



## FEDERAL SUBSIDIARY LEGISLATION

### FACTORIES AND MACHINERY ACT 1967 [ACT 139]

P.U. (A) 114/1983

### FACTORIES AND MACHINERY (SAFETY, HEALTH AND WELFARE) REGULATIONS 1970 (REVISED – 1983)

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## ARRANGEMENT OF REGULATIONS

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- Regulation 1. Citation.
- Regulation 2. Interpretation.
- Regulation 3. Factory not to be used as family dwelling.
- Regulation 4. Underground room not to be used for a factory.
- Regulation 5. Machinery installed on any floor above the ground floor.
- Regulation 6. Floors.
- Regulation 7. Access of place of work.
- Regulation 8. Opening generally to be fenced.
- Regulation 9. Stairway.
- Regulation 10. Fixed ladder.
- Regulation 11. Catwalk, runaway or gangway.
- Regulation 12. Working at a height.
- Regulation 13. Confined spaces.
- Regulation 14. Dangerous liquids.
- Regulation 15. Containers for volatile inflammable substances.
- Regulation 16. Precaution against ignition.
- Regulation 17. Precautions with regard to explosive or inflammable dust, fume or substance.
- Regulation 18. Hot pipes.
- Regulation 19. Objects on inclines.
- Regulation 20. Stacking of material.
- Regulation 21. Safety provisions in case of fire.
- Regulation 22. Fire fighting appliances.
- Regulation 23. Cleanliness.
- Regulation 24. Space for each person.
- Regulation 25. Ventilation.
- Regulation 26. Air cleanliness.
- Regulation 27. Partake of food or drink.
- Regulation 28. Temperature.

Regulation 29. Lighting.  
Regulation 30. Seating facilities.  
Regulation 31. Work benches.  
Regulation 32. Working, clothes, personal protective clothing and appliance.  
Regulation 33. Dressing room.  
Regulation 34. Drinking water.  
Regulation 35. Water unsafe for drinking.  
Regulation 36. Washing facilities.  
Regulation 37. Sanitary convenience.  
Regulation 38. First aid.  
Regulation 39. Duty of occupier.  
Regulation 40. Compliance with any other written law.  
Regulation 41. Penalty.  
Regulation 42. Compoundable offences.

FIRST SCHEDULE.

SECOND SCHEDULE.

THIRD SCHEDULE.

FOURTH SCHEDULE.

LIST OF AMENDMENTS.

## **1. Citation.**

These Regulations may be cited as the **Factories and Machinery (Safety, Health and Welfare) Regulations, 1970.**

## **2. Interpretation.**

In these Regulations the terms used shall, unless the context otherwise requires, have the same meanings as are respectively assigned to them by Part I of the Factories and Machinery Act, 1967 referred to in these regulations as "the Act"

## **3. Factory not to be used as family dwelling.**

No premises or building or part or portion of any premises or building used as a factory shall concurrently be used as a family dwelling:

Provided that this regulation shall not apply if there is no direct access from that part or portion of the premises or building used as a family dwelling to any part or portion of the premises or building used as a factory.

## **4. Underground room not to be used for a factory.**

(1) No underground room shall be used or cause to be used as a factory where such underground room is unsuitable for work other than work involved in the use of the room for the purpose of storage.

(2) In this regulation-

"unsuitable" means unsuitable as regards construction height, light or ventilation or for reason of health, or on the ground that adequate means of escape in the case of fire are not provided.

## **5. Machinery installed on any floor above the ground floor.**

No machinery shall be installed or caused to be installed on any floor above the ground floor of any building unless such floor has been designed and constructed to support the load so imposed thereon or alternatively strengthened for the purpose.

## **6. Floors.**

(1) Every part of any floor where any person is likely to pass shall be:

(a) maintained in a level, good and non-slippery condition to afford safe walking and where necessary safe trucking or handling of materials; and

(b) free from holes, splinters, improperly fitted covers for gutters or conduits, and free from protruding nails, projecting valves or pipes or other projections or obstructions which present stumbling hazards.

(2) The floor or working level surrounding all machinery shall be maintained in good and level condition, and so far as practicable free from any loose material and in non-slippery condition.

(3) Where any process is carried on which makes any floor or working level wet, it shall be suitably graded and adequate means of drainage shall be provided and maintained.

(4) Suitable and effective means shall be provided and maintained to remove from any floor or working level any storm or flood water.

(5) Every part of any floor, working level, stair tread and landing shall not be made of any material which will become slippery through wear.

## **7. Access of place of work.**

(1) Clear and unobstructed space shall be provided and maintained at all machinery to enable any work thereat to be performed without unnecessary risk, and to permit of free and ready access to any part necessitating regular operation, inspection, maintenance or removal.

(2) Where materials or goods or other articles are necessarily stacked between any machines or workbenches, clear aisles or gangways to such machines or workbenches shall be provided and maintained, and such aisles or gangways shall be clearly marked on the floor and no materials or goods or other articles shall be stacked on such aisles or gangways.

## **8. Opening generally to be fenced.**

(1) Every hatchway, chute, pit and trap-door opening shall be-

(a) securely fenced by removable railings with toe boards on not more than two sides and permanent guard rails with toe-boards on all other exposed sides; or

(b) securely guarded by a flush-hinged floor opening cover of adequate strength, equipped with railings attached thereto so as to leave only one side exposed when the cover is open. When the opening is not in use the cover shall be closed or the exposed side guarded.

