OCCUPATIONAL HEALTH AND SAFETY ACT

Act 85 of 1993.

ENVIRONMENTAL REGULATIONS FOR WORKPLACES

[Updated to 7 March 2003]

GoN R2281, G. 10988 (c.i.o 16 October 1987),
GoN R1754, G. 12054 (c.i.o 18 August 1989),
GoN R489, G. 15560 (c.i.o 18 March 1994),
GoN R307, G. 24967 (c.i.o 7 March 2003).

[**Editor Note**: These Regulations were published in terms of the Machinery and Occupational Safety Act, 1983 (Act 6 of 1983) and are now in force in terms of the Occupational Health and Safety Act 85 of 1993.]

The Minister of Manpower has, in terms of section 35 of the Machinery and Occupational Safety Act, 1983 (Act 6 of 1983), made the regulations contained in the Schedule hereto.

ARRANGEMENT OF REGULATIONS

1. Definitions

In these Regulations **"the Act"** means the Machinery and Occupational Safety Act, 1983 (Act 6 of 1983), and any expression to which a meaning has been assigned in the Act shall have the meaning so assigned and, unless the context indicates otherwise—

"acclimatised" means physiologically adapted to a particular thermal environment and work rate;

"attenuation" means the proven capability of hearing protectors to reduce the equivalent noise level to which the wearer thereof is exposed;

"building work" means work defined as such in regulation 1 of the General Administrative Regulations promulgated in terms of section 35 of the Act and published under Government Notice R.2206 of 5 October 1984;

"dB (A)" means a unit of measurement of sound pressure level as contemplated in SABS 083;

"directional luminaire" means a luminaire from which the light radiation is confined to a well-defined narrow beam;

"equivalent sound pressure level" is the value of the equivalent continuous sound level which would deliver the same amount of sound energy as the actual fluctuating sound, measured over the same time period, and **"equivalent noise level"** has a corresponding meaning;

["equivalent sound pressure level" subs by "equivalent noise level" by reg 2(b) of GoN R489 in G. 15560.]

"exposed" means exposed whilst at work, and **"exposure"** has a corresponding meaning;

["exposed" ins by reg 2(a) of GoN R489 in G. 15560.]

"exposure limit" means a value as defined in the Asbestos Regulations, 1987, promulgated in terms of section 35 of the Act and published under Government Notice R.773 of 10 April 1987;

"hearing protectors" means ear muffs or ear plugs of a type approved by the chief inspector and in respect of which an efficiency test as prescribed by SABS 572 has been conducted by the South African Bureau of Standards or an approved inspection authority;

"heatstroke" means a pathological condition arising from thermoregulatory failure of the human body;

"illuminance" means the intensity of light falling on a surface, measured in lux;

"luminaire" means a light fitting which supports a lamp and provides it with electrical connections;

"noise zone" means an area where the equivalent noise level is equal to or exceeds 85 dB (A) when measured in accordance with SABS 083;

"regional director" means the regional director as defined in regulation 1 of the General Administrative Regulations published under Government Notice R.2206 of 5 October 1984 and amended by Government Notice R.2131 of 1990;

["regional director" ins by reg 2(e) of GoN R489 in G. 15560.]

"respiratory protective equipment" means a device as defined in the Asbestos Regulations, 1987, promulgated in terms of section 35 of the Act and published under Government Notice R.773 of 10 April 1987;

"SABS 083" means the South African Bureau of Standards' Code of Practice for the Measurement and Assessment of Occupational Noise for Hearing Conservation Purposes, SABS 083;

"SABS 572" ...

["SABS 572" rep by reg 2(c) of GoN R489 in G. 15560.]

"SABS 1451: Part I" South African Standard. Standard Specification for Hearing Protectors, Part I: Ear muffs;

["SABS 1451 Part I" ins by reg 2(d) of GoN R489 in G. 15560.]

"SABS 1451: Part II" South African Standard. Standard Specification for Hearing Protectors, Part II: Ear plugs;

["SABS 1451 Part II" ins by reg 2(d) of GoN R489 in G. 15560.]

''time-weighted average'' means the average of a number of representative measurements that are taken over a period of time and that are calculated as follows—

$$\text{Time-Weighted average} = \frac{x_1 t_1 + x_2 t_2 + x_3 t_3 + ... + x_n t_n}{t_1 + t_2 + t_3 + ... + t_n}$$

where x_1, x_2, etc., -are the observed measurements during the corresponding periods t_1, t_2, etc., minutes, and $t_1 + t_2 + t_3 + ... + t_n$ is the total time in minutes over which the measurements are taken;

''WBGT index'' means a number which characterises the thermal conditions in the environment to which that number applies; it is calculated by adding seven tenths of the reading in degrees Celsius obtained with a naturally ventilated wet-bulb thermometer to one fifth of the reading in degrees Celsius obtained with a globe thermometer and adding that sum to one tenth of the reading in degrees Celsius obtained with a dry-bulb thermometer; the index may also be obtained by using an electronically integrating direct-reading instrument which has been designed, built and calibrated for that particular purpose;

"working plane" means a horizontal plane at the level where work is performed.

