

**ELECTRICITY.**  
**Applications for Special Orders.**

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AMENDMENT OF THE ELECTRICITY COMMISSIONERS' RULES, 1920, MADE BY THE ELECTRICITY COMMISSIONERS FOR NORTHERN IRELAND, DATED AUGUST 9TH, 1922, IN PURSUANCE OF SECTION 34 OF THE ELECTRICITY (SUPPLY) ACT, 1919 (9 & 10 GEO. 5, c. 100) WITH RESPECT TO APPLICATIONS FOR SPECIAL ORDERS.

1922. No. 50.

Rule V. 11 is hereby amended to read as follows :—

A fee of £35, or in the case of applications relating to an area of supply the population of which does not exceed 3,000, £20, by cheque, payable to the Secretary, Electricity Commissioners for Northern Ireland, to cover ordinary expenses. If in consequence of inquiries or otherwise, additional expense is incurred, the amount will be charged to the applicants, and must be paid by them in addition to the ordinary fee.

Signed on behalf of the Electricity Commissioners for Northern Ireland this ninth day of August, 1922.

(Signed) *D. Kerr*,

Secretary to the Electricity Commissioners  
for Northern Ireland.

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**FACTORY AND WORKSHOP.**  
**Dangerous and Unhealthy Industries.**

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REGULATIONS DATED 20TH NOVEMBER, 1922, MADE BY THE MINISTRY OF LABOUR FOR NORTHERN IRELAND UNDER SECTION 79 OF THE FACTORY AND WORKSHOP ACT, 1901 (1 EDW. 7, c. 22), TO APPLY TO THE MANUFACTURES AND PROCESSES INCIDENTAL THERE TO CARRIED ON IN CHEMICAL WORKS IN NORTHERN IRELAND.

1922. No. 66.

In pursuance of Section 79 of the Factory and Workshop Act, 1901, the Ministry of Labour for Northern Ireland hereby makes the following Regulations and directs that they shall apply to the manufactures and processes incidental thereto carried on in chemical works as hereinafter defined.

Provided that nothing in these Regulations shall apply to (a) the manufacture of certain compounds of lead, namely, any carbonate, sulphate, nitrate, or acetate of lead; (b) the manufacture of red or orange lead or of flaked litharge; (c) the manufacture and necessary purification of coal gas, water gas, and producer gas for lighting, heating and power purposes; (d) the processes of textile printing, bleaching, dyeing, mercerising, tanning and brewing; (e) the distillation of alcohol, of wood (except where acetic acid is isolated or manufactured), and of shale in the manufacture of crude shale oil; (f) processes carried on by way of experiment.

Regulations 2 (b) and 12, and, so far as concerns the processes of grinding or crushing caustic by machinery or packing ground caustic, making or packing of bleaching powder, distillation of gas or coal tar or any process in chemical manufacture in which gas or coal tar is used, the refining of crude shale oil and the manipulation of pitch, Regulations 26, 27 and 28 shall not come into force till 1st April, 1923, or such later date or dates as the Ministry of Labour may appoint, but save as aforesaid, all the Regulations shall take effect on 1st December, 1922. From that date the Regulations dated 30th December, 1908,\* for the manufacture of nitro and amido derivatives of benzene, and the Regulations dated 9th August, 1913,\* for the manufacture of chromate and bichromate of potassium or sodium shall be revoked.

These Regulations may be cited as the Chemical Works Regulations, 1922.

#### †Definitions.

In these Regulations :—

*Chemical works* means any works or such parts of any works as are named in the Schedule of this Order.

*Bleaching powder* means the bleaching powder commonly called chloride of lime.

*Chlorate* means chlorate or perchlorate.

*Caustic* means hydroxide of potassium or sodium.

*Caustic pot* means a metal pot fixed over a furnace or flue and surrounded by brickwork, such as is commonly used for concentrating caustic liquor, whether such pot be used for concentrating or boiling caustic or other liquor.

*Chrome process* means the manufacture of chromate or bichromate of potassium or sodium, or the manipulation, movement or other treatment of these substances in connection with their manufacture.

*Nitro or amido process* means the manufacture of nitro or amido derivatives of phenol and of benzene or its homologues, and the making of explosives with the use of any of these substances.

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\*Issued by the Home Office, London.

†Terms to which defined meanings are given are printed throughout in Italics.

*Breathing apparatus* means (1) a helmet or face-piece with necessary connections by means of which a person using it in a poisonous, asphyxiating, or irritant atmosphere breathes ordinary air, or (2) any other suitable apparatus approved in writing by the Chief Inspector of Factories, Northern Ireland.

*Lifebelt* means a belt made of leather or other suitable material which can be securely fastened round the body, with a suitable length of rope attached to it, each of which is sufficiently strong to sustain the weight of a man.

