

1971. No. 117

[C]

FACTORIES**The Abrasive Wheels Regulations (Northern Ireland) 1971**

REGULATIONS, DATED 16TH APRIL 1971, MADE BY THE MINISTRY OF HEALTH AND SOCIAL SERVICES UNDER THE FACTORIES ACT (NORTHERN IRELAND) 1965.

The Ministry of Health and Social Services for Northern Ireland in exercise of powers conferred by sections 18(3), 75 and 179(3) and (4) of the Factories Act (Northern Ireland) 1965(a) and of all other powers enabling it in that behalf, hereby makes the following Regulations of which all, with the exception of Regulation 19, are special Regulations:—

Citation, commencement and revocation

1.—(1) These Regulations may be cited as the Abrasive Wheels Regulations (Northern Ireland) 1971 and shall come into operation on 17th April 1972.

(2) Regulation 13 of the Grinding of Metals Special Regulations (Northern Ireland) 1950(b) is hereby revoked.

Interpretation

2. In these Regulations—

“abrasive wheel” means—

- (a) a wheel, cylinder, disc or cone which, whether or not any other material is comprised therein, consists of abrasive particles held together by mineral, metallic or organic bonds whether natural or artificial;
- (b) a mounted wheel or point and a wheel or disc having in either case separate segments of abrasive material;
- (c) a wheel or disc made in either case of metal, wood, cloth, felt, rubber or paper and having any surface consisting wholly or partly of abrasive material; and
- (d) a wheel, disc or saw to any surface of any of which is attached a rim or segments consisting in either case of diamond abrasive particles, and which is, or is intended to be, power driven and which is for use in any grinding or cutting operation;

“approved” means approved for the time being by certificate of the Chief Inspector;

“factory” includes any place to which these Regulations apply;

(a) 1965. c. 20 (N.I.).

(b) S.R. & O. (N.I.) 1950, No. 203.

“mounted wheel or point” means a wheel or point consisting in either case of abrasive particles held together by mineral, metallic or organic bonds whether natural or artificial and securely and permanently mounted on the end of a mandrel or quill;

“overhang” means in relation to a mounted wheel or point that part of the mandrel or quill which is exposed between the collet in which the mandrel or quill is held and the part of the abrasive material nearest to the said collet;

“the Act” means the Factories Act (Northern Ireland) 1965.

Application and operation of Regulations

3.—(1) These Regulations, other than Regulation 19, shall apply to any abrasive wheel used for any grinding or cutting operation in factories and any premises, places, processes, operations and works to which the provisions of Part IV of the Act with respect to special Regulations for safety and health are applied by section 121 (which relates to electrical stations), sections 122 (which relates to institutions), section 123 (which relates to certain dock premises and certain warehouses), section 124 (which relates to ships) and section 125 (which relates to building operations and works of engineering construction).

(2) In relation to abrasive wheels, the provisions of these Regulations are in substitution for the provisions of section 15(1) of the Act and accordingly the provisions of that subsection shall not apply in relation to any abrasive wheel.

(3) Regulation 19 shall apply to any abrasive wheel (other than an abrasive wheel of any of the kinds referred to in Regulation 4(1), (4) and (6)) and to any machine of the kind referred to in Regulation 7(1).

(4) Regulation 42 of the Construction (General Provisions) Regulations (Northern Ireland) 1963(c) shall not apply in relation to any abrasive wheel.

Exceptions

4.—(1) Regulations 6, 7, 11(a) and (b), 12 and 19 shall not apply to any abrasive wheel manufactured of metal, wood, cloth, felt, rubber or paper and having any surface consisting wholly or partly of abrasive material.

(2) Regulations 11(a) and (b) and 12 shall not apply to any abrasive wheel which consists wholly of abrasive particles held together by natural bonds.

(3) Regulation 6 shall not apply to any abrasive wheel having separate segments of abrasive material.