2. Thermal requirements

(1) Subject to the provisions of subregulation (2), no employer shall require or permit an employee to work in an environment in which the time-weighted average dry-bulb temperature taken over a period of four hours is less than 6°C, unless the employer takes reasonable measures to protect such employee against the cold and further takes all precautions necessary for the safety of such employee: Provided

that, where outdoor work is performed, the employer shall take such measures and such precautions in an environment in which the actual dry-bulb temperature is less than 6 °C at any time.

[Reg 2(1) subs by reg 2 of GoN R1754 in G. 12054.]

(2) No employer shall require or permit an employee to work in a refrigerated environment in which the actual dry-bulb temperature is below 0 °C unless---

(a) the maximum exposure of the employee does not exceed the periods as indicated in the following table:

Temperature (Celsius)	Maximum exposure
0 to - 18 degrees	No limit.
Lower than -18 but not lower than -34 degrees	Maximum continuous exposure during each hour: 50 minutes. After every exposure in a low-temperature area at least 10 minutes must be spent, under supervision, in a comfortably warm environment.
Lower than -34 but not lower than -57 degrees	Two periods of 30 minutes each, at least 4 hours apart. Total low-temperature exposure: 1 hour per day.
Lower than -57 degrees	Maximum permissible exposure: 5 minutes during any 8-hour period.

(b) the employee is provided with the following protective clothing—

(i) A nylon freezer suit or equivalent and, where the said temperature is below -34 °C, such suit or equivalent shall be of double layer;

(ii) a woollen Balaclava or equivalent;

(iii) fur-lined leather gloves or equivalent;

(iv) waterproof outer gloves with knitted woollen or equivalent inners as well as a waterproof apron where wet or thawing substances are handled;

(v) woollen socks; and

(vi) waterproof industrial boots or equivalent:

Provided that an employee who works in a low-temperature area in which the temperature is not lower than -18 °C for periods not exceeding five minutes in every hour need only be provided with an ordinary overall, gloves and shoes, or equivalent;

(c) the employee is, beforehand and thereafter, at intervals not exceeding one year, certified fit to work in such environment by a registered medical practitioner or a registered nurse according to a protocol prescribed by such practitioner, and such employee is issued with a certificate to that effect; and

(d) all the clothing worn by the employee is dry prior to entering the low-temperature area.

(3) Where hand-held tools which vibrate at a frequency of vibration of less than 1 000 Hz are used at an actual dry-bulb temperature below 6 °C, the employer shall provide an employee operating such tools with lined gloves, and ensure that he wears them.

(4) Where the time-weighted average WBGT index, determined over a period of one hour, exceeds 30 in the environment in which an employee works, the employer of such employee shall—

(a) if practicable, take steps to reduce the said index to below 30; or

(b) where it is not practicable to reduce the said index to below 30 and where hard manual labour is performed—

(i) have every such employee beforehand and thereafter, at intervals not exceeding one year, certified fit to work in such environment by a registered medical practitioner or a registered nurse according to a protocol prescribed by such practitioner, and every such employee shall, if found fit to work in such environment, be issued with a certificate to that effect by such practitioner or nurse;

(ii) ensure that every such employee is acclimatised to such working environment before he is required or permitted to work in such environment;

(iii) inform every such employee of the need to partake of at least 600 millilitres of water every hour;

(iv) train every such employee in the precautions to be taken to avoid heatstroke; and

(v) provide the means whereby every such employee can receive prompt first-aid treatment in the event of heatstroke:

Provided that, where the question arises as to whether any particular type of work does in fact constitute hard manual labour, the decision of an inspector shall be decisive.

3. Lighting

(1) Every employer shall cause every workplace in his undertaking to be lighted in accordance with the illuminance values specified in the Schedule to these Regulations: Provided that where specialised lighting is necessary for the performance of any particular type of work, irrespective of whether that type of work is listed in the Schedule or not, the employer of those employees who perform such work shall ensure that such specialised lighting is available to and is used by such employees.

(2) The chief inspector may, by notice in the *Gazette*, from time to time modify the Schedule to these Regulations as he deems necessary.

(3) With respect to the lighting to be provided in terms of subregulation (1), the employers shall ensure that—

(a) the average illuminance at any floor level in a work- place within five metres of a task is not less than one fifth of the average illuminance on that task;

(b) glare in any workplace is reduced to a level that does not impair vision;

(c) lighting on rotating machinery is such that the hazard of stroboscopic effect is eliminated; and

(d) luminaires and lamps are kept clean and, when defective, are replaced or repaired forthwith.