### **Stairway opening.**

(2) Every stairway opening except at the entrance thereto shall be fenced on every exposed side by guard rails and toe-boards.

### **Floor openings.**

(3) Every manhole floor opening shall be securely fenced by manhole covers of adequate strength, which need not be hinged. Every other floor opening into which persons can accidentally walk shall be fenced either by permanent guard rails with toe-boards on all exposed sides or by hinged floor opening cover of adequate strength.

### **Floor opening cover.**

(4) When floor openings covers are not in place, the openings shall be constantly attended by someone or protected by portable enclosing guard rails.

### **Teagle openings.**

(5) Every teagle opening or similar doorway used for hoisting or lowering goods or materials, whether by mechanical power or otherwise, shall be securely fenced, and shall be provided with secure handhold on each side of the opening or doorway; such fencing shall, except when the hoisting or lowering of the load is being carried on at the opening or doorway, be kept in position.

## **9. Stairway.**

(1) Where any person is regularly employed on any floor above the ground floor, a stairway shall be provided to give access thereto. Such stairway shall-

(a) be not less than thirty-six inches wide except that any secondary stairway may be not less than thirty inches wide;

(b) have a pitch of not less than twenty degrees nor more than forty-five degrees to the horizontal;

(c) have not less than six feet nine inches headroom measured from the top of any tread in line with the face of the riser;

(d) have a height of not more than twelve feet between landings;

(e) have a landing if a door is provided at the top of the stairway; and

(f) where it is

(i) less than thirty six inches in width, be equipped with at least one hand rail on the right side descending;

(ii) thirty six inches or more in width, be equipped with a guard rail on any exposed side and a handrail on any enclosed side; and

(iii) seventy two inches or more in width be equipped as in sub-paragraph (f) (ii) above and in addition with an intermediate guard rail:

Provided that where there are two or less number of risers, the foregoing provisions of this paragraph need not apply.

### **Stairway landing.**

(2) Every landing on a stairway shall not be less than twelve square feet in area.

### **Stairway handrail.**

(3) The handrail of every stairway shall be continuous throughout a flight of stairs and at landings and shall have a smooth unobstructed surface.

(4) An Inspector may require that any stairway be made of non-combustible material.

## **10. Fixed ladder.**

(1) Where access to any working level, platform or deck is provided by means of a fixed ladder, such fixed ladder shall-

(a) where inclined, have a guard rail on each side; or

(b) where vertical:

(i) have suitable hand-rails or hand-holds at the upper landing;

(ii) be so arranged that the distance from the front of the rungs thereof to the nearest fixed structure on the climbing side is not less than thirty inches; and

(iii) be fitted with such safety loops as may be required by an Inspector.

(2) (a) There shall be provided in every factory where there is any overhead transmission machinery a suitably constructed portable ladder of sufficient length to service such machinery.

(b) Every portable ladder shall be fitted with suitable effective non-skid devices.

(c) An Inspector shall order any portable ladder, which in his opinion is damaged beyond repair or otherwise defective, to be destroyed.

### **11. Catwalk, runaway or gangway.**

(1) Where any catwalk, runway or gangway is provided exclusively to give access to machinery or from one place to another, such catwalk, runway or gangway shall be provided with guard-rails on both sides, and toe-boards at least four inches high; and shall not be used as a working platform.

#### **Lubrication of unfenced machinery.**

(2) Unfenced machinery shall not be lubricated by hand from a catwalk, runway or gangway while the machinery is in motion, unless arrangements are provided to supply the lubricant from a position wholly within the fencing of the catwalk, runway or gangway.

#### **Access to catwalk.**

(3) Access to any catwalk, runway or gangway shall be by means of a permanent ladder or stairway.

(4) Catwalks, runways or gangways shall be provided as an Inspector may direct.

#### **Ramps.**

(5) Every ramp used by persons for ascent or descent from one level to another shall be limited to a slope of not more than one in ten and shall conform to all relevant requirements for construction, width, guard-rails and hand rails applying to stairways.

### **12. Working at a height.**

Where any person is required to work at a place from which he will be liable to fall a distance of more than ten feet, means shall be provided to ensure his safety and such means shall where practicable include the use of safety belts or ropes.

### **13. Confined spaces.**

(1) Where any work has to be done inside any chamber, tank, vat, pit, pressure or other vessel or other confined space in which dangerous fumes are liable to be present to such an extent as to involve risk to any person being overcome thereby, such confined space shall, unless there is other adequate means of egress, be provided with a manhole; such manhole may be rectangular, oval or circular in shape, and shall not be less than sixteen inches wide or not less than eighteen inches in diameter if circular.

(2) No person shall be required or permitted to enter any confined space unless-

(a) all practicable steps have been taken to remove any fumes which may be present and to prevent any ingress of fumes;

(b) it has been ascertained by a suitable test that the confined space is free from dangerous fumes:

Provided that where such test cannot be carried out the person entering a confined space shall wear an efficient respiratory protective device suitable for the dangerous substance that is to be expected and a suitable safety belt with attached life line of adequate dimensions leading to a convenient point outside the tank or vessel; and

(c) a reliable and competent person is stationed at the entrance to the tank or vessel to supervise the operations and to take such action as may be necessary in any emergency.

(3) Suitable respiratory protective device, reviving apparatus, belts and ropes shall be provided and maintained, and shall be readily accessible.

(4) A sufficient number of persons employed shall be trained in and familiar with the use of such respiratory protective device and reviving apparatus and the method of restoring respiration.

