

II

(Preparatory Acts)

COMMISSION

Proposal for a Council Directive concerning the minimum health and safety requirements for the use by workers of personal protective equipment*(Third individual Directive within the meaning of Article 13 of Directive.....)⁽¹⁾**COM(88) 76 final**(Submitted by the Commission to the Council on 11 March 1988)**(88/C 161/01)*

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community and in particular Article 118A thereof,

Having regard to the proposal from the Commission, drawn up after consultation with the Advisory Committee for Safety, Hygiene and Health Protection at Work ⁽²⁾,

Having regard to the opinion of the Economic and Social Committee,

In cooperation with the European Parliament,

Whereas Article 118A of the EEC Treaty provides that the Council shall issue Directives containing minimum requirements designed to encourage improvements, especially in the working environment, to promote the health and safety of workers;

Whereas Article 118A also recommends that Directives shall avoid imposing administrative, financial and legal constraints which could hold back the creation and development of small and medium-sized undertakings (SMU);

Whereas the communication from the Commission on its programme concerning safety, hygiene and health at work ⁽³⁾ provides for the adoption of Directives designed to guarantee the safety and health of workers;

Whereas the Council resolution of 21 December 1987 concerning safety, hygiene and health at work ⁽⁴⁾ noted the Commission's intention to present to it in the near future minimum requirements concerning the safety and health of workers at work;

Whereas the completion of the internal market entails the drawing up of a Directive based on Article 100A, in accordance with the new approach to harmonization and standardization ⁽⁵⁾, making compliance with essential safety requirements for the design, manufacture or construction of personal protective equipment a condition for the placing on the market and free movement throughout the Community of such equipment;

Whereas it is necessary to supplement this Directive, which only refers to the placing of personal protection equipment on the Community market, by minimum safety and health requirements for the use of personal protective equipment;

Whereas this Directive introduces a social element in relation to a technical harmonization Directive aiming at the completion of the internal market for personal protective equipment;

Whereas collective means of protection shall be accorded priority over individual protective equipment;

⁽¹⁾ COM(88) 73 final (OJ No C 141, 30. 5. 1988).

⁽²⁾ Council Decision 74/325/EEC (OJ No L 185, 9. 7. 1974).

⁽³⁾ OJ No C 28, 3. 2. 1988, p. 3.

⁽⁴⁾ OJ No C 28, 3. 2. 1988, p. 1.

⁽⁵⁾ White paper, Doc. COM(85) 310 final.

Whereas the use of personal protective equipment presupposes that workers are in situations which pose a risk to their safety and health and that it is important, in such a situation, to encourage the involvement of the worker in all aspects of the use of personal protective equipment;

Whereas this Directive lays down essential minimum requirements to protect the safety and health of workers, without impeding the retention or institution by each Member State of more stringent measures to protect working conditions;

Whereas these requirements should not entail alterations to personal protective equipment whose design and manufacture were covered by Community Directives relating to safety and health at work;

Whereas it is important to promote the cooperation of both sides of industry in decisions and activities relating to the protection of safety and health at the workplace, at all levels;

Whereas a Committee should be set up within the Commission to assist the Commission in the implementation of additional measures provided for by the Directive,

HAS ADOPTED THIS DIRECTIVE:

Object

Article 1

The object of this Directive, which is an individual Directive within the meaning of Article 13 of Directive, is the protection of workers against the risks to their safety and health at work where such risks cannot be avoided or sufficiently overcome by collective means of protection or by organizational measures, methods or procedures.

Definitions

Article 2

1. This Directive applies to personal protective equipment used at work. It lays down supplementary provisions for this type of equipment to those given in Council Directive concerning the assimilation of Member States' legislation on personal protective equipment.

2. For the purpose of this Directive, the following terms have the meanings hereby assigned to them:

— *Workplace*

Any place to which the worker has access in the undertaking and/or establishment.

— *Worker*

Any person who performs work in some form, including students undergoing training and apprentices.

— *Undertaking and/or establishment*

A public-sector or private-sector body engaging in particular in industrial, agricultural, commercial, administrative, service, educational or cultural activities.

— *Employer*

The body or person in charge of the undertaking and/or enterprise.

— *Personal protective equipment*

All equipment designed to be worn or held by the worker to protect him against one or more hazards liable to endanger his safety and health at work. Annex III contains a non-exhaustive list, as a guideline, of personal protective equipment covered by this definition.

The following are also considered to be personal protective equipment:

- an assembly of several integrally-linked devices or means designed to protect the worker against one or more risks liable to be encountered simultaneously,
- a device or means of protection attached, whether permanently or not, to an item of personal non-protective equipment worn or held by the worker in order to perform an activity,
- interchangeable components of an item of personal protective equipment which are essential for its efficient functioning.

