

## **Unvalidated References:**

*Industrial Safety, Health and Welfare Act 1961*

This reprint of this Statutory Instrument incorporates all amendments, if any, made before 25 November 2006 and in force at 1 July 2001.

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Legislative Counsel  
Dated 25 November 2006

**INDEPENDENT STATE OF PAPUA NEW GUINEA.**

Chapter 175B.

***Industrial Safety (Building Works) Order 1967***



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MADE under the *Industrial Safety, Health and Welfare Act 1961*.

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**PART I. – PRELIMINARY.**

**1. INTERPRETATION.**

(1) In this Order, unless the contrary intention appears–

**“crane”** means–

- (a) a grab crane, charging crane, excavator power shovel, floating crane, cableway, overhead travelling crane, jib crane, derrick crane, cantilever crane, bridge or gantry crane, loader, monorail and mobile crane; or
- (b) any other crane or apparatus used for raising, lowering or handling; or
- (c) the supporting structure and gear used in connection with any crane referred to in Paragraph (a) or (b);

**“fixed ladder”** means a ladder that is permanently attached to a building or structure;

**“hoist”** means a mechanical appliance used, or capable of being used, for raising or lowering materials and includes–

- (a) hoists and hoisting appliances used with any building works; and
- (b) supporting structures used in connection with a hoist;

**“ladder”** means an appliance usually consisting of two side rails or stiles joined at regular intervals by cross pieces called steps, rungs or treads, on which a person may rest or step in ascending or descending;

**“the Ladders Code”** means the Standards Association of Australia *Code for Fixed Platforms, Walkways, Stairways and Ladders* (AS 1657-1974), as in force from time to time;

**“step ladder”** means a self-supporting portable ladder, non-adjustable in length, having flat steps or treads and hinged back legs;

**“trestle ladder”** means a self-supporting portable ladder consisting of two sections hinged at the top to form equal angles with the base.

(2) For the purposes of this Order–

- (a) the size of a step ladder is designated by the overall length of the ladder measured along the front edge of the side-rails; and
- (b) the size of a trestle ladder is designated by the length of the side-rails measured along the front edge.

**PART II. – SAFETY GENERALLY.**

**2. PERSON CARRYING OUT BUILDING WORK TO PROVIDE SAFETY MEASURES.**

(1) A person who, directly or by his servants or agents, carries out any building work shall, subject to Section 3, take all necessary measures—

- (a) to minimize accident risk; and
- (b) to prevent injury to the health of persons engaged in the building work.

(2) For the purposes set out in Subsection (1) and without limiting the generality of that subsection, a person referred to in that subsection shall—

- (a) provide suitable and safe scaffolding that conforms to the requirements of this Order for all work that cannot be done safely from ladders constructed in conformity with this Order; and
- (b) provide and maintain safe means of access to any place at which a person has to work at any time; and
- (c) where a person is working at a place from which he would be liable to fall a distance of more than 1.829m to the ground—provide means, by fencing or otherwise, for securing his safety; and
- (d) keep all stairways, corridors and passageways free from loose materials and debris, building materials, supplies and obstructions of any kind; and
- (e) where there is a likelihood of persons being injured by objects falling from above, provide—
  - (i) where practicable—adequate overhead protection for persons working or passing below; or
  - (ii) if it is impracticable to fix overhead protection—head protective helmets, of an approved type, for the use of all persons; and
- (f) subject to Subsection (3), effectively fence in a manner prescribed in this Order—
  - (i) all platforms; and
  - (ii) the open sides of all floors, openings in floors, roofs and platforms into which persons could accidentally walk; and
  - (iii) the open sides of stairways and stairway landings; and
  - (iv) all excavations and holes more than 1.524m deep; and
- (g) cause the exhaust gases of engines used on the premises to be conducted away to the atmosphere so as to prevent discomfort or danger to health; and
- (h) where necessary, provide—

- (i) goggles of an approved type; or
- (ii) effective screens,

to protect the eyes of persons employed on the building work; and

- (i) take measures to ensure that—
  - (i) scaffolding materials, tools, waste materials and other objects and materials are not thrown, tipped or shot down from a height but are properly lowered; and
  - (ii) adequate steps are taken to protect persons from falling or flying debris; and
- (j) cause protruding nails to be knocked in or removed from all materials used in the construction of scaffolding, false work and shuttering, and take measures to ensure that no timber or material with projecting nails is allowed to remain in any place where persons are liable to come into contact with such nails; and
- (k) take all necessary precautions, by the use of adequate temporary guys, stays, supports and fixings or otherwise, to prevent danger to any person through the collapse of any part of a building or structure—
  - (i) during any temporary state or weakness or instability of the building or structure, or a part of it; or
  - (ii) before a building or structure is completed; or
  - (iii) during the demolition of a building or structure; and
- (l) provide adequate safeguards for falling products of any electric arc or similar equipment.

(3) Where, because of the nature of the building work, it is impracticable to comply with Subsection (2)(f), an Industrial Safety Officer may direct that the contractor or person in charge of the building provide safety nets, safety belts or lifelines of an approved type in order that the work may be carried out without risk of serious injury.