#### **14. Dangerous liquids.**

(1) Every fixed vessel, structure, sump or pit of which the edge is less than three feet six inches above the adjoining floor, platform or working level and which contains any scalding, corrosive or poisonous liquid, thereby creating risk of accidental immersion of any portion of the body of a person therein shall either be securely covered or securely fenced to at least three feet six inches.

(2) A warning notice, indicating the nature of the danger, shall be prominently marked on or attached to the vessel, structure, sump or pit or, if this is not reasonably practicable, be posted prominently nearby.

#### **15. Containers for volatile inflammable substances.**

(1) Every drum, can or similar vessel containing volatile inflammable substances shall be kept securely closed when not in actual use, and shall, after the contents have been emptied, be removed without delay from the premises in which they are used; and adequate arrangements shall be made to convey to a safe place any such substance which may escape due to failure of any vessel or leakage or overflow or accidental discharge thereof.

(2) Only such quantity of volatile inflammable substances required for work in one day shall be allowed to be taken into any room or cabinet in which such substances are used:

Provided that this provision shall not apply to any room or cabinet used as a laboratory in which work of an investigative nature is being carried on and where adequate precautions in respect of the safety and health of persons have been taken.

#### **16. Precaution against ignition.**

(1) No fire, flame or naked light or other agent likely to ignite volatile inflammable substances or the fumes therefrom shall be allowed inside any room or cabinet in which such substances are used or stored:

Provided that this provision shall not apply where such room or cabinet is being used as a laboratory in which work of an investigative nature is being carried on and where adequate precautions in respect of the safety and health of persons have been taken.

(2) No person shall smoke in any room or cabinet in which volatile inflammable substances are used or stored and there shall be posted in a conspicuous place in such room or cabinet a notice prohibiting smoking.

**Application of heat to tanks.**

(3) No tank or vessel which contains or has contained any volatile inflammable substance shall be subjected to any operation which involves the application of heat, until all practicable steps have been taken to remove the substance and any fumes arising therefrom, or to render them non-flammable; and if any tank or vessel has been subjected to any such operation as aforesaid, no volatile inflammable substance shall be placed in such tank or vessel until the metal has cooled sufficiently to prevent any risk of igniting the substance:

Provided that this provision shall not apply to work of an investigative nature where adequate precaution in respect of the safety and health of persons has been taken.

**17. Precautions with regard to explosive or inflammable dust, fume or substance.**

(1) Where in connection with any process carried on there is given off any inflammable or explosive dust fume or other substance and where there is a possibility that such dust, fume or substance and where there is a possibility that such dust, fume or substance may escape into any workroom to cause an explosion, all steps shall be taken as far as practicable to prevent such an occurrence-

(a) by enclosure of the plant used in the process and if necessary

(i) by isolation of the plant from any other building; or

(ii) in the case of a plant which is located in a room by separating the room from any other room by fire resisting walls of a type approved by the Inspector and any door therein shall be self-enclosing and fire-resisting; and

(b) by the removal or prevention of the accumulation of the dust, fume of substance; and

(c) by the exclusion or effective enclosure of all possible sources of ignition.

(2) Where there is present in any plant used in any process dust of such a character and to such an extent as to be liable to cause an explosion steps shall be taken to restrict the spread and effects of such an explosion by provision of chokes, baffles and vents or other equally effective appliances, unless the plant is so constructed as to withstand the pressure likely to be produced by such explosion.

(3) (a) No volatile inflammable substance shall be applied except in a room or cabinet, specially constructed for the purpose, of suitable fire-resistant material, or in the open air in a suitable place completely isolated for a radius of not less than fifteen feet.

(b) Every such room or cabinet shall be kept clean and all fans, ducts, trunks or casings used to exhaust any fumes shall be made of fire-resistant materials having an interior smooth surface which shall be kept clean and in good working order. All scraping necessary to comply with this subparagraph shall be carried out with non-ferrous implements.

(4) For the purpose of these Regulations volatile inflammable substances means cellulose solutions (including solutions which contain cellulose acetate, cellulose nitrate or celluloid), absolute alcohol, petroleum and other products of low flash-point.



## **18. Hot pipes.**

All steam pipes and all pipes used for heating purposes, other than pipes which are in such positions that persons employed in the factory will not be likely to come in contact with them in the ordinary course of employment, shall be properly insulated or guarded.

## **19. Objects on inclines.**

(1) Where heavy objects such as logs, loaded drums or tanks are handled on inclines in either direction-

(a) ropes or other tackle shall be used to control their motion, in addition to the necessary chocks or wedges;

(b) no person shall place himself on the down hill side; and

(c) where heavy objects are moved by means of rollers, bars or sledges shall be used instead of hands or feet for moving the rollers to change the direction of movement of the load.

## **20. Stacking of material.**

(1) Material stacks or pipes shall be placed on firm foundations not liable to settle and shall not be subject to a weight so as to overload the floor.

(2) No material shall be stacked-

(a) against partitions or walls of buildings, unless it is known that the partition or wall is of sufficient strength to withstand the pressure; and

(b) to a height which would render the stack or pile unstable.

## **Bags.**

(3) Bagged material shall be stacked or piled in the following manner-

(a) the mouths of the bags shall be placed inwards;

(b) the first four end bags of each pile shall be cross tied; and

(c) a step back of one bag shall be made at every fifth bag in height.

