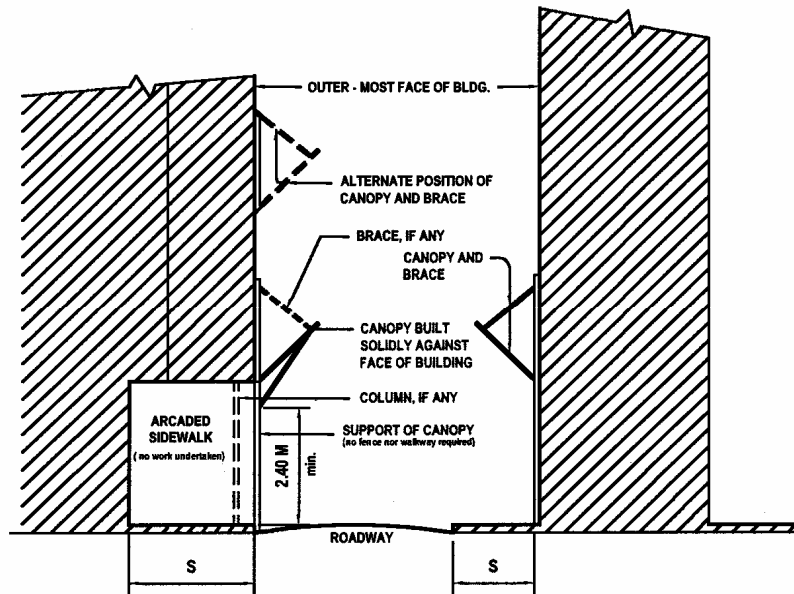
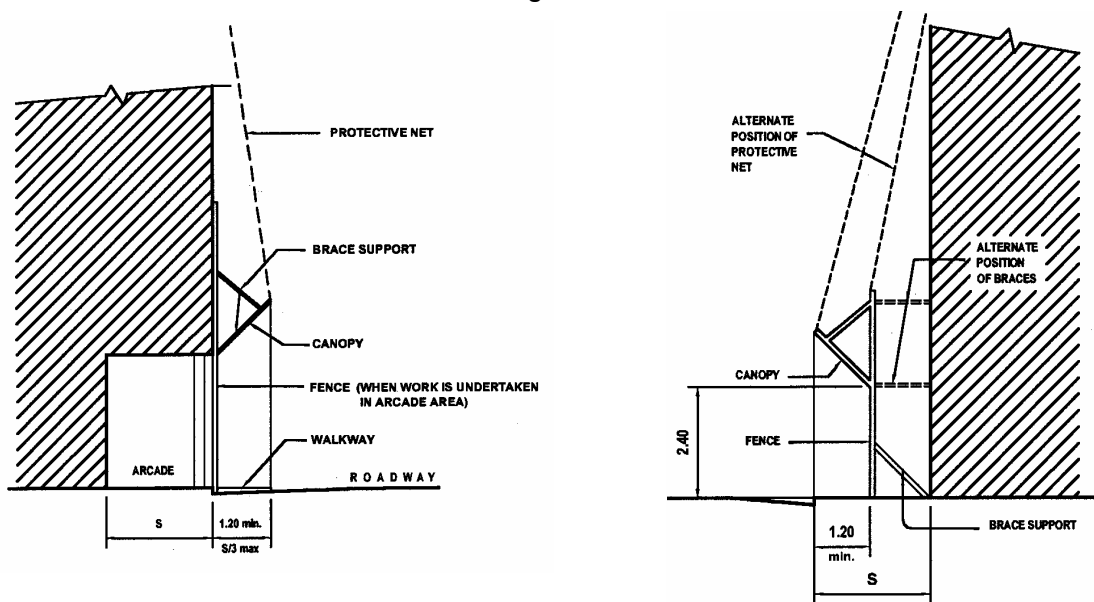


Figure XI.3.



FULL OCCUPANCY OF SIDEWALK

Figure XI.4.

PARTIAL OCCUPANCY OF SIDEWALK

Figure XI.5.

**PROTECTION OF PEDESTRIANS,
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Annotation. For narrow roadways (along which tall buildings shall be constructed), it may be best to provide a steel mesh (with protective net) to catch falling debris. Also, the necessary lights, warning devices and safety barriers should be properly installed, operated and maintained in the areas to be used by the general public during construction.

