SAFETY, HEALTH AND WELFARE AT WORK (GENERAL APPLICATION) (AMENDMENT) REGULATIONS 201?

I, Richard Bruton, Minister for Jobs, Enterprise and Innovation, in exercise of the powers conferred on me by section 58 of the Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005) as adapted by the Enterprise, Trade and Employment (Alteration of Name of Department and Title of Minister) Order 2011 (S.I. No. 245 of 2011), and after consultation with the Health and Safety Authority, hereby make the following regulations:

1. (1) These Regulations may be cited as the Safety, Health and Welfare at Work (General Application) (Amendment) Regulations 201?.

(2) In these Regulations "Principal Regulations" means the Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299 of 2007), amended by the Safety, Health and Welfare at Work (General Application) (Amendment) Regulations 2007 (S.I. No. 732 of 2007) and the Safety, Health and Welfare at Work (General Application) (Amendment) Regulations 2010 (S.I. No. 176 of 2010) (plus others if they happen in the meantime i.e. 2011Regs.)

(3) The Principal Regulations and these Regulations may be cited together as the Safety, Health and Welfare at Work (General Application) Regulations 2007 to 201?.

(4) These Regulations come into operation on ……. 201?.

2. The following are revoked:

(a) Factories (Woodworking Machinery) Regulations, 1972. (S.I. No. 203 of 1972);

(b) Factories (Abrasive Blasting Of Surfaces) Regulations, 1974. (S.I. No. 357 of 1974);

(c) Safety in Industry (Abrasive Wheels) Regulations, 1982. (S.I. No. 30 of 1982).

3. The Principal Regulations are amended as follows —

(a) by inserting ……., the following:

“PART 11

WOODWORKING MACHINERY

New table of regulations

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Interpretation for Part 11.
195. In this Part—

"band sawing machine" means a sawing machine designed to be fitted with a blade in the form of a continuous band or strip the cutting portion of which runs in a vertical direction, but does not include a log band sawing machine or a band re-sawing machine ;

"circular sawing machine" means a sawing machine comprising a saw bench (including a rack bench) with a spindle situated below the machine table to which a circular saw blade can be fitted, for the purpose of dividing material into separate parts, but does not include a multiple rip sawing machine, a straight line edging machine or any sawing machine in the operation of which the blade is moved towards the material which is being cut;

“CNC machine” means a machine where automatic control of the process is performed by a device that makes use of numerical data introduced while the operation is in progress

"combined machine" has the meaning assigned to it b y this Regulation ;

"cutters" means cutters forming part of a woodworking machine to which the Regulations in this Part apply and includes saw blades, chain cutters, knives, boring tools, detachable cutters and solid cutters ;

“harmonised standard” means a non-binding technical specification adopted by a standardisation body, namely the European Committee for Standardisation (CEN), the European Committee for Electrotechnical Standardisation (CENELEC) or the European Telecommunications Standards Institute (ETSI), on the basis of a remit issued by the Commission in accordance with the procedures laid down in Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 [2] laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society services, as last amended by the 2003 Act of Accession;

“high-risk woodworking machinery” includes any hand-fed woodworking machinery, any sawing machine fitted with a circular blade or saw band, and planing machines when used for surfacing.

"machine table" includes, in relation to a circular sawing machine, any frame which supports the material being cut;

"planing machine" means a machine for surfacing or for thicknessing or a combined machine for both those operations (in the Regulations in this Part referred to as a combined machine) but does not include a multi-cutter moulding machine having two or more cutter spindles;

"squared stock" means material having a rectangular (including square) cross section the dimensions of which remain substantially constant throughout the length of the material;

"surfacing" means planing or smoothing the surface of material by passing it over cutters and includes chamfering and bevelling but does not include moulding, tenoning, rebating or recessing;

"vertical spindle moulding machine" includes a high-speed routing machine; and

"woodworking machine" means any machine (including a portable machine) of a kind specified in Schedule 13 which is designed or intended for use on all or any one or more of the following, namely, wood, cork or fibre board and material composed partly of any of those materials, and which is in operation at a place of work.

Application of Part 11.
196. (1) This Part applies to the use of woodworking machinery at a place of work.

(2) The minimum requirements laid down in the Regulations in this Part apply to all machines except in the case of machines to which a specific harmonised standard, adopted by the European Commission applies.

Space around Machines.
197. An employer shall ensure that -

(a) sufficient clear and unobstructed space to enable, so far as is practicable, the work being done at the machine to be done without risk of injury to any person is provided around every woodworking machine while being used.

(b) without prejudice to the generality of paragraph (a) of this Regulation, effective measures are taken to ensure that materials or articles around a woodworking machine are not placed, stacked, or stored in a manner likely to cause danger and that every place at which a person works at a woodworking machine is made and kept safe for the person.