(4) (a) Loaded boxes, crates, and cartons shall be stacked or piled on the sides having the largest area and not to such a height as to cause collapse of the lower boxes, crates or cartons in the stack or pile:

Provided that where the nature of the contents require special ways of stacking the provisions of this sub-paragraph need not apply; and

(b) loaded carton stacks shall be protected against moisture.

## **Pipe and bar stock.**

(5) Pipe and bar stock shall be piled-

(a) on stable storage racks so located that the withdrawal of the material does not create a hazard; or

(b) in layers resting on wood strips with stop blocks fixed on the ends or on metal bars with upturned ends.

### **Cylindrical objects.**

(6) (a) Where empty drums or barrels, large pipes, rolls of paper or other cylindrical objects are piled on their sides-

(i) the pile shall be symmetrical and stable; and

(ii) every unit in the bottom row shall be effectively wedged.

(b) Where loaded barrels, drums or kegs are piled on their ends, two planks should be laid side by side on top of each row before another row is started.

### **21. Safety provisions in case of fire.**

(1) Every factory building shall be provided with not less than two exits from every floor.

(2) Where persons are employed in any floor situated below or above the ground floor, means of escape in case of fire shall be provided and maintained. Such means of escape shall:

(a) communicate directly with the outside air;

(b) be sufficient in the opinion of an Inspector for all persons employed; and

(c) if provided with any door, such door shall be fitted so as to open outwards from the room, passage, or staircase from which it is a means of escape and shall not be kept locked or fastened and shall be free from obstruction while persons are present in the room, passage or staircase.

(3) Every window and door affording means of escape in case of fire or any emergency exit, other than the means of exit in ordinary use, shall be distinctively and conspicuously marked by a notice printed in red letters of an adequate size indicating the purpose for which it is to be used.

(4) The occupier of every factory shall ensure that all persons employed are familiar with the means of escape in case of fire, the use of such means and the routine to be followed in case of fire.

(5) The contents of any room in which persons are employed shall be so arranged or disposed that there is free gangway to enable all persons employed in the room to have access to a means of escape in case of fire.

### **22. Fire fighting appliances.**

In every factory there shall be provided and maintained, so as to readily accessible, means of extinguishing fires, which shall be adequate and suitable having regard to the nature of the processes carried on and the quantity and nature of the substances used.

### **23. Cleanliness.**

In every factory the following provisions relating to the cleanliness shall apply:

(a) There shall be provided and maintained a sufficient number of suitable receptacles for the collection of refuse, rubbish and waste matter and all such refuse, rubbish and waste matter shall be removed daily from the working area.

(b) The floor of every factory shall be cleaned at least once every week by washing or, if it is effective and suitable, by regular sweeping or other method.

(c) All inside walls and partitions, and all ceilings or tops of rooms, and all walls, sides and tops of passages and staircases shall-

(i) where they have a smooth impervious surface, be washed with hot water and soap or cleaned by such other method as may be approved by the Inspector, at least once in every period of fifteen months; or

(ii) where they are kept painted with oil paint or varnished, be repainted or re-varnished at least once in every period of seven years, and be washed with hot water and soap or other suitable detergent, or cleaned by such other method as may be approved by the Inspector, at least once in every period of twelve months; or

(iii) in other cases, be kept white-washed or colour-washed and the white-washing or colour-washing shall be repeated at least once in every period of twelve months:

Provided that the provisions of paragraph (c) (iii) shall not apply to the classes, descriptions or parts of factories shown in the First Schedule.

(d) All sweeping and cleaning shall be done in such a manner as to avoid as far as possible contamination of the air with dust or other obnoxious substances and, where appropriate, vacuum cleaners shall be used.

(e) Adequate drains capable of ensuring effective removal of waste water shall be provided and constantly maintained. Where it is considered essential by an Inspector the drains shall be equipped with hydraulic seals or other effective devices to prevent escape of effluvia and such seals or devices shall be constantly maintained.

(f) Every workroom or workplace shall as far as practicable be so constructed and maintained as to prevent the entrance or harbouring of rodents, insects and vermin of any kind.

(g) Infestation of rodents, insects, and vermin shall be eliminated by suitable measures, and control measures shall be taken to prevent re-infestation.

(h) No person shall be allowed to use any workroom or workplace as living or sleeping quarters.

### **24. Space for each person.**

(1) In every factory there shall be provided not less than four hundred cubic feet of space for each person employed therein, and in determining such space, all space more than fourteen feet above the level of the floor shall not be taken into account.

(2) Every workroom shall not be less than ten feet in height measured from the floor to the lowest point of the ceiling or where there is no ceiling, to the lowest point of any cross beam thereof:

Provided that a workroom shall not include any room used solely for the purpose of housing machinery and in which no person is employed full time in attendance at such machinery and in which case, such height shall not be less than six feet and six inches.

## **25. Ventilation.**

(1) Where the means of natural ventilation is not adequate further means of natural or mechanical ventilation or both shall be provided.

(2) Pursuant to section 22 (1) (c) (ii) of the Act, ventilation shall be considered to be adequate where the number of air changes every hour is-

(a) not less than ten in the case of processes which generate little or no heat, smoke or fume; and

(b) not less than twenty in the case of processes which generate heat, smoke or fume:

Provided that where any fume generated is likely to cause bodily injury to any person employed, the number of air changes every hour shall not be less than thirty.

(3) The total free area of any ventilation air inlets shall be at least fifty per cent greater than the total free area of the air outlets. Air inlets shall, so far as practicable, be located at floor level, and air outlets shall be located as high as practicable.