Any linking system to connect personal protective equipment to an outside device, even when this linking system is not designed to be worn or held permanently by the worker during exposure to the risk or risks.

The definition excludes:

- ordinary working clothes and uniforms not specifically designed to protect the safety and health of the worker,
- equipment used by emergency and rescue services,
- personal protective equipment worn or used by the military, the police and other public order agencies,
- means of private transport and related equipment,
- sports equipment,
- self-defence or deterrent equipment,

- portable devices for detecting and signalling risks and nuisances.

Annex II contains a non-exhaustive list, as a guideline, of personal protective equipment covered by this definition.

General provisions

Article 3

Personal protective equipment shall be used when the risks cannot be avoided, or adequately overcome by the other means indicated in Article 1.

Article 4

1. Personal protective equipment should:

- be appropriate for the risks involved,
- be adapted or adaptable to the individual worker,
- correspond to the conditions at the workplace,
- take account of ergonomic requirements,
- take account of the worker's state of health,
- if possible, incorporate corrective elements required by the user.

2. Where the presence of more than one risk makes it necessary for a worker to wear more than one item of personal protective equipment, such equipment must be compatible and continue to be effective against each risk.

3. The conditions of use of personal protective equipment, in particular the period for which it is worn, shall be determined on the basis of the seriousness of the risk, the frequency of exposure to the risk and the characteristics of the workstation of each worker.

4. Personal protective equipment is, in principle, intended for personal use. If the circumstances permit personal protective equipment to be worn by more than one person, appropriate measures shall be taken to ensure that this does not create any health or hygiene problem for the different users.

5. Adequate information on each item of personal protective equipment, required under paragraphs 1 and 2, shall be provided and made available within the undertaking.

6. Personal protective equipment shall normally be provided free of charge by the employer, who shall ensure that they are kept clean and in good working order, by carrying out the necessary maintenance, repair and replacements.

Assessment of personal protective equipment

Article 5

1. When choosing personal protective equipment, the employer is required to assess whether the equipment he intends to use satisfies the requirements of Article 4 (1) and (2).

This assessment shall involve:

- (a) analysis of risks which cannot be avoided by other means. Annex I comprises a chart, as a guideline, for this analysis;
- (b) the definition of the characteristics which personal protective equipment must have in order to be effective against the risks referred to in (a) above, taking into account any risks which this equipment itself may create;
- (c) comparison of the characteristics of the personal protective equipment available with the characteristics referred to in (b). Annex II gives guidelines on the existence of personal protective equipment. Annex III gives non-exhaustive guidelines for an assessment of certain types of personal protective equipment.

2. The assessment provided for in paragraph 1 shall be repeated if any changes are made to any of its elements.

Regulations for use

Article 6

1. Notwithstanding the provisions of Articles 3, 4 and 5, the Member States shall establish regulations to constitute a framework for the use of personal protective equipment, taking account of Community legislation on the free movement of such equipment.

These regulations shall indicate in particular the circumstances, activities or sectors of activity in which the use of personal protective equipment is required.

Member States shall take account of Annexes I, II, III and IV when establishing such regulations.

2. The Member States shall adapt the regulations referred to in paragraph 1 to take account of any significant changes to the risk, collective means of protection and personal protective equipment, brought about by technological developments.

3. The Member States shall consult management and workers before establishing the regulations referred to in paragraphs 1 and 2.

Collaboration between the social partners

Article 7

1. The employer is required to involve the workers and/or their representatives in the undertaking or establishment in the drawing up and/or implementation of:

- the policy for personal protection in the undertaking,
- the principle for use established in Article 3,
- the conditions for use described in Article 4 (3), (4), (5) and (6),
- the assessment procedure described in Article 5,
- the choice of types of personal protective equipment,
- measures to be taken to reduce the constraints which the wearing of certain items of personal protective equipment can involve for the worker,
- measures to be introduced to ensure that personal protective equipment is correctly used by workers, in particular the provision of information and, if necessary, adequate training,
- measures to be taken to avoid any risks which may result from the use of certain items of personal protective equipment.

2. The provisions set out in paragraph 1 do not affect the employer's responsibility.

3. The authority responsible for safety and health at work shall take the necessary measures to encourage the implementation and application of paragraph 1 in the undertaking.

Article 8

1. Annexes I, II, III and IV shall be changed as a result of:

- the adoption of technical harmonization and standardization directives relating to the design and manufacture of personal protective equipment,
- technical progress and changes in international regulations and specifications or knowledge in the field of personal protective equipment.

2. The Commission shall be assisted in making the changes referred to in paragraph 1 by a Committee using the procedure set out in Article 14 of Directive ...

Article 9

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 1 July 1990 at the latest and shall immediately inform the Commission thereof.