### **3. FENCING OF PLATFORMS, ETC.**

Where it is required by this Order that a platform, landing, stairway, excavation or hole, opening in a floor, roof, platform or landing or any other place be fenced, the fencing shall be effected—

- (a) by positively fastening in position uprights or posts of 101.6mm x 50.8mm timber at a distance of not more than 2.438m apart and bolting to each upright or post such length or lengths of 101.6mm x 50.8mm timber as are necessary to form the top guard rail of the fence, the 101.6mm x 50.8mm timber being bolted to each upright or post at such a position that the distance from its top edge to the level of the place being fenced is 1.067m; or



- (b) by positively fastening to the uprights or posts mentioned in Paragraph (a) toe or fender boards, of not less than 228.6mm x 25.4mm timber, in such a manner that—
  - (i) the bottom edge of each toe or fender board is level with the place being fenced; and
  - (ii) an opening or gap is not left between the bottom edge of the toe or fender board and the surface of the place being fenced; or
- (c) if constructing the members of steel—by providing that each steel member used possesses the strength and rigidity of its corresponding timber member as specified in this Order; or
- (d) by securely attaching a flexible steel wire rope, or a fibre rope not less than 76.2mm in circumference, to the uprights or posts, and keeping the rope taut and properly secured.

#### **4. STABILITY OF WALLS.**

A wall or portion of a wall shall not, during its construction, be built to a greater height than 1.524m or six times its thickness, whichever is the greater, unless it is supported, until such time as roof or floor ties or cross walls are in position, by temporary shores, proper scaffolding or buttresses at intervals of length not greater than 30 times the thickness of the wall.

#### **5. PROTECTION IN LIFT WELLS OR STAIR WELLS.**

When persons are working in a lift well or stair well during the construction, alteration or equipping of a building, timber planks not less than 50.80mm thick shall be laid across the lift well or stair well not more than two stories above nor one storey below the level at which they are working.

#### **6. TEMPORARY RAMPS.**

(1) A temporary ramp built to provide access for vehicles to the site of a building work shall—

- (a) have a grade safe for vehicles using it; and
- (b) possess adequate strength and stability under the effects of the maximum loads to which it is subjected.

(2) The minimum width of a ramp referred to in Subsection (1) is 3.048m, and a guide or kerb 228.6mm in height and 152.4mm in width shall be positively fixed in position on either side.

#### **7. PROTECTION OF FOOTPATHS, ETC.**

A person who, directly or by his agents or servants, carries out any building works shall, where the public uses a footpath, walkway or road in the vicinity of or close to any construction work, provide—

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- (a) such adequate protection by way of fences, barriers or overhead protection; and
- (b) during the hours of sunset to sunrise—such lights to illuminate the fence, barrier or protection,

as are necessary to prevent any possible injury resulting from the building works to persons using the footpath, walkway or road.

**PART III. – LADDERS.**

**8. STANDARDS FOR LADDERS.**

- (1) Ladders shall conform to the Ladders Code.
- (2) Ladders shall not—
  - (a) be made by fastening cleats across a single rail; or
  - (b) be joined together to form a longer ladder unless the longer ladder so formed complies with the Ladders Code with respect to strength and rigidity; or
  - (c) be used as guys, braces, tows, struts, beams or skids, or for any purpose other than their intended purpose; or
  - (d) be used with missing, broken, weakened or otherwise defective rungs or treads, or broken or defective stiles; or
  - (e) be used with rungs or treads that depend for their support solely on nails, spikes or other similar fixing.

**9. PROVISION OF LADDERS.**

(1) A person who, directly or by his agents or servants, carries out any building work shall provide and maintain in place during working hours such ladders as are necessary to provide safe means of access to—

- (a) all floor levels; and
- (b) all places where any person has to work,

until such time as temporary or permanent stairways are completed and are available as such safe means of access.

(2) Ladders for a purpose set out in Subsection (1) shall rise to a height of at least 1.067m above the place of landing for persons using them.

(3) A ladder used as a place from which a person has to work shall rise to a height of at least 1.067m above the highest rung to be reached by the feet of the person working on the ladder, or if that is impracticable then to the greatest practicable height.

**10. PLACING OF LADDERS.**

- (1) Ladders shall be so placed that—
  - (a) each side-rail or stile has a level and firm footing; and
  - (b) the top rest for each side-rail or stile—
    - (i) is level and reasonably rigid; and
    - (ii) is of adequate strength to support the maximum applied load; and

- (c) the side-rails or stiles are not supported by boxes, house bricks or other loose packing.

(2) A ladder shall not be placed in front of a door opening towards the ladder, unless the door is fastened open, or is locked or guarded.

#### **11. SECURING LADDERS.**

A ladder shall, as far as practicable, be securely fixed so that it cannot move either from the top or from its bottom points of rest, or if it cannot be so securely fixed—

- (a) it shall, where practicable, be securely fixed at the base; or
- (b) if fixing at the base is impracticable, a person shall be stationed at the base of the ladder to prevent it from slipping.

#### **12. ANGLE OF LADDERS.**

A ladder shall, where possible, be used at such an angle that the horizontal distance from the top support to the foot of the ladder is equal to 25% of the length of the ladder.