(4) With a view to the emergency evacuation of indoor workplaces without natural lighting or in which persons habitually work at night, every employer shall, in such workplaces, provide emergency sources of lighting which are such that, when activated, an illuminance of not less than 0,3 lux is obtained at floor level to enable employees to evacuate such workplaces: Provided that where it is necessary to stop machinery or shut down plant or processes before evacuating the workplace, or where dangerous materials are present or dangerous processes are carried out, the illuminance shall be not less than 20 lux.

(5) An employer shall ensure that the emergency sources of lighting prescribed by subregulation (4)—

(a) are capable of being activated within 15 seconds of the failure of the lighting prescribed by subregulation (1);

(b) will last long enough to ensure the safe evacuation of all indoor workplaces;

(c) are kept in good working order and tested for efficient operation at intervals of not more than three months; and

(d) where directional luminaries are installed, these are mounted at a height of not less than two metres above floor level and are not aimed between 10 degrees above and 45 degrees below the horizontal line on which they are installed.

(6) An employer engaged in building work shall cause all rooms, stairways, passageways, gangways, basements and other places where danger may exist through lack of natural light, to be lighted such that it will be safe.

4. Windows

(1) In order to effect visual contact with areas outside a workplace, where employees work the majority of their shift in a room of which the floor area is less than 100 square metres, the employer of such employees shall cause every such room to be provided with windows in such a way that—

(a) the total glazed area of such windows is not less than three fifths of the square root of the floor area of the room, both areas measured in square metres;

(b) the window sills are not higher and the window heads are not lower than one and a half metres above the floor level of the room; and

(c) such windows are glazed with transparent material.

(2) Unless an inspector otherwise directs, the provisions of subregulation (1) shall not apply under conditions where natural light will have an adverse effect on the process or material used in a room, or where the process in a room has to be conducted under critical conditions of light, temperature, humidity or air movement, or where the judgement of texture or colour in a room has to be done under conditions of constant lighting quality and intensity, or where, for reasons of safety, privacy or security, compliance with the intended provisions becomes impracticable.

(3) Where the penetration of direct sunlight into any workplace may pose a threat to the safety of persons in such workplace, the employer concerned shall ensure that such workplace is screened to avoid such penetration, but retaining, as far as is practicable, outside visual contact.

5. Ventilation

(1) An employer shall ensure that every workplace in his undertaking is ventilated either by natural or mechanical means in such a way that—

(a) the air breathed by employees does not endanger their safety;

(b) the time-weighted average concentration of carbon dioxide therein, taken over an eight-hour period, does not exceed one half per cent by volume of air;

(c) the carbon dioxide content thereof does not at any time exceed three per cent by volume of air;

(d) the prescribed exposure limits for airborne substances therein are not exceeded; and

(e) the concentration therein of any explosive or flammable gas, vapour or dust does not exceed the lower explosive limit of that gas, vapour or dust.

(2) Where the measures prescribed by subregulation (1) are not practicable, or where there is a danger of unsafe air in the breathing zone of an employee, the employer shall provide every such employee with, and ensure that he correctly uses, respiratory protective equipment of a type that reduces the exposure of the employee to a safe level and the employer shall, further, inform him of the dangers of and the precautionary measures against excessive exposure.

(3) The provisions of subregulation (1)(b) and (c) shall not apply in respect of workplaces where the ambient pressure differs by more than 20 per cent from atmospheric pressure at sea level.

[Reg 5(3) am by reg 3 of GoN R1754 in G. 12054.]

6. Housekeeping

(1) A user of machinery shall provide and maintain sufficient clear and unobstructed space at every machine to enable work to be carried out without danger to persons.

(2) An employer shall—

(a) with the exclusion of workplaces where building work is performed, make at least 2,25 square metres of effective open floor area available for every employee working in an indoor workplace;

(b) make available and maintain an unimpeded work space for every employee;

(c) keep every indoor workplace clean, orderly and free of materials, tools and similar things which are not necessary for the work done in such work place;

(d) keep all floors, walkways, stairs, passages and gang-ways in a good state of repair, skid-free and free of obstructions, waste or materials;

(e) keep the roof and walls of every indoor workplace sound and leak-free;

(f) board over or fence, or enclose with rails or guards, or take other measures which may be necessary under the circumstances to ensure the safety of persons, all openings in floors, all hatchways and all stairways and any open sides of floors or buildings through or from which persons are liable to fall: Provided that such boarding or guarding may be omitted or removed for the time and to the extent necessary for the access of persons or the movement of material; and

(g) erect a catch platform or net above an entrance or passageway or above a place where persons work or pass, or fence off the danger area if work is being performed above such entrance, passageway, place or danger area and there is a possibility of persons being struck by falling objects.