2. Member States shall communicate to the Commission the text of the national provisions which they adopt in the field covered by this Directive. The Commission shall inform the other Member States thereof.

3. Member States shall report to the Commission every two years on the practical implementation of the provisions of this Directive in undertakings, indicating the points of view of employers and workers.

Article 10

This Directive is addressed to the Member States.

Specimen risk analysis table for the use of personal protective equipment

[illegible]

ANNEX II**Non-exhaustive list of items of personal protective equipment covered by the definition in Article 2****HEAD PROTECTION**

- Protective helmets for use in industry (mines, building sites, other industrial uses).
- Protective headgear (bonnets, caps, souwesters, etc. in fabric, fabric with proofing, etc.).
- Scalp protection (caps, bonnets, hairnets —with or without eye shade).

HEARING PROTECTION

- Earplugs and other ear plugging devices.
- Full helmets.
- Earmuffs which can be fitted to industrial protective helmets.
- Ear defenders with receiver for LF induction loop.
- Ear protection with intercom equipment.

EYE AND FACE PROTECTION

- Spectacles.
- Goggles.
- X-ray goggles, laser-beam goggles, ultra-violet, infra-red, visible radiation goggles.
- Face shields.
- Arc-welding masks and helmets (hand masks, headband masks or masks which can be fitted to protective helmets).

RESPIRATORY PROTECTION

- Dust filters.
- Gas filters.
- Radioactive dust filters.
- Insulating appliances (free air, compressed air, open circuit (air) or closed circuit (oxygen)).
- Respiratory devices including a removable welding mask.
- Diving equipment.
- Diving suits.

HAND AND ARM PROTECTION

- Gloves to provide protection from physical injury (piercing, cuts, vibrations, etc.).
- Gloves to provide protection from chemicals.
- Electricians' gloves.
- Mittens.
- Finger stalls.
- Oversleeves.
- Wrist protection for heavy work.
- Fingerless gloves.
- Protective gloves.

FOOT AND LEG PROTECTION

- Low shoes, ankle boots, calf-length boots, safety boots.
- Shoes which can be unlaced or unhooked rapidly.
- Shoes with additional protective toe-cap.
- Shoes and overshoes with heat-resistant soles.
- Heat-resistant shoes, boots and overboots.
- Thermal shoes, boots and overboots.
- Vibration-resistant shoes, boots and overboots.
- Anti-static shoes, boots and overboots.
- Insulating shoes, boots and overboots.
- Protective boots for chain saw operators.
- Clogs.
- Kneepads.
- Removable instep protectors.
- Removable soles (heat-proof, pierce-proof or sweat-proof).
- Removable spikes for ice, snow or slippery flooring.

SKIN PROTECTION

- Barrier creams/ointments.

TRUNK AND ABDOMEN PROTECTION

- Protective waistcoats, jackets and aprons to provide protection from machinery (piercing, cutting, molten metal splasher, etc.).
- Protective waistcoats, jackets and aprons to provide protection from chemicals.
- Heated waistcoats.
- Protective X-ray aprons.
- Safety belts for lorry drivers.

WHOLE BODY PROTECTION

- *Equipment designed to prevent falls*
 - Fall-prevention equipment (full equipment with all necessary accessories).
 - Braking equipment to absorb kinetic energy (full equipment with all necessary accessories).
 - Body-holding devices (safety harness).
 - *Protective clothing*
 - 'Safety' working clothing (two-piece and overalls).
 - Clothing to provide protection from machinery (piercing, cutting, etc.).
 - Clothing to provide protection from chemicals.
 - Clothing to provide protection from molten metal splasher and infra-red radiation.
 - Heat-resistant clothing.
 - Thermal clothing.
 - Clothing to provide protection from radioactive contamination.
 - Dust-proof clothing.
 - Gas-proof clothing.
 - Fluorescent signalling, retro-reflecting clothing and accessories (armsbands, gloves, etc.).
 - Protective coverings.
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ANNEX III

Non-exhaustive information for evaluating personal protective equipment

1. Industrial helmets.
2. Goggles and visors.
3. Ear protectors.
4. Respirators.
5. Gloves.
6. Boots and shoes.
7. Protective clothing.
8. Life jackets for industrial use.
9. Protection against falls.