*Efficient exhaust draught* means localised ventilation effected by mechanical or other means for the removal of gas, vapour, fume, or dust, which prevents it from escaping into the air of any place in which work is carried on.\*

*Surgeon* means the Certifying Factory Surgeon of the District, or a duly qualified medical practitioner appointed by written certificate of the Chief Inspector of Factories, Northern Ireland, which appointment shall be subject to such conditions as may be specified in that certificate.

*Suspension* means suspension by written certificate in the Health Register, signed by the *Surgeon*, from employment in any process mentioned in the certificate.

#### *Exceptions.*

Where it is proved to the satisfaction of the Chief Inspector of Factories, Northern Ireland, that by reason of exceptional circumstances in any works subject to these Regulations, or by reason of the infrequency of the process, or for other reasons, all or any of the requirements of the Regulations are not necessary for the protection of persons employed in such works, he may by certificate in writing (which he may in his discretion revoke) exempt such works from all or any of the provisions of the same, subject to such conditions as he may by such certificate prescribe.

#### *Duties.*

It shall be the duty of the occupier to comply with these Regulations, and it shall be the duty of all agents, foremen, and persons employed to conduct their work in accordance with these Regulations.

#### Part I.

##### *Applying to all Chemical Works.*

1. With regard to every fixed vessel, whether pot, pan, vat, or other structure, containing any dangerous material, and not so

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\* Care must be taken that the means provided do not cause a contravention of the provisions of the Alkali, &c., Works Regulation Act, 1906.

covered as to eliminate all reasonable risk of accidental immersion of any portion of the body of a person employed :—

- (a) Each such vessel shall, unless its edge is at least 3 feet above the adjoining ground or platform, be securely fenced to a height of at least 3 feet above such adjoining ground or platform.
- (b) No plank or gangway shall be placed across or inside any such vessel unless such plank or gangway is—
  - (i) at least 18 inches wide ; and
  - (ii) securely fenced on both sides ; either by upper and lower rails, to a height of 3 feet, or by other equally efficient means.
- (c) Where such vessels adjoin, and the space between them, clear of any surrounding brick or other work, is either
  - (i) less than 18 inches in width, or
  - (ii) is 18 or more inches in width, but is not securely fenced on both sides to a height of at least 3 feet,
 secure barriers shall be so placed as to prevent passage between them.

Provided that paragraph (a) of this Regulation shall not apply to that part of the sides of brine evaporating pans at which raking, drawing or filling is carried on, or to saturators used in the manufacture of sulphate of ammonia.

2. The following processes shall not be carried on except under an *efficient exhaust draught*.—

- (a) drawing a charge from a salt cake furnace ;
- (b) slaking of lime for use in a chemical process except when it is carried on in the open air or by means of an enclosed mechanical or other appliance so constructed as to prevent the escape of steam or dust into the air of any place in which any person is employed ;
- (c) any process involving action of acid or alkali on metal whereby there is a liability to the evolution of arseniuretted hydrogen.

3. All mills and screens for grinding and screening anhydrous lime, and all mechanical conveyors used in connection therewith, shall be so enclosed as to prevent the escape of dust.

4. (a) All places in which persons are employed and all means of access thereto shall be efficiently lighted by day and by night.

(b) No electric arc lamp, or naked light, fixed or portable, shall be used, and no person shall have in his possession any lucifer match or any apparatus of any kind for producing a naked light or spark in, on, or about any part of the works where there is liability to explosion from inflammable gas, vapour or dust, and all incandescent electric lights in such parts shall be in double air-tight glass covers.

(c) Stoves shall not be used for the artificial heating of places in which there is danger of ignition of gas, vapour, or dust : if steam pipes or radiators are used for this purpose they shall be placed so that there is a space of not less than two inches between them and the wall, and shall be protected by a wire screen.

(d) A prominent notice, legible by day and by night, prohibiting smoking or the use of naked lights, and the carrying of matches, or any apparatus for producing a naked light or spark, shall be affixed at the entrance of every room or place in which there is liability to explosion from inflammable gas, vapour, or dust.

5. Every still and every closed vessel in which gas is evolved or into which gas is passed, and in which the pressure is liable to rise to a dangerous degree, shall have attached to it, and maintained in proper condition, a proper safety valve or other equally efficient means to relieve the pressure.

Nothing in this Regulation shall apply to metal bottles or cylinders used for the transport of compressed gases.