Training, instruction and information.
198. Without prejudice to the generality of Section 10 of the Act an employer shall ensure that –

(a) an employee is not employed on any kind of work at a woodworking machine unless they have previously been—

(i) sufficiently trained at machines of the class to which the machine belongs in the kind of work on which he is to be employed, and

(ii) sufficiently instructed in accordance with subparagraph (b) of this regulation,

unless the employee is working under the direct supervision of a person who has a thorough knowledge and experience of the working of the machine;

(b) an employee, while being trained to work at a woodworking machine, is fully and carefully instructed:

(i) as to the dangers arising in connection with such machine, the precautions to be observed, and the requirements of the Regulations in this Part which apply to the machine and,

(ii) in the case that the person is being trained to operate the machine, in the method of using the guards, devices and appliances required to be provided by the Regulations in this Part, and in particular, they are provided with information on the use of the machine, including where relevant:

(I) the speed, range, type and dimensions of tools suitable for the machine;
(II) any limitation on the cutting speeds of the machine, particular operations or size and material of any workpiece;
(III) procedures relating to the repair or replacement of any guard or protection device;
(IV) the availability, suitability and use of any additional protection device or protection appliance;
(V) the correct procedures to be followed for setting and adjusting operations;
(VI) safe methods of handling tools;
(VII) correct procedures for start-up and shutdown, isolation and how to discharge any residual energy;
(VIII) procedures for cleaning;
(IX) procedures for adjusting any guard, tool, clamp or other part of a machine;
(X) in the case of CNC machines, programming;

(c) young persons are not allowed to operate any high-risk woodworking machinery, unless for the purposes of training and they are under the supervision of a person who has a thorough knowledge and experience of the working of the machine.

Guarding of woodworking machines

199. (1) An employer shall ensure that –

(a) an employee is not required to use any woodworking machine unless the guards, devices or other safeguards provided pursuant to the Regulations in this Part are in proper position;

(b) effective measures are taken to ensure that—

(i) all guards, devices and other such safeguards, and

(ii) all spikes, push-sticks, push-blocks, jigs, holders and back stops,

provided pursuant to the Regulations in this Part are properly maintained;

(c) an employee operating a machine—

(i) uses and keeps properly adjusted the guards and devices provided in accordance with the Regulations in this Part and all safeguards as are mentioned in paragraph (3) of this Regulation and

(ii) uses the spikes, push-sticks, push-blocks, jigs, holders and back stops provided in accordance with this Regulation,

provided that (but subject to the proviso in sub-paragraph (2) (c) of this Regulation) the foregoing provisions of this paragraph shall not apply whenever, because of the nature of the work being done, to use the said guards, devices or other safeguards would be impracticable.

(2) Without prejudice to Regulation 33 and subject to Regulations 199 (3) and 207 (d) and (e), an employer shall ensure that –

(a) every guard provided in pursuance of this regulation shall be of suitable design, good construction, sound material and adequate strength for the purpose for which it is intended;

(b) the cutters on every woodworking machine are enclosed by a guard or guards to the greatest extent that is practicable, having regard to the work being done, but the provisions of this paragraph shall not apply if the cutters are positioned so as to be as safe, as regards any person employed as they would be if they were so enclosed;

(c) at all times while cutters are in motion, the relevant guards and devices required by this Regulation and all such safeguards (being safeguards other than those specified in this Regulation) as are mentioned in Regulation 199 (3) hereof are kept constantly both in position and properly secured and adjusted except when, and only to the extent to which, because of the nature of the work being done, the use of any such guard, device or safeguard is rendered impracticable: provided that the foregoing exception shall not apply to the use of any guard required by Regulation 203(i), 206 (1) (a) or (d);

(d) the guarding at a machine provides a sufficient degree of protection in the event of the cutter or tool disintegrating or the cutter being ejected;

(e) where guarding is achieved by means of an outer fence of the perimeter type, any hinged, sliding or moveable guards forming a part of that fence or enclosure should be interlocked so that the machine will not run unless they are effectively closed.

(3) Regulations 199 (2) (a) and (b), 203 (a), (b) (c) and (d), 204, 205, 206 (1) (b) (iii), (d), (f) and (g), and 207 (e) shall not apply to any woodworking machine in respect of which

safeguards, other than those specified in these Regulations, are provided which render the machine as safe as it would be if the provisions of these Regulations were complied with.

Maintenance of Woodworking Machines

200. An employer shall ensure that –

(a) a person shall not examine, repair, clean, oil or grease any woodworking machine while it is in motion if the examination, repairing, cleaning, oiling or greasing thereof would expose them to risk of injury from any moving part either of the woodworking machine or other adjacent machinery;

(b) a person shall not make any adjustment to any part of a woodworking machine or to any guard thereon, while the cutters are in motion, unless the adjustment can be made without danger;

(c) the blade of a circular sawing machine or of a band re-sawing machine or of a band mill is not cleaned by scraping while the blade is in motion.