#### **13. USE OF SEPARATE LADDERS FOR ASCENT AND DESCENT.**

Where, in connection with any building work, traffic conditions on ladders are such as to warrant the use of separate ladders for the purposes of ascent and descent, separate ladders shall be provided, designated and used for the purpose of ascent only or descent only.

#### **14. LANDING PLACES.**

(1) A landing place at least 685.8mm in width and 1,219.2mm in length shall be provided at the head and base of a ladder used for a purpose set out in Section 10.

(2) If any person is liable to fall a distance of more than 1,828mm from a landing referred to in Subsection (1), the landing shall be fenced in a manner prescribed by Section 3.

(3) A ladder or run of ladders rising a vertical distance of 6.096m or more shall be provided with an intermediate landing place or places so that the vertical distance between two successive landing places does not exceed 6.096m.

#### **15. STEP LADDERS.**

Where a step ladder is used, it shall be set up on a level and firm footing, and shall not be stood on loose bricks or other loose packing.

**16. SCAFFOLDING PLANKS.**

Where it is necessary to support a plank on which a person is to work above ground level, the plank shall be supported on properly constructed trestle ladders.

**17. USE OF LADDERS.**

Persons using ladders—

- (a) shall face the ladder while in the act of ascending or descending; and
- (b) shall not crowd together on ladders.

**PART IV. – SCAFFOLDING.****18. INTERPRETATION OF PART IV.**

In this Part, unless the contrary intention appears—

**“birdcage scaffolding”** means independent pole scaffolding used—

- (a) in connection with interior decoration of buildings; or
- (b) for fixing building ceilings; or
- (c) for other such work,

in the course of which loads required to be carried are small in weight when compared with the weight of persons using the scaffolding;

**“heavy-duty scaffolding”** means scaffolding used by bricklayers, masons, plasterers and other such tradesmen who in the course of their work require heavy materials to be deposited on the scaffolding;

**“independent-pole scaffolding”** means scaffolding supported from the base by two or more rows of standards independent of support from a wall or other structure;

**“light-duty scaffolding”** means scaffolding for the use of carpenters, painters, plumbers, electricians and other such tradesmen that is required to support material of a weight that is small when compared with the weight of persons using the scaffolding;

**“run”** means a stationary incline provided as a means of ascent and descent from one level to another;

**“single-pole scaffolding”** means scaffolding supported from the base by one row of standards, the inner edge of the working platform being supported by putlogs fixed to the wall or structure;

**“toe board”** means a board 228.6mm in height erected at right angles to scaffolding platform and held tightly against the scaffolding platform—

- (a) for protection of persons; and
- (b) to prevent materials or tools falling from the platform.

**19. ELECTRICAL DANGERS.**

(1) Scaffolding in which a metal member is used shall not be set up within 4.572m of—

- (a) any overhead electricity transmission line or main; or
- (b) any electrical apparatus,

until the line, main or apparatus has been protected in an approved manner by the electricity supply authority.

(2) Scaffolding built of timber members shall not be set up within 1.524m of any electricity line, main or apparatus until the line, main or apparatus has been protected in an approved manner by the electricity supply authority.

**20. CONSTRUCTION OF SCAFFOLDING GENERALLY.**

(1) Scaffolding shall be—

- (a) of sound materials, good construction, and adequate strength, and free from defects; and
- (b) suitable and safe for the purpose for which it is intended.

(2) Scaffolding and fixing shall be inspected by an Industrial Safety Officer, or a person appointed by an Industrial Safety Officer for the purpose, before it is used, in order—

- (a) to eliminate any defective or broken items; and
- (b) to ensure that it complies with this Order.

(3) Timber used in scaffolding shall be of good quality hardwood.

(4) Working platforms shall have a minimum width of 457.2mm, and all scaffold planks shall—

- (a) be of a uniform thickness of not less than 228.6mm in width by 38.1mm in depth; and
- (b) be lapped 228.6mm over supports; and
- (c) be laid over the full width of the scaffolding frame.

(5) Guard rails and toe boards shall be provided on the outer edges and ends of all scaffolding from which a person or object could fall a distance of 3.048m or more.

(6) Guard rails shall be—

- (a) of timber—
  - (i) of equivalent strength and rigidity to the timber used in construction of the scaffolding; and
  - (ii) at least 101.6mm x 50.8mm in dimensions and a minimum of 0.914m in height above the working platform; or
- (b) of metal piping of not less than 48.419mm external diameter; or
- (c) of rope not less than 76.2mm in circumference,

and shall be secured to uprights at intervals of not more than 2.438m.

(7) Toe boards shall—

- (a) project not less than 228.6mm above the top of the platform planks; and
- (b) be set up so as to leave no space between the platform planks and the bottom edge of the toe boards.

(8) Fittings shall be—

- (a) for sawn-timber scaffolding—steel bolts 15.875mm in diameter with washers and nuts; or
- (b) for round wood pole scaffolding—
  - (i) more than 9.144m in height—fibre rope lashings each 5.486m in length by 38.1mm in circumference; and
  - (ii) 9.144m or less in height fibre rope lashing each 4.877m in length by 3.8mm in circumference; and
- (c) for tubular scaffolding—approved types of connectors, and all fittings shall accurately embrace, over the whole area of their bearing surface, the member or members on which they are used.