(4) Regulations 6, 7, 10(1), 11, 12, 18 and 19 shall not apply to any abrasive wheel which does not exceed 235 millimetres in diameter, is manufactured of cloth, felt, rubber or paper and has any surface consisting wholly or partly of abrasive material, when that abrasive wheel is used, or in the case of Regulation 19, is for use, in a portable machine.

(5) Regulations 7, 10(1), 11 and 12 shall not apply to any abrasive wheel when it is used for the grinding of glass.

(6) Regulations 6, 7, 12 and 19 shall not apply to any wheel, disc or saw being a wheel, disc or saw of a kind specified in Regulation 2(d).

Exemptions

5. The Chief Inspector may (subject to such conditions, if any, as may be specified therein) by certificate in writing (which he may in his discretion revoke at any time) exempt from all or any of the requirements of these Regulations—

- (a) any particular abrasive wheel or any type of abrasive wheel; or
- (b) any machine or part of a machine or any class or description of machines or parts of machines; or
- (c) any operation or process or any class or description of operations or processes,

if he is satisfied that the requirements in respect of which the exemption is granted are impracticable or inappropriate or are not necessary for the protection of persons employed.

Speeds of abrasive wheels

6.—(1) No abrasive wheel having a diameter of more than 55 millimetres shall be taken into use in any factory for the first time in that factory after the coming into operation of these Regulations unless the abrasive wheel or its washer is clearly marked with the maximum permissible speed in revolutions per minute specified by the manufacturer for that abrasive wheel.

(2) No abrasive wheel having a diameter of 55 millimetres or less shall be taken into use in any factory for the first time in that factory after the coming into operation of these Regulations unless there is kept permanently fixed in the room in which grinding is ordinarily carried out with that abrasive wheel a notice clearly stating the maximum permissible speed in revolutions per minute specified by the manufacturer for that abrasive wheel or for abrasive wheels of the class to which that abrasive wheel belongs and, in the case of mounted wheels and points, the overhang permissible at that speed:

Provided that when grinding with such an abrasive wheel is not ordinarily carried out in any one room the notice shall be kept posted at a place and in a position where it may easily be read by persons employed in grinding with that abrasive wheel.

(3) No abrasive wheel shall be operated at a speed in excess of the maximum permissible speed in revolutions per minute specified in accordance with the provisions of this Regulation for that abrasive wheel:

Provided that where the diameter of an abrasive wheel has been reduced its maximum permissible speed may be increased to that speed which bears the same proportion to the maximum permissible speed as the original diameter of the abrasive wheel bears to its reduced diameter.

Speeds of spindles

7.—(1) There shall be securely affixed to every power driven machine having any spindle on which an abrasive wheel is, or is intended to be, mounted a notice specifying—

- (a) in the case of each such spindle (other than a spindle to which subparagraph (b) or (c) applies) its maximum working speed;
- (b) in the case of any such spindle for which there are provided arrangements for operating the spindle at more than one specific working speed, each such speed; and

(c) in the case of any such spindle for which there are provided arrangements for operating the spindle at an infinite number of working speeds within a specified range, the maximum and minimum working speeds of the spindle.

(2) No such spindle shall while an abrasive wheel is mounted on it be operated at a speed in excess of the maximum working speed specified in accordance with the provisions of this Regulation for that spindle.

(3) The occupier shall, when so required by an inspector, provide him with all such facilities and information as are necessary to enable him to determine the working speed of any spindle, shaft, pulley, or other appliance, which is used to operate an abrasive wheel.

(4) The speed of every air driven spindle on which an abrasive wheel is mounted shall be controlled by a governor or other device so that the speed of the spindle does not at any time exceed the maximum working speed specified for that spindle in accordance with paragraph (1).

(5) Every governor and other device used for controlling the speed of an air driven spindle on which an abrasive wheel is mounted shall be properly maintained.

Mounting

8. Every abrasive wheel shall be properly mounted.

Training and appointment of persons to mount abrasive wheels

9.—(1) Except as provided in paragraphs (4) and (5), no person shall mount any abrasive wheel unless he—

(a) has been trained in accordance with the Schedule;

(b) is competent to carry out that duty; and

(c) has been appointed by the occupier of the factory to carry out that duty in respect of the class or description of abrasive wheel to which the abrasive wheel belongs; and every such appointment shall be made by a signed and dated entry in, or signed and dated certificate attached to, a register kept for the purposes of this Regulation.