Braking Devices

201. An employer shall ensure that a woodworking machine is provided with braking devices except where –

(i) machines have a rundown time of 10 seconds or less;

(ii) the effect of braking could be detrimental to the integrity of the machinery;

(iii) machines have been built in conformity with a harmonised European standard (and a reference to the standard has been published in the Official Journal of the European Communities), where the standard does not require braking devices.

Exhaust extraction

202. Without prejudice to Section 8 (2) (d) of the Act an employer shall ensure that effective measures are taken by the provision of suitable exhaust appliances or other suitable means for collecting and discharging into a suitable receptacle or place any substantial quantity of dust, chips, shavings, or other waste materials given off in the operation of any woodworking machine.

Circular Sawing machines

203. Subject to Regulation 199 (3) an employer shall ensure that—

(a) the part of the saw blade of a circular sawing machine which is below the machine table shall be securely fenced;

(b) every circular sawing machine is provided with a riving knife which is securely fixed by means of a suitable device situated below the machine table, which is behind

and in a direct line with the saw blade, has a smooth surface, is strong, rigid and easily adjustable and in addition fulfills the following conditions, namely:

(*i*) the edge of the knife nearer the saw blade forms an arc of a circle having a radius not exceeding the radius of the largest saw blade with which the saw bench is designed to be used,

(*ii*) the knife is capable of being adjusted, and is kept adjusted, so that—

(I) it is as close as practicable to the saw blade, having regard to the nature of the work being done, and

(II) at the level of the machine table the distance between the edge of the knife nearer to the saw blade and the teeth of the saw blade does not exceed 12 millimetres,

(*iii*) for a blade of a diameter of less than 600 millimetres, the knife extends upwards from the machine table to a height above the surface of the machine table which is not more than 25 millimetres below the highest point of the saw blade, and for a saw blade of a diameter of 600 millimetres or over, the knife extends upwards from the machine table to a height of at least 225 millimetres above the machine table; and

(*iv*) in the case of a parallel plate saw blade, the knife is thicker than the plate of the saw blade;

(c) without prejudice to the requirements of Regulation 203 (i), the part of the saw blade of every circular sawing machine which is above the machine table is guarded by a suitable and easily adjustable guard capable of being moved horizontally and vertically and parallel to the saw blade. The guard shall have along the whole of its length a flange of adequate depth on the side of the saw blade furthest from the fence. The guard shall be kept adjusted so that the flange referred to extends beyond 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;

(d) where a guard provided pursuant to paragraph (c) of this Regulation, it is fitted with an adjustable front extension piece which shall have along the whole of its length a flange of adequate depth on the side further from the fence and the extension piece shall be kept adjusted so that the flange referred to extends beyond the roots of the teeth of the saw blade;

(e) in the case of a circular sawing machine the spindle of which is not capable of being operated at more than one working speed, no saw blade is used therewith for dividing material into separate parts which has a diameter of less than six-tenths of the diameter of the largest saw blade with which the saw bench is designed to be used;

(f) in the case of a circular sawing machine which has arrangements for the spindle to operate at more than one working speed, no saw blade is used therewith for dividing material into separate parts which has a diameter of less than six-tenths of the

diameter of the largest saw blade which can properly be used at the fastest speed of the spindle at that saw bench;

(g) a notice specifying the diameter of the smallest saw blade which may be used in the machine in compliance with paragraph (e) or (f), as may be appropriate, of this Regulation, is securely affixed to every circular sawing machine;

(h) a circular sawing machine is not used for work which involves feeding a workpiece to the saw blade by hand and starting a cut otherwise than at the end or outer edge of a surface of the workpiece;

(i) a circular sawing machine is not used for cutting any rebate, tenon, mould or groove, unless that part of the saw blade or other cutter which is above the machine table is effectively guarded;

(j) a circular sawing machine is not used for cross-cutting logs, branches or any material intended for firewood unless the material being cut is firmly held by a gripping device securely fixed to a travelling table;

(k) a suitable push-stick is provided and kept available for use at every circular sawing machine when fed by hand;

(l) except where the distance between a circular saw blade and its fence is so great, or the method of feeding material to the saw blade is such that the use of a push-stick can safely be dispensed with, push-sticks shall be used—

(*i*) to exert feeding pressure on the material between the saw blade and the fence throughout any cut of 300 millimetres or less in length,

(*ii*) to exert feeding pressure on the material between the saw blade and the fence during the last 300 millimetres of any cut of more than 300 millimetres in length, and

(*ii*) to remove from between the saw blade and the fence pieces of material which have been cut;

(m) where any person (other than the operator) is employed at a circular sawing machine in removing material which has been cut, -

(i) that person does not for that purpose stand elsewhere than at the delivery end of the machine,

(ii) the machine table is constructed, or other arrangements are made by suitably extending the table, to ensure that the distance between the delivery end of the table, over the whole of its width together with any extension thereof, and the up-running part of the saw blade is not less than 1,200 millimetres.