(9) Pipes used for the construction of tubular scaffolding shall be straight and free from indentations, corrosion and other defects, and the ends of the pipes shall be squared.

## **21. CONSTRUCTION OF SINGLE-POLE AND INDEPENDENT-POLE SCAFFOLDING.**

(1) Single-pole and independent-pole scaffolding shall comprise a number of standards to which are fixed horizontal ledgers supporting putlogs on which are laid scaffold planks, the whole structure being braced both longitudinally and transversely.

(2) Bracing shall be adequate in all directions to form a rigid structure capable of maintaining a wide margin of stability under all possible conditions.

(3) Standards shall bear on a firm footing, and shall be protected against any forces or impacts that may tend to displace them.

(4) Where splices are necessary in round timber pole standards, butt-jointed double poles shall be used in place of simple poles, and double poles shall break joint at least 2.743m, the poles being secured together with two rope lashings at the base and one rope lashing on each side of each butt joint.

(5) Sawn timber standards shall be butt-jointed with two 0.914m lengths of timber 101.6mm x 50.8mm fixed one on each side of the butt joint and bolted through with four steel bolts 15.875mm in diameter and fitted with washers and nuts, spaced at 228.6mm centres.

(6) Joints in tubular scaffolding shall be made with approved type fittings and shall not be at distances greater than 228.6 mm from ledgers or other members capable of effectively constraining the joints against lateral displacement.

(7) Ledgers shall—

- (a) be secured to each standard at each crossing by use of the appropriate fixing prescribed by Section 22(6)(c); and
- (b) be so fixed that the greater rectilinear dimension of a section stands vertically; and



- (c) be continuous, and be kept continuous, for the whole length of a scaffolding frame,

and joints shall not be made—

- (d) in a ledger of a single span; or
- (e) in ledgers near the end or outer standards; or
- (f) in adjacent spans of a ledger.

(8) Where a straight ledger is supported—

- (a) by a row of not less than three standards—one joint only may be made in the ledger and then only if it is not placed at a greater distance than 685.8mm from the central standard; or
- (b) by a row of four or more standards—the ledger joints may be placed at any position but not within adjacent or end spans.

(9) A putlog shall—

- (a) be set above ledgers and securely fixed to ledgers or standards; and
- (b) in the case of single-pole scaffolding—
  - (i) have not less than 114mm bearing in walls; and
  - (ii) be securely wedged in position in walls; and
- (c) be effectively secured to any structure on which it rests; and
- (d) be arranged so as to provide a true and even support to scaffold planks; and
- (e) where placed in timber scaffolding—be spaced not more than 1.829m apart; and
- (f) subject to Subsection (10), where placed in tubular scaffolding—be placed one at each side of each standard not more than 228.6mm from the centre of the standard to the centre of the putlog.

(10) In the case of a standard at the end of the scaffolding frame, one putlog only shall be placed on the inside of the standard.

(11) A joint shall not be made in a putlog.

(12) The maximum span of a putlog—

- (a) in timber and tubular scaffolding—shall not exceed 1.587m; and
- (b) in aluminium scaffolding—shall not exceed 1.435m.

(13) On each ledger, at least one putlog within 0.610m of each standard shall remain in the scaffolding until the scaffolding is finally removed.

**22. HEAVY-DUTY SHORT SINGLE-POLE AND INDEPENDENT-POLE SCAFFOLDING.**

(1) This section applies to heavy-duty single-pole and independent-pole scaffolding not exceeding 7.62m in height.

(2) Except as provided by this section, Section 21 also applies to scaffolding to which this section applies.

(3) The load due to the weight of—

- (a) men and material uniformly distributed over the area of a scaffolding platform shall not exceed 34,750.08kN per square metre of platform area; or
- (b) a concentrated load imposed on any bay—shall not exceed 181.436kg.

(4) Subject to Subsection (5), no more than two working platforms shall be set up and used on a scaffolding frame at any one time.

(5) Short platforms may be set up at different positions on a scaffolding frame, if the total area of the short platforms supported by a standard does not exceed that supported when two full length platforms are set up.

(6) Standards shall be effectively tied to the building or structure or be otherwise braced at points not more than 3.658m apart on the length of each standard, and shall be—

- (a) of sawn hardwood timber 101.6mm x 76.2mm sectional dimensions; or
- (b) of timber poles not less than 76.2mm in diameter at the small end; or
- (c) in the case of tubular scaffolding only—of round metal pipes, steam quality, mild steel or pipes of an approved high tensile aluminium alloy or other approved alloy, all such pipes being of an outside diameter of not less than 48.419mm and a nominal bore of 38.1mm.

(7) Standards shall be spaced—

- (a) in the case of sawn timber and pole standards—not more than 3.048m apart from centre line to centre line of one standard to the next in row; or
- (b) in the case of tubular or pipe standards—not more than 2.286m apart in any row; or
- (c) if two or more rows of standards are used—
  - (i) in the case of the scaffolding constructed of timber or mild steel pipes—not more than 1.524m apart; and
  - (ii) in the case of scaffolding constructed of high tensile aluminium alloy pipes—not more than 1.372m apart.