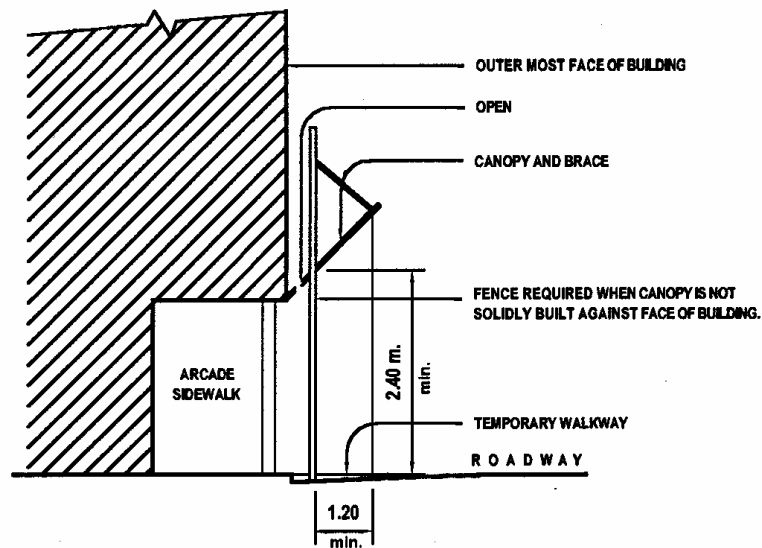
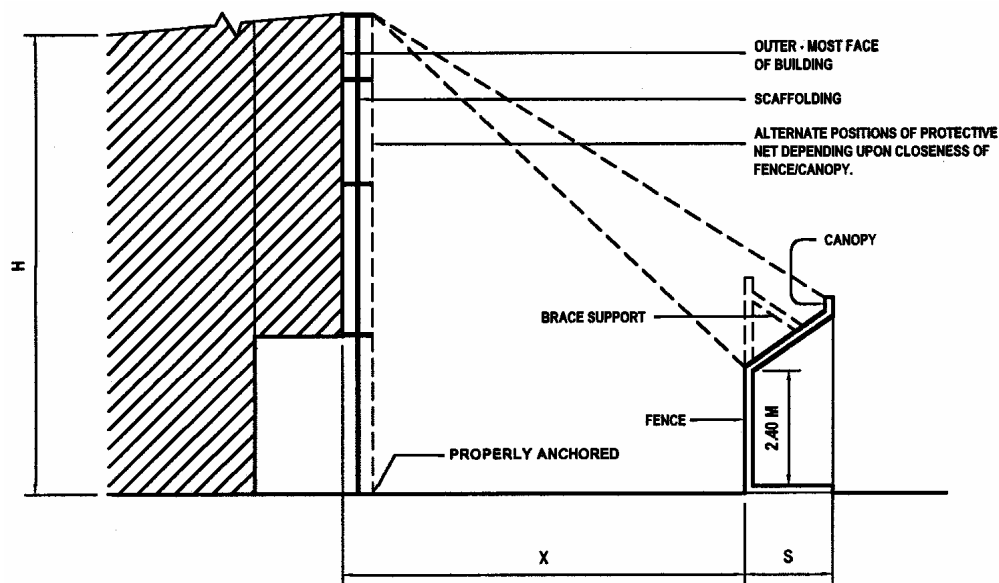


Figure XI.6.



WHEN $X + S < H/2$

FENCE, NET AND CANOPY
ARE REQUIRED

Figure XI.7.

**PROTECTION OF PEDESTRIANS,
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Annotation. The necessary lights, warning devices and safety barriers should be properly installed, operated and maintained in the areas to be used by the general public during construction.

- d. All areas of danger in demolition operations shall be properly enclosed and danger signs posted. Watchmen shall be provided to warn workers of impending dangers and all unauthorized persons shall be excluded from places where demolition is in progress.

