

Serial Number 1940/83.



THE SPRAY PAINTING REGULATIONS 1940.

GALWAY, Governor-General.

ORDER IN COUNCIL.

At the Government House at Wellington, this 14th day of May, 1940.

Present :

HIS EXCELLENCY THE GOVERNOR-GENERAL IN COUNCIL.

PURSUANT to sections 67 and 132 of the Health Act, 1920, and to section 70 of the Factories Act, 1921-22, His Excellency the Governor-General, acting by and with the advice and consent of the Executive Council, doth hereby make the regulations hereinafter set forth.

REGULATIONS.

PART I.—GENERAL.

1. These regulations may be cited as the Spray Painting Regulations 1940.
2. These regulations shall come into force on the 1st day of July, 1940.
3. In these regulations, if not inconsistent with the context,—
 - “The said Act” means the Health Act, 1920 :
 - “Approved” means approved by the Chief Inspector or an Inspector :
 - “Chief Inspector” means the Chief Inspector of Factories appointed pursuant to the Factories Act, 1921-22 :
 - “Government Analyst” means an Analyst appointed under the Sale of Food and Drugs Act, 1908, for the purposes of that Act :
 - “Inspector” includes an Inspector of Factories appointed under the Factories Act, 1921-22, and an Inspector of Health appointed under the Health Act, 1920 :
 - “Inflammable liquid” means a liquid which, when tested in the manner set forth in the Fifth Schedule to the Dangerous Goods Regulations 1928,* has a true flashing-point of less than 73 degrees :
 - “Lead paint” means any paint, paste, spray, stopping, filling, or other material used in painting which, when treated in the manner prescribed in the First Schedule hereto, yields to an aqueous solution of hydrochloric acid a quantity of soluble lead compound exceeding when calculated as lead monoxide 5 per centum of the dry weight of the portion taken for analysis :

* Supplementary Gazette No. 26 of 1928, page 861.

“Occupier” includes every person who is for the time being an occupier of any factory in which spray painting is carried on :

“Secretary” means the Secretary of the Department of Labour :

“Silica paint” means any paint, paste, glaze, spray, or other material which, when treated in the manner prescribed in the Second Schedule hereto, contains free silica to the extent of 2 per centum of the dry weight of the portion taken for analysis :

“Spray painting” means the application to any article by spraying of lead paint, silica paint, or any enamel, vitreous enamel, lacquer, or other material having a nitrocellulose or inflammable liquid content :

“Vehicle” means any locomotive, and every description of wheeled carriage or wheeled implement (including all parts thereof made separately) used or capable of being used for the conveyance of persons or goods or for agricultural purposes.

4. The occupier of a factory in which spray painting is carried on shall observe and cause to be observed the provisions contained in Part II hereof.

5. If any person is the occupier of a factory in which spray painting is carried on and in such factory there is a failure to comply with any provision contained in Part II hereof or with any notice given to the occupier under Part II hereof, such person commits an offence against these regulations :

Provided first that if more than one person be for the time being the occupiers of any factory, then notice given to any one of them shall be deemed notice to all of them :

Provided secondly that a certificate in writing purporting to be signed by a person described in the certificate as the Secretary and stating that any approval or notice has or has not been given shall be *prima facie* evidence that such approval or notice has or has not been given, as the case may be.

6. Every person employed in a factory in which spray painting is carried on shall observe the provisions contained in Part III hereof.

7. Every person employed in a factory in which spray painting is carried on who fails to observe or comply with any provision contained in Part III hereof commits an offence against these regulations.

8. Every person who commits an offence against these regulations is liable to a fine not exceeding £5.

PART II.—DUTIES OF OCCUPIER.

9. The occupier shall provide a suitable booth in the factory for spray painting.

Type and Construction of Booths.

10. A booth may be of any one of the following types :—

(a) *Cabinet Booth.*—An enclosure so arranged, constructed, and equipped as to confine and control exhaust air motion in such a manner as effectively to protect the spray operator and all others in the vicinity from particles of paint and fumes :

- (b) *Room Booth*.—A building or portion of a building used wholly or in part as an enclosure exclusively for spray-painting operations :
- (c) *Tunnel Booth*.—An arrangement of enclosing walls, floor, and ceiling with two opposite ends open to permit of continuous movement through the booth of articles being sprayed, designed, and equipped so as effectively to protect workmen in or near such booths from particles of paint and fumes :
- (d) *Canopy Booth*.—An arrangement of walls and ceiling forming a canopy or hood designed and equipped so that when it is in a position over an article being spray painted the operator and all others in the vicinity will be effectively protected from particles of paint and fumes.

11. Cabinet booths shall be used wherever practicable. Tunnel booths, room booths, and canopy booths shall be used only with the previous written approval of the Secretary.