(3) No employer shall require or permit any person to, and no person shall, dispose of any article from a high place except by hoist or chute unless arrangements have been made to secure the safety of persons who may be struck by falling objects.

7. …

[Reg 7 subs by reg 3 of GoN R489 in G. 15560; rep by reg 15 of GoN R307 in G. 24967.]

8. Precautions against flooding

(1) Where a substantial risk exists that a workplace may be flooded, the employer shall take measures to be informed forthwith of any imminent flooding.

(2) Every employer shall take measures to be informed forthwith of any imminent flooding from constructions for conserving water, or which may cause water to converge or accumulate on his premises, and shall, prior to the erection of such a construction, give notice in writing to all persons situated in the danger zone below such construction of the possibility of flooding owing to such construction.

9. Fire precautions and means of egress

(1) In order to expedite the evacuation of a workplace in case of fire, every employer shall ensure that—

(a) any emergency escape door from any room or passage or at a staircase shall, as far as is practicable, be hung so as to open outwards;

(b) every door of a room in which persons may be present, and every door of a passage or at a staircase serving as a means of exit from such room, shall be kept clear and capable of being easily and rapidly opened from inside so as to ensure quick and easy evacuation;

(c) the provisions of paragraphs (a) and (b) shall also be complied with in respect of the outer escape exit from the workplace;

(d) staircases and steps leading from one floor to another or to the ground shall be provided with substantial hand-rails;

(e) staircases intended to be used as fire escapes shall—

(i) be constructed of non-combustible material;

(ii) be kept clear of any material or other obstruction; and

(iii) not terminate in an enclosed area;

(f) staircases, passages and exits intended for escape purposes shall be of a width and of a gradient which will facilitate the quick and safe egress of the number of persons intended to make use of them; and

(g) having regard to the size, construction and location of a workplace, the number of persons, and the activity therein, such workplace is provided with at least two means of egress situated as far apart as is practicable.

(2) Having regard to the size, construction and location of the workplace, and the amount and type of flammable articles used, handled or stored on the premises, an employer shall provide on the premises an adequate supply of suitable fire-fighting equipment at strategic locations or as may be recommended by the fire chief of the local authority concerned, and such equipment shall be maintained in good working order.

10. Offences and penalties

Any person who contravenes or fails to comply with any provision of regulation 2, 3(1), 3(3), 3(4), 3(5), 3(6), 4(1), 4(3), 5(1), 5(2), 6, 7, 8 or 9 shall be guilty of an offence and liable on conviction to a fine not exceeding R1 000 or to imprisonment for a period not exceeding six months and, in the case of a continuous offence, to an additional fine of R5 for each day on which the offence continues or to additional imprisonment of one day for each day on which the offence continues: Provided that the period of such additional imprisonment shall in no case exceed 90 days.

11. Withdrawal of regulations

The following regulations are hereby withdrawn—

(a) Regulations B.1(1), B.1(2), B.1(3), B.1(4), B.2, B.5, B.11, B.13, B.15 and B.17, published under Government Notice R.929 of 28 June 1963, as amended by Government Notice R.2237 of 30 November 1973;

(b) regulations C.10, C.11 and C.12, published under Government Notice R.929 of 28 June 1963; and

(c) regulation D.4, published under Government Notice R.1934 of 13 December 1963, as amended by Government Notice R.3475 of 9 October 1969.

12. Short title

These Regulations shall be called the Environmental Regulations for Workplaces, 1987.

SCHEDULE

ENVIRONMENTAL REGULATIONS FOR WORKPLACES

MINIMUM AVERAGE VALUES OF MAINTAINED ILLUMINANCE (MEASURED ON THE WORKING PLANE UNLESS OTHERWISE INDICATED)

Location / Industry	Place or type of activity	Illuminance (Lux)
ABATTOIRS	Cold store, casting and stunning pen …….	100
	Bleeding area, slaughtering …….	150
	Dressing, evisceration, washing, tripery and skin sorting	200
	Inspection and grading …….	300
	Boning, cleaning, grinding, packing and cutting …….	200
	Manufacture of by-products …….	100
	(See also OUTDOOR AREAS.)	
ABLUTIONS	Washrooms, toilets and changing rooms …….	100 (at floor level)
ABRASIVE BLASTING	Sand or other ……...	200
AIRCRAFT MANUFACTURE	Stock part production …….	300
	Drilling, sheet aluminum layout, template work, wing section, cowling, welding, subassembly, landing gear, fuselage, final assembly, inspection, riveting, screw fastening and similar activities …….	200
	Maintenance and repairs (hangars) ……...	200
	Engine testing …….	200
ASSEMBLY PLANTS	Rough work, e.g. frame assembly, heavy machinery assembly …….	100
	Medium work, e.g. machined parts, engine assembly, vehicle body assembly …….	200
	Fine work. e.g. radio and telephone equipment, typewriter and office machinery assembly ……...	500
	Very fine work, e.g. small precision assembly…….	1 000
BAKERIES	Mixing and make-up rooms, oven rooms, wrapping rooms	100
	Decorating and icing …….	200
	General working areas …….	100
BANKS	Counters (See also OFFICES) …….	300
	General working areas …….	200
BLACKSMITH	General working areas …….	75
	Tempering …….	50
BOILER HOUSES	Coal and ash handling ……...	75 (at floor level)

