Chapter 14:08
Factories and Works
(Building, Structural and Excavation Work) Regulations, 1976

Rhodesia Government Notice No. 264 of 1976

Amended by ***S.I. 287/82****.*

ARRANGEMENT OF SECTIONS

IT is hereby notified that the Minister of Labour and Social Welfare has, in terms of subsection (1) of section 34 of the Factories and Works Act [*Chapter 14:08*], made the following regulations:—

PRELIMINARY

Title

1 (1) These regulations may be cited as the Factories and Works (Building, Structural and Excavation Work) Regulations, 1976.

(2) These regulations shall come into operation on the **1st May, 1976**.

Interpretation of terms

2 In these regulations—

"**Chief Inspector**" means the Chief Inspector of Factories appointed in terms of section 4 of the Act;

"**Central African Standards Association Code of Practice**" means a publication—

(a) embodying a Code of Practice laid down by the British Standards Association or the Central African Standards Association or the South African Bureau of Standards; and

(b) copies of which are held at Occupational Safety Offices where they may be inspected free of charge;

"**competent person**" means a person who has served an apprenticeship in an appropriate trade or who has not less than 5 years' practical experience in working with machinery and who has a thorough knowledge of the machinery, or class of vessel of which he is in charge or which he may be required to examine;

"**inspector**" means an inspector appointed in terms of section 4 of the Act.

"**user**" means an occupier or builder, or the person or persons owning or leasing the machinery, apparatus or appliances.

PART I

SCAFFOLDING

Scaffolding framework

3 (1) A user shall cause—

(a) scaffold standards to be firmly supported and secured against displacement and to be kept vertical, except in the case of putlog scaffolds which shall incline slightly towards the object on which work is performed;

(b) —

(i) standards to be spaced not more than 1,8 mtrs, 2,4 mtrs and 3 mtrs apart in the case of high, medium and low mass loads, respectively, if constructed of steel and not more than 3 mtrs apart if constructed of timber;

(ii) ledgers to be spaced not more than 2,1 mtrs apart vertically;

(iii) putlogs or transoms to be spaced not more than 1,5 mtrs, 1,8 mtrs and 2,4 mtrs apart in the case of high, medium and low mass loads, respectively;

(c) every member of a scaffold frame which is constructed of timber to have a diameter of not less than 75 mm or to have a section of equivalent strength.

(2) For the purpose of subsection (I), "high", "medium" and "low" mass loads shall mean mass loads, of not more than 375; 250 and 125 kgs per sq mtr respectively.

(3) No user shall use, or cause to be used, any scaffold unless it is— .

(a) securely and effectively braced to ensure stability in all directions;

(b) secured at suitable vertical and horizontal distances to the object on which work is being performed, unless the scaffold is designed to be completely self·supporting;

(c) so constructed that it has a factor of safety of not less than 4;

(d) inspected by a competent person at least once a week and after inclement weather.

(4) No user shall require or permit—

(a) scaffolding, the supporting frame of which is constructed of timber, to exceed a height of 25 mtrs;

(b) scaffolding to be erected, moved, altered or taken down other than by or under the personal supervision of a competent person.

[amended by SI 287/82 with effect from 14th May, 1982]

Scaffold platforms

4 (1) A user shall ensure that—

(a) every scaffold platform which is constructed of timber consists of boards at least 228 mm wide by 38 mm thick;

(b) every board which forms part of a scaffold platform rests on at least 3 supports, except in the case of trestle scaffolds. and projects at least 150 mm at intermediate supports and not more than 230 mm at the end supports;

(c) every board of a scaffold platforms securely fastened to prevent its displacement;

(d) every platform is boarded in such a manner that materials and tools are prevented from falling through.

(2) A user shall ensure that every working platform of scaffold—

(a) is not less than 456 mm wide;

(b) which is more than 2 mtrs above the floor or ground is provided on all sides of the platform, except on the side facing the working plane, with-

(i) substantial guard rails at least 900 mm and not more than 1,100 mm high;

(ii) toe-boards which shall be at least 150 mm high from the level of the platform and in the case of timber toe-boards at least 25 mm thick, and which shall be so affixed that there is no open space between the toe-boards and the platform;

(c) is so arranged that the gap between the platform and the working plane does not exceed 75 mm:

Provided that—

(i) where workmen are required to sit whilst working, this distance may be increased to not more than 300 mm;

(ii) where work is performed on irregular working planes, the working platform shall be as close as practicable to the working plane;

(d) is kept free from waste, projecting nails or any other obstruction and is maintained in a non-slippery state.

(3) No user shall require or permit a working platform which is higher than 600 mm to be supported on a scaffold platform.

(4) A user shall ensure that an additional guard rail is provided at a height of 900 mm above every working platform which is supported on a scaffold platform.