(8) Ledgers shall be—

- (a) of sawn hardwood timber not less than 152.4mm x 50.8mm sectional dimensions; or

- (b) of timber poles not less than 76.2mm diameter at the small end; or
- (c) in the case of tubular scaffolding only—of round metal pipes of the description and dimensions specified in Subsection (6)(c); or
- (d) of such other material, construction and dimensions as are approved in writing.

(9) Ledgers shall not be spaced more than 1.828m apart, except that the distance measured from the base of the scaffolding to the first ledger may be increased to not more than 3.048m to provide a working bay, if an additional cross-brace is added to all other bays.

(10) Putlogs shall be—

- (a) of sawn hardwood timber not less than 101.6mm x 76.2mm sectional dimensions; or
- (b) in the case of tubular scaffolding only—of round metal pipes of the description and dimensions specified in Subsection (6)(c).

(11) Bracings shall be—

- (a) in the case of timber scaffolding—
  - (i) of sawn hardwood timber, not less than 58.064cm<sup>2</sup> in sectional area; or
  - (ii) timber poles not less than 76mm in diameter at the small end; or
- (b) in the case of tubular scaffolding—round metal pipes of the description and dimensions specified in Subsection (6)(c).

### **23. LONGER HEAVY-DUTY SINGLE-POLE AND INDEPENDENT-POLE SCAFFOLDING.**

(1) This section applies to heavy-duty, single-pole and independent-pole scaffolding from 7.62m to 45.72m in height.

(2) Except as provided by this section, Sections 21 and 22 also apply to scaffolding to which this section applies.

(3) Standards of sawn hardwood timber shall not be less than 101.6mm x 101.6mm sectional dimension.

(4) Sawn timber and pole standards shall not be spaced more than 2.743m apart in any row.

(5) Tubular or pipe standards shall not be spaced more than 2.286m apart in any row.

### **24. LIGHT-DUTY SINGLE-POLE AND INDEPENDENT-POLE TUBULAR SCAFFOLDING.**

(1) Light-duty single-pole or independent-pole tubular scaffolding may be used only by painters, decorators and tradesmen engaged in other similar building work

where the scaffolding is subjected, from the combined weight of workmen and materials, to the equivalent of a uniformly distributed load of 9,928.8kN to the square metre, and subject to the succeeding provisions of this section.

(2) The height of the topmost platform shall not exceed 30.48m from the base of the scaffold.

(3) Subject to Subsection (4), more than two working platforms shall not be set up and used on a light-duty scaffolding at the same time.

(4) Short platforms may be set up at different positions on a scaffolding frame provided that the total area of the short platforms supported by a standard does not exceed that supported when two full length platforms are set up.

(5) Standards shall be of round metal pipe of the description and dimensions specified in Section 22(6)(c).

(6) All standards shall be effectively tied to the building or structure and be otherwise braced at points not more than 3.657 m apart.

(7) Standards shall not be spaced more than 3.657 m apart, and if two or more rows of standards are used the rows shall be spaced so as to be not more than 1.524 m apart.

(8) Ledgers shall be of round metal pipe of the description and dimensions specified in Section 22(6)(c) and shall not be spaced more than 3.048 m apart.

(9) The distance of a joint in a ledger from the vertical shall not exceed 533.4 mm.

(10) Putlogs shall be of round metal pipe of the description and dimensions specified in Section 22(6)(c).

(11) A putlog shall not be placed more than 610 mm from a standard at each side of each standard, except in the case of the standards at each end of the scaffolding frame where only one need be used on the inside of a standard.

(12) The span of a putlog shall not more than 1.638 m.

## **25. LIGHT-DUTY SCAFFOLDING FOR SINGLE-STOREY WOODEN BUILDINGS.**

For single-storey wooden buildings, light-duty scaffolding, not exceeding 6.096 m in height, used for carpenters, plumbers, painters and others working on wooden buildings may be erected according to the following specifications:—

(a) standards shall be not less than 101.6 mm x 50.8 mm hardwood, spaced not more than 2.743 m apart;

(b) ledgers shall not be less than 152.4 mm x 25.4 mm hardwood well nailed—

(i) to the standards and to the studs of walls; or

- (ii) to cleats not less than 76.2 mm x 38.1 mm well nailed to the wall of the building or structure and checked out to fully accommodate them;
- (c) the span between a standard and the wall of the structure shall not exceed 1.219 m;
- (d) scaffold boards shall be of sound timber not less than 228.6 mm x 38.1 mm in cross-section laid butting or lapping, and when they are laid lapping the laps shall not be less than 228.6 mm;
- (e) the floor of the platform shall not be less than 457.2 mm in width;
- (f) a fender board not less than 228.6 mm in height shall be fixed to the outside edge of the platform;
- (g) guard rails shall not be less than 76.2 mm x 38.1 mm hardwood, securely fastened to standards at a height of not less than 0.914 m above the platform;
- (h) bracings shall be of 101.6 mm x 25.4 mm sectional area sawn timber.