Multiple Rip Sawing Machines and Straight Line Edging Machines.

204. Subject to Regulation 199 (3) an employer shall ensure that -

(a) every multiple rip sawing machine and straight line edging machine has provided on the operator's side of the in-feed pressure rollers an effective device which is designed and constructed to contain, as far as practicable, any material accidentally ejected by the machine, and every such device extends for not less than the full width of the said pressure rollers;

(b) subject as aforesaid, every such multiple rip sawing machine and straight line edging machine on which the saw spindle is mounted above the machine table is, in addition to the device mentioned in paragraph (a) of this Regulation, fitted on the side remote from the fence with a suitable guard, which extends from the edge of the said device along a line parallel to the blade of the saw at least 300 millimetres towards the axis of the saw and is of such a design, and so constructed, as to contain, as far as practicable, any material accidentally ejected from the machine.

Band Sawing Machines.

205. Subject to Regulation 199 (3) of these Regulations, an employer shall ensure that –

(a) the saw wheels of every band sawing machine and the whole of the blade of every such machine, other than that part of the blade which runs downwards between the top wheel and the machine table, is enclosed by a guard or guards of substantial construction;

(b) subject as aforesaid, that part of the blade of every band sawing machine which is above the friction disc or rollers and below the top wheel is guarded by a frontal plate which is as close as is practicable to the saw blade and has at least one flange at right angles to the plate and extending behind the saw blade.

Planing Machines.

206. (1) An employer shall ensure that –

(a) a planing machine shall not be used for cutting any rebate, recess, tenon or mould unless the cutter is effectively guarded;

(b) every planing machine for surfacing is -

(i) fitted with a cylindrical cutter block,

(ii) designed and constructed so as to be capable of adjustment whereby—

(I) the clearances between the cutters and the front edge of the delivery table, and

(II) the gap between the feed table and the delivery table,

are as small as practicable, having regard to the operation being performed, and a planing machine which is not so adjusted is not used for surfacing;

(iii) subject to Regulation 199 (3), provided with a bridge guard which is –

(I) strong and rigid, has a length not less than the full length of the cutter block and a width not less than the diameter of the cutter block and is constructed so as to be capable of easy adjustment in both a vertical and horizontal direction, and

(II) mounted on the machine in a position which is approximately central over the axis of the cutter block and shall be constructed so as to prevent its being accidentally displaced from that position;

(c) where a planing machine is being used for surfacing, subject to paragraph (e) of this Regulation -

(i) all practicable steps are taken to ensure that the bridge guard provided in pursuance of subparagraph (b)(iii) of this Regulation is kept properly adjusted, so as to avoid injury to persons,

(ii) subject to subparagraph (*iv*) of this paragraph, where the machine is being used to machine a face surface of squared stock the bridge guard is kept adjusted so that,

(I) the distance between the end of the guard and the fence does not exceed 10 millimetres, and

(II) the underside of the guard is not more than 10 millimetres above the upper surface of the material;

(iii) subject to subparagraph (c) (*iv*) of this Regulation, where the machine is being used to machine an edge surface of squared stock the bridge guard is kept adjusted so that,

(I) the end of the guard is at a point not more than 10 millimetres from the surface of the said material which is further from the fence, and

(II) the underside of the guard is not more than 10 millimetres above the surface of the feed table;

(iv) where both a face surface and an edge of squared stock are being machined, one operation immediately following the other, the bridge guard is kept so that,

(I) when a face surface is being machined the underside of the guard is not more than 10 millimetres above the upper surface of the material, and

(II) when an edge surface is being machined, the end of the guard is at a point not more than 10 millimetres from the surface of the squared stock which is further from the fence;

(v) where the machining of one or more adjoining surfaces of squared stock of square cross section is being carried out, the bridge guard may be kept adjusted in accordance with the requirements either of subparagraph (c)(ii) or subparagraph (*c*)(iii) of this paragraph;

(d) subject to Regulation 199 (3), in addition to being provided with a bridge guard in accordance with paragraph (b) (iii) of these Regulations, every planing machine for surfacing is provided with a strong, effective and easily adjustable guard for that part of the cutter block which is on the side of the fence most distant from the bridge guard;

(e) where a face surface is being planed or smoothed on a planing machine and by reason of the shortness of the material work cannot be done with the bridge guard adjusted in accordance with this Regulation, a suitable push-block having suitable hand-holds which afford the operator a firm grip is provided and used;

(f) subject to Regulation 199 (3) of these Regulations, that part of the cutter block of a combined machine which is exposed in the table gap is effectively guarded whenever the machine is used for thicknessing;

(g) subject to Regulation 199 (3) of these Regulations, every planing machine used for thicknessing is provided on the operator's side of the feed roller with a device to restrain, so far as practicable, any workpiece accidentally ejected by the machine, and every such device is properly designed and constructed.