12. All booths, other than room booths, shall be constructed entirely of, or be entirely lined with, metal or other non-combustible material, and all windows in such booths shall be of wired glass in fixed metal sashes. Interior walls shall be smooth finished, and all fittings shall be of non-combustible material.

13. No booth shall be erected or used in any factory unless and until the plan and specification of same have been approved in writing by the Secretary, and every booth shall be constructed in accordance with the plan and specification so approved.

14. All booth floors and the floor area to a distance of at least 3 ft. beyond the entrance to the booth shall be of impervious material.

Ventilation of Booths.

15. Every booth, other than a room booth, shall be fitted with an exhaust fan or other appliance placed in a suitable position and capable of producing and maintaining, and actually producing and maintaining, within the breathing-zone of the operator a uniform air movement of not less than 100 linear feet per minute. Where a larger air movement is in his opinion necessary, the Secretary may by notice in writing to the occupier require the occupier to increase such movement.

16. Any of the following methods of mechanically ventilating the booths may be used :—

- (a) Induced or syphon type—*i.e.*, fans and motors entirely outside the booths and ducts :
- (b) Fans in duct, with motor and bearing outside, and shaft-driven. The motor driving the fan shall be of non-sparking induction type, and shielded against vapours and dust :
- (c) Fans in duct, with motor and bearing outside, and belt-driven :
Provided that belt and pulley within the duct or booth are thoroughly enclosed and adequately electrically earthed :
- (d) Fans with motor of the totally enclosed type in duct :
- (e) Any other method approved in writing by the Secretary.

17. All exhaust ducts shall be of metal with airtight joints, and shall be of sufficient capacity to convey all spray-laden or contaminated air from the booths to the outside atmosphere. They shall be extended

to a height exceeding the eaves of the factory and of any adjacent building, where necessary. Devices in lieu of such ducts, designed to cleanse contaminated air discharged by exhaust fans from spray booths, may be installed with the previous written approval of the Secretary.

18. The exhaust ducts shall not be erected within 9 in. of any wood-work or other combustible material unless effectively insulated, and shall be fitted with inspection openings and clean-out holes at elbows and other places where accumulation may be expected.

19. Every spray booth in which any material having a nitrocellulose or inflammable liquid content is sprayed, having an internal dimension exceeding 50 cubic feet, shall be provided with a separate exhaust duct.

20. The termination of all exhaust ducts delivering to the outside atmosphere shall be protected from the detrimental effects of weather and fire hazards from any source, and shall be arranged so as not to constitute a nuisance or fire hazard in the neighbourhood.

21. All fans operated in ducts shall be constructed of such metal or combination of metals as will prevent sparking in practical operation.

Illumination of Booths.

22. All artificial illumination of spray booths shall be by electricity, and all electrical equipment therein shall be in full accordance with the Electrical Wiring Regulations 1935 and any regulations for the time being in force amending or replacing these regulations.

Use of Booths.

23. No spray painting shall be carried on except in a booth :

Provided that—

- (a) A booth shall not be required when the process of spray painting is carried out in the open air and has a complete surrounding isolation of at least 15 ft. :
- (b) Boilers and heavy articles usually made in boilermaking and engineering works and large vehicles may be sprayed in the open workroom in which they are assembled during periods when all other work within 40 ft. of same is effectively separated therefrom by a non-combustible gastight wall extending from the floor to the ceiling, if any, or to the roof :
- (c) In factories where vehicles are made, assembled, or repaired the chassis and running gear of such vehicles and parts thereof may be sprayed in the open workroom if such workroom is satisfactorily ventilated and no lead paint or silica paint is sprayed, and if such spraying operations do not exceed four hours daily, in periods of not more than fifteen minutes each, with intervals of at least fifteen minutes between such periods :
- (d) Minor finishing operations in any industry may be carried out in the open workroom intermittently for not more than four hours on any day, in periods of not more than fifteen minutes, with intervals of at least fifteen minutes between such periods.

24. Whenever spray painting is carried on in any place other than (1) a booth or (2) the open air with a complete surrounding isolation of at least 15 ft., then either—

- (a) The air in such place shall be changed by natural ventilation, exhaust fan, or other means at least twenty times in each hour; or
- (b) The occupier shall provide a positive pressure helmet for use by each person working in such place.

25. The vehicle or article to be sprayed shall be placed in such position within the booth that the workman using the spray gun will always have the gun between himself and the exhausting fan or appliance. Turntables or other mechanical appliances shall be provided, when necessary, by the occupier to ensure this effect.

26. The ventilation of the workroom in which any booth is erected shall allow of free entrance of the outer air further to ensure that the spraying will be done between the source of entrance air and the exhaust fan.

27. The ventilating-plant of every booth shall be kept running during all spraying operations and for at least five minutes after any spraying operations have ceased.