**26. TUBULAR BIRDCAGE SCAFFOLDING.**

(1) Where tubular birdcage scaffolding is used, the total load on the platform in any bay at any time shall not exceed the weight of two men plus material weight 22.68 kg.

(2) The general arrangement, construction and materials shall be as specified in Section 24, subject to the following conditions:—

- (a) platform planks may be spaced not more than 177.8 mm apart;
- (b) the span of putlogs may be increased to 2.438 m for steel and 1.829 m for approved aluminium alloy;
- (c) standards shall not be spaced more than 3.048 m apart in any row, unless additional putlogs are provided to support cantilevered ends of platform planks;
- (d) more than one working platform shall not be set up on a scaffold frame at the same time.

**27. USE OF UNIT FRAME SCAFFOLDING.**

Unit frame scaffolding shall not be used except where the design is such that the construction of the scaffolding is the same in strength, rigidity and safety as if wooden round poles or tubular scaffolding, as specified in this Order, had been used.

**PART V. – TRESTLE LADDERS.****28. INTERPRETATION OF PART V.**

For the purposes of this Part, the height of a trestle ladder is the height when fully opened for work.

**29. CONSTRUCTION OF TRESTLE LADDERS.**

Subject to this Part, trestle ladders shall be constructed in accordance with Part III.

**30. TIMBER LADDERS.**

(1) Trestle ladders constructed of timber—

- (a) up to 3.048 m in height—shall have stiles and ledgers of not less than 69.85 mm x 34.925 mm dressed timber; and
- (b) over 3.048 m and up to 4.877 m in height—shall have stiles of not less than 69.85 mm x 44.45 mm and ledgers of not less than 69.85 mm x 34.925 mm dressed timber.

(2) Trestle ladders constructed of timber shall not be used over 4.877 m in height.

**31. STEEL OR ALLOY METAL LADDERS.**

Trestle ladders constructed of steel or alloy metals shall not exceed 4.877 m in height, and their construction shall be of a standard equivalent in strength, rigidity and safety to that of wooden ladders specified in this Order.

**32. HINGES, ETC.**

(1) Trestle ladders more than 3.048 m in height shall have hinges not less than 355.6 mm long on each side of the hinge pin, and each side shall be secured to the stile with three steel bolts 9.525 mm in diameter.

(2) Trestle ladders not more than 3.048 m in height shall have hinges not less than 254 mm long on either side of the hinge pin, and each side shall be secured to the stile with three steel bolts 9.525 mm in diameter.

**33. DISTANCE BETWEEN STILES.**

(1) The width between the inside faces of stiles at the top rung shall be—

- (a) for trestle ladders up to and including 3.048 m in length—not less than 381 mm or more than 508 mm; and
- (b) for trestle ladders over 3.048 m in length—not less than 482.6 mm or more than 533.4 mm.

(2) The dimensions specified in Subsection (1) shall increase towards the lower rungs at a ratio not less than 1:8 and not more than 1:7 of the length of the stiles.

**34. GUARD RAILS.**

Where an Industrial Safety Officer directs that guard rails are necessary, guard rails in accordance with this Order shall be fitted.

**35. GENERAL CONSTRUCTION.**

(1) A trestle ladder shall have—

- (a) ledgers with tenons of not less than 25.4 mm in length and not less than 22.225 mm in thickness that extend the full depth of the ledger and into the stile or side rail for not less than 25.4 mm; and
- (b) iron tie rods of 9.525 mm in diameter with nuts and washers fitted at the top, bottom and centre; and
- (c) strap hinges and effective measures to prevent spreading; and
- (d) rungs equally spaced so that there is not less than 508 mm or more than 609.6 mm from centre to centre; and
- (e) hinges of steel not less than 44.45 mm wide and not less than 6.35 mm in thickness.

(2) Tenons for the purposes of Subsection (1)(a) shall be secured by means of two nails of at least 12 gauge driven through the narrow edge of the side rail and passing completely through the tenon.

(3) The top rung of either pair of stiles shall be not more than 152.4 mm from the top of the trestle ladder.

(4) The spread between pairs of side-rails on stiles, in the fully opened position, shall not be less than one third or more than two thirds of the length of the side rails.

**PART VI. – CRANES AND HOISTS.****36. STANDARDS FOR CRANES AND HOISTS.**

Unless otherwise provided in this Order, cranes and hoists used in construction and building works shall be designed, constructed, maintained, inspected and operated in conformity with the Standards Association of Australia Code No. C.B.2.

**37. NOTICE SHOWING SAFE LOADING.**

(1) Each crane or hoist shall have constantly maintained on it a permanent notice, prominently and legibly exhibiting—

- (a) all of the safe working loads of the crane or hoist; and
- (b) information as to the conditions, incidence and manner in which the loads shall or may be lifted or handled for the safe use of, and for the manipulation of, the crane or hoist.

(2) The loads, conditions, incidence and manner as shown on the notice referred to in Subsection (1) are the limiting values of the loads, conditions, incidence and manner of loadings.