6. There shall be provided in every works where dangerous gas or fume is liable to escape a sufficient supply of :—

(a) *Breathing apparatus.*

(b) *Oxygen and suitable means for its administration.*

(c) *Life-belts.*

The *breathing apparatus* and other appliances required by this Regulation shall be maintained in good order and kept in an ambulance room or in some other place approved in writing by the Chief Inspector of Factories in Northern Ireland, which shall be conveniently situated. In every such room or place and wherever required in writing by the Chief Inspector of Factories in Northern Ireland there shall be affixed the official cautionary notice regarding gassing and burns.

Such apparatus and appliances shall be inspected once every month by a competent person, conversant with their use, appointed by the occupier, and a record of their condition shall be entered in a book provided for that purpose, which shall be produced when required by an Inspector.

7. Before any person enters, for any purpose except that of rescue, any absorber, boiler, culvert, drain, flue, gas purifier, sewer, still tank, tower, vitriol chamber, or other place where there is reason to apprehend the presence of dangerous gas or fume, a responsible person appointed by the occupier for the purpose shall personally examine such place and shall certify in writing in a book to be kept for the purpose either that such place is isolated and sealed from every source of such gas or fume and is free from danger, or that it is not so isolated and sealed and free from danger. No person shall enter any such place which is certified not to be so isolated and sealed and free from danger unless he is wearing a *breathing apparatus*, and (where there are no cross-stays or obstructions likely to cause entanglement) a *life-belt*, the free end of the

rope attached to which shall be left with a man outside whose sole duty shall be to keep watch and to draw out the wearer if he appears to be affected by gas or fume. The belt and rope shall be so adjusted and worn that the wearer can be drawn up head foremost through any manhole or opening.

8. No person shall enter any place mentioned in Regulation 7 for the purpose of rescue unless he is wearing a *breathing apparatus* and a *life-belt* in the manner specified in that Regulation.

9. A sufficient supply of non-metallic spades, scrapers and pails shall be provided for the use of persons employed in cleaning out or removing the residues from any chamber, still tank, or other vessel which has contained sulphuric or hydrochloric acid or other substance which may cause evolution of arseniuretted hydrogen.

10. In all places where strong acids or dangerous corrosive liquids are used—

(a) there shall be provided, for use in case of emergency :—

(i) Adequate and readily accessible means of drenching with cold water persons, and the clothing of persons, who have become splashed with such liquid ;

(ii) A sufficient number of eye-wash bottles, filled with distilled water or other suitable liquid, kept in boxes or cupboards conveniently situated and clearly indicated by a distinctive sign which shall be visible at all times.

(b) Except where the manipulation of such acids and liquids is so carried on as to prevent risk of personal injury from splashing or otherwise, there shall be provided for those who have to manipulate such acids or liquids, sufficient and suitable goggles and gloves or other suitable protection for the eyes and hands. If gloves are provided they shall be collected, examined and cleaned at the close of the day's work and shall be repaired or renewed when necessary.

(c) There shall be kept affixed the official cautionary notice regarding gassing and burns.

11. There shall be provided in readily accessible positions a sufficient number of "First Aid" boxes or cupboards.

Each "First Aid" box or cupboard shall be distinctively marked, and if newly provided after the date of these Regulations shall be marked plainly with a white cross on a red ground, and shall contain, besides any other medical appliances or requisites :—

(i) A supply of suitable sterilised dressings for fingers, hands, feet, or other injured parts.

(ii) A supply of sterilised cotton-wool.

(iii) A supply of sterilised burn dressings (large and small).

(iv) Plaster—waterproofed on the outside.

- (v) Ointment, a 2 per cent, alcoholic solution of iodine and a bottle of sal volatile.
- (vi) A copy of the First Aid leaflet issued by the Factory Department of the Home Office, Whitehall, London, S.W.1.

Nothing except appliances or requisites for First Aid shall be kept in a "First Aid" box or cupboard.

Each "First Aid" box shall be kept stocked and in good order, and shall be placed in the charge of a responsible person, who shall always be readily available during working hours.

A notice or notices shall be affixed in every workplace stating the name of the person in charge of the "First Aid" box or cupboard provided in respect of that place.

12. There shall be provided and maintained in good order in every works in which the total number of persons employed in the processes to which these Regulations apply at any one time is 250 or more, an Ambulance room.

The Ambulance room shall be a separate room used only for the purpose of treatment and rest. It shall have a floor space of not less than 100 square feet and smooth, hard and impervious walls and floor, and shall be provided with ample means of natural and artificial lighting. It shall contain at least :—

- (i) A glazed sink with hot and cold water always available.
- (ii) A table with a smooth top.
- (iii) Means for sterilising instruments.
- (iv) A supply of suitable dressings, bandages and splints.
- (v) A couch.
- (vi) A stretcher.

Where persons of both sexes are employed, arrangements shall be made at the ambulance room for their separate treatment.

