
**Personal protective equipment for
firefighters — Standard terms and
definitions**

*Équipement de protection personnelle pour pompiers — Termes et
définitions normalisés*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

This document was prepared by Technical Committee ISO/TC 94, *Personal safety — Protective clothing and equipment*, Subcommittee SC 14, *Fire-fighters' personal equipment*.

Introduction

The definitions compiled in this document apply to the standards and draft standards prepared by ISO/TC 94/SC 14.

For this reason, the terms and definitions laid down in this technical report only cover personal protective equipment which is used by firefighters.

Since the document was developed under Clause 5.2 of the Vienna Agreement, it also takes account of terms and definitions of the relevant ISO-TC for protective clothing, ISO/TC 94/SC 13 and ISO/TR 11610. In addition, terms applied by the American National Fire Protection Association standards body and other standards bodies including EN and AS/NZS Standards are included in so far as ISO/TC 94/SC 14 use them in its standardising activities.

This document is intended to serve as a reference document for ISO/TC 94/SC 14 to ascertain what definitions already exist and may be used for setting up new standards and to provide guidance in the elaboration of new definitions. The document should be taken into account when terms need to be defined in ISO/TC 94/SC 14. Except in exceptional circumstances, terms included in [Clause 3](#) of this document should not be re-defined with a different meaning in a standard prepared by ISO/TC 94/SC 14. If the particular use of a term requires a further definition to limit its meaning within the definition in this document, this document should be referred to and the term number given. The division of a concept defined in this document into sub-concepts in a terms and definitions clause of another standard should be in accordance with ISO 704:1994 and ISO 860. The layout should be in accordance with ISO 10241-1.

Whenever new terms are defined, the principles laid down in ISO 10241-1, ISO 860 and ISO 704 should be taken into account as far as possible.

It is strongly recommended that terms in this document are used within the limits of their definitions when they are used in manufacturers' information leaflets and in advertising and promotion of products covered by standards prepared by ISO/TC 94/SC 14.

This document aims to facilitate the use of terms that have already been defined and to serve as a basis for further definitions when new standards are being developed for firefighters' personal protective equipment.

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Personal protective equipment for firefighters — Standard terms and definitions

1 Scope

This document contains a list of terms which are frequently used in the standardization of personal protective equipment worn by firefighters and definitions of these terms. The definitions are intended to support an unambiguous use of the terms listed.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

NOTE The following terms and definitions have been taken from ISO/TR 11610 and the existing standards and draft standards in ISO/TC 94/SC 14. For each definition, the source standard(s) is given below the term. For some terms, the definition given in the document refers to its use in the specific field of firefighters personal protective equipment.

3.1

abrasion cycle

completion of all the translational abrasion movements tracing a Lissajous figure comprising 16 rubs, i.e. 16 revolutions of the two outer drives and 15 revolutions of the inner drive of the Martindale abrasion tester

[SOURCE: ISO 12947-1:1998, 3.2]

3.2

abrasion rub

one revolution of the outer drives of the Martindale abrasion tester

[SOURCE: ISO 12947-11:1998, 3.1]

3.3

attached components

components such as but not limited to gloves and boots that can be either temporarily or permanently joined or fastened, either by design or by a procedure described by the manufacturer in the user instructions, to the chemical protective suit to create a chemical protective ensemble

3.4

accessory

additional parts that are approved by the manufacturer and can be attached to an item of PPE but are not necessary to fulfil the requirements of the standard

EXAMPLE Cable clips, lamp brackets, etc.

[SOURCE: ISO 11999-1:2015, 3.1, modified — “is” changed to “are”.]

**3.5
afterflame**

persistence of flaming of material under specified test conditions, after the ignition source has been removed

[SOURCE: ISO/TR 11610:2004, 3.5]

**3.6
afterflame time**

duration of flaming after removal of ignition source; length of time for which a material continues to flame, under the specified test conditions, after the ignition source has been removed

Note 1 to entry: Afterflame time is measured to the nearest second and afterflame times of less than 1,0 s should be recorded as zero.

[SOURCE: ISO/TR 11610:2004, 3.6, modified — Note to entry added.]

**3.7
afterglow**

persistence of glowing combustion of a material under specified test conditions, after cessation of afterflaming or, if no afterflaming occurs, after removal of the ignition source

Note 1 to entry: Afterglow is a continuation of combustion with the evolution of heat and light but without flame. Some materials absorb heat during the flame application and continue to emit this absorbed heat after removal of the igniting flame. This glowing without combustion should not be recorded as afterglow.

[SOURCE: ISO 15025:2016, 3.2]

**3.8
afterglow time**

duration of flaming after removal of ignition source

Note 1 to entry: It is also defined as the length of time for which a material continues to flame under the specified test conditions, after the ignition source has been removed.

Note 2 to entry: Afterflame time is measured and reported to the nearest second.

[SOURCE: ISO 15025:2016, 3.3, modified — original text is “duration of afterglow”.]

**3.9
ageing**

change of one or more initial properties of the materials during the passage of time

[SOURCE: ISO/TR 11610:2004, 3.9]

**3.10
antistatic footwear**

footwear whose resistance, when measured, lies above 100 k Ω and is less than or equal to 1 000 M Ω

Note 1 to entry: The resistance is measured according to ISO 20344:2011 5.10.