1. INDUSTRIAL HELMETS

Risk	Origin and type of risk	Safety and performance criteria for selection of equipment
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RISKS TO BE COVERED

Mechanical	— Objects falling, impact — Lateral crushing — Stud drivers	— Absorption of impact — Resistance to puncture — Lateral resistance — Resistance to shots
Electrical	— Low-voltage electricity	— Electrical insulation
Thermal	— Cold, heat — Splashes of molten metal	— Maintenance of characteristics at high and low temperatures — Resistance to splashes of molten metal
Non-visibility	— Not sufficiently noticeable	— Luminous/reflective colour

RISKS ARISING FROM THE EQUIPMENT

Discomfort, interference with work	— Inadequate comfort	— Ergonomic design: — weight — headroom — head fit — ventilation
Accidents and health hazards	— Poor compatibility — Poor hygiene — Poor stability, helmet falls off — Contact with flames	— Quality of materials — Ease of maintenance — Fit — Non-flammability and resistance to flame
Ageing	— Exposure to weather, ambient conditions, cleaning, use	— Resistance to industrial wear and tear — Maintenance of characteristics throughout useful life

RISKS ARISING FROM THE USE OF THE EQUIPMENT

Inadequate protection	— Wrong choice of equipment	— Select equipment in line with the nature and scale of risks and stress: — follow manufacturer's instructions — follow markings on equipment (e.g. level of protection, special uses) — select equipment to suit user's individual requirements
	— Incorrect use of equipment	— Use equipment appropriate and be aware of risk — Follow manufacturer's instructions
	— Equipment dirty, worn or deteriorated	— Maintain in good condition — Regular checks — Replace in good time — Follow manufacturer's instructions

2. GOGGLES AND VISORS

Risk	Origin and type of risk	Safety and performance criteria for selection of equipment
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RISKS TO BE COVERED

Specific	— Stress arising from use	— Eyepiece with adequate mechanical resistance and shatter-resistant
	— Puncturing by low-power foreign bodies	— Imperviousness and resistance
Mechanical	— High-speed particles, splinters, splashing — Stud drivers	— Mechanical resistance
Thermal/Mechanical	— Burning particles at high speed	— Resistance to burning or molten materials
Cold	— Hypothermia of the eyes	— Close fit to face
Chemical	— Irritation from: — gases — aerosols — dusts — fumes	— Imperviousness (lateral protection and chemical resistance)
Radiation	— Technical sources of infra-red, visible and ultraviolet radiation, ionizing radiation and laser rays — Natural radiation: daylight	— Filtering capacity of eyepiece — Imperviousness to radiation of frame — Frame opaque to radiation

RISKS ARISING FROM THE EQUIPMENT

Discomfort, interference with work	— Inadequate comfort: — too bulky — increased perspiration — inadequate grip, contact pressure too high	— Ergonomic design: — reduced bulk — adequate ventilation, anti-misting eyepiece — individual adaptability to the user
	— Poor compatibility — Poor hygiene	— Quality of materials — Ease of maintenance
Accidents and health hazards	— Risk of cuts from sharp edges	— Rounded edges and rims — Use of safety eyepieces

RISKS ARISING FROM THE EQUIPMENT

Accidents and health hazards	— Impairment of vision caused by poor optical quality, e.g. distortion, modification of colours, in particular signals, diffusion — Reduction of field of visibility — Reflection — Sudden severe changes in transparency (light-dark) — Misty eyepieces	— Check optical quality — Use abrasion-proof eyepieces — Eyepieces of adequate size — Anti-reflective eyepieces and frame — Eyepiece light reaction speed (photochromatic) — Anti-misting facility
Ageing	— Exposure to weather, ambient conditions, cleaning, use	— Resistance to industrial wear and tear — Maintenance of characteristics throughout useful life

RISKS ARISING FROM THE USE OF THE EQUIPMENT

Inadequate protection	— Wrong choice of equipment	— Select equipment in line with the type and scale of the risks and stress: — follow manufacturer's instructions — follow markings on equipment (e.g. level of protection, special uses) — Select equipment to suit user's individual requirements
	— Incorrect use of equipment	— Use equipment appropriately, be aware of risk — Follow manufacturer's instructions
	— Equipment dirty, worn or deteriorated	— Maintain in good condition — Regular checks — Replace in good time — Follow manufacturer's instructions

3. EAR PROTECTORS

Risk	Origin and type of risk	Safety and performance criteria for selection of equipment
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RISKS TO BE COVERED

Noise	— Continuous noise — Impulse noise	— Sufficient noise reduction for all types of noise
Thermal	— Metal splashing, for example during welding	— Resistance to molten or burning materials

RISKS ARISING FROM THE EQUIPMENT

Discomfort, interference with work	— Inadequate comfort: — too bulky — too much pressure — increased perspiration — inadequate grip	— Ergonomic design: — bulk — pressure when worn and effort required to keep in place — adaptability to individual requirements
Restriction of hearing capacity	— Deterioration of ability to understand words, recognize signals and key sounds during work and to locate direction of noise	— Variation in noise reduction depending on frequency, reduction in hearing performance — Possibility of replacing shells with earplugs — Audio tests before selection — Use of appropriate electro-acoustic protection