(5) A user shall ensure that convenient and safe access is provided to every scaffold platform and where such access is by means of ladders, that the ladders are firmly supported at the base and extended not less than 900 mm beyond the top of the platform and shall be firmly secured.

Suspended scaffolds

5 No user shall require or permit a suspended scaffold to be used unless—

(a) the outriggers are—

(i) of steel and have a factor of safety of not less than 4;

(ii) properly supported, suitably spaced and securely anchored at the inner end:

Provided that in the case of outriggers anchored by weights the arrangement there of shall be approved by an inspector;

(iii) fitted with a stop or other means at the outer ends to prevent displacement of the rope;

(b) the working platform is suspended from at least 2 independent steel wire ropes, the factor of safety of which is not less than 10 based on the maximum load which each rope is required to support;

(c) lifting machines or lifting tackle are so constructed and maintained as to prevent accidental movement of the working platform and are so situated that they are readily accessible for inspection and that the rope connections to the outriggers are vertically above the working platform attachments;

(d) the working platform is—

(i) not less than 456 mm and not more than 912 mm wide in the case of light suspended scaffolds and not less than 912 mm wide in the case of heavy suspended scaffolds;

(ii) suspended in such a manner that it is as close as practicable to the working plane on which work is being performed and secured at every working position to prevent relative horizontal movement between the platform and the working plane;

(iii) fitted with substantial guard rails of not less than 900 mm and not more than 1,100 mm above and on all sides of the platform except the side facing the working plane:

Provided that, in the case of a light suspended scaffold, guard rails not less than 750 mm high shall be fitted on all sides of the platform;

(iv) fitted on all sides with toe-boards which shall be not less than 150 mm high from the level of the platform and in the case of timber toe-boards not less than 25 mm thick and which shall be so installed there are no open spaces between the toe-boards and the platform:

Provided that in the case of heavy suspended scaffolds the toe-board facing the working plane shall be not less than 50 mm high from the level of the platform.

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Boatswain's chairs

6 A user shall cause every boatswain's chair or similar appliance to be securely suspended and to be of such construction as to prevent any occupant from falling therefrom.

Trestle scaffolds

7 A user shall ensure that trestle scaffolds are of sound and stable construction and that ail reasonable measures are taken against the accidental spreading of their supporting legs when in use, and no person shall render such measures ineffective or cause them to be rendered ineffective.

Construction and use of gangways, runs and raised platforms

8 Every builder shall ensure that—

(a) every gangway or run from any part of which a person is liable to fall a distance of more than 2 mtrs—

(i) is closely boarded planked or plated; and

(ii) is at least 450 mm wide;

(b) all planks forming a gangway or run are so fixed and supported as to prevent undue or unequal sagging;

(c) where the slope of a gangway or run is more than 1 vertical to 4 horizontal, such gangway or run is fitted with a substantial hand-rail and proper stepping **lathe* which shall—

[should *this not read " *ladder* "- Editor ?]

(i) be placed at suitable intervals not exceeding 560 mm; and

(ii) be the full width of the gangway or run except that it may be interrupted for a width not exceeding 230 mm to facilitate movement of barrows;

(d) every platform, gangway run or stair is kept free from any unnecessary obstruction, material or rubbish and from any projecting nails;

(e) toe-boards are placed and secured on edge around the perimeter of all raised working platforms to prevent the dislodgement of materials from such platforms;

(f) all timber used in the construction of working platforms shall be free from knots and warps and is straight-grained and free from cracks, and is unpainted.

Safety of hoistways, platforms and cages

9 Every user shall ensure that—

(a) the hoistway of every hoist, at all points at which access to the hoistway is provided or at which persons are liable to be struck by any moving part of the hoist, is enclosed and, where access to the hoist is needed, is fitted with gates, and such enclosures and gates shall extend to a height of at least 1,9 mtrs, except where a lesser height is sufficient to prevent any person falling down the hoistway and where there is no risk of any person coming into contact with any moving part of the hoist, but in no case shall such height be less than 900 mm;

(b) the construction and installation of every hoist at any one time is such that it can be operated only from 1 position and that no hoist can be operated from the cage;

(c) if the person operating the hoist does not have a clear and unrestricted view of the platform or cage throughout its travel, except at points where such a view is not necessary for such working arrangements are made for signals to be given to the operator from each landing-place at which the hoist is used;

(d) the safe working load is plainly marked on every hoist platform or cage and no load greater than that load is carried;

(e) no hoist is used unless it has been thoroughly examined by a competent person at least once within the previous month and a report entered in the register;

(f) every part of a load is securely suspended or supported while being raised or lowered;

(g) every receptacle used for raising or lowering material is so constructed as to prevent the accidental falling of such material:

Provided that these requirements shall not apply to a grab shovel or other similar excavation receptacle if effective steps are taken to prevent danger to persons by a fall of material therefrom;