## **26. Air cleanliness.**

(1) In every factory where any process carried on therein there is given off any fume or dust which is, or is likely to be, injurious or offensive to any person, or where any substantial quantity of dust or fume is being accumulated, measures shall be taken to protect such persons against inhalation of the fume or dust and to prevent it accumulating in the factory.

### **Removal of dust laden air.**

(2) Any dust laden air extracted in accordance with the provisions of paragraph (1) shall be removed to a safe place in the open air where such dust shall be removed by a settling chamber, water spray, cyclone, filter or any combination of these or other suitable appliance.

### **Hoods and ducting.**

(3) Any hood, enclosure, canopy or ducting for the extraction of fume or dust shall be constructed so as to envelop, as far as practicable, the point of origin of the fume or dust so that a smooth and uninterrupted flow is maintained. In addition to this requirement the hood, enclosure, canopy, or ducting for the extraction of fume shall be constructed so as to maintain the air velocity at the surface thereof at a rate not less than one hundred and fifty feet per minute.

### **Exhaust gases.**

(4) No stationary internal combustion engine, steam boiler, cupola, furnace or other plant burning fuel shall be operated unless provision is made for conducting the products of combustion to a safe place in the open air.

## **27. Partake of food or drink.**

Where any poisonous or otherwise injurious substance is used in any room or part of a factory so as to give rise to any fume or dust, no person shall partake of food or drink in that room or part of the factory.

## **28. Temperature.**

(1) Where the operation of any machinery or any process gives rise to undue heat, an Inspector may require that suitable provision be made to reduce the effect thereof on any person employed so such extent as he may consider reasonable and practicable.

(2) Where in the opinion of an Inspector the temperature in a factory or part thereof, is unduly high, adequate means shall be provided to cool the air or to create adequate air movement, or both, in order to reduce the body temperature of any person employed.

(3) Any building constructed wholly or partly of materials having a high coefficient of heat transmission which are subject to the heat of the sun shall be lined with suitable insulating material or coated with white paint, white-wash or other heat reflecting material or so lined and so coated.

## **29. Lighting.**

In respect of every factory the following provisions relating to the lighting shall apply:

(a) No person shall be required or permitted to work in any factory building where the means of obtaining natural light is less than ten percent of the floor area thereof.

(b) All windows and skylights shall be-

(i) located and spaced so that daylight conditions are fairly uniform over the working area; and

(ii) kept clean on both the inner and outer surfaces and free from obstruction:

Provided that the provisions of this sub-paragraph shall not affect the white-washing or shading of windows and skylights for the purpose of mitigating heat or glare.

(c) In every part of every factory building the intensity of illumination shall not be less than two-foot-candles measured in a horizontal plane at a height of three feet from any floor or working level and not less than five-foot candles at any point where work is actually being done.

(d) The intensity of illumination measured at floor level in any factory where any person may pass shall not be less than one-half of one foot-candle.

(e) Where in the opinion of an Inspector, the general level of illumination is inadequate for any particular process he shall require it to be supplemented by local lighting, in accordance with the standards shown in the Second Schedule to these regulations.

(f) (i) any general lighting source shall be mounted at a height sufficient to keep it well above the line of normal vision.

(ii) Any local lighting source shall be mounted and arranged so as to confine the light to the immediate working area.

(g) Adequate measures shall be taken to prevent the formation of shadows.

### **Emergency lightings.**

(h) (i) In every factory where more than fifty persons are employed at any one time during hours of darkness an emergency lighting system shall be provided and maintained in all important stairways, passageways and exits from workplaces.

(ii) Such emergency lighting system shall be capable of producing and maintaining for at least one hour a minimum intensity of one half a foot-candle and shall have energy sources independent of the installations for the general lighting system.

(iii) Provision shall be made for automatic lighting of the emergency lighting system upon failure of the general lighting system.

### **30. Seating facilities.**

(1) In every factory where persons employed have in the course of their employment, reasonable opportunities for sitting without detriment to their work, there shall be provided and maintained suitable and sufficient seating facilities for their use.

(2) Where a substantial portion of any work can properly be done sitting-

(a) there shall be provided and maintained for any person employed in that work a seat of a design, construction and dimensions suitable for him and the work, together with a foot-rest if such a foot-rest is necessary to support his feet in order to reduce fatigue; and

(b) the arrangements shall be such that the seat is adequately and properly supported while in use for the purpose for which it is provided.

(3) For the purposes of paragraph (2) the dimensions of seat which is adjustable shall be taken to be its dimensions as for the time being adjusted.

### **31. Work benches.**

Every work bench or work table shall be of a design construction and dimensions suitable for persons employed so that the work can be carried out without undue strain.

### **32. Working, clothes, personal protective clothing and appliance.**

Pursuant to section 24 of the Act relating to working clothes and personal protective clothing and appliances, the following provisions shall apply-

(a) (i) Working clothes shall be of good fit and there shall be no loose flaps or strings, loose aprons, loose, torn, or ragged garments and neckties. Key chains or watch chains shall not be worn near moving parts of machinery.

(ii) Every precaution shall be taken to safeguard hair of persons being exposed to the risk of being caught in moving parts of machinery and such precautions shall include the wearing of caps.

(iii) Every person employed on any operation or process involving danger of explosion or fire shall not during the operation or process wear articles such as

collars, eyeshades, cap visors and other articles of similar nature if such collars, eyeshades, cap visors or articles are made of inflammable materials.

(iv) Every person exposed to inflammable, explosive or toxic dusts shall not wear clothing having pockets, cuffs or turn-ups that might collect such dusts.