SECTION 1107. Maintenance and Removal of Protective Devices

1. Maintenance. All protective devices shall be properly maintained in place kept in good order for the entire length of time pedestrians may be endangered.
 - a. Average Light Intensity and Illumination
 - i. All parts of buildings/structures under construction/demolition, and all sheds, scaffolds, canopied walkways, work or storage areas, and equipment used in connection with such operations shall have sufficient light to insure safety and protection of life and property. In passageways, stairways and corridors, the average light intensity measured at floor level shall be not less than 200 LUX.
 - ii. At locations where tools and/or machinery are used, the average light intensity measured at floor level shall be not less than 500 LUX. Natural or artificial illumination shall be provided in such a manner that glare and shadows will not adversely affect the safety and protection of the public, workers and property.
 - b. Welding and Cutting
 - i. Gas welding and cutting and arc welding in construction/ demolition operations shall be restricted to experienced workers accredited by the Technical Education Skills Development Authority (**TESDA**). Suitable goggles, helmets and gloves shall be provided for and worn by workers engaged in gas welding or cutting or arc welding. Incombustible shields shall be provided to protect the workers when exposed to falling hot metal oxide.
 - ii. Gas welding or cutting or arc welding shall not be done above pedestrians and workers. When unavoidable, an incombustible shield shall be provided between the work and workers below. A watchman shall be stationed to give warning at places where pedestrians and workers, in the course of their activity, are likely to pass under a gas welding or cutting or an arc welding operation.
 - iii. Gas welding or cutting shall not be carried out in any place where ample ventilation is not provided or from which quick escape is difficult. When unavoidable, workers engaged in such work in confined spaces shall be allowed frequent access to fresh air. A relief worker shall be stationed close at hand to assist the worker in case of accident and to shut off the gases.
 - iv. Tanks of fuel gas shall not be moved or allowed to stand for any extended period when not in use unless the caps of such tanks are in place.
 - v. Suitable cradles shall be used for lifting or lowering oxygen or fuel tanks, to reduce to a minimum the possibility of dropping tanks. Ordinary rope slings shall not be used.
 - vi. Tanks supplying gases for welding or cutting shall be located at no greater distance from the work than is necessary for safety.
 - vii. Such tanks shall be securely fastened in place and in upright position. They shall be stored or set in place for use so that they are not exposed to the direct rays of the sun or to high temperature.
 - viii. Before steel beams or other structural shapes or elements of construction are cut by means of a gas flame, they shall be secured by cables or chains to prevent them from dropping or swinging.

- ix. Where, in the course of demolition work, steel work or ironwork is being cut, released or dismantled, all necessary precautions shall be taken to prevent danger from sudden twist, spring or collapse.
- c. Special Typhoon Precautions
- i. Whenever a typhoon is expected to pass at or near the construction site, all construction materials and equipment shall be secured against displacement by wind forces.
 - ii. Construction sheds, construction materials and equipment shall be secured by guying, shoring, or by tying down.
 - iii. Where a full complement of personnel is employed or engaged for such protection purposes, normal construction activity or uses of materials or equipment may continue, allowing such reasonable time as may be necessary to secure such materials and equipment before winds of gale force are anticipated, in accordance with warnings or advisories issued by the Philippine Atmospheric Geophysical Astronomical Services Administration (**PAGASA**).
- d. Hoisting Machinery
- i. Every hoisting engine shall be provided with adequate brakes capable of holding the maximum load at any point of travel.
 - ii. Hoisting machinery shall be enclosed to exclude unauthorized persons. If placed outside the building, further protection against falling objects shall be provided.
 - iv. Guards shall be provided with exposed gears and other moving parts and around hoisting cables at all points to prevent workers from tripping or getting their clothing caught.
 - v. Ample room shall be provided around hoisting engines, motors or machineries or apparatus to allow the free and safe movement of the operators.
 - vi. When hoisting machinery is set on an elevated platform, such platform shall be of substantial and sturdy construction. Guardrails and toe boards shall be provided along all open sides of such platform.
 - vii. Electrical machinery and equipment to be used for construction work shall be installed and operated in accordance with the Philippine Electrical Code.
 - viii. Steam boilers used in construction work shall be installed, equipped and maintained in accordance with the Philippine Mechanical Code.
 - ix. A tag line or guide rope shall be used on all loads being hoisted or lowered.
- e. Platform Hoists
- i. Platform hoists for the handling of materials in buildings under construction shall have the car substantially constructed and provided with covers, either solid or wire mesh.
 - ii. If suitable overhead protection is provided, the covers may be omitted.
 - iii. Hoists shall be equipped with a broken-rope safety device.