	Boiler rooms ……	100
BOOKBINDING	Folding, pasting, punching, stitching ……	200
	Cutting, assembling, embossing ……	300
	Finishing, blocking, inlaying and inspection ……	500
BOOT AND SHOE	Sorting and grading ……	500
	Clicking and closing: Preparatory operations ……..	500
	Cutting tables and presses, stitching ……..	500
	Bottom stock preparation, lasting, bottoming, finishing ……	500
	Shoe rooms ……..	500
BOX, CARTON AND PAPER-BAG MAKING	Corrugated boards, cartons, containers and paper-bag manufacture, coating and laminating process ……..	150
	Associated printing ……	200
BREWING. DISTILLING AND SOFT DRINKS	General working areas ……	100
	Brewing, bottling and canning plants ……	300
	Bottle inspection ……	300
BUILDING AND CONSTRUCTION	Industrialised building plants ……	200
	Concrete shops ……	150
	General working areas ……	20
	Walkways and access ……..	5 (at floor level)
CANNING AND PRESERVING	Inspection of products ……	300
	Preparation, kettle areas, mechanical cleaning, dicing, Trimming ……	200
	Canned and bottled goods: Retorts ……..	150
	High speed labelling lines ……..	200
	Can and bottle inspection ……..	300
	Automatic processes ……..	25
CARPET MAKING	Winding, beaming ……	150
	Designing, Jacquard card cutting, setting, patternwork, tufting, topping, cutting, hemming, fringing ……	200
	Weaving, mending, inspection ……..	300
	Dyeing ……	400
CEMENT, ASBESTOS, GYPSUM, TALC, ETC., PRODUCTS AND MOULDED GOODS	Fiberising, mixing, shredding, agitating, flat and corrugated sheets and moulded goods manufacture ……	200
	Pipe and pole manufacture: mixing, spinning, reinforcing, Stripping ……	150
CEMENT MANUFACTURE	Control room, milling, conveying, drying, pumping, burners' platform, coal plant milling, feeding, bagging, bulk filling, loading	150
	Vertical control panel face ……	200 (vertical illuminance)
CERAMICS	See POTTERY AND CLAY PRODUCTS	
CHEMICAL WORKS	Hand furnaces, boiling tanks, stationary driers, stationary or gravity crystallisers, mechanical driers, evaporators, filtration plants, mechanical crystallising, bleaching, extractors, percolators, nitrators, electrolytic cells ……..	100
	Controls, gauges, valves, etc. ……	100
	Control rooms: Vertical control panels ……..	200 (vertical illuminance)

	Control desks ……	200
	General working areas …… (See also OUTDOOR AREAS.)	100
CLOTHING	Matching up	300
	Sorting, cutting, sewing	300
	Pressing, cloth treating	200
	Inspection, hand tailoring	500
COLD STORES	General working areas……	100
CONFECTIONERY (CHOCOLATES, SWEETS ETC.)	Mixing, blending, boiling	100
	Husking, winnowing, fat extraction, crushing, refining, feeding, bean cleaning, sorting, milling, cream making	150
	Hand decorating, inspection, wrapping, packing	200
COURT ROOMS	Seating.....	100
	Court.....	300
DAIRIES	General working areas.....	150
	Bottle inspection ……	300
	Bottle filling ……	300
	Despatching	100
DIE-SINKING AND ENGRAVING	General	200
	Fine.....	500
	Hand engraving	500
DRYCLEANING	See LAUNDERING AND DRY CLEANING.	
DYE WORKS	Reception, “grey” perching	500
	Wet processes	150
	Dry processes.....	150
	Dyer’s offices.....	500
	Final perching (examination)	1 500
ELECTRICAL GOODS MANUFACTURE	Impregnating processes, mica working	150
	Coil and armature processes:	
	General.....	200
	Fine (e.g. instrument coils)	400
ELECTRICITY GENERATING STATIONS	Turbine halls (operating floor)	200 (at floor level)
	Blowers, auxiliary generators	100
	Transformer chambers, etc.	75
	Cable tunnels, covered ways, storage tanks	50
	Battery and charging equipment rooms.....	100
	Boiler front (operating floor)	150 (at floor level)
	Between boilers (operating floor), stairs, galleries and operating platforms, and precipitator high voltage chamber.....	100 (at floor level)
	Pulverisers, feeders. ash plant, conveyors (tunnel, junction tower) ……....	75 (at floor level)
	Boiler house and turbine house basements	100 (at floor level)
	Pump houses and rooms, water treatment plant.....	100