The Ambulance room shall be placed under the charge of a qualified nurse, or other person trained in first Aid, who shall always be readily available during working hours and shall keep a record of all cases of accidents or sickness treated in the room.

13. At every works there shall be provided and maintained in good condition a suitably constructed ambulance carriage, for the purpose of the removal of serious cases of accident or sickness, unless arrangements have been made for obtaining such a carriage when required from a hospital or other place in telephonic communication with the works.

14. Arrangements shall be made to the satisfaction of the Chief Inspector of Factories, Northern Ireland, for the effective training and practising of a sufficient number of persons in the use of the appliances required by regulation 6 and in administering First Aid.

15. There shall be provided for all female persons employed whose work is done standing, facilities for sitting, so as to enable them to take advantage of any opportunities for resting which may occur in the course of their employment.

16. There shall be provided and maintained at suitable points conveniently accessible at all times to all persons employed :—

- (a) An adequate supply of wholesome drinking water from a public main or from some other source of supply approved in writing by the local authority of the district in which the factory is situated, which shall be either laid on, or contained in a suitable vessel ;
- (b) (except where the water is delivered in an upward jet from which the workers can conveniently drink) at least one suitable cup or drinking vessel at each point of supply, with facilities for rinsing it in drinking water.

Each drinking water supply shall be clearly marked “ Drinking Water.”

All practicable steps shall be taken to preserve the water and vessels from contamination.

17. (1) Every person employed shall—

- (a) report to his foremen any defect in any fencing, *breathing apparatus*, appliance or other requisite provided in pursuance of these Regulations, as soon as he becomes aware of such defect ;
- (b) use the articles, appliances or accommodation required by these Regulations for the purpose for which they are provided.
- (c) wear the *breathing apparatus* and *life-belt* where required under Regulations 7 and 8.

(2) No person shall—

- (a) remove any fencing provided in pursuance of Regulation 1 unless duly authorised ; or
- (b) stand on the edge or on the side of any vessel to which Regulation 1 applies ;
- (c) pass or attempt to pass any barrier erected in pursuance of Regulation 1 (c) ;
- (d) place across or inside any vessel to which Regulation 1 applies any plank or gangway which does not comply with Regulation 1 (b), or make use of any such plank or gangway while in such position ;
- (e) take a naked light or any lamp or matches or any apparatus for producing a naked light or spark into, or smoke in, any part of the works where there is liability to explosion from inflammable gas, vapour or dust ;
- (f) use a metal spade, scraper or pail when cleaning out or removing the residues from any chamber, still, tank, or other vessel which has contained sulphuric acid or hydrochloric acid or other substance which may cause evolution of arseniuretted hydrogen ;

- (g) remove from a First Aid box or cupboard or from the ambulance room any First Aid appliance or dressing except for the treatment of injuries in the works.

Part II.

*Applying to Works or Parts thereof in which—*

- I. *Caustic pots* are used ; or
- II. *Chlorate or bleaching powder* is manufactured ; or
- III. (a) Gas tar or coal tar is distilled or is used in any process of chemical manufacture : or
  - (b) A *nitro or amido process* is carried on ; or
  - (c) A *chrome process* is carried on ; or
- IV. Crude shale oil is refined or processes incidental thereto are carried on ; or
- V. Nitric acid is used in the manufacture of nitro compounds.

18. Every *caustic pot* shall be of such construction that there shall be no foothold on the top or sides of the brickwork or flues ; and the edge of every such pot constructed, rebuilt or replaced after these Regulations come into force shall be at least 3 feet in height above the adjoining ground or platform.

19. Before any person enters a gas tar or coal tar still for any purpose except that of rescue, it shall be completely isolated from adjoining tar stills, either by disconnecting—

- (a) the pipe leading from the swan neck to the condenser worm ; or
- (b) the waste gas pipe fixed to the worm end or receiver ; and in addition, blank flanges shall be inserted between the disconnected parts, and the pitch discharge pipe or cock at the bottom of the still shall be disconnected.

20. No person shall enter a chamber for the purpose of withdrawing the charge of *bleaching powder* unless and until :—

- (i) The chamber is efficiently ventilated, and
- (ii) The air in the chamber has been tested and found to contain not more than 2.5 grains of free chlorine gas per cubic foot. A register containing details of all such tests shall be kept in a form approved by the Chief Inspector of Factories, Northern Ireland.

21. In a *nitro or amido process* :—

- (a) If crystallised substances are broken or any liquor agitated by hand, means shall be taken to prevent, as far as practicable, the escape of dust or fume into the air of any place in which any person is employed. The handles of all implements used in the operations shall be cleansed daily.