[SOURCE: ISO 20345:2011, 3.15, modified — text added “whose resistance, when measured, lies”]

**3.11
anti-wicking barrier**

material used to prevent the transfer of liquid from outside the garment to inside the garment, usually in addition to or replacing part of the moisture barrier at the edge(s)

[SOURCE: EN 469:2005, 3.1]

3.12**approach fire fighting**

limited, specialized fire fighting operations conducted at a distance from incidents involving very high levels of radiant, convective and contact heat, such as bulk flammable gas and bulk flammable liquid fires

[SOURCE: ISO/TR 11610:2004, 3.11]

3.13**arch**

bottom curved portion of the foot, extending from the heel to the ball

3.14**assemblage**

permanent fastening between two or more different garments, or between the protective clothing and accessories obtained for example by sewing, welding, vulcanising, gluing

[SOURCE: ISO/TR 11610:2004, 3.17]

3.15**attached components**

components such as but not limited to gloves and boots that can be either temporarily or permanently joined or fastened, either by design or by a procedure described by the manufacturer in the user instructions, to the chemical protective suit to create a chemical protective ensemble

3.16**basic plane of the head or headform**

plane at the level of the opening of the external auditory meatus and the lower edge of the eye sockets

[SOURCE: ISO 11999-1:2015, 3.2]

3.17**basic shape**

outer shape which the helmet would have if it had neither comb nor brim nor any of the fairings or radii associated with these

[SOURCE: ISO 11999-1:2015, 3.4]

3.18**behind-the-head earmuff**

earmuff designed to be worn with the headband passing behind the head

[SOURCE: ISO 16073:2011, 3.2]

3.19**behind-the-head headband ear-plugs**

ear-plugs designed to be worn with the headband passing behind the head

[SOURCE: ISO 16073:2011, 3.1]

3.20**biological agents**

biological materials that are capable of causing an acute disease or long term damage to the human body

3.21**biological terrorism agents**

liquid or particulate agents that consist of a biologically derived toxin or pathogen used to inflict lethal or incapacitating casualties, generally on a civilian population as a result of a terrorist attack

3.22**body fluid-borne pathogen**

infectious micro-organisms, including bacteria or viruses, carried in human, animal, or clinical body fluids, organs, or tissues

3.23

body fluids

natural fluids or secretions that are produced by the body including, but not limited to, blood, semen, mucus, faeces, urine, vaginal secretions, breast milk, amniotic fluid, cerebrospinal fluid, synovial fluid, and pericardial fluid

3.24

bootee

sock like extension of the chemical protective suit

Note 1 to entry: The bootee may or may not be made of the same material used in the construction of the chemical protective suit.

3.25

breakthrough time

<protection against chemicals> elapsed time between the initial application of a test chemical to the appropriate surface of a material and its subsequent presence on the other side of the material, measured as described in the relevant standard

[SOURCE: ISO/TR 11610:2004, 3.26]

3.26

brim

ridge protruding outwards from the basic shape of the helmet shell forming the lower edge of the shell and including its associated fairings and radii

[SOURCE: ISO 11999-1:2015, 3.5]

3.27

brim line

horizontal plane with a reference point at the intersection of the front opening of the helmet and the mid-sagittal plane

3.28

burn injury

burn damage which occurs at various levels of depth with human tissues

Note 1 to entry: Burn injury in human tissue occurs when the tissue is heated and kept at an elevated temperature for a critical period of time. The amount of burn injury, first, second, or third-degree depends upon the level of the elevated temperature and the duration of time.

[SOURCE: ISO/TR 11610:2004, 3.34]

3.29

bust girth

maximum horizontal girth measured during normal breathing with the subject standing upright and the tape-measure passed over the scapulae under the armpits and across the breasts: normal underclothing to be worn

[SOURCE: ISO/TR 11610:2004, 3.35]

3.30

care

processes and procedures for cleaning, decontamination, and storage of protective clothing and equipment

3.31

cellular outsole

cellular outsole having a density of 0,9 g/ml or less with a cell structure visible under 10x magnification

[SOURCE: ISO 11999-1:2015, 3.6]

3.32**central vertical axis**

line relative to the headform that lies in the plane of symmetry, that is normal to the basic plane at a point equidistant from the front and the back of the headform at the level of the reference plane

[SOURCE: ISO 11999-1:2015, 3.7]

3.33**challenge chemical test chemical**

chemical used to contact a protective clothing material sample to determine chemical/protective clothing material interactions or compatibility

[SOURCE: ISO/TR 11610:2004, 3.39]

3.34**char**

formation of a carbonaceous brittle residue when material is exposed to thermal energy

[SOURCE: ISO 15025:2000, 2.5, modified — added carbonaceous.]

3.35**chemical flash fire**

ignition of a flammable vapour or gas that produces an outward expanding flame front, as those vapours or gases burn

Note 1 to entry: This burning and expanding flame front (fire ball) will release both thermal and kinetic energy to the environment.

3.36**chemical protection layer**

layer or layers included in the composite that provide penetration resistance against chemicals and to provide gas-tight integrity for the purpose of providing protection from chemical hazards

3.37**chemical protective clothing**

combined assembly of garments worn to provide protection to the skin against exposure to or contact with chemicals

[SOURCE: ISO/TR 11610:2004, 3.40]

3.38**chemical protective clothing material**

any material or combination of materials used in an item of protective clothing for the purpose of isolating parts of the body from direct contact with a chemical

[SOURCE: ISO/TR 11610:2004, 3.41]

3.39**chemical protective suit**

clothing worn to protect against chemicals that covers the whole, or greater part of the body

Note 1 to entry: A chemical protective suit may comprise of garments combined together to provide protection to the body. A suit may also have various types of additional protection such as hood or helmet, boots and gloves joined with it.

[SOURCE: ISO/TR 11610:2004, 3.42, modified — The two last sentences have been moved into a Note to entry.]