(v) In operations or processes where ordinary foot-wear is not suitable, persons employed on such operations or processes shall be provided with boots, heavy shoes or other footwear of suitable and adequate protection.

(vi) Where any article of food or drink is manufactured, prepared or handled, an Inspector may require the provision and maintenance, in good and clean condition, of suitable overalls and caps for the use of persons employed in the process.

#### **Safety helmets.**

(b) Every person exposed to falling or flying objects and blows on the head shall wear well fitting industrial safety helmets.

(c) In the case of any of the processes specified in the Third Schedule, suitable goggles or effective screens shall be provided to protect the eyes of persons employed in, or in proximity to, the processes.

#### **Ear-plugs and screens.**

(d) (i) Persons working in intensive prolonged noise shall be provided with suitable ear-plugs which shall be cleaned daily unless discarded after each use.

(ii) In the case of any of the processes where ears of persons employed are exposed to sparks, molten metal particles or other foreign bodies suitable ear screens shall be provided.

(iii) When not in use every ear protection device shall be kept in closed containers protecting them against mechanical damages or contamination by oil grease or other harmful substances.

#### **Protection clothing.**

(e) Every person exposed to corrosive or other harmful substances shall be provided with liquid proof protective suits, hoods, aprons, leggings, gloves and other protective wear, according to the nature of the substance or substances and the risks involved.

#### **Gloves.**

(f) (i) Every person employed in processes involving handling of sharp-edged, abrasive objects, corrosive harmful substances, hot metals or other toxic irritating or infectious substances shall be provided with suitable mittens, gloves or gauntlets.

(ii) All torn gloves shall be replaced immediately.

(iii) No gloves shall be worn by persons operating drills, punch presses or other machinery with which the hand or parts of the hand may be caught in moving parts.

#### **Respiratory protective equipment.**

(g) (i) Every person exposed to vapours, injurious gases, dusty, toxic or hazardous atmospheres or atmospheres deficient in oxygen shall be provided with suitable respiratory protective equipment, and in determining the suitability of such equipment consideration is to be given to:

(a) the process and conditions creating the exposure;

(b) the chemical and physical toxic or other hazards of the substance from which protection is required;

(c) the nature of the duties to be performed by the persons required to wear the equipment;

(d) the encumbrance or restriction of movement in the working area; and

(e) the facilities available for maintenance, upkeep and supervision in the use of such equipment.

Provided that no mechanical filter respirators shall be used for protection of persons in atmospheres deficient in oxygen or against solvent vapours or injurious gases and also provided that supplied air respirators or hose masks shall be used for all operations in atmospheres in which the contact of dangerous gas or fumes is too high for the safe use of cannister or cartridge respirators.

(ii) Where compressed air is supplied for a respiratory protective device or mask, a pressure reducing valve shall be installed near the point where the respiratory protective device or mask hose is attached to the compressed air line, and as a further precaution against high pressure, in case the reducing valve fails to function, a relief valve shall be installed preset to release at a pressure slightly above the setting of the pressure reducing valve.

(iii) Oxygen breathing apparatus shall be worn only by persons who have had sufficient training in the use of such equipment.

(h) The design, construction, use and maintenance of every personal protection clothing, device, apparatus and other equipment shall conform to safety standards acceptable by the Chief Inspector.

(i) No protective clothing or appliances prescribed under these regulations shall be removed from the factory except on the authority of the occupier for the purpose of cleaning or repair.

### **33. Dressing room.**

(1) (a) There shall be provided for the persons employed adequate accommodation for clothing not worn during working hours.

(b) A separate dressing room shall be made available for all persons employed whose working clothes are exposed to contamination with poisonous, infectious, irritating or radioactive substances and such dressing room shall be well separated from the accommodation for street or working clothes.

(c) No such contaminated clothing shall be worn in premises or areas where meals are being taken.

(2) Where persons employed are engaged in process of such nature that their working clothes are liable to become wet or have to be washed between shifts suitable arrangements shall be made and facilities provided for such persons to have a change of clothes between shifts and the washing and drying of their wet clothes.

### **Rest room for women.**

(3) In every factory where fifteen or more women are employed at any one time, at least one rest and dressing room shall be provided for their exclusive use.



(4) Where less than fifteen women are employed at any one time and no rest room is available there shall be provided some equivalent space, properly screened and made suitable for the use of women employees.

### **34. Drinking water.**

Pursuant to section 25 (1) (b) (i) of the Act relating to the supply of drinking water, the following provisions shall apply:

(a) Water provided and maintained for drinking purposes shall be clean, safe and wholesome and shall be from a piped main or some other source approved by the Inspector.

(b) Any supply of drinking water other than the piped supply shall be contained in suitable vessels clearly marked to indicate that the water is safe for drinking and such supply be renewed daily and all necessary precautions taken to preserve the water and vessels from contamination:

Provided that such vessels shall not include open barrels, pails, tanks or other containers from which the water must be dipped or poured for drinking irrespective of whether or not they are fitted with covers.

(c) Except where the water is delivered by a rising jet, suitable drinking cups shall be provided at each supply.

(d) The use of common drinking cups shall be prohibited.

### **35. Water unsafe for drinking.**

Where water unsafe for drinking purposes is provided for use in industrial processes for fire precaution or other purposes-

(a) conspicuous notices shall be posted at the points of supply stating clearly that such water is unsafe or not to be used as drinking water; and

(b) every precaution shall be taken to prevent it from being so used.