- (b) Cartridges shall not be filled by hand except by means of a suitable scoop.
  - (c) Every drying stove shall be efficiently ventilated to the outside air in such a manner that hot air from the stove shall be not drawn into any workroom.
  - (d) No person shall enter a stove to remove the contents until a free current of air has been passed through it.
  - (e) Every vessel containing nitro or amido derivatives of phenol or of benzene or its homologues shall, if steam is passed into or around it, or if the temperature of the contents be at or above the temperature of boiling water be covered in such a way that steam or vapour shall be discharged into the open air at a height of not less than 25 feet from the ground or working platform, and at a point where it cannot be blown back again into the workroom.
  - (f) In every room in which dust is generated or fume is evolved an *efficient exhaust draught* shall be provided.
22. (a) Every machine used for grinding or crushing *caustic* shall be enclosed, and
- (b) Where any of the following processes are carried on :—
    - (i) Grinding or crushing of *caustic* ;
    - (ii) Packing of ground *caustic* ;
    - (iii) Grinding, sieving, evaporating or packing in a *chrome process* ;
    - (iv) Crushing, grinding or mixing of material or cartridge filling in a *nitro or amido process* ;
 an *efficient exhaust draught* shall be provided.
23. (a) *Chlorate* shall not be crystallised, ground or packed except in a room or place not used for any other purpose, the floor of which room or place shall be of cement or other smooth, impervious and incombustible material, and shall be thoroughly cleansed daily.
- (b) Wooden vessels shall not be used for the crystallisation of *chlorate* or to contain crystallised or ground *chlorate* ; provided that this Regulation shall not prohibit the packing of *chlorate* for sale into wooden casks or other wooden vessels.
24. No person under 18 years of age shall be employed in a *chrome process* or in a *nitro or amido process*.
25. (a) There shall be provided and maintained for the use of all persons employed in :—
- (i) A *nitro or amido process*, sufficient and suitable overalls or suits of working clothes and sufficient and suitable protective footwear ;\*

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\* In those places to which the Explosives Act, 1875, applies, the provision made must conform to the requirements of that Act.

- (ii) grinding raw materials in a *chrome process*, sufficient and suitable overall suits ;
  - (iii) the crystal department and in packing in a *chrome process*, sufficient and suitable protective coverings ;
  - (iv) packing in a *chrome process*, sufficient and suitable respirators ;
  - (v) any room or place in which *chlorate* is crystallised, ground or packed, clothing of woollen material and boots or overshoes, the soles of which shall have no metal on them ;
  - (vi) any room or place in which *caustic* is ground or crushed by machinery, sufficient and suitable goggles and gloves, or other suitable protection for the eyes and hands ;
  - (vii) *bleaching powder* chambers, or in packing charges drawn from such chambers, a supply of flannel or other suitable respirators.
- (b) (i) The overalls or suits of working clothes required to be provided by (a) (i) and (ii) of this Regulation shall be washed, cleansed or renewed at least once every week ;
- (ii) the filtering material of the respirators required to be provided by (a) (iv) of this Regulation shall be washed or renewed daily ;
- (iii) the woollen clothing required to be provided by (a) (v) of this Regulation shall not be removed from the works for any purpose, but shall be washed daily after use and thoroughly dried before being worn again ; all such clothing when worn out shall be destroyed.
- (iv) if gloves are provided to comply with (a) (vi) of this Regulation, they shall be collected, examined and cleaned at the close of the day's work, and shall be repaired or renewed when necessary.

26. There shall be provided and maintained for the use of all persons for whom overalls or suits of working clothes are required to be provided under Regulation 25 (a) :—

- (a) A suitable cloakroom for clothing put off during working hours, with adequate arrangements for drying the clothing if wet ; and
- (b) a suitable place or places, separate from the cloakroom and from the meal room provided in pursuance of Regulation 27, for the storage of overalls or working suits.

The accommodation so provided shall be placed under the charge of a responsible person, and shall be kept clean.

27. There shall be provided and maintained for the use of all persons remaining on the premises during the meal intervals, who are employed in (a) any *nitro or amido process*, (b) any *chrome*

process, (c) grinding or crushing *caustic* by machinery or packing of ground *caustic*, (d) making or packing of *bleaching powder*, including the drawing of the charges from the chambers, (e) crystallising, grinding or packing of *chlorate*, (f) distilling gas tar or coal tar (other than blast furnace tar), or in any process of chemical manufacture in which gas or coal tar (other than blast furnace tar) is used, or (g) refining of crude shale oil, suitable and adequate messroom or canteen accommodation, which shall be furnished with—

- (i) sufficient tables and chairs or benches with back rests ;
- (ii) adequate means for cooking or warming food and for boiling water ; and
- (iii) arrangements for washing crockery and utensils.