3.40

chemical protective suit ensemble

combination of a chemical protective suit with the wearer's respiratory protective equipment, gloves, footwear, communications system, and cooling device, or some combination of those

[SOURCE: ISO/TR 11610:2004, 3.43]

3.41

chemical terrorism agents

liquid, solid, gaseous and vapour chemicals capable of inflicting lethal or incapacitating casualties, generally on a civilian population as a result of a terrorist attack

3.42

chest girth

maximum horizontal girth measured during normal breathing with the subject standing upright and the tape-measure passed over the scapulae under the armpits and across the chest

[SOURCE: ISO/TR 11610:2004, 3.44]

3.43

chinstrap

adjustment device, being part of the retention system, fitting under the chin to secure the helmet to the head

[SOURCE: AS/NZS 2512.1:2009, 3.6]

3.44

class

designation of a protective item in this standard based upon its level of flame and thermal protection, for example Class 1 and Class 2

Note 1 to entry: All items of the same "class" will have the same level of performance in flame and thermal protection and can be used together to make a protective ensemble.

3.45

cleaning

act of removing soils and contaminants from protective clothing and equipment by a mechanical, chemical, thermal, or combined processes

3.46

cleaning cycle

washing and a drying cycle or a dry cleaning cycle

[SOURCE: ISO 11999-1:2015, 3.10]

3.47

cleat

protruding part(s) of the outer surface of the sole

[SOURCE: ISO 20345:2011, 3.8]

3.48

closure

device, for example, zipper, "touch and close" fastener, etc., to close openings for the donning of protective clothing

[SOURCE: ISO/TR 11610:2004, 3.47]

3.49**closure system**

method of fastening openings in the garment including combinations of more than one method of achieving a secure closure, e.g. a slide fastener covered by an over flap fastened down with a touch and close fastener

Note 1 to entry: This term does not cover seams.

[SOURCE: ISO/TR 11610:2004, 3.48]

3.50**clothing assembly**

garments designed to always be worn together

Note 1 to entry: If several garments are used to achieve the performance levels, they are clearly labelled to this effect.

[SOURCE: ISO 16073:2011, 3.7]

3.51**clothing ensemble**

group of garments worn together on the body at the same time

[SOURCE: ISO/TR 11610:2004, 3.49]

3.52**cold environment**

specific conditions characterized by the combination of defined low temperatures, humidity, wind and thermal radiation

[SOURCE: ISO/TR 11610:2004, 3.51]

3.53**collar**

portion of the upper torso garment that encircles the neck

3.54**collar length**

measurement along top of collar from point-to-point

3.55**collar lining**

part of collar fabric composite that is next to the skin when the collar is closed in the raised position

[SOURCE: ISO 11999-1:2015, 3.12]

3.56**collar width**

measurement at centre back from top edge of unfolded collar to the bottom collar seam

3.57**combined-performance material**

<high-visibility warning clothing> material intended to exhibit both background fluorescent and retroreflective properties

[SOURCE: ISO/TR 11610:2004, 3.53]

3.58**comfort system**

material in a helmet which serves to improve comfort for the wearer

[SOURCE: ISO 11999-1:2015, 3.14]

3.59

complete garment assembly

all materials that form the complete garment

[SOURCE: EN 469:2005, 3.3]

3.60

compliance

compliant

meeting or exceeding all applicable requirements of a standard or other published set of requirements

3.61

component

part or sub-assembly of a protective item necessary for it to meet its respective requirements

3.62

component assembly

material combination found in a multilayer garment arranged in the order of the finished garment construction and including any inner liner

[SOURCE: ISO/TR 11610:2004, 3.54]

3.63

conductive footwear

footwear whose resistance, when measured, lies in the range of 0 k Ω to 100 k Ω

Note 1 to entry: The resistance is measured according to ISO 20344:2004, 5.10.

[SOURCE: ISO 20345:2011, 3.14, modified — text added “whose resistance, when measured, lies”]

3.64

contact temperature

surface temperature of the contact area of the heating cylinder which is kept constant

[SOURCE: ISO/TR 11610:2004, 3.56]

3.65

coronal plane

anatomical plane dividing the head into anterior and posterior portions, perpendicular to the basic and mid sagittal planes and containing the midpoint of a line connecting the superior rims of the right and left auditory meatuses

3.66

corrosion

condition exhibiting signs of deterioration, including but not limited to pitting or loss of metal

3.67

coverage

area of the body which is covered by the whole of the protective equipment and its attachments

[SOURCE: ISO/TR 11610:2004, 3.59]

3.68

coverall

overall

one-piece garment that completely covers the wearer's torso, arms and legs

[SOURCE: ISO 16073:2011, 3.9]

3.69**cradle**

fixed or adjustable portion of the parts of the helmet harness in contact with the head, excluding the nape strap

[SOURCE: AS/NZS 2512.1:2009, 3.13 (a)]

3.70**crown**

portion of the helmet that covers the head above the reference plane

[SOURCE: AS/NZS 2512.1:2009, 3.9]

3.71**crown straps**

part of the helmet suspension that passes over the head

3.72**cuff circumference**

measurement of torso garment cuff along end of opening from folded edge to folded edge, and multiplied by two to obtain circumference

3.73**cup**

hollow component which is mounted on the headband of a hearing protector and to which a cushion and a liner are usually fitted

[SOURCE: ISO 16073:2011, 3.12]

3.74**cushion**

deformable component, usually containing a foam plastic or fluid filling, fitted to the rim of the cup to improve the comfort and fit of the earmuffs on the head