- iv. Where wheelbarrows or buggies are used for handling material on platform hoists, cleats shall be nailed to the platform to fix the proper position so that handles shall not project beyond platform edges.
 - v. Supports for the overhead sheave of the hoist shall be designed to carry two (2) times the weight of the hoist and its maximum load.
- f. Hoist Towers
- i. Hoist towers erected in connection with construction work shall be substantially constructed. All members shall be so proportioned that the stresses shall not exceed those specified for the material when carrying the dead load of the tower plus two times the weight of the platform or bucket or its maximum load.
 - ii. Every hoist tower shall rest on a sufficiently solid foundation to prevent injurious settlement or distortion of its framework.
 - iii. The base of every hoist tower shall be screened or otherwise protected on all sides to a height of not less than 1.80 meters.
 - iv. Every hoist tower shall be secured in not less than four (4) directions against swaying or tipping at intervals of not more than 10.00 meters in its height, by steel cable guys adequately anchored or by other satisfactory means.
 - v. Such towers which are constructed adjacent to buildings shall be secured to the building frame at each floor as the construction progresses.
 - vi. Hoist towers erected within the building, but not occupying the entire opening through which they pass, shall be completely enclosed on all sides and shall be provided with doors at the unloading points unless the platform hoist is solidly enclosed on all sides to the height to which material is to be loaded or unloaded.
 - vii. Landing platforms in hoist towers or platforms connecting a hoist tower to a building or other structure shall be provided with guardrails and toe boards.
- g. Derricks and Cranes
- i. Derricks shall be so designed and assembled that no part shall be stressed beyond the safe working stress for the material under its maximum rated load in any possible position. Such maximum load shall be conspicuously posted on each derrick.
 - ii. The foot-block of every derrick shall be firmly secured against motion in any direction.
 - iii. Guy derricks shall have the top of the mast held by not less than six (6) steel guy cables secured by firm anchorages and so placed that the angle of the guy with the mast shall be as large as possible.
 - iv. The moving parts of derricks and cranes shall be kept well lubricated. All parts shall be inspected at least every other day.
 - v. Use and operation of cranes shall be in accordance with Rule XIII.
 - vi. In the operation of cranes and similar devices, a standard signal system shall be used and all men assigned to the operation of such equipment shall be fully instructed on the signals.

h. Cables, Ropes, Chains and Blocks

- i. All ropes and cables used in connection with scaffolds, derricks and hoisting apparatus shall be tested before being put to use and at least once every thirty (30) days while in use, to insure their safety and suitability for the purpose.
- ii. Cables, ropes, chains and blocks shall be of such size that the maximum load supported by them will not exceed one-sixth (1/6) of their breaking strength.
- iii. Blocks designed for use with abaca ropes shall not be used for steel cables.
- iv. Blocks used at or near floors or in other exposed places to change the direction of cables shall be enclosed or otherwise effectively guarded.
- v. Chains shall not be used for slings, bridles or other similar purposes, but shall be restricted to only a straight pull.
- vi. Hooks shall not be used for hoisting buckets, cages or skips.

i. Ladders and Temporary Stairways

- i. Except where either permanent or temporary stairways or runways are required, ladders shall be provided to give access to all floors, stagings or platforms where work is being done more than five (5) storeys above ground or above a permanent or temporary floor.
- ii. Ladders shall not be extended by joining two (2) or more together. No single ladder shall exceed 6.00 meters in length. When greater heights are to be reached, intermediate platforms shall be erected.
- iii. Ladder landings shall be at least 1.20 meters square and equipped with handrails and toe boards.
- iv. Ladder rungs shall be spaced uniformly and as near to 300 millimeters as practicable.
- v. Ladders leading to floors, stagings or platforms shall extend at least 900 millimeters above the level of such floors, stagings or platforms.
- vi. When used temporarily in place of stairways or runways, ladders serving traffic in both directions simultaneously shall be at least 1.00 meters wide. If separate ladders are provided for going up and coming down, they shall be marked "UP" and "DOWN" respectively at each floor and platform level.
- vii. All ladders, when in use, shall be set up in a manner to be secured and to prevent slipping. Ladders, except stepladders or other self-supporting ladders, shall be securely fastened to a permanent support at the top, and if necessary, at the bottom, and braced to prevent swaying, bending or shaking.
- viii. Ladders shall not be placed or used in shafts of operative elevators or hoists except by workers engaged in the erection, construction, alteration or repair of any such shafts, hoistways or equipment.
- ix. Ladders shall not be painted, but may be oiled or treated with preservatives so as to permit the detection of faults.