(2) In this regulation, in relation to squared stock—

"edge" means either of the surfaces which are the narrower surfaces ;

"face" means either of the surfaces which are the wider surfaces ; and

"surfaces" do not include cross-sections.

Vertical Spindle Moulding Machines.

207. An employer shall ensure that –

(a) every cutter and every cutter block of a vertical spindle moulding machine is of good construction, sound material and properly maintained;

(b) every detachable cutter for any such machine is so mounted in or on the cutter block or spindle so as to prevent it, as far as practicable, from becoming accidentally detached from the machine;

(c) where straight fences are being used for the purposes of the work being done at a vertical spindle moulding machine, the gap between the fences is reduced as far as practicable either by a false fence or otherwise;

(d) subject to paragraph (f) of this Regulation, where, by reason of the nature of the work being done at a vertical spindle moulding machine, it is impracticable to provide in accordance with Regulation 199 (2) (a) and (b) a guard enclosing the cutters of the said machine so that they are effectively guarded, but it is practicable to provide, in substitution for the guard required to be provided by the said Regulation 199(2)(a) and (b) a jig or holder of such design and constructed so as to hold firmly any material being machined and having suitable handholds which will afford the operator a firm grip, the machine is not used unless such a jig or holder is provided;

(e) subject to Regulation 199 (3), every guard provided in accordance with Regulation 199 (2) (a) and (b) for the cutters of any vertical spindle moulding machine is of such design and constructed so as to contain, so far as reasonably practicable, any part of the cutters or their fixing appliances and also any part thereof should it be ejected;

(f) where the work being done at a vertical spindle moulding machine is work in which the cutting of the material being machined commences otherwise than at the end of a surface of the material and it is impracticable to provide a jig or holder in accordance with paragraph (d) of this Regulation, the trailing end of the material is, if practicable, supported by a suitable backstop to prevent the material being thrown back when the cutters first make contact with it;

(g) no work is done on a vertical spindle moulding machine, being work in which—

(i) the cutting of the material being machined commences otherwise than at the end of a surface of the material, and

(ii) during the progress of the cutting the material is moved in the same direction as the movement of the cutters,

unless a jig or holder provided in accordance with paragraph (d) of this Regulation is being used;

(h) where the nature of the work being done on a vertical spindle moulding machine is such that the use of a suitable spike or push-stick would enable the work to be carried on without unnecessary risk, such a spike or push-stick shall be provided and kept available for use;

(i) where the motor driving a vertical spindle moulding machine (other than a high-speed routing machine) is designed to operate at two working speeds, the device controlling the speed of the motor is arranged so that the motor cannot run at the higher of the speeds, without first running at the lower of the speeds.

SCHEDULE. 13

WOODWORKING MACHINES.

1. Any sawing machine designed to be fitted with one or more circular blades.

2. Any sawing machine designed to be fitted with a blade in the form of a continuous band or strip.

3. Automatic and semi-automatic lathes.

4. Boring machines.

5. Chain sawing machines.

6. Grooving machines.

7. Mortising machines.

8. Multi-cutter moulding machines having two or more cutter spindles.

9. Planing machines.

10. Trenching machines.

11. Tenoning machines.

12. Vertical spindle moulding machines.

PART 12

ABRASIVE WHEELS

Table of Regulations

Interpretation for Part 12.
208. In this part, unless the context otherwise requires—

"abrasive wheel" means—

(*a*) a wheel, cylinder, disc or cone which, whether or not any other material is comprised in it, 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, or

(*d*) a wheel, disc or saw, to any surface of which is attached a rim or segments consisting of diamond abrasive particles,

which is, or is intended to be, power-driven and is for use in any grinding or cutting operation;

"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", in relation to a mounted wheel or point, means 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 collet.

Application of Part 12.

209. (1) This Part applies to any place of work where an abrasive wheel is used for any grinding or cutting operation.

(2) (a) Regulations 211, 214 (b) (i) and (ii), (c) and (d) do not apply to an abrasive wheel manufactured of metal, wood, cloth, felt, rubber or paper and having any surface consisting wholly or partly of abrasive material.