	Overland conveyor housing walkways	50
	Control rooms:	
	Vertical control panel face	200 (vertical
	Rear of control panels …….....	100 illuminance)
	Control desks	200
	Computer room.....	500
	Switch houses and rooms.....	150
	Relay and telecommunication rooms	200
	Nuclear reactors and steam raising plants:	
	Reactor areas, boilers, galleries.....	150
	Gas circulator bays.....	150 (at floor level)
	Reactor charge / discharge face	150
	High voltage substations	100 (vertical)
	(See also OUTDOOR AREAS.)	
FIRE STATIONS	Appliance rooms.....	100
	External apron.....	30
FORGING	General.....	100
FOUNDRIES	Charging floor, tumbling, cleaning, shaking out, rough moulding and core making	100
	Fine moulding and core making, inspection ……...	200
FURNITURE FACTORIES	Raw materials store.....	50
	Finished goods store.....	75
	Wood-machining and assembly	150
	Rough sawing and cutting	150
	Machining, sundry and assembly of components	250
	Cabinetmaking:	
	Veneer sorting and preparation.....	500
	Veneer pressing	250
	Components store.....	75
	Fitting, final inspection	400
	Upholstery:	
	Cloth inspection	750
	Filling, covering	250
	Slipping	400
	Cutting, sewing	400
	Mattress making:	
	Assembly.....	250
	Tape edging.....	500
	Tool rooms:	
	General.....	250
	Benches	400
	Spray booth:	

	Colour finishing	250
	Clear finishing …….....	150
GARAGES	Parking areas (interior)	50
	Washing, polishing, greasing	100
	Servicing pits	100
	Repairs	200
	Work-bench	250
	Apron fuel pumps	100
GASWORKS	Retort houses, oil gas plants, water gas plants, purifiers, coke screening and coke handling plants ……	50 (at floor level)
	Governor, meter, compressor, booster, and exhauster houses	75
	(See also OUTDOOR AREAS.)	
GAUGE AND TOOL ROOMS	General ……	500
GENERAL FACTORY AREAS	Canteens / Dining-rooms	100
	Cloak-rooms	100
	Entrances	100 (at floor
	Rest rooms	100 level)
	First-aid rooms	100
GLASS PROCESSING	Furnace rooms, bending, annealing lehrs (ovens), mixing rooms, forming (blowing, drawing, pressing, rolling) ……	100
	Cutting to size, grinding, polishing, toughening ……..	150
	Finishing (bevelling, decorating, etching, silvering) ……	200
	Brilliant cutting.....	500
	Inspections:	
	General ……	150
	Fine ……	500
GLOVE MAKING	General working areas ……	300
	(See also CLOTHING.)	
HAT MAKING	Stiffening, braiding, cleaning, refining	200
	Forming, sizing, pouncing, flanging, finishing, ironing	100
	General working areas ……	100
	(See also CLOTHING.)	
HOSIERY AND KNITWEAR	Circular and flat knitting machines, universal winders,	
	cutting out, folding and pressing ……..	200
	Lock stitch and overlocking machines	300
	Mending:	
	Light goods	800
	Dark goods	1 000
	Examining and hand finishing:	
	Light goods	400
	Dark goods	800

	Linking or running on	300
HOSTELS AND RESTAURANTS	Entrance Halls	100 (at floor level)
	Reception and accounts	200
	Stairs, corridors	100 (at floor level)
	Laundries	150
	Kitchens	150
	General working areas	50
INSPECTION AREA (ENGINEERING)	Rough work, e.g. counting, rough visual checking of stock parts, etc. …….	100
	Medium work, e.g. “Go” and “No-go” gauges	200
	Sub-assemblies	200
	Fine work, e.g. radio and telecommunication equipment, calibrated scales, precision mechanisms, instruments ..	500
	Very fine work, e.g. gauging and inspection of small intricate parts	1 000
	Minute work …….	1 500
IRON AND STEEL	Slab yards, melting shops, ingot stripping, soaking pits, blast furnace working areas, pickling and cleaning lines, mechanical pump houses, slabbing and large section rolling mills	75
	Mould preparation, light section, wire and cold strip mills, mill inspection and conditioning, sheet and plate finishing, tinning, galvanising and roll shops	100
	Plate inspection.....	200
	Tinplate inspection and pulpits (control rooms) ……	200
	General working areas …….....	75
JEWELLERY AND WATCHMAKING	Fine processes	500
	Minute processes.....	3 000
	Gem cutting, polishing and setting.....	1 000
LABORATORIES AND TEST ROOMS	General laboratories, balance rooms	200
	Electrical and electronic instrument laboratories	300
	Calibrated scales, precision mechanical instruments	300
LAUNDERING AND DRY CLEANING	Receiving, sorting, washing, drying, ironing (calendaring), despatch ……	150
	Dry cleaning, bulk machine work ……	150
	Hand ironing, pressing, inspection, mending …….	200
	Spotting	250
LEATHER AND TANNING	Vats, cleaning, tanning, stretching, cutting. fleshing and stuffing	100
	Finishing, staking, splitting ……	150
	Pressing andglazing.....	300
	Cutting, scarfing and sewing.....	500
	Grading and matching	500
LIBRARIES, MUSEUMS AND ART GALLERIES	Shelves	100 (vertical illuminance)
	Binding	300
	Cataloguing, sorting	200
	General working areas	100