- x. Every ladder shall be inspected by the superintendent or foreman in charge before being put to use on a construction operation and thereafter at least once every thirty (30) days while in continued use.
 - xi. Permanent stairways shall be installed in all buildings under construction as soon as conditions will permit.
 - xii. When the work on a building has progressed to a height in excess of 18.00 meters and it has not been practicable to install the permanent stairways, at least one temporary stairway shall be provided for the full height and continued upward as rapidly as the work progresses.
 - xiii. Stairs and stairways shall be of sufficient strength to support a load of at least 4800 Pascal. All stairways shall be guarded on all open sides with handrails and toe boards.
 - xiv. Temporary stairs shall be constructed so that treads and risers are uniform in width and height in any one (1) flight.
 - xv. The sum of the height of the two (2) risers and the width of one (1) tread shall be not less than 460 millimeters nor more than 700 millimeters.
 - xvi. Temporary stairways shall be not less than 900.00 millimeters wide.
 - xvii. Landings shall be not less than 750 millimeters long. No flight of stairs of temporary stairways shall have a vertical rise in excess of 3.60 meters. Whenever necessary, intermediate landings shall be provided.
 - xviii. Temporary and permanent stairways shall be adequately lighted.
 - xix. Permanent stairs that are to be used during construction and on which treads are to be filled in later shall have wooden treads firmly fitted in place for the full area of the tread.
 - xx. The top surfaces of the temporary treads shall be maintained above the tops of the risers or nosings.
 - xxi. No door shall open directly onto a flight of stairs, but a landing equal at least the width of the door shall be provided between the door and the stairs.
- j. Runways and Ramps
- i. Runways and ramps used in connection with scaffolds or extending from storey to storey or otherwise located and maintained for an extended period of time or for the transfer of bulky material shall be constructed of at least three (3) 25 x 250 millimeters planks laid closely side by side and substantially supported and braced to prevent unequal deflection and springing action.
 - ii. Runways and ramps shall have a slope not greater than one is to three (1:3). The total rise of a runway or ramp between landings shall not exceed 1.80 meters.
 - iii. When the rise is steeper than 1:3, runways or ramps shall be provided with cleats spaced not more than 20 millimeters apart.
 - iv. Runways and ramps having a total rise of more than 1.80 meters, or passing over or near floor openings, high tension wires or other dangerous places, shall be provided with guardrails and toe boards.

h. Scaffolds

- i. Properly constructed scaffolds shall be provided for all works which cannot be done safely by workmen standing on permanent or solid construction, except when such work can be done safely from ladders. All such scaffolds shall be substantially constructed to support at least four (4) times the maximum load, and shall be secured to prevent swaying.
- ii. Planks used in the construction of stationary scaffolds shall be not less than 50 millimeters nominal thickness. Where such planks overlap at the ends, the overlap shall be not less than 150 millimeters. Planks shall be so placed that they cannot tip under the weight of the worker at any point. All nails shall be driven full strength. No nails shall be subject to direct pull.
- iii. Ropes, cables and blocks shall sustain at least six (6) times the maximum loads to which they will be subjected. Where acids are likely to come in contact with them, ropes shall not be used but steel cables properly protected by grease or oil or other effective methods shall be used instead.
- iv. Every scaffold, the platform level of which is more than 1.80 meters above the ground, or above a permanent or temporary floor, other than iron workers' scaffolds and carpenters' bracket scaffolds, shall be provided with guard rails and toe boards extending the full length of the scaffold and along the ends except where ramps or runways connect with them, unless otherwise enclosed or guarded. On suspended, swinging and pole scaffolds, the space between guardrails and toe boards shall be fitted with wire mesh screens securely attached.
- v. Where objects are likely to fall on a scaffold from above, a substantial overhead protection shall be provided not more than 3.00 meters above the scaffold platform, and at doorways, passageways or other points. Where workers must pass under scaffolds, a substantial overhead protection shall be provided.
- vi. No materials or equipment other than required by the workers shall be placed on scaffold platforms.
- vii. Roof brackets, roof scantling, crawling boards and similar forms of supports shall be substantial in construction and securely fastened in place when in use.
- viii. Barrels, boxes or other similar unstable objects shall not be used as supports.
- ix. When used over public sidewalks or other places of public use, scaffolds used for minor building repairs, alterations, or painting, shall be equipped with drop cloths to effectively prevent the falling of paint or debris.
- x. Scaffolds used for sandblasting and guniting operations shall be entirely and effectively enclosed, and the determination of effective enclosure shall be the completed absence of particles of materials of operation in the air at a horizontal distance of 15.0 meters from the point of operation.

k. Temporary Flooring

- i. In buildings of skeleton construction, the permanent floor, except for necessary hoistway openings, shall, when possible, be constructed as the building progresses. There shall be not more than three (3) unfilled floors below the highest permanent floor.