RISKS ARISING FROM THE EQUIPMENT

Accidents and health hazards	— Poor compatibility — Poor hygiene — Unsuitable materials	— Quality of materials — Ease of maintenance — Possibility of replacing muffs with shells, use of disposable earplugs
	— Sharp edges — Pulls hair — Contact with burning objects — Contact with flame	— Rounded edges and corners — Eliminate elements which pull hair — Resistance to combustion and melting — Non-flammability, resistance to flame
Ageing	— Exposure to weather, ambient conditions, cleaning, use	— Resistance to industrial wear and tear — Maintenance of characteristics throughout useful life

RISKS ARISING FROM THE USE OF THE EQUIPMENT

Inadequate protection	— Wrong choice of equipment	— Select equipment in line with nature and scale of risks and stress: — follow manufacturer's instructions — follow markings on equipment (e.g. level of protection, special uses) — Select equipment to suit user's individual requirements
	— Incorrect use of equipment	— Use equipment appropriate, be aware of risk — Follow manufacturer's instructions
	— Equipment dirty, worn or deteriorated	— Maintain in good condition — Regular checks — Replace in good time — Follow manufacturer's instructions

4. RESPIRATORS

Risk	Origin and type of risk	Safety and performance criteria for selection of equipment
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RISKS TO BE COVERED

Effect of dangerous substances in inhaled air	— Particulate pollutants (dust, fumes, aerosols)	— Particle filter of the required efficiency (filter grade), depending on concentration, toxicity/health hazard and size range of particles — Particular attention should be given to liquid particles (droplets)
	— Gaseous and evaporative pollutants	— Selection of suitable gas filter type and appropriate filter grade, depending on concentration, toxicity/health hazard, length of time to be worn and nature of work
	— Particulate and gaseous aerosol pollutants	— Selection of suitable combined filter type according to same criteria as for particle and gas filters
Lack of oxygen in inhaled air	— Oxygen retention	— Guaranteed oxygen supply through equipment
	— Oxygen pressure	— Respect oxygen capacity of equipment in relation to duration of use

RISKS ARISING FROM THE EQUIPMENT

Discomfort, interference with work	— Inadequate comfort: — size — bulk — supply — respiratory resistance — microclimate in respirator — use	— Ergonomic design: — adaptability — small bulk, good weight distribution — no interference with head movements — respiratory resistance and high pressure in respiratory zone — respirators with breathing valve, blower — easy to handle/use
Accidents and health hazards	— Poor compatibility — Poor hygiene — Not airtight (leaks) — Accumulation of CO₂ in inhaled air — Contact with naked flames, sparks, spatters of molten metal — Reduction of field of vision — Contamination	— Quality of materials — Ease of maintenance and disinfection — Airtight fit to the face; imperviousness of equipment — Respirators with breathing valves, blower or CO₂ absorbers — Use of non-flammable materials — Adequate range of field of vision — Resistance, ease of decontamination
Ageing	— Exposure to weather, ambient conditions, cleaning, use	— Resistance to industrial wear and tear — Maintenance of characteristics throughout useful life

RISKS ARISING FROM THE USE OF THE EQUIPMENT

Inadequate protection	— Wrong choice of equipment	— Select equipment in line with nature and scale of risks and stress: — follow manufacturer's instructions — follow markings on equipment (e.g. level of protection, special uses) — observe restrictions on use and duration of use; where oxygen concentration is too high or too low clean-air equipment should be used instead of filtered-air equipment — Select equipment to suit user's individual requirements (possibility of change)
	— Incorrect use of equipment	— Use equipment appropriately, be aware of risk — Follow information and instructions for use provided by manufacturer, safety organizations and test laboratories
	— Equipment dirty, worn or deteriorated	— Maintain in good condition — Regular checks — Respect maximum periods of use — Replace in good time — Follow manufacturer's instructions as safety rules

5. PROTECTIVE GLOVES

Risk	Origin and type of risk	Safety and performance criteria for selection of equipment
RISKS TO BE COVERED		
General	— Contact — Use-related stress	— Area of hand covered — Resistance to tearing, stretching, abrasion
Mechanical	— By abrasive, sharp or pointed objects — Impact	— Resistance to penetration, puncture and cutting — Padding
Thermal	— Burning or cold materials, ambient temperature — Contact with naked flame — Effects of welding work	— Insulation against cold and heat — Non-flammability, resistance to flame — Protection from and resistance to radiation and splashes of molten metal
Electrical	— Electricity	— Electrical insulation
Chemical	— Action of chemicals	— Imperviousness, resistance
Vibration	— Mechanical vibration	— Vibration reduction
Contamination	— Contacts with radioactive materials	— Imperviousness, ease of decontamination, resistance