### **36. Washing facilities.**

(a) Pursuant to section 25 (1) (b) (ii) of the Act, adequate and suitable facilities for washing shall be comprise at least one wash-hand basin or equivalent trough of ample size, having a smooth impervious surface and fitted with a waste pipe and plug for every twenty or part of twenty persons employed at any one time and an adequate supply of clean water and soap and towels or other means of drying;

Provided that where in the opinion of the Inspector the nature of the processes carried on is such that the washing facilities required by this regulation are inadequate or unsuitable, he may require that such additional washing or bathing facilities, or both as he may deem suitable and adequate, be provided or maintained.

(b) The floors at all washing facilities shall be made of impervious material and shall be properly graded for effective drainage.

### 37. Sanitary convenience.

Pursuant to section 22 (1) (f) of the Act, sufficient and suitable sanitary convenience shall comprise the follows:

(a) Where persons of both sexes are employed sanitary conveniences shall be separately arranged for persons of each sex:

Provided that this paragraph shall not apply in the case of factories where the only persons employed are members of the same family.

(b) Sanitary conveniences shall be arranged as follows:

(i) where twenty five males or less are employed at any one time	one water closet or latrine and four feet of urinal;
(ii) where the number of males employed at any one time exceeds twenty five but not exceeding fifty	two water closets or latrines and eight feet of urinal;
(iii) where the number of males employed at any one time exceeds fifty but not exceeding one hundred	three water closets or latrines and thirteen feet of urinal;
(iv) where the number of males employed at any one time exceeds one hundred	as in (iii) above and an additional water closet or latrine and additional four feet of urinal are to be provided for every fifty males in excess;
(v) where twenty females or less are employed at any one time	one water closet;
(vi) where the number of females employed at any one time exceeds twenty	as in (v) above and one additional water closet is to be provided for every twenty females in excess.

(c) Closets and urinals in the interior of buildings shall be of the water-flush type.

(d) Where conditions require, water shall be provided for very toilet facility.

(e) Toilet facilities shall not communicate directly with the actual workplace but shall open only to corridors, halls, landings or courtyards.

(f) Effective provision shall be made for every sanitary convenience in respect of lighting and ventilating to the open air.

### 38. First aid.

(1) Any injured person shall at all times receive prompt first-aid treatment and such further medical attention as may be necessary.

(2) Pursuant to section 25 (1) (c) of the Act every first-aid box or cupboard shall-

(i) be equipped in accordance with the Fourth Schedule to these regulations;

(ii) be clearly marked with a red cross on a white background;

(iii) be kept locked and the key thereto kept by a responsible person available during all working hours; and

(iv) be placed under the charge of a responsible person who shall, in the case of a factory where more than twenty persons are employed at any one time, be trained in first-aid treatment; and such responsible person shall always be readily available during working hours. A notice shall be affixed in prominent places in every factory stating the name of the responsible person.

(3) Nothing except appliances of requisites for first-aid shall be kept in a first-aid box, cupboard or room.

(4) The occupier of every factory shall be noticed immediately of any accident occurring in his factory.

### **39. Duty of occupier.**

(1) The occupier of every factory shall ensure that the process carried on therein does not affect adversely the health of any person employed therein or the public.

(2) Unless the person responsible in any of these regulations is otherwise specified, it shall be the duty of the occupier to comply with the provisions of these Regulations and to ensure that they are observed.

(3) It shall be the duty of every person employed to use every facility or means provided in any of these Regulations to ensure his safety, health and welfare.

### **40. Compliance with any other written law.**

Nothing in these Regulations shall be construed as relieving the occupier or other person from compliance with any other written law.

### **41. Penalty.**

Any person who commits an offence against these Regulations for which no corresponding penalty is provided by the Act, shall on conviction be liable to a fine not exceeding one thousand ringgit.

### **42. Compoundable offences.**

The Chief Inspector or a Deputy Chief Inspector may compound offences involving the contravention of regulations 3, 7 (2), 16, 19, 21, 29, 32, 33, 35, 38 other than sub-paragraphs (i) and (ii) of paragraphs (2), and (39).

*[Ins.P.U.(A) 86/1978.]*

## **FIRST SCHEDULE**

(Regulation 23 (c) (iii) )

### **CLASSES, DESCRIPTION OR PARTS OF FACTORIES**

1. Blast furnaces.
2. Brick and tile works in which unglazed bricks or tiles are made.
3. Cement works.
4. Chemical works.
5. Coach and motor body works.
6. Copper mills.
7. Electric generating or transforming stations.
8. Engineering works.
9. Factories in which sugar is refined or manufactured.
10. Foundries.
11. Dredges.
12. Gas works.
13. Gun factories.
14. Iron mills.
15. Ship-building works.
16. Stone, slate and marble works.
17. Ceilings or tops of rooms in printing works, bleach works, or dye works, with the exception of finishing rooms or warehouses.
18. Parts in which dense steam is continuously evolved in the process.
19. Parts in which pitch, tar or the like material is manufactured or is used to a substantial extent, except in brush works.
20. Parts in which coal, coke, oxide of iron, ochre, lime or stone is crushed or ground.
21. Parts of walls, partitions, ceilings or tops of rooms which are at least twenty feet above the floor.
22. Rooms in which graphite is manufactured or is used to a substantial extent in any process.
23. Rooms used for the storage of articles in which no process is regularly carried on.
24. The part of a glass factory known as the glass house.
25. Those parts of factories where unpainted or unvarnished wood is manufactured.