- ii. In buildings of skeleton construction, the entire working floor shall be planked over, except spaces required for raising or lowering materials, and for stairways or ladders. Planks shall not tip under the weight of a worker at any point and secured, so that they cannot slip out of place.
 - iii. In buildings of wood joist construction, the immediate underfloor shall be laid for each floor as the building progresses.
- I. Floor Openings
- i. All floor openings used as hoistways or elevator shaftways shall be protected on all sides, except the side being used for loading or unloading. Protection shall be in the form of barricades or guardrails not less than 900 millimeters high placed not less than 600 millimeters distant at all points from the edges of such openings. If guardrails are used, toe boards shall be provided along the edges of the openings. Sides left open for loading or unloading shall be guarded by similar solid doors or gates.
 - ii. All floor openings used as stairways or for the accommodation of ladders or runways shall be guarded by railings and toe boards.
 - iii. All floor openings shall be protected on all sides by solid barriers or railings with toe boards not less than 900 millimeters high or shall be planked over by temporary construction capable of sustaining safely such loads as are likely to come thereon.
 - iv. Barriers for the protection of openings used as hoistways or for elevators shall be constructed so that workers cannot thrust head, arms or legs through them, and loose materials cannot fall or be pushed into the shaftway.
 - v. Barriers and guardrails around floor openings shall remain in place until permanent enclosures or protection are otherwise provided.
- m. Guardrails and Toe Boards
- i. Guardrails, when required under this Rule, shall have the top rail not less than 900 millimeters with an intermediate rail provided between the top rail and the platform.
 - ii. All guardrails shall have supports not more than 2.40 meters apart, constructed to withstand a horizontal force of 30 kilograms per sq. meters.
 - iii. Toe boards, whenever required under this Rule, shall extend not less than 150 millimeters above the platform level and shall be placed to fit close to the edges of the platform. They shall be adequately secured along the entire length to resist the impact of workers' feet and the shifting of materials.
 - iv. Toe boards of metal shall be not less than 25 millimeters nominal thickness, with supports not more than 1.20 meters apart.
 - v. Toe boards of metal shall be not less than 30 millimeters thick, with supports not more than 1.20 meters apart.
2. Removal. Every protective fence or canopy shall be removed within 30 days after such protection is no longer required as determined by the Building Official.

SECTION 1108. Demolition

1. If the work is of a difficult or dangerous nature, it should be done by a contractor experienced in such work.
2. Before demolition is commenced, notice of intention to proceed should be given to the adjoining owners of the buildings.
3. Before commencing to demolish a building or repair a badly damaged building, shoring, tying, and strutting are necessary to prevent movement.
4. For the purposes of arranging shores, ties, and other security measures, a survey of the existing building and the adjoining owner's building should be made prior to demolition and, where possible, particulars of existing wall foundations and of the subsoil should be obtained.
5. Demolition should be done as much as possible, floor-by-floor.
6. Care should be taken to dispose of debris as it arises. If this is not done, there is a great risk of overloading the floors, which may result in a collapse. All debris arising from demolition should be kept damp by means of spraying water from a hose with a fine spray to prevent dust arising and causing inconvenience to adjoining owners and pedestrians.
7. Fans or catch platforms should be provided over public footways, etc., to protect workmen and occupants of adjoining building and the general public from falling debris during demolition. One fan at the first (1st) floor level should be sufficient for buildings of three (3) storeys. Building of more than three (3) storeys should have additional fans at higher levels, generally at alternate floor levels.
8. Precautions Before Demolition
 - a. Before commencing the work of demolition of a building/structure, all gas, electric, water and other utility meters shall be removed and the supply and service lines disconnected by the corresponding utility/service companies, who should be notified in advance.
 - b. **All** fittings attached to the building/structure and connected to any street lighting system, electrical supply or other utilities shall be removed.
 - c. **All** electric power shall be shut off and all electric service lines shall be cut and disconnected by the power company at or outside the property line.
 - d. No electric cable or other apparatus, other than those especially required for use in connection with the demolition work, shall remain electrically charged during demolition operations. When it is necessary to maintain any power, water, gas, or other utility/service lines during the process of demolition, such lines shall be temporarily relocated and protected with substantial covering to the satisfaction of the utility/service company concerned.
 - e. All necessary steps shall be taken to prevent danger to persons arising from fire or explosion from leakage or accumulation of gas or vapor, and from flooding from uncapped water mains, sewers and/or culverts.
 - f. All entrances/exits to and from the building shall be properly protected so as to prevent any danger to persons engaged in the demolition work using such entrances/exits in the performance of their works.
 - g. Glazed sashes and glazed doors shall be removed before the start of demolition operations.