(b) Regulations 214 (b) (i) and (ii), (c) and (d) do not apply to an abrasive wheel consisting wholly of abrasive particles held together by natural bonds.

(c) Regulations 211 (1) (a)(b)(c) and (d) do not apply to an abrasive wheel having separate segments of abrasive material.

(d) Regulations 211 and 214 (a), (b), (c) and (d) do not apply to an 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 the wheel is used in a portable machine.

(e) Regulations 211 (1) (e) (f) and (g), 211 (2), and 214 (a), (b) (c) and (d) do not apply to an abrasive wheel when it is used for grinding glass.

(f) Regulations 211 and 214 (c) and (d) do not apply to any wheel, disc or saw of a kind referred to in clause (*d*) of the definition of "abrasive wheel" in Regulation 208.

Use of Abrasive wheels

210. An employer shall ensure that an abrasive wheel used in any place is suitable for the work for which it is used having regard to the risk of injury to persons employed.

Speed of Revolution

211. (1) An employer shall ensure that –

(a) no abrasive wheel having a diameter of more than 80 millimetres shall be taken into use at a place of work 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;

(b) no abrasive wheel having a diameter of 80 millimetres or less shall be taken into use at a place of work unless 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 it belongs and, in the case of mounted wheels and points, the overhang permissible at that speed, is kept permanently fixed in the room in which grinding is ordinarily carried out with that abrasive wheel;

(c) when grinding with an abrasive wheel having a diameter of 80 millimetres or less is not ordinarily carried out in a particular room, the notice required by paragraph (b) is kept posted at a place and in a position where it may easily be read by persons employed in grinding with the wheel;

(d) no abrasive wheel is operated at a speed in excess of the appropriate maximum permissible speed in revolutions per minute specified in paragraph (a) or (b) of this Regulation, except where the diameter of an abrasive wheel has been reduced, in which case its maximum permissible speed (as specified by the manufacturer) may be increased to that speed which bears the same proportion to the maximum permissible speed as the original diameter of the wheel bears to the reduced diameter;

(e) a notice is securely affixed to every power-driven machine having any spindle on which an abrasive wheel is (or is intended to be) mounted which specifies—

(*i*) in the case of each such spindle (other than a spindle referred to in subparagraph (ii) or (iii) of this paragraph) its maximum working speed as specified by the manufacturer,

(ii) in the case of any such spindle for which arrangements are provided for operating it at more than one working speed, each such speed, and

(iii) in the case of any such spindle for which arrangements are provided for operating the spindle at an infinite number of working speeds within a specified range, the maximum and minimum working speeds of the spindle as specified by the manufacturer;

(f) no spindle on a power-driven machine having an abrasive wheel mounted or provision for such mounting is while an abrasive wheel is mounted on it operated at a speed in excess of the appropriate maximum working speed as specified by the manufacturer;

(g) the speed of every air-driven spindle on which an abrasive wheel is mounted is controlled by a governor or other device which prevents the speed of the spindle from exceeding the appropriate maximum working speed for that spindle, and every such device used for controlling the speed of an air-driven spindle on which an abrasive wheel is mounted is properly maintained.

(2) An employer at a place of work shall, when so required by an inspector, provide him or her with all such facilities and information as are necessary to enable them to determine the working speed of any spindle, shaft, pulley, or other appliance, used to operate an abrasive wheel.

Mounting of Abrasive Wheels
212. An employer shall ensure that every abrasive wheel is properly mounted.

Training
213. (1) An employer shall ensure that -

(a) every person who mounts any abrasive wheel—

(i) has been trained in accordance with Schedule 14,

(ii) is competent to mount such a wheel, and

(iii) has been appointed by them to carry out such an operation in respect of the class or type of abrasive wheel to which the abrasive wheel concerned belongs,

unless the person is mounting a mounted wheel or point, or the person is undergoing training in mounting abrasive wheels and working under the immediate supervision of a person appointed under this Regulation;

(b) very appointment referred to in paragraph (1) (a) (iii) of this Regulation is recorded in a register kept for the purposes of this Regulation;

(c) particulars of the class or type of abrasive wheel to which an appointment referred to in paragraph (1) (a) (iii) of this Regulation relates are specified in the register referred to in paragraph (b) of this Regulation, and every person appointed under this Regulation is furnished with a copy of the entry in the register of their appointment and of any entry revoking such an appointment.

(2) Any appointment under this Regulation may be revoked by the employer at any time by a dated entry in the register kept for the purposes of this Regulation.