**38. SAFE LOADS.**

(1) Subject to Subsection (2), a person shall not subject, or instruct or permit any person to subject, a crane or hoist to a greater load, or to a more adverse incidence or manner of load than that shown on the notice referred to in Section 37(1) on the crane or hoist.

(2) Subsection (1) does not prevent a crane or hoist being tested in the presence of an Industrial Safety Officer for the purpose of calculating safe working loads.

(3) A person shall not represent a crane or hoist to be capable of lifting or handling a greater load, or of sustaining a more adverse incidence, condition or manner of load, than the designed and constructed limiting values of the load or the conditions, incidence and manner of load, of the crane or hoist.

**39. MAINTENANCE.**

(1) A crane or hoist used on construction or building works shall be constantly and efficiently maintained at all times by competent tradesmen.

(2) Lifting hooks that have opened out at the throat by 5% of their throat dimensions shall not be used.

(3) Lifting rings of which any internal diameter has increased or decreased by 5% shall not be used.

(4) Where members, components, parts, linkages or attachments are—



- (a) unduly loose or slack; or
- (b) unduly worn, deteriorated, or otherwise impaired; or
- (c) so cracked, distorted, eroded, burned, fatigued, strain-hardened or in any way defective or so damaged, as to be productive or conducive to conditions of hazard, uncertainty or danger,

they shall be immediately discontinued and immediate action taken to repair or replace them.

**40. ARRANGEMENT OF COMPONENTS, ETC.**

Members, components, parts, linkages or attachments (particularly operating cords, controls and brakes) shall be so arranged that at all times they carry out their functions freely and without obstruction.

**41. GUARDS ON MOVING PARTS.**

Moving parts of a crane or hoist winch that constitute a safety hazard shall be adequately guarded with guards, to the satisfaction of an Industrial Safety Officer.

**42. EARTHING.**

A mobile or portable crane or hoist near electrical equipment or apparatus shall be effectively earthed in a manner that ensures the safety of persons using or working in connection with it.

**43. LOAD RADIUS ATTACHMENTS.**

(1) Where a jib or derrick crane or hoist is not designed to lift its maximum rated working load at all attainable positions of the jib without breach of this Order, it shall have a load radius indicator that functions automatically and the load markings on which are of a permanent nature.

(2) The load radius indicator shall be constantly maintained in good order.

**44. RIDING ON LOADS.**

(1) Subject to Subsection (3), a crane or hoist shall not be used for the purpose of lifting or lowering a person or persons.

(2) A person shall not ride on the load of a crane or hoist.

(3) In special circumstances, the Departmental Head may approve of the use of a crane or hoist for the purpose of lifting or lowering a person or persons.

**45. CONSTRUCTION OF TIMBER HOIST TOWERS.**

(1) A timber hoist tower the overall outside dimensions of which do not exceed 1.524 m x 1 524 m shall be constructed as follows:—

- (a) each corner post shall not be less than 101.6 mm in cross section if it is in one piece of timber, but if it is built up of two pieces of timber each piece shall not be less than 127 mm x 50.8 mm in cross section;
- (b) the corner posts shall be properly framed together at each side of the tower by horizontal and diagonal braces, the distance between the centres of the horizontal braces being not more than 1.524 m, and the horizontal and diagonal braces not being less than 127 mm x 50.8 mm in cross section;
- (c) all braces shall be connected to the corner posts by bolts not less than 12.7 mm in diameter, with nuts and washers under both the bolt head and the nut;
- (d) the supporting beams of the tower head rope sheaves shall be of hardwood, and each beam being not less than 152.4 mm x 101.6 mm in cross section;
- (e) where beams referred to in Paragraph (d) are longer than 1.829 m, the cross section dimensions shall be increased to provide the same factor of safety as the shorter beams;
- (f) a platform constructed of planks not less than 38.1 mm in thickness shall be provided and fixed adjacent to the tower head rope sheaves to give safe access to the sheaves for maintenance purposes;
- (g) the platform referred to in Paragraph (f) shall be protected on all sides by guard rails that comply with this Order;
- (h) a ladder or ladders that complies or comply with this Order shall be fixed to the tower to provide a safe means of access to the platform from the floor of the buildings or the ground, as the case requires;
- (i) the tower shall be effectively enclosed, to a height of not less than 1.829 m above the level of each floor, scaffolding, platform or stairway adjacent to it by—
  - (i) close fitting timber boarding not less than 19.05 mm in thickness; or
  - (ii) 1.25 mm wire mesh; or
  - (iii) black or galvanized flat iron not less than 0.6 mm thickness,

positively fixed to the outside of the tower frame;

- (j) a tower set up in or contiguous to a building shall be positively fixed to the building at each floor level;
- (k) if a tower is set up in any other position, it shall be kept upright by steel wire guy ropes, the breaking load of which is not less than four times the maximum load to which they are subjected;
- (l) the guy ropes shall be effectively secured to the tower corner posts, and efficient provision made for keeping every guy taut;

- (m) a set of four guy ropes shall be used for every 9.144 m of tower height;
- (n) the anchorage for the guy ropes shall be so spaced that the guys are not more than 90° apart in plan.

(2) The timber used in the construction of a hoist tower shall be of the best grade, well seasoned, and free from knots, shakes and other defects.