9. Chutes

- a. Chutes for the removal of materials and debris shall be provided in all parts of demolition operations, which are more than 6.00 meters above the point from which material is to be removed. Chutes shall be so situated and constructed so as not to pose any danger to the public or to workmen.
- b. Chutes shall be completely enclosed and shall be equipped, at intervals of 6.00 meters or less, with substantial stops to prevent descending materials from attaining dangerous speeds. Proper tools shall be provided and kept available to loosen materials or debris jammed in the chute. No materials or debris shall be dropped from any part of a building under demolition to any point outside the walls of the building except through properly enclosed wooden or metal chutes.
- c. Chutes which are at an angle of more than 45° from the horizontal shall be completely enclosed on all four (4) sides, except for openings at or about floor level at each floor, for the receiving of materials or debris.
- d. Chutes at an angle of less than 45° with the horizontal may be left open on the upper side. However, where such a chute discharges into another chute steeper than 45° with the horizontal, the top of the steeper chute shall be covered at the junction point of the two (2) chutes to prevent the spillage of materials or debris.
- e. Openings into which materials or debris are dumped at the top of a chute shall be protected by a substantial guardrail extending at least 1.80 meters above the level of the floor.
- f. At chute openings where materials or debris are dumped from wheelbarrows, a toe board or bumper not less than 150 millimeters high and 50 millimeters nominal thickness shall be provided.
- g. Any space between the chute and edges of floor openings through which the chute passes shall be solidly planked over.
- h. Chutes, as well as floors, stairways and other places, shall be effectively wet down at frequent intervals, whenever the dust from demolition operations would cause a menace or hardship to residents of adjoining buildings or premises.
- i. The bottom of each chute shall be equipped with an adjustable gate or stop for regulating the flow of materials.
- j. Except when in actual use in the discharge of materials, the gate or stop shall be kept closed. A reliable person shall be designated to control the gate and the backing up and loading of trucks. He shall see to it that no person is allowed to stand or pass under the discharge end of the chute at any time.
- k. The area at the discharge end of each chute shall be completely enclosed with a substantial fence at all times or otherwise made inaccessible. A danger sign shall be placed at the discharge end of every chute.

10. Demolition of Walls and Chimneys

- a. No wall, chimney or other construction shall be allowed to fall in mass, except under competent supervision.

- b. Scaffolds or stagings shall be erected for workers if walls or other elements of the structure are too thin or too weak to work on. Heavy structural members, such as beams or columns, shall be carefully lowered and not allowed to fall freely.
- c. Masonry walls or sections of masonry walls shall not be permitted to fall upon the floors of the building in such masses as to exceed the safe carrying capacity of the floors.
- d. No walls or section of walls whose height is more than twenty-two (22) times its thickness shall be permitted to stand without lateral bracing unless such wall is in good condition and was originally designed to stand to a greater height without such lateral support.
- e. Workmen shall **not** be permitted to work on top of a wall when weather conditions constitute a hazard.
- f. Before demolishing any interior or exterior wall which is within 3.00 meters of any opening in the floor immediately below, such opening shall be substantially planked over unless all workmen are removed from all floors below and access to such floors is positively prevented.
- g. At the completion of each day's work, all walls undemolished shall be left stable and in no danger of overturning or falling.
- h. Foundation walls which serve as retaining walls to support earth and adjoining structures shall not be demolished until such adjoining structures have been underpinned or braced, and earth either removed or supported by sheet piling or other suitable materials.
- i. In the demolition of brick and/or masonry chimneys which cannot safely be toppled or dropped, all materials shall be dropped down through the inside of such chimneys.
- j. The landing point at the discharge end chute, at or near the bottom of a chimney, shall be completely protected by means of any overhead timber canopy.
- k. To enable workmen to reach or leave their work on any wall or scaffold, walkways shall be provided. Such walkways shall not be less than three (3) planks, properly tied or nailed to bearers of not less than 560 millimeters in width, such that the planks do not deflect more than 50 millimeters under normal loading.
- l. In buildings of skeleton construction, the steel framing may be left in place during the demolition of masonry work. When this is done, all steel beams, girders and the like shall be cleared of all loose materials as the demolition progresses.

11. Demolition of Floors

- a. Before the demolition of floors and floor beams, the floors and beams shall be completely supported by temporary planking and supports.
- b. When the load is transferred to lower floors, these floors shall be carefully propped.
- c. Demolition of floors shall not be started until the surrounding floor area to a distance of 6.00 meters have been entirely cleared of debris and other unnecessary materials.
- d. No floor, roof or other part of a building that is being demolished shall be so overloaded with debris or materials as to render it unsafe.
- e. Where workmen are engaged in the removal of floors, planks of ample strength which are supported independently of the flooring shall be provided for the workmen to step on. The

planks shall be so placed as to give the workmen a firm support in case the floor gives way or collapses unexpectedly. Where it is necessary for a workman to straddle a space between two planks, such space shall not exceed 400 millimeters. To enable workmen to reach any workplace without the necessity of walking on exposed beams, planks shall be provided to serve as catwalks.