Guarding and rests for workpieces
214. An employer shall ensure that –

(a) a guard is provided and kept in position at every abrasive wheel in motion, unless circumstances are such that, because of work being done at a wheel or because of the work ordinarily done or intended to be done at a wheel or because of the nature of the wheel, the use of a guard would be impracticable;

(b) every guard provided in pursuance of the Regulations in this Part is—

(i) so far as is reasonably practicable, of such a design and so constructed as to contain every part of the abrasive wheel in the event of a fracture of the wheel (or of any part of the wheel) occurring while it is in motion,

(ii) properly maintained and so secured as to prevent its displacement in the event of any such fracture, and

(iii)such that it encloses the whole of the abrasive wheel except such part as is necessarily exposed for the purpose of any work being done at the wheel or, where a non-adjustable guard is used, for the purpose of the work which is ordinarily done or ordinarily intended to be done at the wheel;

(c) where the work which is ordinarily done (or ordinarily intended to be done) at an abrasive wheel requires the exposed arc of the wheel to exceed 180 degrees measured at the centre of the wheel, the wheel has a diameter of 200 millimeters or less and is tapered from its centre towards its periphery by at least 6 per cent on each side and is mounted between suitable protection flanges;

(d) the protection flanges referred to in paragraph (c) of this Regulation are of substantial construction, properly maintained, and have the same degree of taper as the wheel mounted between them and are of a diameter equal to at least half the diameter of the wheel;

(e) where at any abrasive wheel there is a rest for supporting a workpiece, the rest is of substantial construction and properly maintained, and is properly secured and adjusted so as to be as close as practicable to the exposed part of the abrasive wheel at all times while the wheel is in motion.

SCHEDULE 14

Training required by Regulation 212

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

(1) proper methods 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 knowledge of the correct and incorrect methods of assembling all components and of 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;

(10) the use of advisory literature relating to the mounting of abrasive wheels.

PART 13

ABRASIVE BLASTING OF SURFACES.

Table of Regulations

Interpretation for Part 13.
215. In this Part—

"blasting" means the cleaning, smoothing, roughening, or removing of part of any surface by the use as an abrasive of a jet of sand, metal shot, or grit or other material, propelled by a blast of compressed air or steam or by a wheel;

"blasting enclosure" means a chamber, barrel, cabinet or other similar enclosure designed for the performance of blasting therein, or any enclosure in which blasting is done;

"blasting chamber" means a blasting enclosure into which persons enter;

"cleaning of castings" means, where done as an incidental or supplemental process in connection with the making of metal castings, the freeing of the castings from adherent sand or other substances and includes the removal of cores and the general smoothing of the castings where such freeing is done, but does not include the freeing of castings from scale formed during annealing or heat treatment;

Application of Part 13.
216. (1)Subject to the provisions of paragraphs (2), (3) and (4) of this Regulation—

(a) Regulations 218 to 221 and 224 shall apply to all places of work in which blasting is done.

(b) Regulations 222 and 223 shall apply in relation to blasting in any place of work in or incidental to the cleaning of castings.

Design, construction and safe operation of abrasive blasting apparatus, enclosures or ventilating plant

217. Without prejudice to Regulation 28 an employer shall ensure that any blasting apparatus, blasting enclosure or apparatus, or ventilating plant connected therewith is suitable by design, construction or adaptation for the work it is intended to do.

Prohibition on silica

218. An employer shall ensure that no sand or other substance containing free silica shall be introduced as an abrasive into any blasting apparatus.

Protection of employees

219. An employer shall ensure that where, in connection with blasting at any place of work, any dust of such a character and to such an extent as to be likely to present a risk to the safety and health to persons employed, or any substantial quantity of dust of any kind, is emitted, all practicable measures are taken to protect the persons employed against inhalation of the dust

Young persons

220. Without prejudice to the generality of the requirements of Part 1 of Chapter 6 of the Principal Regulations an employer shall ensure that no child or young person is employed –

(a) in blasting or assisting at blasting or in any blasting chamber or in the cleaning of any blasting apparatus, blasting enclosure or apparatus, or ventilating plant connected therewith or on maintenance or repair work at any such apparatus, enclosure or plant, or

(b) to work regularly within six metres of any blasting enclosure in which blasting is done by means of compressed air or steam unless the enclosure is in a room and such person is outside that room and is effectively separated from any dust coming from the enclosure.

Personal Protective equipment

221. (1) Without prejudice to the requirements of Chapter Three of the Principal Regulations an employer shall ensure that –

(a) there is provided and maintained for the use of all persons who are employed—

(i) in blasting,

(ii) to work in a blasting chamber, or

(iii) to clean the inside of a blasting chamber,

appropriate protective helmets and every such person shall wear the helmet provided whilst they are engaged in blasting or working in a blasting chamber and such person do not remove the helmet until the blasting has ceased or, if they were working in a blasting chamber, until they are outside that chamber.