[SOURCE: ISO 16073:2011, 3.13]

3.75**cushioning (harness)**

material to improve wearer comfort but which is not intended to perform the function of protective padding

[SOURCE: AS/NZS 2512.1:2009, 3.13]

3.76**decontamination**

act of removing hazardous materials, body fluids, or CBRN agents from protective clothing and equipment by a physical, chemical, or combined process

3.77**degradation**

deleterious change in one or more mechanical properties of a material due to contact with a chemical

[SOURCE: ISO/TR 11610:2004, 3.65]

3.78**dexterity**

<gloves> manipulative ability to perform a task

Note 1 to entry: Reduced dexterity is related to the thickness of glove material, its elasticity and its deformability amongst other things

[SOURCE: ISO/TR 11610:2004, 3.67]

3.79

dielectric test plane

plane that runs diagonally through the test headform that lies from the intersection of the test line and mid sagittal plane in the front to the intersection of the reference plane and mid sagittal plane in the rear

3.80

digit

one of the terminal divisions of the hand

Note 1 to entry: These are numbered from the thumb to the little finger, and the numbers are used to denote the appropriate digits.

[SOURCE: ISO/TR 11610:2004, 3.68, modified — Note to entry was added.]

3.81

disinfectant

agent that destroys, neutralizes, or inhibits the growth of vegetative forms of harmful microorganisms (as bacteria and fungi)

3.82

drag rescue device

device incorporated into the upper torso garment that allows the incapacitated wearer to be moved by dragging

Note 1 to entry: It is not a lifting device.

[SOURCE: ISO 11999-1:2015, 3.19]

3.83

drip

to run or fall in drops

[SOURCE: ISO 11999-1:2015, 3.20]

3.84

dripping

softening with material movement and consequent detachment

[SOURCE: ISO 11999-1:2015, 3.21]

3.85

dry suit

<immersion suits> a garment that stops the entry of significant quantities of water upon immersion

[SOURCE: ISO/TR 11610:2004, 3.71]

3.86

dual-use industrial chemicals

highly toxic industrial chemicals that have been identified as mass casualty threats that could be used as weapons of terrorism to inflict casualties, generally on a civilian population, during a terrorist attack

Note 1 to entry: Dual-use industrial chemicals can be liquid, solid, or gaseous agents.

3.87

ear covers

ear flaps

portion of the protective helmet that provides limited protection to the helmet/coat interface area

3.88 **earmuff**

hearing protector consisting of a cup to be pressed against each pinna or of a circumaural cup to be pressed against the head around each pinna

Note 1 to entry: The cups can be pressed against the head with a headband or by means of a device attached to a helmet or other equipment.

[SOURCE: ISO 16073:2011, 3.17]

3.89**(earmuff) liner**

acoustically absorptive material contained within the cup, intended to increase the attenuation of the earmuffs at certain frequencies

3.90 **earplug**

hearing protector worn within each of the external ear canals (aural) or in the concha, against the entrance to each of the external ear canals (semi-aural)

[SOURCE: ISO 16073:2011, 3.18]

3.91 **ease**

sizing and tolerance of garments that allow good fit and does not inhibit natural body movements or the performance of job related tasks

3.92 **electrically insulating footwear**

footwear which protects the wearer against electrical shocks by preventing the passage of dangerous current through the body via the feet

[SOURCE: ISO 20345:2011, 3.16]

3.93 **emergency response team**

firefighters and other first responders that are trained and equipped to respond to incidents involving the accidental release of hazardous materials

3.94 **energy absorption system**

helmet material and/or suspension system which serves to dampen impact energy

[SOURCE: ISO 11999-1:2015, 3.23]

3.95 **ensemble**

combination or assembly of multiple items that are individually compliant with a standard that provide protection to the head, upper torso including arms and hands and the lower torso including feet

[SOURCE: ISO 11999-1:2015, 3.24, modified — original text is “material and/or system in a helmet which serves to dampen impact energy”.]

3.96 **entry firefighting**

very specialized fire fighting operations, which may include the activities of rescue and fire suppression at incidents involving very high levels of radiant, convective and contact heat, such as aircraft fires, bulk flammable gas and bulk flammable liquid fires, and which may involve voluntary direct entry into flames

[SOURCE: ISO/TR 11610:2004, 3.74]

3.97

exhaust valve

component of a chemical protective suit that prevents over pressurization of the suit

3.98

exterior fabric

outer fabric of a suit, either in the form of a single or composite fabric

[SOURCE: ISO/TR 11610:2004, 3.75]

3.99

exterior pockets

pockets located on the exterior of the protective garment

[SOURCE: ISO 11999-1:2015, 3.25]

3.100

faceshield

form of face and eye protection that can be placed in front of the eyes and that covers a large part of the face, sometimes a part or accessory to a helmet

[SOURCE: ISO 11999-1:2015, 3.26]

3.101

facial opening

opening in front of the fire hood interfacing with the eye protectors/respiratory protective device facemask

[SOURCE: ISO 11999-1:2015, 3.27]

3.102

fastener

means by which a removable strap or belt is attached to the fastening point on the garment

[SOURCE: ISO/TR 11610:2004, 3.78]

3.103

fighting fires occurring in structures

activities of rescue, fire suppression and property conservation in buildings, enclosed structures, vehicles, marine vessels, or like properties that are involved in a fire or emergency situation

[SOURCE: ISO 11999-1:2015, 3.28]

3.104

fire-fighters protective clothing

specialized garments providing protection for the firefighter's torso, neck, arms, and legs, but excluding the head, hands, and feet