- f. Planks used for temporary protection shall be sound, and at least 25 millimeters thick. They shall be laid close together, with the ends overlapping by at least 100 millimeters over solid bearings to prevent tipping under a load.
- g. Where floors are being removed, no workmen shall be allowed to work in the area directly underneath. Such areas shall be barricaded to prevent access to it.
- h. Structural or load-supporting members at any floors shall not be cut or removed until all stories above that floor have been demolished and removed.
- i. Where any floor has been removed, the entire tier of beams on which any device is supported shall be completely planked over, except for such openings as are required for the handling of materials or equipment.
- j. Stairs and stair railings shall be kept in place and in usable condition as long as it is practicable.
- k. Steps and landings shall be kept free from debris and obstructions.

12. Other Safeguards

- a. Where applicable, the **Building Official** shall require strict compliance with the minimum safety standards as prescribed under Administrative Order of **DOLE**. The construction, alteration and removal of scaffolds and the application, installation and setting up of safeguard devices shall be done by skilled workmen under the supervision of a person, qualified by experience or training for such work.
- b. A device or piece of equipment, which is unsafe, shall be reported to the superintendent or foreman, who shall take immediate steps to remedy such condition or remove such device or equipment.
- c. Scaffolds, ladders, stairs, fuel gas tanks and other devices or equipment falling within the scope of this Rule shall be maintained in a good, safe and usable conditions as long as in use.
- d. Scaffolds, temporary floors, ramps, stairway landings, stair treads, and all other walkway surfaces shall be kept free from protruding nails/splinters.
- e. Protruding nails and tie wire ends shall be removed, hammered in or bent in a safe condition.
- f. Electric lines, moving ropes and cable gears, or similar hazards with which a person might come in contact with shall be encased or protected.
- g. No person, firm or corporation, either personally or through an employee or agent of another, shall operate or move any machinery, equipment, materials, scaffolds, closer than 5.00 meters to any energized high voltage overhead electrical facilities unless authorized by the Electrical Inspector.
- h. All workmen on any demolition job shall be required to wear industrial safety helmets and body protective gears.

- i. Construction sheds and toolboxes shall be so located as to protect persons from dangerous falling walls and objects.
- j. The **Building Official** may permit the use of alternative methods and/or devices depending on local conditions provided that the minimum standard of safety sought to be achieved under this Rule is not jeopardized.
- k. In Fire Zones of **Types I, II and III** Construction, only heaters with enclosed flames shall be used for the heating of any roofing or other similar materials.
- l. Wherever any enclosed flame heaters or open fires are used, there shall be a workman in constant attendance, whose duty shall be to have such heater or fire under proper control at all times.
- m. In all buildings in which standpipes are required, such standpipes shall be installed as the construction progresses in such a manner that they are always ready for Fire Department use, to the topmost constructed floor. Such standpipes shall be provided with a Siamese twin dry standpipe outside the building and with one (1) outlet at each floor connected to a fire hose cabinet.
- n. In every construction operation, wherever a tool house, storeroom or other shanty is built or a room or space is used for storage, dressing room or workshop, at least one (1) approved hand pump, tank or portable chemical or dry powder fire extinguisher shall be provided and maintained in an accessible location.
- o. During construction operations, free access from the street to fire hydrants and to outside connections for standpipes, sprinklers or other fire extinguishing equipment, whether permanent or temporary shall be provided and maintained at all times. No material or construction equipment shall be placed within 3.00 meters of such hydrant or connection, nor between it and the centerline of the street.
- p. Toilet facilities at the construction/demolition site, as an ancillary to the bunkhouse and operation, shall be maintained in a clean/sanitary condition for the use of the workers.
- q. Supply of potable water and sanitary washing facilities shall be provided for workers' and other uses during workdays.
- r. At every construction/demolition operation, arrangements shall be made for prompt medical attention in case of an accident. An ample supply of first aid medicine shall be provided and maintained in a clean/sanitary cabinet, which shall be available at all times under the direction of the superintendent or a person designated by him.
- s. Unless competent medical attention is quickly available, where more than two hundred (200) workers are employed, a properly equipped first-aid room shall be provided, and a physician or competent nurse shall be in constant attendance.

(emphases, underscoring and annotations supplied)

Rule XII follows