(2) Particulars of the class or description of abrasive wheel to which any appointment made in accordance with paragraph (1)(c) relates shall be set out in the entry or certificate (as the case may be) of the appointment. Every person appointed under paragraph (1)(c) shall be furnished by the occupier with a copy of the entry or certificate of his appointment and of any entry revoking the same.

(3) Any appointment made under paragraph 1(c) may be revoked by the occupier at any time by signed and dated entry in the register.

(4) Paragraph (1) shall not apply to a person who is undergoing training in the work of mounting abrasive wheels and working under the immediate supervision of a competent person appointed under paragraph (1).

(5) Paragraph (1) shall not apply to any person who mounts any mounted wheel or point.

Provision of guards

10.—(1) Except as provided in paragraph (2) a guard shall be provided and kept in position at every abrasive wheel in motion.

(2) Paragraph (1) shall not apply to an abrasive wheel where, by reason of the work being done thereat, or of the work which is ordinarily done thereat (or, in the case of a new wheel, is intended ordinarily to be done thereat), or the nature of the wheel, the use of a guard is impracticable.

Construction, maintenance, etc., of guards

11. Every guard provided in pursuance of these Regulations shall—

- (a) so far as is reasonably practicable, be of such a design and so constructed as to contain every part of the abrasive wheel in the event of any fracture of the abrasive wheel or of any part thereof occurring while the abrasive wheel is in motion;
- (b) be properly maintained and so secured as to prevent its displacement in the event of any such fracture as aforesaid; and
- (c) enclose the whole of the abrasive wheel except such part thereof as is necessarily exposed for the purpose of any work being done at that abrasive wheel or, where a guard which is not adjustable is used, for the purpose of the work which is ordinarily done thereat (or, in the case of a new abrasive wheel, is intended ordinarily to be done thereat).

Tapered wheels and protection flanges

12.—(1) Where the work which is ordinarily done (or, in the case of a new abrasive wheel, is intended ordinarily to be done) at any abrasive wheel requires that the exposed arc of the wheel shall exceed 180 degrees measured at the centre of the wheel then, where practicable, the wheel used shall be tapered from its centre towards its periphery by at least 6 per cent. on each side and shall be mounted between suitable protection flanges.

(2) Protection flanges between which any abrasive wheel is mounted in accordance with this Regulation shall be of substantial construction and properly maintained and shall have the same degree of taper as the wheel and shall—

- (a) in the case of a wheel of 300 millimetres or less in diameter, be of a diameter equal to at least half the diameter of the wheel;
- (b) in the case of a wheel of more than 300 millimetres but not exceeding 750 millimetres in diameter, be of a diameter equal to at least the diameter of the wheel less 150 millimetres; and
- (c) in the case of a wheel of more than 750 millimetres in diameter, be of a diameter equal to at least the diameter of the wheel less 200 millimetres.

Selection of abrasive wheels

13. All practicable steps shall be taken to ensure that any abrasive wheel used is suitable for the work for which it is used to the extent necessary to reduce the risk of injury to persons employed.

Machine controls

14. No abrasive wheel shall be used in a machine unless the said machine is provided with an efficient device or efficient devices for starting, and cutting off, the power to the machine and the control or controls of the device or devices shall be in such a position and of such design and construction as to be readily and conveniently operated by the person operating the machine.

Rests

15.—(1) Where at any abrasive wheel there is a rest for supporting a work-piece that rest shall at all times while the wheel is in motion be—

- (a) properly secured; and
- (b) adjusted so as to be as close as practicable to the exposed part of the abrasive wheel.

(2) Every such rest shall be of substantial construction and properly maintained.