[SOURCE: ISO 11999-1:2015, 3.30]

3.105

firefighter's protective ensemble

assembly of garments and equipment that together with the wearer's RPD limits exposure to the thermal hazards associated with fire suppression and the other hazards associated with life and property conservation related to the fire and that cover the wearer altogether and that are all compatible with each other

3.106**fire hood**

item worn directly in contact with the head to protect exposed parts of the head and neck where the protective coat/helmet/respiratory protective device (RPD) facepiece interface

[SOURCE: ISO 11999-1:2015, 3.29]

3.107**firefighter's protective glove**

specific gloves for protection for the firefighter's hands and wrists

[SOURCE: ISO 11999-1:2015, 3.31]

3.108**fit**

quality, state, and manner when worn, in which clothing and equipment, relate to the human body

3.109**fitting device**

items on a helmet that enable it to be adjusted to a user's head or neck with the aim to correctly position it for maximum protection and comfort

Note 1 to entry: These features can be incorporated directly into the helmet, the helmet retention system, or the helmet shock absorption system.

[SOURCE: ISO 11999-1:2015, 3.32]

3.110**five-finger glove**

any glove covering both the back and palm of the hand and wrist, and having separate individual fingers and thumb

[SOURCE: ISO/TR 11610:2004, 3.81]

3.111**flame application time**

time for which the ignition flame is applied to the test specimen

[SOURCE: ISO/TR 11610:2004, 3.82]

3.112**flammable****explosive atmosphere**

atmospheres containing substances or gases at concentrations that will burn or explode if ignited

3.113**flame distribution**

<flash fire testing of clothing> spatial distribution of incident flames from the test facility burners to provide a controlled heat flux density over the manikin surface

[SOURCE: ISO/TR 11610:2004, 3.83]

3.114**flame resistance**

property of a material whereby combustion is prevented, terminated, or inhibited following the application of a source of ignition, with or without subsequent removal of the ignition source

Note 1 to entry: Flame resistance can be an inherent property of a material, or it can be imparted by specific treatment.

3.115

flaming debris

material separating from the specimen during the test procedure and igniting the filter paper

[SOURCE: ISO 15025:2000, 3.7]

3.116

flash fire

rapid and intense fire caused by ignition of a mixture of air and a dispersed flammable substance such as a solid (including dust), flammable or combustible liquid (such as an aerosol or fine mist), or a flammable gas, without the production of damaging pressure

3.117

fluorescence

process by which radiant flux of certain wavelengths is absorbed and reradiated non-thermally in other, usually, longer wavelengths

[SOURCE: ISO 11999-1:2015, 3.34]

3.118

fluorescent material

material that absorbs optical radiation at particular wavelengths and emits optical radiation at longer wavelengths

[SOURCE: ISO/TR 11610:2004, 3.85]

3.119

footwear

component of the protective ensemble designed to provide protection to the foot, ankle, and lower leg

3.120

footwear upper

portion of footwear above the sole, heel, and insole

3.121

foul weather

specific conditions characterised by the combination of precipitation, rain and fog, ground humidity and wind at temperatures of $-5\text{ }^{\circ}\text{C}$ and above

[SOURCE: ISO/TR 11610:2004, 3.86]

3.122

fuel oil

aliphatic hydrocarbon constituent of petroleum

[SOURCE: ISO 11999-1:2015, 3.35]

3.123

full face mask

face piece which covers the eyes, nose, mouth and chin and provides adequate sealing on the face of the wearer of a respiratory protective device against the ambient atmosphere

[SOURCE: ISO 11999-1:2015, 3.36]

3.124

full face mask fixing

system enabling a face piece of a respiratory protective device to be fixed to the helmet in such a way that correct sealing around the face is achievable

3.125**functional**

ability of personal protective equipment or its components to continue to be utilized for its intended purpose

3.126**garment**

single item of clothing which may consist of single or multiple layers

[SOURCE: ISO 11999-1:2015, 3.38]

3.127**garment assembly**

two or more layers of the same or different materials joined together at the garment manufacturing stage and including all layers of the material and seams present in that region of the garment

Note 1 to entry: A garment assembly specimen is normally a section cut through the garment but may be a replicate which is in all respects of a section through the proposed garment.

[SOURCE: ISO/TR 11610:2004, 3.88]

3.128**cuff**

<garment> finished edge of the sleeve opening

[SOURCE: ISO 16073:2011, 3.10]

3.129**“gas-tight” chemical protective clothing**

clothing which satisfies the requirements for “leak-tightness” when tested according to the internal pressure test given in EN 464

[SOURCE: ISO/TR 11610:2004, 3.91]

3.130**gas-tight integrity**

ability of a chemical protective suit to meet a leak tightness test

3.131**gas-tight, vapour-protective ensemble**

multiple items of clothing and equipment which when used together provide a high degree of protection for emergency responders from the adverse exposures to the inherent risks of hazardous materials and that demonstrates gas-tight integrity

Note 1 to entry: In this document, the elements of the gas-tight, vapour-protective ensemble include the chemical protective suit, gloves, and footwear.

3.132**gas-tight suit**

<protection against chemicals> one-piece garment with hood, gloves and boots which, when worn with self-contained or air-line breathing apparatus provides the wearer a high degree of separation from harmful liquids, particles and gaseous or vapour contaminants

[SOURCE: ISO/TR 11610:2004, 3.92]

3.133**glove**

personal protective equipment (PPE) which protects the hand or part of the hand against hazards

Note 1 to entry: It can additionally cover part of the forearm and arm.