28. The occupier—

- (a) Shall not allow any smoking;
- (b) Shall not permit any fire, forge, furnace, naked light, flame, or other cause of ignition;
- (c) Shall not allow any motor-vehicle to be moved with its own power nor the engine of a motor-vehicle to be started or set in motion while any spraying process is in operation—

within the spray booths, or within 40 ft. of same unless effectively separated therefrom by a non-combustible gastight wall extending from the floor to the ceiling, if any, or to the roof or by other efficient means.

29. All spray booths and floor areas surrounding booths, fans, exhaust ducts, trunks, and casings shall be thoroughly cleansed once in each week, and the implements used in such cleaning shall be composed of fibre, wood, or non-ferrous metals.

Equipment of Premises and Storage.

30. Where doors are fitted to any room or work-place in which spray painting is done they shall be made to open otherwise than inwards.

31. Neither lead paint nor silica paint shall be stored or kept otherwise than in receptacles on which is conspicuously written in capital letters of not less than twenty-four points face measurement in the case of receptacles having a capacity not exceeding 1 gallon, and seventy-two points face measurement in the case of any other receptacle, the words "This Paint contains Lead" and "This Paint contains Silica" respectively:

Provided that this requirement shall not apply to receptacles—

- (a) Containing lead paint or silica paint in actual use in spray painting; or
- (b) Used for mixing lead paint or silica paint for immediate use.

32. Material having a nitrocellulose or inflammable liquid content shall not be kept otherwise than in accordance with the requirements of the Explosive and Dangerous Goods Act, 1908.

33. Gravity feed containers shall not exceed 10 gallons in capacity and shall be suspended by non-combustible materials.

34. One or more 2-gallon fire-extinguishers of the foam or other approved type shall be maintained in the immediate proximity of each spray booth in which any material having a nitrocellulose or inflammable liquid content is being sprayed. These extinguishers shall be discharged through the nozzle and recharged at least once in every twelve months, and shall at all times be maintained in good working-order.

35. Metal containers, with close-fitting lids, shall be provided for the deposit of cotton waste, cleaning rags, or similar materials which have been in use. Such containers shall at the close of each day's work be removed from the building in which the spray painting operations are carried out.

Provision for Employees.

36. The occupier shall provide and maintain for the use of all persons engaged in, or exposed to, the spraying of lead paint or silica paint suitable overalls and head coverings, which shall be thoroughly washed and cleaned at the occupier's expense at intervals of not more than one week.

37. The occupier shall also provide and maintain in a room set apart for the purpose approved double lockers for the clothing of all persons engaged in, or exposed to, spray painting of lead paint or silica paint.

38. The occupier shall provide and maintain for the use of every person engaged in any spray-painting operation a sufficient quantity of approved material capable of removing paint or spraying mixture from his hands and face.

39. The occupier shall provide for persons employed in the spraying of lead paint or silica paint an adequate supply of hot water for washing purposes and a sufficient supply of towels, suitable nail-brushes, and soap. He shall also provide a suitable supply of drinking-water and drinking-facilities to the satisfaction of the Inspector.

40. The occupier shall, if required by the Inspector, provide and maintain a room with tables and seating accommodation to the satisfaction of the Inspector for workers to take their meals in.

41. All meal-rooms, clothing-lockers, lavatories, and sanitary conveniences shall at all times be kept in a cleanly state.

42. The occupier shall provide approved respirators, and shall maintain the same in an efficient condition for all persons engaged in—

- (a) Any spray-painting process in which lead paint or silica paint is used ;
- (b) Any spray-painting process in which any other material is used which is detrimental to health ;
- (c) Cleansing any booth or any part of the ventilating-plant of any booth ;
- (d) The dry rubbing down or scraping of a surface painted with lead paint or silica paint otherwise than in a place ventilated as prescribed by Regulation 15 hereof or as prescribed by paragraph (a) of Regulation 24 hereof,—

and for all persons otherwise exposed to the lead paint or silica paint or to such other detrimental material.

Miscellaneous.

43. The following substances shall not be used in spray painting : carbon bisulphide, carbon tetrachloride, tetrachlorethane, arsenic or its compounds.

44. Material used in spray painting shall not contain benzol or methyl alcohol in excess of 1 per centum.

45. White lead, or sulphate of lead, shall not be manipulated or used in the preparation of painters' stopping-material, except under an efficient exhaust draught so arranged as to remove the dust produced, as nearly as may be, at its point of origin :

Provided that this requirement shall not apply if the stopping-material is prepared by a worker solely for his own use.

46. When requested by an Inspector, a sample of any material in use or mixed for use in spray painting shall be provided by the occupier, and this shall be taken in the presence of such Inspector who shall forthwith seal such sample and deliver it to the Government Analyst. Should the occupier so desire, a second sample shall at the same time be sealed by the Inspector and handed to the occupier. Delivery of the sample to the Government Analyst may be effected either personally or by registered post.