RISKS ARISING FROM THE EQUIPMENT

Discomfort, interference with work	— Inadequate comfort	— Ergonomic design: — bulk, grading of sizes, surface area, comfort, permeability to water vapour
Accidents and health hazards	— Poor compatibility — Poor hygiene — Gloves stick to the skin	— Quality of materials — Ease of maintenance — Good shaping design
Ageing	— Exposure to weather, ambient conditions, cleaning, use	— Resistance to industrial wear and tear — Maintenance of characteristics throughout useful life — Maintenance of size

RISKS ARISING FROM THE USE OF THE EQUIPMENT

Inadequate protection	— Wrong choice of equipment	— Select equipment in line with nature and scale of risks and stress: — follow manufacturer's instructions — follow markings on equipment (e.g. level of protection, special uses) — Select equipment to suit user's individual requirements
	— Incorrect use of equipment	— Use equipment appropriately, be aware of risk — Follow manufacturer's instructions
	— Equipment dirty, worn or deteriorated	— Maintain in good condition — Regular checks — Replace in good time — Follow manufacturer's instructions

6. SAFETY BOOTS AND SHOES

Risk	Origin and type of risk	Safety and performance criteria for selection of equipment
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RISKS TO BE COVERED

Mechanical	— Objects falling on or crushing the front of the foot — Falls and impact on heel — Falls as a result of slipping — Treading on pointed or sharp objects — Damage to: — the malleoli — the metatarsus — the leg	— Resistance of the front of the boot or shoe — Energy-absorbing capacity of the heel — Reinforcement of instep — Resistance to slipping of sole — Puncture-proof sole — Protection for: — the malleoli — the metatarsus — the leg
Electrical	— Low and medium voltage — High voltage	— Electrical insulation — Electrical conductivity
Thermal	— Cold, heat — Molten metal spatter	— Thermal insulation — Resistance, imperviousness
Chemical	— Harmful dusts or liquids	— Resistance and impermeability

RISKS ARISING FROM THE EQUIPMENT

Discomfort, interference with work	— Inadequate comfort: — the shoe does not fit — poor absorption of perspiration — fatigue from using the equipment — the shoe leaks	— Ergonomic design: — shape, padding, size — vapour permeability and water absorption capacity — flexibility, bulk — waterproofing
Accidents and health hazards	— Poor compatibility — Poor hygiene — Risk of dislocation and sprains because of poor foot holding	— Quality of materials — Ease of maintenance — Stiffness across width of the shoe and arch support, fit
Ageing	— Exposure to weather, ambient conditions, cleaning, use	— Resistance to corrosion, abrasion and fatigue of the sole — Resistance to industrial wear and tear — Maintenance of characteristics throughout useful life
Static electricity	— Discharge of static electricity	— Electrical conductivity

RISKS ARISING FROM THE USE OF THE EQUIPMENT

Inadequate protection	— Wrong choice of equipment	— Select equipment in line with nature and scale of risks and stress: — follow manufacturer's instructions — follow markings on equipment (e.g. level of protection, special uses) — Select equipment to suit user's individual requirements
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RISKS ARISING FROM THE EQUIPMENT

Inadequate protection	— Incorrect use of equipment	— Use equipment appropriately, be aware of risk — Follow manufacturer's instructions
	— Equipment dirty, worn or deteriorated	— Maintain in good condition — Regular checks — Replace in good time — Follow manufacturer's instructions

7. PROTECTIVE CLOTHING

Risk	Origin and type of risk	Safety and performance criteria for selection of equipment
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RISKS TO BE COVERED

General	— Contact — Stress arising from use	— Coverage of torso — Resistance to tearing, stretching, prevention of spreading of tears
Mechanical	— Abrasive, pointed and sharp objects	— Resistance to penetration
Thermal	— Burning or cold materials, ambient temperature — Contact with naked flames — Welding work	— Insulation against cold and heat, maintenance of protective qualities — Non-flammability, resistance to flame — Protection from and resistance to radiation and splashes of molten metal
Electrical	— Electricity	— Electrical insulation
Chemical	— Chemical damage	— Impermeability and resistance to chemical damage
Humidity	— Clothing leaks	— Waterproofing
Non-visibility	— Clothing difficult to see	— Bright or reflective colour
Contamination	— Contact with radioactive materials	— Impermeability, ease of decontamination, resistance

RISKS ARISING FROM THE EQUIPMENT

Discomfort, interference with work	— Inadequate comfort	— Ergonomic design: — size, grading of sizes, surface area, comfort, permeability to water vapour
Accidents and health hazards	— Poor compatibility — Poor hygiene — Clothing sticks to the skin	— Quality of materials — Ease of maintenance — Good shaping design
Ageing	— Exposure to weather, ambient conditions, cleaning, use	— Resistance to industrial wear and tear — Maintenance of characteristics throughout useful life — Maintenance of size