LIFTS	Car interior …….. Motor room ……...	100 300
MACHINE SHOPS AND FITTERS' BENCHES	Rough bench and machinery work, rough checking and stock parts..... Medium bench and machine work, ordinary automatic machines, rough grinding, medium buffing and polishing Fine bench and machinery work, fine automatic machines, medium grinding, fine buffing and polishing ..... Extra-fine bench and machine work, fine grinding	100 200 500 800
MATERIALS HANDLING	Wrapping, packing, labelling, despatch ..... Sorting stock, classifying, loading	150 100
MILLING (FLOUR)	Cleaning, grinding, rolling, purifying, silks and packing ..... Wetting tables, product control.....	150 200
MOTOR VEHICLE MANUFACTURE	General sub-assemblies, chassis assembly, car assembly, trim shops, body sub-assembly, body assembly ..... Upholstery ..... Final inspection ..... Spray booths (See PAINT SHOPS AND SPRAYING BOOTHS.)	200 400 300
OFFICES	Entrance halls and reception areas..... Conference rooms, general offices, typing and filing ..... Computer and business machine operation ..... Drawing offices	100 300 500 500
OUTDOOR AREAS	Abattoirs: Lairage …… Race …… Ash handling, precipitator and fan area ..... Bulk loading / unloading areas where manual operations are performed …… Bulk loading / unloading areas where operations are performed mechanically..... Cool-water screens…… Fuel pumps..... Storage areas (excluding dumps) ..... Water clarification plant and storage tanks (operating areas) Marshalling yards …… Main entrance and exits ..... Transformer and reactor terrain ..... High voltage yard, distribution and substation ..... Gangways. catwalks, stairways, etc ..... Conveyor structure	 20 50 (at floor level) 20 (at floor level) 50 10 20 100 5 (at floor level) 50 10 (at floor level) 20 20 10 20 (at floor level) 10
PAINT MANUFACTURE	Filling, blending, dispersion and reactor platform ..... Batch mixing ..... Colour matching	150 300 300
PAINT SHOPS AND SPRAYING BOOTHS	Rubbing, dipping, ordinary painting, spraying and finishing. Fine painting, spraying and finishing	200 300

	Retouching and matching	500
PAPER AND PAPER BOARD MANUFACTURE	Paper and board making:	
	Machine houses, calendering, pulp mills, preparation plants, cutting, finishing, trimming ……..	150
	Inspection and sorting (overhauling) ……..	200
	Paper convening processes:	
	General	150
	Associated printing	200
PASSAGES AND LOBBIES	All areas ……	75 (at floor level)
PHARMACEUTICAL AND FINE CHEMICAL	Raw material storage	150
	Control laboratories and testing.....	200
	Pharmaceuticals manufacture: Grinding, granulating, mixing, drying, tabletting, sterilising, washing, preparation of solutions, filling, labelling, capping, inspection	200
	Fine chemical manufacture:	
	Plant processing ……..	150
	Fine chemical finishing	200
PHOTOGRAPHIC	Safety light: dark room	5
PLASTICS	Manufacture (See CHEMICAL WORKS)	
	Processing:	
	Calendering, extrusion	200
	Moulding--compression, injection, blowing	150
	Sheet fabrication:	
	Shaping	150
	Trimming, machining, polishing	200
	Cementing	150
	Colour matching and inspection	500
PLATING	Vats and baths, buffing, polishing, burnishing	200
	Final buffing and polishing	200
POST OFFICES	Counters	200
	Sorting of mail	300
	General working areas	100
POTTERY AND CLAY PRODUCTS	Grinding, filter pressing, kiln room, moulding, pressing, cleaning, trimming, glazing, firing	200
	Enamelling, colouring, decorating	300
PRINTING	Type foundries:	
	Matrix making, dressing type, hand and machine casting	150
	Front assembly, sorting	300
	Printing plants:	
	Machine composition, imposing stones.....	150
	Presses	200
	Composition room	300