[SOURCE: ISO/TR 11610:2004, 3.93]

3.134

glove body

that part of the glove that extends from the tip of the fingers to 25 mm beyond the wrist crease

[SOURCE: ISO 11999-1:2015, 3.39]

3.135

cuff

<glove> circular, flared or otherwise expanded part of the glove that extends beyond the opening of the glove body to cover the wrist area

[SOURCE: ISO 16073:2011, 3.11]

3.136

glove liner

innermost layer of the glove body composite as worn that comes into contact with the wearer's skin

3.137

goggles

form of face and eye protection that encloses the orbital area and fits tightly against the face, sometimes a part or accessory to a helmet

[SOURCE: ISO 11999-1:2015, 3.40]

3.138

hardware

non-fabric items used in protective clothing including those made of metal or plastic

EXAMPLE Buttons, zippers, fasteners, and rank markings.

[SOURCE: ISO 11999-1:2015, 3.41]

3.139

harness

complete assembly by means of which the helmet is maintained in position on the head, and which may provide a means of absorbing energy

[SOURCE: ISO 16073:2011, 3.27]

3.140

hazard

situation which can be the cause of harm or damage to the health of the human body

[SOURCE: ISO/TR 11610:2004, 3.98]

3.141

hazardous material

any solid, liquid, gas, or mixture thereof that can potentially cause harm to the human body, through respiration, ingestion, skin absorption, or skin contact

3.142

hazardous materials response

incident involving the release or potential release of hazardous materials into the environment that can cause loss of life, personnel injury, or damage to property and the environment

3.143

headband

<earmuffs> band, usually of metal or plastics, designed to enable the earmuffs to fit securely around the ears by exerting force against the cups and pressure through the cushions

[SOURCE: ISO 16073:2011, 3.29]

3.144
headband

<earplugs> band, usually of metal or plastics, designed to enable the ear-plugs (disposable or re-usable) to be held within (aural) or against (semi-aural) the entrance to the external ear canals by exerting force against the ear-plug elements

[SOURCE: ISO 16073:2011, 3.30]

3.145
headband

<eye protection> part of the eye protector that is fitted around a head to hold the eye protector in position

[SOURCE: ISO 16073:2011, 3.31]

3.146
headband

<helmet> part of the harness surrounding the head

[SOURCE: ISO 16073:2011, 3.28]

3.147
headform

shape replacing the head which is used for testing

Note 1 to entry: The headform used when testing helmets is designed in accordance with EN 960:2006 headform 575.

Note 2 to entry: The headform used testing eye protection is designed in accordance with EN168.

Note 3 to entry: The headform used when testing fire hoods is designed in accordance with EN 960:2006 headform 575.

Note 4 to entry: The headform used for testing hearing protection is designed in accordance with EN138-9.

3.148
headstrap

< earmuffs > flexible strap fitted to each cup, or to the headband close to the cup

Note 1 to entry: The head strap is designed to support behind-the-head and under-the-chin earmuffs by passing over, and resting on top of, the head.

[SOURCE: ISO 16073:2011, 3.33]

3.149
heat flux

thermal intensity indicated by the amount of energy transmitted per unit area and per unit time

Note 1 to entry: The heat flux is expressed in (cal/cm²·s) or (watts/cm²).

[SOURCE: ISO/TR 11610:2004, 3.99, modified — The units have been moved into a Note to entry.]

3.150
heat stress

sum of metabolic and environmental factors (including clothing) leading to heat storage in the body

[SOURCE: ISO/TR 11610:2004, 3.101]

3.151

**heat transfer index
flame**

whole number calculated from the mean time in seconds to achieve a temperature rise of $(24 \pm 0,2)$ °C when the heat transmission is tested using a copper disc of mass $(18 \pm 0,05)$ g and a starting temperature of (25 ± 5) °C

[SOURCE: ISO/TR 11610:2004, 3.102, modified — The term flame has been inserted as second term.]

3.152

**heat transfer levels
 t_1 , t_2 and t_3**

<radiant heat> three different levels, characterized by the time from the start of the irradiation until the total heat transmitted through the specimen (t_1 and t_2) or the momentary heat flux at the back of the specimen (t_3) reaches a certain level

[SOURCE: ISO/TR 11610:2004, 3.103]

3.153

heat transmission factor

measure of the fraction of heat transmitted through a specimen exposed to a source of radiant heat

Note 1 to entry: It is numerically equal to the ratio of the transmitted to the incident heat flux density.

[SOURCE: ISO/TR 11610:2004, 3.104, modified — The second sentence has been moved into a Note to entry.]

3.154

heel breast

forward face of the footwear heel under the arch of the sole

3.155

helmet accessory

additional device approved by the manufacturer, which may be attached to the helmet and intended to be removable by the user, but which provide no protection to the wearer

EXAMPLE Lamp bracket, cable clip.

[SOURCE: ISO 16073:2011, 3.34]

3.156

helmet assembly

helmet, together with any optional or mandatory attached protective components (e.g. ear covers, neck protector, faceshield or goggles)

[SOURCE: ISO 11999-1:2015, 3.43]

3.157

helmet

headgear intended to ensure protection of the wearer's head (and optionally the wearer's neck) against hazards which might occur during operations of fire fighting in buildings and other structures

[SOURCE: ISO 11999-1:2015, 3.44]

3.158

helmet for wildland firefighting

headgear intended to ensure protection of the wearer's head (and optionally the wearer's neck) against hazards that might occur during operations of wildland firefighting

Note 1 to entry: Hereinafter, the helmet for wildland firefighting is referred to as "helmet".