Cautionary notice

16. The approved cautionary notice as to the dangers arising from the use of abrasive wheels and the precautions to be observed shall be affixed in every room in which grinding or cutting by means of abrasive wheels is ordinarily carried out, or, where such grinding or cutting is not ordinarily carried out in a room, at a place and in such a position where it may be easily read by persons employed in grinding or cutting.

Condition of floors

17.—(1) The floor immediately surrounding every fixed machine on which an abrasive wheel is, or is intended to be, mounted shall be maintained in good and even condition and shall, so far as practicable, be kept clear of loose material and prevented from becoming slippery.

(2) All reasonably practicable steps shall be taken to ensure that the floor of any room or place in which any portable machine on which an abrasive wheel is mounted is used is in good and even condition, is kept clear of loose material and is prevented from becoming slippery.

Duties of employed persons

18.—(1) No employed person using an abrasive wheel shall wilfully misuse or remove any guard, or wilfully misuse any protection flanges or other appliances provided in pursuance of these Regulations or any rest for a work-piece.

(2) Every employed person shall make full and proper use of guards, protection flanges and other appliances provided in pursuance of these Regulations and of rests for workpieces and if he discovers any defect in the same shall forthwith report such defect to the occupier, manager or other appropriate person.

Sale or hire of machinery

19. The provisions of section 18(2) of the Act shall extend to—

- (a) any abrasive wheel to which this Regulation applies having a diameter of more than 55 millimetres which is for use in a factory and which is not marked in the manner required by Regulation 6(1); and
- (b) any machine supplied with its prime mover as a unit which is for use in a factory and is of a kind specified in Regulation 7(1) which does not comply with the requirements of that paragraph.

Sealed with the Official Seal of the Ministry of Health and Social Services for Northern Ireland this 16th day of April 1971.

(L.S.)

W. G. H. Quigley,
Deputy Secretary.

SCHEDULE

Regulation 9

Particulars of Training required by Regulation 9(1)

The training shall include suitable and sufficient instruction in the following matters in relation to each class or description of abrasive wheel in respect of which it is proposed to appoint the person being trained—

- (1) approved advisory literature relating to the mounting of abrasive wheels;
- (2) hazards arising from the use of abrasive wheels and precautions which should be observed;
- (3) methods of marking abrasive wheels as to type and speed;
- (4) methods of storing, handling and transporting abrasive wheels;
- (5) methods of inspecting and testing abrasive wheels to check for damage;
- (6) the functions of all components used with abrasive wheels, including flanges, washers, bushes and nuts used in mounting and including knowledge of the correct and incorrect methods of assembling all components and correct balancing of abrasive wheels;
- (7) the proper method of dressing an abrasive wheel;
- (8) the adjustment of the rest of an abrasive wheel;
- (9) the requirements of these Regulations.

EXPLANATORY NOTE

(This Note is not part of the Regulations but is intended to indicate their general purport.)

These Regulations impose requirements in relation to abrasive wheels used in factories and in other premises and places to which the Factories Act (Northern Ireland) 1965 applies. As respects abrasive wheels, the Regulations are in substitution for section 15(1) of the Factories Act (Northern Ireland) 1965, and for Regulation 42 of the Construction (General Provisions) Regulations (Northern Ireland) 1963 (all of which require that dangerous parts of machinery shall be securely fenced).

The Regulations provide for the maximum permissible speeds of abrasive wheels to be specified and for the control of such speeds; for the proper mounting of abrasive wheels; for the training and appointment of persons permitted to mount abrasive wheels; for the provision and maintenance of guards and protection flanges for abrasive wheels; for the controls to be provided for machines in which abrasive wheels are used; for the securing and adjustment of rests for workpieces at abrasive wheels; for the affixing of cautionary notices as to the dangers from the use of abrasive wheels and the precautions to be observed; and for the condition of floors where there are machines on which abrasive wheels are mounted.

The Regulations also prohibit the sale or letting on hire for use in a factory of certain abrasive wheels which are not marked with their maximum permissible speeds and of certain machines on which abrasive wheels are or are intended to be mounted to which the notice as to working speeds is not affixed as required by the Regulations.