#### **46. CONSTRUCTION OF TUBULAR HOIST TOWERS.**

(1) The metal tubes used to construct a tubular tower hoist shall be of the description and dimensions specified in Section 22(6)(c).

(2) A tubular hoist tower the overall outside dimensions of which do not exceed 1.524 m x 1.524 m shall be constructed as follows:—

- (a) the height of the topmost platform shall not exceed 51.816 m measured from the base of the corner of the hoist tower to the surface of the top platform supporting the tower head rope sheaves;
- (b) the standards shall rest on solid footings sufficient to prevent any unequal settlement;
- (c) the distance between the horizontal braces shall not exceed 1.524 m;
- (d) horizontal braces shall extend at least 228.6 mm past each standard;
- (e) diagonal bracing shall be fitted on all sides of the hoist tower;
- (f) each section or panel between the horizontal braces shall contain at least one rigid diagonal brace;
- (g) a tower set up in or contiguous to a building shall be positively fixed to the building at each floor level;
- (h) if a tower is set up in any other position, it shall be kept upright by steel wire ropes as specified in Section 45(1)(k);
- (i) if timber beams are used to support the tower head rope sheaves, they shall comply with Section 45(1)(d) and (e);
- (j) where tubular steel is used as beams for supporting the tower head rope sheaves—
  - (i) the tubes shall be suitably trussed to provide supports to the centre of the beam; and
  - (ii) channel iron having a minimum section of 152.4 mm x 101.6 mm may be used for the supporting beams of the tower head rope sheaves;
- (k) supporting beams referred to in Paragraph (j)(ii) shall be effectively secured at each end;
- (l) the horizontal brace of the steel tower on which any beam supporting the tower head rope sheaves rests shall be suitably trussed to provide support to the centre of the beam;

- (m) effective means shall be taken to enclose the hoist tower at all times, to a height of not less than 1.829 m above the level of all floor scaffolding, platforms or stairways adjacent to it;
- (n) there shall be a platform similar to that specified in Section 45(1)(f) and (g) at the top of the tower, with access similar to that specified in Section 45(1)(h).

**47. GATES, ETC., AT PLATFORMS AND LANDINGS.**

(1) A gate, door or fixed barrier, fitted with a suitable locking device to hold it closed, shall be placed across all openings giving access to a hoist platform.

(2) When the hoist is stopped level with a floor or landing and the gate, door or barrier is opened for working purposes, it shall be shut immediately the purposes are effected.

(3) The gate, door or barrier shall be fixed not less than 152.4 mm back from the extreme projecting edges of the hoist platform.

**48. HOIST PLATFORM TO BE VISIBLE TO DRIVER.**

Hoists used for building operations shall be erected in such a position that the hoist platform is in plain view of the hoist driver at all times.

**49. PLATFORM TO OPERATE BETWEEN GUIDES, ETC.**

(1) The platform shall be arranged to operate between suitable vertical guides, which shall be secured to the building floors, building frame-work or other structures surrounding them by bolts of not less than 15.875 mm in diameter.

(2) The hoist platform shall be so constructed that it will not show any signs of distortion when the maximum load to be lifted or lowered is placed in any position on it.

**50. SAFE SIGNALLING SYSTEM.**

(1) An efficient and safe signalling arrangement shall be provided for the purpose of transmitting signals to the hoist driver.

(2) A notice setting out the signalling code shall be prominently displayed at the hoist drivers' station and at all landings.

**51. RIDING ON PLATFORM.**

(1) A person shall not be allowed to ride on the platform of a builder's hoist unless written approval has been obtained from the Departmental Head for persons to ride on the platform.

(2) A notice prohibiting persons from riding on hoist platforms shall be displayed on the platform of a builder's hoist.

**52. PROTECTIVE GEAR.**

(1) Personal protective equipment and gear shall be provided to all persons operating or working near a crane or hoist used in building or construction works.

(2) A sign shall be displayed at the site of construction and building works where a crane or hoist is being used, requiring all persons to wear protective head hats.

**PART VII. – WORK ON ROOFS OF BRITTLE MATERIALS.**

**53. WARNING NOTICES.**

The owner of a building (other than a private dwelling house) or a structure, that has any roof sheathing of asbestos cement or other brittle material, shall provide and fix on each individual slope, curve or flat of the roofing, notices—

- (a) warning persons that the roof sheathing is of brittle material, in lettering not less than 44.45 mm in height; and
- (b) carrying the wording “WARNING–DANGER” in red lettering.

**54. CAT WALKS.**

(1) For the purpose of fixing or repairing roof sheeting of asbestos, cement, terra-cotta, or cement tiles, slates or other brittle materials, cat walks shall be provided.

(2) Cat walks shall be constructed of planks not less than 254 mm in width and 25.4 mm in thickness, with not less than 50.8 mm x 25.4 mm wooden cleats securely nailed to the planks at not more than 457.2 mm centres.

(3) Cat walks shall be securely fastened over the ridge of the roof.

(4) Spoutings or gutters shall not be used as supports for cat walks.

*Industrial Safety (Building Works) Order 1967*