[SOURCE: ISO 16073:2011, 3.35]

3.159**helmet liner**

protective component of a helmet which may provide either the general inner or outer form of the helmet or both

[SOURCE: AS/NZS 2512.1:2009, 3.16, modified — original title is “Liner”.]

3.160**helmet shell**

component in hard material with smooth finish which gives the helmet its general shape and on which may be fixed various helmet accessories

[SOURCE: ISO 16073:2011, 3.36]

3.161**high visibility material****trim**

retroreflective, fluorescent or combination retroreflective and fluorescent material attached to the outer material for visibility enhancement

Note 1 to entry: Retroreflective materials enhance night-time visibility and fluorescent materials improve daytime visibility.

[SOURCE: ISO 16073:2011, 3.37]

3.162**high-visibility warning clothing**

warning clothing intended to provide conspicuousness at all times when light is present

[SOURCE: ISO/TR 11610:2004, 3.106]

3.163**horizontal clearance**

horizontal distance between the headband and the inside of the shell or any protruding part of the inside of the shell

[SOURCE: ISO 16073:2011, 3.38]

3.164**horizontal reach**

<protection against heat or flame> horizontal projection of the igniting flame with the burner in a horizontal position, measured as the distance between the tip of the burner and the extreme end of the yellow part of the flame when viewed in a dim light

[SOURCE: ISO/TR 11610:2004, 3.109]

3.165**ignition**

initiation of combustion

[SOURCE: ISO/TR 11610:2004, 3.111]

3.166**impact area**

<impact protectors> areas of the body which are at greatest risk of impacts

[SOURCE: ISO/TR 11610:2004, 3.114]

3.167

incident heat flux density

amount of energy incident per unit time on the exposed face of the calorimeter

Note 1 to entry: It is expressed in kW/m.

[SOURCE: ISO/TR 11610:2004, 3.115]

3.168

innermost lining

lining on the innermost face of a component assembly of a garment closest to the wearer's skin

Note 1 to entry: Where the innermost lining forms part of a material combination, the material combination shall be regarded as the innermost lining.

[SOURCE: ISO 16073:2011, 3.39]

3.169

insertion loss

mean algebraic difference in decibels between the one-third octave band sound pressure level, measured by the microphone of the acoustic test fixture in a specified sound field under specified conditions, with the hearing protector absent, and the sound pressure level with the hearing protector on, with other conditions identical

[SOURCE: ISO 16073:2011, 3.40]

3.170

insock

removable or permanent footwear component used to cover part or all of the insole

[SOURCE: ISO 20345:2011, 3.6]

3.171

integral additional protective function

part(s) of the helmet, intended by the helmet manufacturer not to be removed by the user, except for maintenance and fitting purposes, and which provide protection to the wearer, other than as provided for by this document

[SOURCE: ISO 11999-1:2015, 3.48]

3.172

interface area

area where items of PPE meet or overlap

EXAMPLE The protective coat/helmet/eyewear/respiratory protective device face piece area, the protective coat/glove area, and the protective trouser/footwear area.

[SOURCE: ISO 16073:2011, 3.41]

3.173

interface component

item(s) designed to provide limited protection to interface areas

EXAMPLE Fire hood and protective wristlets.

[SOURCE: ISO 11999-1:2015, 3.50]

3.174**interior attack**

activity of rescue, fire suppression and property conservation generally performed in the interior or immediate vicinity of the exterior of involved structures, for the purpose of an attack on a fire to directly control or extinguish the fire

[SOURCE: ISO 11999-1:2015, 3.51]

3.175**interlining**

layer between the outermost layer and the innermost lining in a multilayer garment

[SOURCE: ISO 11999-1:2015, 3.52]

3.176**join**

non-permanent fastening between two different garments, or between protective clothing and accessories

[SOURCE: ISO/TR 11610:2004, 3.128]

3.177**leather**

hide or skin tanned to be imputrescible

[SOURCE: ISO 11999-1:2015, 3.53]

3.178**level of performance****performance level**

performance gradation of the flame and thermal properties, the strength and physical properties, the water and liquid resistance properties and the thermal comfort properties of the protective clothing in this document

Note 1 to entry: The levels of flame and thermal protection will determine a garment's "class" and the levels of the other three categories of performance for clothing are reported according to Paragraph 13.3. Levels of performance by category are only determined for clothing (see class)

Note 2 to entry: See Table 1.

[SOURCE: ISO 11999-1:2015, 3.64, modified — The definition has been rewritten.]

3.179**limited use chemical protective clothing**

chemical protective clothing for limited duration of use, i.e to be worn until hygienic cleaning becomes necessary or chemical contamination has occurred and disposal is required

Note 1 to entry: This includes protective clothing for single use and for limited re-use according to the information supplied by the manufacturer.

[SOURCE: ISO/TR 11610:2004, 3.135, modified — Note to entry has been added.]

3.180**line of longest length of a glove**

perpendicular line joining the seam of the cuff (or equivalent position if no seam is present) with the tip of the second finger (or equivalent position in a mitt or one-finger mitt)

[SOURCE: ISO/TR 11610:2004, 3.136]

3.181**liner system**

moisture barrier and thermal barrier layers as used in a garment

3.182

lining

any material that is used to cover or partially cover the interior surface area of a protective garment

3.183

liquid-tight

resistant to penetration by liquids in the form of a continuous jet; this term covers jet-tight and spray-tight

[SOURCE: ISO/TR 11610:2004, 3.139]

3.184

long-cuff glove

glove with a permanently attached stiff but flexible cuff covering the forearm

Note 1 to entry: Deprecated term: gauntlet: this is an inexact synonym of "long-cuff glove".