(b) each protective helmet carries a distinguishing mark indicating the person by whom it should be worn and no person wears, or is allowed to, or required to wear—

(i) a helmet which does not carry their mark or

(ii) a helmet which has been worn by any person and which has not been thoroughly disinfected.

(c) each protective helmet, when in use, is supplied with clean and not unreasonably cold air at a rate of not less than one hundred and twenty litres per minute.

(d) suitable gauntlets and overalls are provided for the use of all persons while engaged in blasting or assisting at blasting and every such person while so engaged, wears the gauntlets and overalls so provided.

(e) adequate and suitable storage accommodation for the helmets, gauntlets and overalls is provided outside and conveniently near to every blasting enclosure or place where blasting is done and such accommodation shall be kept clean, and helmets, gauntlets and overalls, when not in actual use, are kept in this accommodation.

(2) Without prejudice to Section 14 of the Act an employee shall ensure that all helmets, gauntlets, overalls and other protective devices or clothing provided are worn for the purposes for which they are intended, kept in good condition and, on every day on which they are used, freed, so far as is reasonably practicable, from dust.

(3) An employer shall ensure that where dust arising from the cleaning of such protective clothing or devices is likely to be inhaled –

(a) all practicable measures are taken to prevent such inhalation and

(b) vacuum cleaners are, wherever practicable, used for removing dust from such clothing and compressed air is not in any case used for removing dust from any clothing.

Blasting enclosures

222. An employer shall ensure that –

(a) blasting is not done except in a blasting enclosure;

(b) no work is performed in a blasting enclosure except—

(i) blasting and work immediately incidental thereto, and

(ii) the cleaning and repairing of the enclosure and of plant and appliances situated therein,

(c) every door of a blasting enclosure is kept closed while blasting is being done therein;

(d) blasting enclosures are constantly maintained in good condition and all practicable measures are taken to prevent dust escaping from such enclosures, and from any apparatus connected therewith, into the air of any room;

(e) there is provided and maintained, in connection with every blasting enclosure, efficient apparatus for separating, so far as practicable, an abrasive which has been used in blasting apparatus and which is to be used again as an abrasive from dust or particles of other material arising from blasting, and no such abrasive are again introduced into blasting apparatus until it has been so separated;

(f) there is provided and maintained, in connection with every blasting enclosure, an efficient ventilating plant to extract, by exhaust draught effected by mechanical means, dust produced in the enclosure, and to remove and dispose of such dust so that it shall not escape into the air of any room; and every bag used for filtering the dust and every other filtering or settling device situated in a room in which persons are employed, other than persons attending to such bag or other filtering or settling device, is completely separated from the general air of that room in an enclosure ventilated to the open air;

(g) the ventilating plant provided for the purposes of sub-paragraph (f) is kept in continuous operation whenever the blasting enclosure is in use whether or not blasting is actually taking place therein, and, in the case of a blasting chamber, is in operation when any person is inside the chamber for the purpose of cleaning or repair work;

(h) every blasting enclosure is specially inspected by a person competent for the purpose at least once in every week in which it is used for blasting;

(i) every blasting enclosure, the apparatus connected therewith, and the ventilating plant provided in connection with the enclosure, is thoroughly examined and, in the case of ventilating plant, tested, by a person competent for the purpose at least once every month;

(j) particulars of the result of any inspection, examination and test carried out pursuant to paragraphs (h) and (i) of this Regulation shall forthwith be entered in a register, which shall be kept in an appropriate form and shall be available for inspection by any workman employed in or in connection with blasting in the factory

(k) any defect found on any inspection, examination or test carried out pursuant to paragraphs (h) and (i) of this Regulation is immediately reported to them by the person carrying out the inspection, examination or test and is remedied as soon as practicable.

Cleaning of equipment

223. An employer shall ensure that –

(a) where any person is engaged upon—

(i) the cleaning of any blasting apparatus,

(ii) the cleaning of any blasting enclosure,

(iii) the cleaning of any apparatus or ventilating plant connected with any blasting enclosure,

(iv) the cleaning of the surroundings of any blasting enclosure, or

(v) any work in connection with any blasting apparatus, blasting enclosure or any apparatus or ventilating plant connected with any blasting enclosure,

and any such person is rendered liable to inhale dust which has arisen from blasting, all practicable measures are taken so as to prevent any such inhalation

(b) all practicable measures are taken to dispose of dust which arises as a result of—

(i) the cleaning operations referred to in paragraph (a) of this regulation, or

(ii) the removal of dust from filtering or settling devices,

in such a manner that it does not enter the air of any room

(c) vacuum cleaners are provided and used, wherever practicable, for any such cleaning operations.

Vacuum Cleaning Plant

224. An employer shall ensure that vacuum cleaning plant used for the purposes of the Regulations in this Part is properly maintained."