(h) loose material is not placed directly onto a platform of a hoist unless such platform is enclosed or other effective precautions are taken to prevent a fall of any such materials;

(i) no truck or wheelbarrow is carried on a hoist platform unless it is prevented from falling from the platform;

(j) no truck or wheelbarrow is raised or lowered on an open platform of a hoist unless the truck or wheelbarrow is so loaded that no part of the load is liable to fall off;

(k) the wheel of a barrow is not used as a means of suspension for raising or lowering the barrow unless the axle is prevented from slipping out of the bearing;

(l) no load is left suspended from the lifting appliances unless a competent person is actually in charge of controls of the appliance;

(m) no hoist is used for carrying of persons unless it complies with the requirements of the provisions of Factories and Works (Elevator and Escalator) Regulations RGN 278/1976 ;

(n) notices are posted at every materials hoist platform forbidding the carriage of persons.

PART II

EXCAVATIONS

Excavations

10 Every excavation user shall ensure that unless excavation work is undertaken under the direct supervision of a qualified person and is executed in accordance with the Provision of Central African Standards Association Code of Practice for the Construction and Site Control of Earthworks (C.A.S. 137) then—

(a) every trench carried beyond a depth of 1,5 mtrs is shuttered with timber of not less than 25 mm thickness and 152 mm in width to a depth of 3 mtrs and that thereafter the timbering shall not be less than 38 mm thick and 152 mm in width and the shuttering is so spaced, fixed and secured to prevent collapse of the sides of the trench:

Provided that metal members may be used if their strength is not less than the equivalent close timber shuttering;

(b) no excavation or earth work which is likely to reduce the security or stability of any part of any structure is commenced or continued unless steps are taken to prevent danger to any person from collapse of the structure or a fall of any part thereof;

(c) every accessible part of any excavation, pit, trench or opening in the ground of a depth of 2 mtrs or more is provided with a barrier to a height of at least 600 mm round the edge of such excavation, trench, pit or opening;

(d) material is not placed, stacked or stored less than, 5 mtrs from the edge of any excavation, trench, pit or opening where it is likely to cause collapse of the side of any excavation, trench, pit or opening, in which persons are working;

(e) in the open face of any excavation, no under-cutting is allowed and no face has a height of more than 3 mtrs unless it is worked in terraces not less than 3 mtrs wide or at an angle of 45° to the horizontal;

(f) every excavation over 10 mtrs deep has sufficient means of ventilation and a safe and reliable means of entry and exit for persons;

(g) every excavation more than 25 mtrs deep having a mechanical haulage is supplied with guides for the cage, skip or other means of conveyance unless specific exemption has first been obtained from the Chief Inspector in writing and that such guides shall—

(i) in a sinking shaft, allow the cross-heads to travel to a point not more than 25 mtrs from the bottom; and

(ii) in any other shaft, extend to the lowest point to which the winding takes place;

(h) except at blasting time, no bucket or conveyance is hoisted without cause from the bottom of the excavation and that every such bucket or conveyance is lifted approximately 1,5 mtrs and then held to remove any debris from the bottom thereof and that the bucket or conveyance is not further moved until the signal to do so has been received, except where the bucket or conveyance is clearly visible to the hoist driver; -

(i) no bucket or conveyance in an excavation is filled with loose material above the level of the brim;

(j) the cross-heads are picked up by the engine-driver without shock;

(k) no person, other than persons carrying out inspection or repairs, travels on the outside of any conveyance intended for the conveyance of persons;

(l) no person travels in any conveyance loaded with materials except in a road vehicle;

(m) every person in an excavation exceeding 3 mtrs in depth wears a hard hat of a pattern approved by an inspector;

(n) where any material or any equipment projects beyond the top of the conveyance when being raised or lowered in an excavation, it is securely fastened to a winding-rope, or bridle:

(o) no person gets on or off or attempts to get on or off a locomotive, truck or other vehicle in motion;

(p) a locomotive or truck or the leading unit of a train of trucks has an efficient light fixed to the front of it when in motion;

(q) on every level on which mechanical haulage is employed a clearance of at least 450 mm is maintained between the sides of the level and the trucks, unless suitable refuges are provided at intervals of not more than 30 mtrs and that the clearance at such refuges is kept free from loose materials:

(r) a safety device is supplied to prevent run-away trucks on every inclined track where trucks are worked attached to a rope or chain.