RISKS ARISING FROM THE USE OF THE EQUIPMENT

Inadequate protection	— Wrong choice of equipment	— Select equipment in line with nature and scale of risks and stress: — follow manufacturer's instructions — follow markings on equipment (e.g. level of protection, special uses) — Select equipment to suit user's individual requirements
	— Incorrect use of equipment	— Use equipment appropriately, be aware of risk — Follow manufacturer's instructions
	— Equipment dirty, worn or deteriorated	— Maintain in good condition — Regular checks — Replace in good time — Follow manufacturer's instructions

8. LIFE JACKETS FOR INDUSTRIAL USE

Risk	Origin and type of risk	Safety and performance criteria for selection of equipment
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RISKS TO BE COVERED

Drowning	— Fall into water of a person in work clothing, unconscious or deprived of physical faculties	— Buoyancy — Righting ability even if wearer is unconscious — Inflation time — Triggering of automatic inflation — Ability to keep mouth and nose out of the water
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RISKS ARISING FROM THE EQUIPMENT

Discomfort, interference with work	— Constraint caused by size or poor design	— Ergonomic design which does not restrict vision, respiration or movement
Accidents and health hazards	— Jacket falls off if wearer falls into water — Damage to jacket during use — Function of inflation system affected — Inappropriate use	— Design (stays in position) — Resistance to mechanical damage (impact, crushing, perforation) — Maintenance of safety qualities under all conditions — Type of gas used for inflation (size of container, whether or not gas is harmful) — Efficiency of automatic inflation device (also after long storage) — Possibility of triggering inflation manually — Provision of a device for oral inflation even while jacket is worn — Outline instructions for use marked on jacket indelibly
Ageing	— Exposure to weather, ambient conditions, cleaning, use	— Resistance to chemical, biological and physical attack: seawater, detergents, hydrocarbons, micro-organisms (bacteria, mould) — Resistance to climatic factors: thermal stress, humidity, rain, splashing, solar radiation — Resistance of materials and protective covers: tearing, abrasion, non-flammability, spattering of molten metal (welding)

RISKS ARISING FROM THE USE OF THE EQUIPMENT

Inadequate protection	— Wrong choice of equipment	— Select equipment in line with nature and scale of risks and stress: — follow manufacturer's instructions — follow markings on equipment (e.g. level of protection, special uses) — Select equipment to suit user's individual requirements
	— Incorrect use of equipment	— Use equipment appropriately, be aware of risk — Follow manufacturer's instructions
	— Equipment dirty, worn or deteriorated	— Maintain in good condition — Regular checks — Replace in good time — Follow manufacturer's instructions

9. EQUIPMENT FOR PROTECTION AGAINST FALLS

Risk	Origin and type of risk	Safety and performance criteria for selection of equipment
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RISKS TO BE COVERED

Impact	— Falls from a height — Loss of balance	— Resistance and suitability of equipment and anchorage point
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RISKS ARISING FROM THE EQUIPMENT

Discomfort, interference with work	— Inadequate ergonomic design	— Ergonomic design: — method of construction — bulk — flexibility — ease of putting on — gripping device with automatic length adjustment
	— Restriction of freedom of movement	
Accidents and health hazards	— Dynamic stress exerted on the user and equipment during braking	— Suitability of equipment: — distribution of braking stress to parts of the body with absorption capacity — reduction of braking force — braking distance — position of attaching device
	— Oscillation and lateral impact	— Anchorage point above the head, anchorage at other points
	— Static stress exerted on suspended body by straps	— Design of equipment (distribution of stress)
	— Slipping of link device	— Short link device (e.g. safety harness, escape line)
Ageing	— Change in mechanical resistance resulting from exposure to weather, ambient conditions, cleaning and use	— Resistance to corrosion — Resistance to industrial wear and tear — Maintenance of characteristics throughout useful life

RISKS ARISING FROM THE USE OF THE EQUIPMENT

Inadequate protection	— Wrong choice of equipment	— Select equipment in line with nature and scale of risks and stress: — follow manufacturer's instructions — follow markings on equipment (e.g. level of protection, special uses) — Select equipment to suit user's individual requirements
	— Incorrect use of equipment	— Use equipment appropriately, be aware of risk — Follow manufacturer's instructions
	— Equipment dirty, worn or deteriorated	— Maintain in good condition — Regular checks — Replace in good time — Follow manufacturer's instructions

ANNEX IV

Non-exhaustive guide list of activities and sectors of activity referred to in Article 6 (1)

1. HEAD PROTECTION (SKULL PROTECTION)

Protective helmets

- Building work, particularly work on, underneath or in the vicinity of scaffolding and elevated work places, erection and stripping of formwork, assembly and installation work, work on scaffolding and demolition work.
- Work on steel bridges, steel building construction, masts, towers, steel hydraulic structures, blast furnaces, steel works and rolling mills, large containers, large pipelines, boiler plants and power stations.
- Work in pits, trenches, shafts and tunnels.
- Earth and rock works.
- Work in underground workings, quarries, open diggings, coal stock removal.
- Work with bolt-driving tools.
- Blasting work.
- Work in the vicinity of lifts, lifting gear, cranes and conveyors.
- Work with blast furnaces, direct reduction plants, steelworks, rolling mills, ironworks, forging, drop forging and casting.
- Work with industrial furnaces, containers, machinery, silos, bunkers and pipelines.
- Shipbuildings.
- Railway shunting work.
- Slaughterhouses.