	Proof-reading	300
	Electrotyping:	
	Block-making, electroplating, washing, backing	150
	Moulding, finishing, routing	200
	Photo-engraving:	
	Block-making, etching, masking	200
	Finishing, routing	300
	Colour printing: Inspection area	500
REFRIGERATION	Chilling and cold rooms, icemaking	100
RUBBER	Stock and fabric preparation	150
PROCESSING	Dipping, moulding, compounding, calendering	150
	Tyre and tube making	200
	Curing and inspection	300
SCHOOLS AND	Stairs, corridors	100 (at floor level)
EDUCATIONAL	Class and lecture rooms	200
INSTITUTIONS	General working areas	100
SHEET METAL	Benchwork, pressing, punching, shearing, stamping, spinning, folding	150
	Scribing	200
	Sheet inspection	300
SHOPS, STORE	Stairs, corridors	100 (at floor level)
ROOMS AND	General working areas	100
WAREHOUSES		
SOAP MANUFACTURE	All processes, e.g. kettle houses and ancillaries, batch or continuous soap rooting, soap stamping	150
	General areas	100
	Vertical control panel face	200 (vertical illuminance)
	Edible product processing and packing	150
STAIRS, ESCALATORS AND RAMPS	General	100 (at floor level)
STORAGE BATTERY MANUFACTURE	General	100
STRUCTURAL STEEL	General	100
FABRICATION	Marking off	200
SUGAR	Manufacture:	
	Crushing, settling, evaporating, boiling, curing, drying, packing	100
	Refining:	
	Centrifuging, metering, filtering, condensing	100
	Panning, mixing, drying	200
	Grading, colour inspection	500
SURGERIES,	Stairs, corridors	100 (at floor level)
HOSPITALS AND	General working areas.....	100
CLINICS		

TAILORING	Hand tailoring	500
TELEPHONE EXCHANGES	Manual exchange rooms (on desk) ……	100
	Main distribution frame rooms in automatic exchanges	200
	Battery rooms.....	100
TEXTILE (COTTON OR LINEN)	Bale breaking, blowing, carding	100
	Roving, slubbing, spinning (ordinary counts), winding, hackling, spreading, cabling ……	100
	Warping, slashing, dressing, dyeing, doubling (fancy), spinning (fine counts)	150
	Healding (drawing in)	500 (vertical)
	Weaving:	
	Patterned cloth	500
	Plain “grey” cloth	150
	Cloth inspection	500
TEXTILE (JUTE)	Weaving, spinning flat, Jacquard carpet looms, cop winding	150
	Yarn calender	100
TEXTILE (SILK OR SYNTHETIC)	Soaking, fugitive tinting, conditioning or setting of twist	150
	Spinning	300
	Winding, twisting, rewinding and coning, quilling, slashing ...	200
	Warping	200
	Healding (drawing in)	500 (vertical illuminance)
	Weaving, finishing	500
	Inspection	500
TEXTILE (WOOLLEN)	Scouring, carbonising, teasing, preparing, raising, brushing, …pressing, back-washing, gilling, crabbing and blowing ..	100
	Blending, carding, combing (white), tentering, drying, cropping	150
	Spinning, roving, winding, warping, combing (coloured), twisting ……	300
	Healding (drawing in) ……	500 (vertical illuminance)
	Weaving:	
	Fine worsteds	500
	Medium worsteds, fine woollens	300
	Heavy woollens	200
	Burling, mending	500
	Perching:	
	“Grey”.....	500
	Finals ……	1 500
THEATRES, CINEMAS AND HALLS	Stairs, corridors	100 (at floor level)
	Booking offices	200
	Projection rooms	150

TOBACCO	Primary manufacture:	
	Weighing, blending, conditioning, threshing, cutting ……	100
	Cigarette making:	
	Manufacturing processes, filter plug-makers …….	500
	Inspection (catcher) ……	500
	Cigarette or tobacco packing	500
UPHOLSTERING	Furniture and vehicles	200
WAREHOUSES AND BULK STORING	Small materials, racks, packing and despatch	150
	Issue counters	200
	Loading bays ……...	75
	Inactive storage ……...	20
	(Also see MATERIALS HANDLING.)	
WELDING AND SOLDERING	Gas and arc welding, rough spot welding	150
	Medium soldering, brazing and spot-welding, e.g. domestic hardware ……...	200
	Fine soldering and spot welding, e.g. instruments, radio set assembly ……...	500
	Very fine soldering and spot welding, e.g. electronic printed circuits ……...	1 500
WOODWORKING AND SAWMILLING	Rough sawing and bench work, sizing, planing, rough sanding……...	150
	Medium machine and bench work, glueing, veneering, cooperage …….	200
	Fine bench and machine work, fine sanding and finishing ..	200

[Sch am by reg 4 of GoN R1754 in G. 12054.]