The messroom shall be sufficiently warmed for use during meal intervals, be placed under the charge of a responsible person and be kept clean and well ventilated.

28. There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed in (a) any *nitro or amido process* ; (b) any *chrome process* ; (c) grinding or crushing *caustic* by machinery or packing of ground *caustic* ; (d) making or packing of *bleaching powder*, including the drawing of the charges from the chambers ; (e) crystallising, grinding or packing of *chlorate* ; (f) distilling gas tar or coal tar (other than blast furnace tar), or in any process of chemical manufacture in which gas or coal tar (other than blast furnace tar) is used ; (g) the manipulation of pitch (other than blast furnace pitch) ; or (h) refining of crude shale oil :—

A lavatory, under cover, with a sufficient supply of clean towels, renewed daily, and of soap and nail brushes, and with either—

- (a) a trough with a smooth impervious surface, fitted with a waste pipe without plug, and of such length as to allow at least two feet for every five such persons, and having a constant supply of warm water from taps or jets above the trough at intervals of not more than two feet ; or
- (b) at least one lavatory basin for every five such persons, fitted with a waste pipe and plug or placed in a trough having a waste pipe, and having either a constant supply of hot and cold water or warm water laid on, or (if a constant supply of heated water be not reasonably practicable) a constant supply of cold water laid on and a supply of hot water always at hand when required for use by persons employed.

29. There shall be provided for the use of all persons employed in (a) a *nitro or amido process*, (b) the crystal department and the packing room in a *chrome process*, (c) the process of distilling gas or

coal tar (other than blast furnace tar) and any process of chemical manufacture in which such tar is used and (d) refining of crude shale oil :—

Sufficient and suitable bath accommodation (douche or other), with hot and cold water laid on and a sufficient supply of soap and towels.

A bath register shall be kept containing a list of all persons employed in the above processes and an entry of the date when each person takes a bath.

30. In a *chrome process* and in a *nitro or amido process* :—

- (a) A Health Register, containing the names of all persons employed, shall be kept in a form approved by the chief Inspector of Factories, Northern Ireland.
- (b) No person shall be newly employed for more than fourteen days without a certificate of fitness granted after examination by the *Surgeon* by signed entry in the Health Register.
- (c) Every person employed shall be examined by the *Surgeon* once in each calendar month (or at such other intervals as may be prescribed in writing by the chief Inspector of Factories, Northern Ireland), on a date or dates of which due notice shall be given to all concerned.
- (d) Every person employed shall present himself at the appointed time for examination by the *Surgeon* as provided in (b) and (c) of this Regulation.
- (e) The *Surgeon* shall have power of *suspension* as regards all persons employed, and no person after *suspension* shall be employed without written sanction from the *Surgeon* entered in the Health Register.
- (f) No person shall introduce, keep, prepare or partake of any food, drink, or tobacco in any room or place in which a *nitro* or *amido* process is carried on, or in the crystal department of a *chrome process*.

31. Every person employed—

- (a) in a process to which Regulation 25 (a) applies shall wear the protective clothing, footwear, respirators, goggles or gloves provided under Regulation 25 (a) and shall deposit overalls or suits of working clothing so provided, as well as clothing put off during working hours, in the places provided under Regulation 26 (a) and (b) ;
- (b) in processes to which Regulation 28 applies shall carefully wash the hands and face before partaking of any food or leaving the premises ;

- (c) in any processes to which Part II of these Regulations apply shall use the protective appliances supplied in respect of any process in which he is engaged.

J. A. Dale,

Secretary, Ministry of Labour, Northern Ireland.

7 Upper Queen Street,  
Belfast,

20th November, 1922.

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*Schedule.*

*Chemical Works* means any works or that part of a works in which :—

1. The manufacture or recovery of any of the following is carried on :—
  - (a) Carbonates, chromates, chlorates, oxides or hydroxides of potassium, sodium, iron, aluminium, cobalt, nickel, arsenic, antimony, zinc or magnesium.
  - (b) Ammonia and the hydroxide and salts of ammonium.
  - (c) Sulphurous, sulphuric, nitric, hydrochloric, hydrofluoric, hydriodic, hydro-sulphuric, boric, phosphoric, arsenious, arsenic, lactic, acetic, oxalic, tartaric or citric acids and their metallic or organic salts, and
  - (d) Cyanogen compounds.
2. A wet process is carried on
  - (a) for the extraction of metal from ore or from any by-product or residual material; or
  - (b) in which electrical energy is used in any process of chemical manufacture.
3. Alkali waste or the drainage therefrom is subjected to any chemical process for the recovery of sulphur, or for the utilisation of any constituent of such waste or drainage.
4. Carbon bisulphide is made or hydrogen sulphide is evolved by the decomposition of metallic sulphides, or hydrogen sulphide is used in the production of such sulphides.
5. Bleaching powder is manufactured or chlorine gas is made or is used in any process of chemical manufacture.
6. (a) Gas tar or coal tar or any compound product or residue of such tars is distilled or is used in any process of chemical manufacture.  
(b) Synthetic colouring matters or their intermediates are made.
7. The refining of crude shale oil or processes incidental thereto are carried on.
8. Nitric acid is used in the manufacture of nitro compounds.
9. Explosives are made with the use of nitro compounds.