2. FOOT PROTECTION

Safety shoes with pierce-proof soles

- Carcass work, foundation work and roadworks.
- Scaffolding work.
- The demolition of carcass work.
- Work with concrete and prefabricated parts involving formwork erection and stripping.
- Work in contractors' yards and warehouses.

Safety shoes without pierce-proof soles

- Work on steel bridges, steel building construction, masts, towers, lifts, steel hydraulic structures, blast furnaces, steelworks and rolling mills, large containers, large pipelines, cranes, boiler plants and power stations.
- Furnace construction, heating and ventilation installation and metal assembly work.
- Conversion and maintenance work.
- Work with blast furnaces, direct reduction plants, steelworks, rolling mills, ironworks, forging, drop forging, hot pressing and drawing plants.
- Work in quarries and open diggings, coal stock removal.
- Working and processing of rock.
- Flat glass products and container glassware manufacture, working and processing.
- Work with moulds in the ceramics industry.
- Lining of kilns in the ceramics industry.
- Moulding work in the ceramic ware and building materials industry.
- Transport and storage.
- Work with frozen meat blocks and preserved foods packaging.
- Shipbuilding.
- Railway shunting work.
- Skilled work of all kinds.

Safety shoes with heels or wedges and pierce-proof soles

- Roof work.

Protective shoes with insulated sole

- Work with and on very hot or very cold materials.

Safety shoes which can easily be removed

- Where there is a risk of penetration by molten substances.

3. EYE OR FACE PROTECTION

Protective goggles, face shields or screens

- Welding, grinding and separating work.
- Caulking and chiselling.
- Rock working and processing.
- Work with bolt-driving tools.
- Work on stock removing machines for small chippings.
- Drop forging.
- The removal and breaking up of fragments.
- Spraying of abrasive substances.
- Work with acids and caustic solutions, disinfectants and corrosive cleaning products.
- Work with liquid sprays.
- Work with and in the vicinity of molten substances.
- Work with radiant heat.
- Work with lasers.

4. RESPIRATORY PROTECTION

Respirators

- Work in containers, restricted areas and gas-fired industrial furnaces where there may be gas or insufficient oxygen.
- Work in the vicinity of the blast furnace charge.
- Work in the vicinity of gas converters and blast furnace gas pipes.
- Work in the vicinity of blast furnace taps where there may be heavy metal fumes.
- Work on the lining of furnaces and ladles where there is dust.
- Spray painting where dedusting is inadequate.
- Work in shafts, sewers and other underground areas connected with sewage.
- Work in refrigeration plants where there is a danger that the refrigerant may escape.

5. HEARING PROTECTION

Ear protectors

- Work with metal presses.
- Work with pneumatic drills.
- The work of ground staff at airports.
- Pile-driving work.

6. BODY, ARM AND HAND PROTECTION

Protective clothing

- Work with acids and caustic solutions, disinfectants and corrosive cleaning substances.
- Work with or in the vicinity of hot materials and where the effects of heat are felt.
- Work on flat glass products.
- Sand spraying.
- Work in deep-freeze rooms.

Fire-resistant protective clothing

- Welding in restricted areas.

Pierce-proof aprons

- Boning and cutting work.
- Work with hand knives involving drawing the knife towards the body.

Leather aprons

- Welding.
- Forging.
- Casting.

Forearm protection

- Boning and cutting.

Gloves

- Welding.
- Handling of sharp-edged objects, other than machines, where there is a danger of being cut.
- Unprotected work with acids and caustic solutions.

Metal mesh gloves

- Boning and cutting.
- Regular cutting using a hand knife for production and slaughtering.
- Changing the knives of cutting machines.

7. WEATHERPROOF CLOTHING

- Building work in the open air in rain and cold weather.

8. REFLECTIVE CLOTHING

- Work where the workers must be clearly visible.

9. SAFETY HARNESES

- Work on scaffolding.
- Assembly of prefabricated parts.
- Work on masts.

10. SAFETY ROPES

- Work in high crane cabs.
- Work in high cabs of warehouse stacking and retrieval equipment.
- Work in high sections of drilling towers.
- Work in shafts and sewers.

11. SKIN PROTECTION

- Processing of coating materials.
 - Tanning.
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