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Suppression of dust

11 Every builder shall, in any underground excavation or tunnel, ensure that—

(a) in all portions of an underground excavation or tunnel where the natural ventilating current is, in the opinion of an inspector, inadequate, effective mechanical ventilating appliances are fitted and operated;

(b) every working development end is fitted with a pipe of not less than 25 mm inside diameter and ending not more than 15 mm from the face, through which air can be discharged for displacing foul air;

(c) the air is turned on through the pipe described in paragraph (b), immediately after lighting explosive or blasting charges in a development end;

(d) no person enters a place when blasting has occurred until a sufficient quantity of fresh air has been supplied to replace the air vitiated by dust or fumes due to blasting:

(e) no person moves or is permitted to move broken rock by any means unless or until such rock is wet;

(f) every rock drill for drilling underground or in a place where there is no ventilating current, if of the front vented type—

(i) has a minimum effective area release of not less than 200 sq mm if the piston diameter does not exceed 80 mm and not less than 260 sq mm if the piston diameter exceeds 80 mm;

(ii) has an undamaged water tube having an inside diameter of not less than 4 mm and an outside diameter when new, of not less than 6,4 mm and the end of which is not more than 25 mm from the shank end of the drill steel when it is fully inserted;

(iii) has an axial hole in the piston when new, of not less than 6,5 mm and not more than 6,7 in diameter for a length of at least 60 mm;

(iv) has a water pressure at the machine of not less than 100 kilopascals;

(g) no other percussion rock-drill is used and no person permitted to use such a drill unless—

(i) the water tube is undamaged and the end of it is not more than 25 mm from the shank-end of the drill steel when it is fully inserted;

(ii) the working water pressure at the machine is at least 200 kilopascals; and

(iii) a ventilating air current of a volume not less than that specified by the Chief Inspector is being delivered at the machine;

(h) all drill steels used in rock-drills have unrestricted axial holes of not less than 5 mm in diameter through which water may be fed to the bits;

(i) an adequate flow of water is maintained through the drill steel of every rock-drill when drilling;

(j) mechanical dust collecting systems are applied where dust is generated in confined spaces particularly at crushing, screening and mixing plants to the satisfaction of an inspector.

Use of explosives

12 Otherwise than in accordance with the provisions of the Explosives Act [*Chapter 10:08*] and these regulations, no builder shall use or cause or permit to be used, any explosives.

PART III

MISCELLANEOUS

Demolition work

13 Every builder shall ensure that—

(a) before demolition is commenced and during the progress of the work—

(i) no electric cable or apparatus, other than a cable or apparatus used for the operation shall remain electrically alive;

(ii) steps are taken to prevent danger of fire or explosions through leakage or accumulation of gas or vapour or from flooding from water mains, sewers or culverts;

(b) no floor, roof or other part of the building is so overloaded with debris or material as to render it unsafe;

(c) before any steel-work or iron-work is cut or released, precautions are taken to avoid danger from any sudden twist, spring or collapse;

(d) precautions are taken by shoring or otherwise to prevent the accidental collapse of any part of the building or any adjoining building, the collapse of which may endanger any person.

Protection from falling materials and objects

14 Every builder shall ensure that adequate measures are taken at any place at which any person is employed to protect such persons from being struck by any falling material or article accidentally dislodged by working operations on a higher level.

Lighting of working places, etc.

15 Every builder shall ensure that every working place and approach thereto, every place where raising or lowering operations with the use of lifting appliances are in progress, and all openings dangerous to persons employed, are adequately lighted during working hours.

Avoidance of danger from collapse of structure during construction work or demolition work

16 Every builder shall ensure that—

[substituted by SI 287/82 with effect from 14th May, 1982]

(a) all precautions are taken to prevent danger to any person through the collapse of any part of a structure through any weakness or instability before the completion of the structure;

(b) crawl planks or crawl ladders are used when the roofing material is asbestos;

(c) sufficient scaffold-planks are supplied where workmen have to pass over, or work above, fragile roofs or ceilings.

Safety-nets, safety-sheets and safety-belts

17 Every builder shall ensure that, if the special nature or circumstances of any part of any work render impracticable full compliance with any of the provisions of regulations designed to prevent the fall of any person engaged on that part of the work, safety-nets, safety-sheets, safety-belts, or other contrivances which will enable such persons to carry out the work without risk of injury are supplied:

Provided that the provisions of this section shall not apply to persons engaged on the erection of structural steel-work.

Register and records

18 The builder shall keep a register, in which shall be entered all reports of examinations and tests required to be carried out in terms of these regulations, and such register shall at all reasonable times be open for inspection by an inspector at the building site.

Notice of commencement of work

19 A builder shall, before commencing the work, notify an inspector in writing of the address at which the works are situated:

provided that—

(i) the provisions of this section shall not apply to any work in respect of which the builder has reasonable grounds for believing will be completed in a period of less than 3 months;

(ii) if a builder undertakes any structural work in a place where other structural work is in progress, he shall not be required to give such notice if notice has already been given in respect of the work already in progress;

(iii) the location of any quarry, clay-pit, gravel-pit, sand-pit and the site of any excavation of sand from river beds or their banks shall be notified in writing to an inspector before the work is commenced, unless the person undertaking such work has reasonable grounds for believing that such work will be of less than 24 hours' duration.