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REGULATIONS DATED 22ND DECEMBER, 1922, MADE BY THE MINISTRY OF LABOUR FOR NORTHERN IRELAND, UNDER SECTION 79 OF THE FACTORY AND WORKSHOP ACT, 1901 (1 EDW. 7, c. 22), FOR THE USE OF WOODWORKING MACHINERY.

1922. No. 72.

In pursuance of Section 79 of the Factory and Workshop Act, 1901, the Ministry of Labour for Northern Ireland hereby makes the following Regulations and directs that they shall apply to all factories or parts thereof, and to any place to which the provisions of the said Section are applied by the said Act in which any wood-working machinery is used.

Provided that if the Chief Inspector of Factories, Northern Ireland, is satisfied in respect of any factory or other place to which these Regulations apply that, owing to the special conditions of the work or otherwise, any of the requirements of the Regulations can be suspended or relaxed without danger to the persons employed therein, he may by certificate in writing authorise such suspension or relaxation for such period and on such conditions as he may think fit. Any such certificate may be revoked at any time.

These Regulations may be cited as the Woodworking Machinery Regulations, 1922, and shall come into force on 1st February, 1923.

*\*Definitions.*

In these Regulations—

“*Woodworking machine*” means a *circular saw, plain band saw, planing machine, vertical spindle moulding machine or chain mortising machine operating on wood.*

“*Circular saw*” means a circular saw working in a bench (including a rack bench) for the purpose of ripping, deep-cutting or cross cutting, but does not include a swing saw or other saw which is moved towards the wood.

“*Plain band saw*” means a band saw, other than a log saw or band re-sawing machine, the cutting portion of which runs in a vertical direction.

“*Planing machine*” includes a machine for overhand planing or for thicknessing or for both operations.

“*Within reach*” means within  $6\frac{1}{2}$  feet from the floor or from any other point to which any person employed or working in a factory normally has access while the machinery is in motion.

“*Underground room*” means a room any part of which is so situate that half or more than half the whole height thereof measured from the floor to the ceiling is below the surface of the footway of the adjoining street or of the ground adjoining or nearest to the room.

“*Gauge*” means the Imperial Standard Wire Gauge.

*Duties.*

It shall be the duty of the occupier to observe Part I of these Regulations.

It shall be the duty of all persons employed to observe Part II of these Regulations.

*Part I.—Duties of Occupiers.*

(1) Every *woodworking machine* shall be provided with an efficient stopping and starting appliance, and the control of this appliance shall be in such a position as to be readily and conveniently operated by the person in charge of the machine.

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\*Terms to which defined meanings are given are printed throughout in italics.

(2) Every shaft, wheel, pulley, strap, band, or other device *within reach* by which any part of a *woodworking machine* receives its motion shall be securely fenced.

(3) Sufficient clear and unobstructed space shall be maintained at every *woodworking machine* while in motion to enable the work to be carried on without unnecessary risk.

(4) The floor surrounding every *woodworking machine* shall be maintained in good and level condition, and as far as practicable free from chips or other loose material, and shall not be allowed to become slippery.

(5) Where the natural light at a *woodworking machine* is inadequate and can be improved by the provision of additional or better windows not involving serious structural alteration, or by whitening the walls or the tops of the factory, or by any other reasonable means, the occupier shall take steps as aforesaid to improve the natural light at the said machine.

(6) The means of artificial lighting for every *woodworking machine* shall be adequate, and shall be so placed or shaded as to prevent direct rays of light from impinging on the eyes of the operator while he is operating such machine.

(7) After the 1st March, 1924, *no woodworking machine* shall be worked in any *underground room* which is certified by the chief Inspector of Factories, Northern Ireland, to be unsuitable for the purpose as regards construction, light, ventilation, or in any other respect.

(8) The temperature of any part of a room in which a *woodworking machine* is being worked shall not at any time fall below 50 degrees, except where and in so far as the construction of the room and the necessities of the business carried on make it impracticable to maintain this temperature.

(9) (a) Every person while being trained to work a *woodworking machine* shall be fully and carefully instructed as to the dangers arising in connection with such machine and the precautions to be observed.