## SECOND SCHEDULE

(Regulation 29 (e))

### STANDARD OF LIGHTING

Description of Areas thoroughfares and process where lighting is required	Approximate minimum intensity in foot candles under average operating conditions
1. (a) Where discrimination of detail is not essential, such as for handling or working on materials of a coarse nature, for example handling coal, rough sorting, or grinding of coarse products.  (b) For passageways, corridors and stairways, warehouses, storerooms and stockrooms for rough and bulky materials.	5
2. (a) Where slight discrimination of detail is essential such as for rough assembling; milling of grains; opening, picking and carding of cotton. Production of semi-finished iron and steel products; or other primary operations in most of the industrial processes.  (b) For engine and boiler rooms, crating and boxing and packing departments, receiving and shipping rooms, storerooms and stockrooms for medium and fine materials, passenger and goods lifts, locker rooms, toilets and washrooms.	10
3. Where moderate discrimination of detail is essential, such as for medium assembling, rough bench and machine work, rough inspection or testing of products, sewing light-coloured textile or leather products, canning and preserving, meat packing, planing of lumber, veneering and cooperage	20
4. Where close discrimination of detail is essential, such as for medium bench and machine work, medium inspection, fine testing, flour grading, leather finishing and weaving cotton goods or light-coloured woollen goods, or for office desk work with intermittent reading and writing, for filing, and for mail sorting.	30
5. Where discrimination of fine detail is involved under conditions of a fair degree of contrast for long periods of time, such as for fine assembling, fine bench and machine work, fine inspection, fine polishing and bevelling of glass, fine woodworking, and weaving dark-coloured woollen goods, or for accounting, book-keeping, drafting, stenographic work, typing, or other prolonged close office desk work.	50
6. Where discrimination of extremely fine detail is involved under conditions of extremely poor contrast for long periods of time, such as for extra-fine assembling, extra-fine inspection, testing of extra-fine instruments, jewellery and watch manufacturing, grading and sorting tobacco products, make-up and proof-reading in printing plants, and inspecting or sewing dark-coloured cloth products.	100

### **THIRD SCHEDULE**

(Regulation 32 (c))

#### **PROCESSES REQUIRING PROVISION OF SUITABLE GOGGLES OF EFFECTIVE SCREENS**

1. Dry grinding of metals, or articles of metal, by a revolving wheel or disc driven by mechanical power at which a person or persons is or are employed.
2. Turning (external or internal) or non-ferrous metals, or of cast iron, or of articles of such metals or such iron, where the work is done dry, other than precision turning where the use of goggles or a screen would seriously interfere with the work, or turning by means of hand tools.
3. Welding or cutting of metals by means of an electrical, oxy-acetylene or similar process.
4. The following processes when carried on by means of hand tools or other portable tools-
  - (a) fettling of metal castings involving the removal of metal;
  - (b) cutting out or cutting off (not including drilling or punching back) of cold rivets or bolts from boilers or other plants or from ships;
  - (c) chipping or scaling of boilers or ship's plates;
  - (d) breaking or dressing of stone, concrete or slag.

## FOURTH SCHEDULE

(Regulation 38 (2) (i))

### FIRST-AID BOX

Contents of factory first-aid box or cupboard	Box A (For factories with up to 10 persons employed at a time)	Box B (For factories with 11-50 persons employed at a time)	Box C (For factories with more than 50 persons employed at a time)
1. Small individual medicated or un-medicated sterilised dressings, for fingers	6	12	24
2. Medium-sized individual medicated or un-medicated sterilized dressings, for hands and feet	3	6	12
3. Large individual medicated or un-medicated sterilised dressings, for other injured parts	3	6	12
4. Assorted adhesive wound dressings	12	24	36
5. Triangular bandages ... ..	2	4	8
6. (i) Roller bandages, 1 inch ... ..	6	9	12
(ii) Roller bandages, 2 inch ... ..	6	9	12
...			
7. Adhesive plaster ... ..		" A sufficient supply"	
8. Absorbent sterilised cotton wool, in 1/2 oz. packets		6	6
or Cotton-wool strip contained in cotton-wool dispenser	6	" A sufficient supply"	
9. Suitable splints and wool or other material for padding		" A sufficient supply"	
10. Approved eye ointment or eye drops		" A sufficient supply"	
11. Individual sterilised eye pads in separate sealed packets	2	4	8
12. Rubber or pressure bandage ...	1	1	1
13. A two per cent alcoholic solution of iodine, or a one per cent aqueous solution of gentian violet in a stoppered 2 oz. bottle	1	1	1
14. A bottle of sal volatile with the	1	1	1

dose and mode of administration  
indicated on the label

15. Blunt-nosed surgical scissors ...	1	1	1
16. Safety pins ... ..	12	24	36



## LIST OF AMENDMENTS

*Particulars under section 7(ii) and (iii) of the Revision of Laws Act 1968 (Act 1)*

<b><i>Amending Law</i></b>	<b><i>Short title</i></b>	<b><i>In force from</i></b>
Act 160	Malaysian Currency (Ringgit) Act 1975	29-8-1975
P.U.(A) 86/1978	Factories and Machinery (Compoundable Offences) Regulations 1978	31-3-1978

## LIST OF LAWS OR PARTS THEREOF SUPERSEDED

<b><i>No.</i></b>	<b><i>Title</i></b>
P.U.(A) 32 of 1970	Factories and Machinery (Safety, Health and Welfare) Regulations 1970