47. A Health Register containing the names of all persons employed in, or exposed to, spray painting shall be kept, and where any employee is absent from work for three days owing to illness the name, address, age, and date of cessation from work and duration of absence shall be entered by the employer in the Health Register :

Provided that it shall be a sufficient compliance with this rule if particulars of all absences from work of such persons due to illness are entered to the satisfaction of the Inspector in the time and wages book required to be kept pursuant to the Factories Act, 1921-22.

48. The Health Register kept in pursuance of the last preceding regulation or the time and wages book in which the particulars of absences are entered shall, upon demand being made by an Inspector at reasonable times, be produced for examination. All such registers or time and wages books shall be retained by the occupier for five years after the last entry has been made, and shall, upon demand being made by an Inspector at any reasonable time, be produced for examination.

PART III.—DUTIES OF PERSONS EMPLOYED.

49. No person shall introduce, keep, prepare, or partake of any food or drink within a spray booth, nor shall he smoke within the booth, or within 40 ft. of same unless effectively separated therefrom by a non-combustible gastight wall, or other effective means.

50. Spray operators shall not test the spray gun by spraying promiscuously about the workroom or booth, and shall not direct the spray gun to spray on walls of booth.

51. Every person engaged in, or exposed to, the spray painting of lead paint or silica paint shall wear the overalls and head covering prescribed in Regulation 36 hereof, and every person engaged in or exposed to spray painting, or lead paint, or silica paint shall use the double lockers prescribed by Regulation 37 hereof.

52. Respirators as required to be provided by Regulation 42 hereof shall be worn by every person engaged in or in connection with any of the processes referred to in the said Regulation 42, and each respirator shall be cleaned daily.

53. Cotton waste, cleansing-rags, or similar materials which have been in use shall be deposited in the metal containers provided in accordance with Regulation 35 hereof.

54. Every person employed in or exposed to spray painting shall, before partaking of food or leaving the premises, thoroughly cleanse his face and hands and remove the overalls and head covering prescribed in Regulation 36 hereof.

55. All clothing when not in actual use shall be kept in the appropriate part of the double locker provided in accordance with Regulation 37 hereof.

SCHEDULES.

FIRST SCHEDULE.

METHOD OF TREATMENT OF LEAD PAINT FOR THE PURPOSE OF ASCERTAINING THE PERCENTAGE OF DRY COMPOUND OF LEAD PRESENT.

THE material is to be treated with suitable solvents to remove the oil, varnish, and other media, and the residue to be dried at 100 degrees C., and thoroughly mixed. A weighed quantity of this extracted, dried, and mixed material is to be continuously shaken for one hour, at the common temperature, with 1,000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 per centum by weight of hydrogen chloride. This solution is thereafter to be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate is then to be precipitated as lead sulphide and weighed as lead sulphate.

SECOND SCHEDULE.

METHOD OF TREATMENT OF SILICA PAINT FOR THE PURPOSE OF ASCERTAINING THE PERCENTAGE OF FREE SILICA PRESENT.

(1) Take 10 grammes of paint and extract with successive portions of a suitable solvent until the residue is free from oil varnish and other media.

(2) Take 0.5 gramme of dry residue and boil for five minutes with 50 ml. of 20 per centum acetic acid containing 5 grammes of ammonium acetate. Cool, centrifuge, decant the supernatant liquid, and wash the residue with 50 ml. of 20 per centum acetic acid.

(3) Treat the residue with 50 ml. of 1 : 2 hydrochloric acid, boil, cool, centrifuge, decant, and wash with 50 ml. of 1 : 2 hydrochloric acid.

(4) Treat the residue with 25 ml. of concentrated sulphuric acid containing 5 grammes of sodium sulphate. Heat to fuming, cool, centrifuge, decant, and wash with 25 ml. of concentrated sulphuric acid. Decant and wash with 25 ml. of water.

(5) Boil the residue for five minutes with 50 ml. of 10 per centum sodium carbonate, cool, centrifuge, decant, and wash with 50 ml. of 1 : 10 hydrochloric acid.

(6) Transfer residue to platinum dish, evaporate to dryness, ignite, and weigh. (Residue A.)

(7) Treat the residue with 5 ml. of hydrofluoric acid containing 0.5 ml. of concentrated sulphuric acid. Heat on the water bath for one hour, evaporate to dryness over flame, ignite, and weigh. (Residue B.)

Free silica = Residue A minus 2 Residue B.

C. A. JEFFERY,

Clerk of the Executive Council.

Issued under the authority of the Regulations Act, 1936.

Date of notification in *Gazette* : 16th day of May, 1940.

These regulations are administered in the Department of Labour.