(b) No person shall be employed at a *woodworking machine* unless he has been sufficiently trained to work that class of machine or unless he works under the adequate supervision of a person who has a thorough knowledge of the working of the machine.

(10) Every *circular saw* shall be fenced as follows :—

(a) The part of the saw below the bench table shall be protected by two plates of metal or other suitable material one on each side of the saw ; such plates shall not be more than six inches apart, and shall extend from the axis of the saw outwards to a distance of not less than two inches beyond the teeth of the saw. Metal plates

if not beaded, shall be of a thickness at least equal to 14 *gauge*, or, if beaded, be of a thickness at least equal to 20 *gauge*.

- (b) Behind and in direct line with the saw there shall be a riving knife, which shall have a smooth surface, shall be strong, rigid, and easily adjustable, and shall also conform to the following conditions :—
- (i) The edge of the knife nearer the saw shall form an arc of a circle having a radius not exceeding the radius of the largest saw used on the bench.
  - (ii) The knife shall be maintained as close as practicable to the saw, having regard to the nature of the work being done at the time, and at the level of the bench table the distance between the front edge of the knife and teeth of the saw shall not exceed half an inch.
  - (iii) For a saw of a diameter of less than 24 inches, the knife shall extend upwards from the bench table to within one inch of the top of the saw, and for a saw of a diameter of 24 inches or over shall extend upwards from the bench table to a height of at least nine inches.
- (c) The top of the saw shall be covered by a strong and easily adjustable guard, with a flange at the side of the saw farthest from the fence. The guard shall be kept so adjusted that the said flange shall extend below the roots of the teeth of the saw. The guard shall extend from the top of the riving knife to a point as low as practicable at the cutting edge of the saw.

(11) A suitable push-stick shall be kept available for use at the bench of every *circular saw* which is fed by hand, to enable the work to be carried on without unnecessary risk.

(12) Every *plain band saw* shall be guarded as follows :—

- (a) Both sides of the bottom pulley shall be completely encased by sheet metal or other suitable material.
- (b) The front of the top pulley shall be covered with sheet metal or other suitable material.
- (c) All portions of the blade shall be enclosed or otherwise securely guarded, except the portion of the blade between the bench table and the top guide.

(13) After the 1st March, 1924, no *planing machine* which is not mechanically fed, shall be used for overhand planing unless it is fitted with a cylindrical cutter block.

(14) No *planing machine*, which is not mechanically fed, shall be used for planing overhand any piece of wood less than twelve inches in length unless a safe holder is used for such piece of wood. Provided that this Regulation shall not apply to the operation of planing the edges of flat pieces of wood, nor to a *planing machine* which is fitted with a cylindrical cutter block.

(15) Every *planing machine* used for overhand planing shall be provided with a "bridge" guard capable of covering the full length and breadth of the cutting slot in the bench; and so constructed as to be easily adjusted both in a vertical and horizontal direction.

(16) The feed roller of every *planing machine* used for thicknessing, except the combined machine for overhand planing and thicknessing, shall be provided with an efficient guard.

(17) The cutter of every vertical spindle moulding machine shall, when practicable, be provided with the most efficient guard having regard to the nature of work which is being performed.

(18) For such work as cannot be performed with an efficient guard for the cutter, the wood being moulded at a vertical spindle moulding machine, shall, if practicable, be held in a jig or holder of such construction as to reduce as far as possible the risk of accident to the worker.

(19) A suitable "spike" or push stick shall be kept available for use at the bench of every vertical spindle moulding machine.

(20) The chain of every chain mortising machine shall be provided with a guard which shall enclose the cutters as far as practicable.

(21) The guards and other appliances required by these Regulations shall be maintained in an efficient state and shall be constantly kept in position while the machinery is in motion, except when, owing to the nature of the work being done, the use of the guards or appliances is rendered impracticable. The guards shall be so adjusted as to enable the work to be carried on without unnecessary risk.

(22) Regulations 10, 12, 15 and 16 shall not apply to any *woodworking machine* in respect of which it can be shown that other safeguards are provided and maintained which render the machine equally safe as it would be if guarded in the manner prescribed by these Regulations.

*Part II.—Duties of Persons Employed.*

(23) Every person employed on a *woodworking machine* shall—

(i) use and maintain in proper adjustment the guards provided in accordance with these Regulations;

(ii) use the "spikes" or push-sticks and holders provided in compliance with Regulations 11, 14, 18 and 19;

except when, owing to the nature of the work being done, the use of the guards or appliances is rendered impracticable.

*J. A. Dale,*

Secretary, Ministry of Labour, Northern Ireland.

7 Upper Queen Street,  
Belfast,

22nd December, 1922.