[SOURCE: ISO/TR 11610:2004, 3.140]

3.185

longitudinal vertical median plane

vertical plane of symmetry of the headform

[SOURCE: ISO 11999-1:2015, 3.54]

3.186

lower torso

area of the body trunk below the navel, excluding the legs, ankles, and feet

3.187

maintenance

act of inspection, service, and repair of protective clothing and equipment including the determination for removal from service

3.188

manufacturer

entity that assumes the liability and provides the warranty for the compliant product

[SOURCE: AS/NZS 4967:2009, 1.5.13]

3.189

material

substances excluding hardware, of which an item of clothing is made

3.190

material assembly

<protection against heat or flame> two or more separate layers of the same or different materials

Note 1 to entry: A material assembly test specimen represents or is taken from the various layers in a single garment or in a series of garments in a clothing system, assembled in equal size and in the order of use

[SOURCE: ISO/TR 11610:2004, 3.143, modified — Note to entry has been added.]

3.191

material combination

material produced from a series of separate layers, intimately combined prior to the item's manufacturing stage

EXAMPLE A quilted material.

[SOURCE: ISO 11999-1:2015, 3.55]

3.192**means of fixing**

means by which the ocular of the visor is supported and interfaced with the designated helmet(s)

Note 1 to entry: This means may be an integral part of the helmet, may be fixed permanently or temporarily, or it may be worn separately but at the same time as the helmet

[SOURCE: ISO 11999-1:2015, 3.56, modified — , modified — Note to entry has been added.]

3.193**melt**, verb

to liquefy a material usually by exposure to heat resulting in a non-reversible change to its structure

Note 1 to entry: For the purposes of this International Standard, melting is observed as the response to heat as evidenced by flowing or dripping.

[SOURCE: ISO 16073:2011, 3.49]

3.194**mesh**

woven or perforated, metal mesh; moulded, woven or perforated plastic mesh

[SOURCE: ISO 16073:2011, 3.50]

3.195**mesh face screen**

mesh type eye protector with mesh face protection that can be worn with a support, directly on the head, or in conjunction with a helmet

[SOURCE: ISO 16073:2011, 3.51]

3.196**mesh face screen with additional or alternative ocular(s)**

mesh face screen incorporating one or two additional or alternative protective oculars

[SOURCE: ISO 16073:2011, 3.52]

3.197**mesh goggle**

eye protector with mesh ocular(s), which tightly encloses the orbital area and sits on the face

Note 1 to entry: Mesh goggles are usually held in position by a headband.

[SOURCE: ISO 16073:2011, 3.53]

3.198**mesh spectacle**

eye protector with mesh oculars mounted in a spectacle type frame with or without side shield

Note 1 to entry: Mesh spectacles are usually held in place by temples.

[SOURCE: ISO 16073:2011, 3.54]

3.199**mesh type eye protector**

either mesh spectacles, mesh goggles, mesh face screens or mesh face screens with one or two oculars

[SOURCE: ISO 16073:2011, 3.55]

3.200

mesh type eye protector resistant to high speed particles

mesh type eye protector that is able to withstand the impact of high speed particles

Note 1 to entry: Such a mesh type eye protector can be used in applications where a risk of high speed particles impact exists together with the need for good ventilation.

[SOURCE: ISO 16073:2011, 3.56]

3.201

mesh visor

part of a mesh face screen covering the eye area and all or parts of the face, which can be removed from the frame or housing and be replaced

[SOURCE: ISO 16073:2011, 3.57]

3.202

mitt (mitten)

any glove covering both the back and palm of the hand and wrist, and having a separate thumb and a common covering for the fingers

[SOURCE: ISO/TR 11610:2004, 3.145]

3.203

mixed ensemble

ensemble of PPE, which cannot be classified as either Type 1 or Type 2 because one or more of the parts of the ensemble meets Type 1 requirements and one or more of the parts of the ensemble meets Type 2 requirements, may be used together to provide whole body and respiratory protection to a firefighter

Note 1 to entry: If all the fitting/interface and compatibility requirements according to ISO 11999-2 are met, such a combination can be designated as an "ISO 11999 Mixed Ensemble".

[SOURCE: ISO 11999-1:2015, 3.58, modified — original text is "ensemble of PPE in which mixed items fulfil heat and flame requirements of Type1 or Type2".]

3.204

model (name)

manufacturer's unique code or name that identifies a product having a specified performance level, a specified minimum zone of protection and thus anticipated body coverage, and a particular construction common to all examples of the model

Note 1 to entry: A model may be available in a range of sizes and styles.

[SOURCE: ISO/TR 11610:2004, 3.146, modified — Note to entry has been added.]

3.205

moisture barrier

part of the component assembly of garments which impedes the transfer of liquids

Note 1 to entry: Moisture barriers might not prevent the passage of some chemical (except accidentally), biological or radiological agents and appropriate PPE should be provided to protect the wearer in such incidents.

[SOURCE: ISO 11999-1:2015, 3.59]

3.206

molten debris

molten material separating from the specimen during the test procedure and falling from the specimen without flaming

[SOURCE: ISO/TR 11610:2004, 3.149]

3.207**mounted accessory**

<high-visibility warning clothing> an item manufactured to be permanently affixed to a garment

[SOURCE: ISO/TR 11610:2004, 3.151]

3.208**multi-layer clothing assembly**

series of layers of garments arranged in the order as worn

Note 1 to entry: The assembly may contain multi-layer materials, material combinations or separate layers of clothing material in single layers

[SOURCE: ISO/TR 11610:2004, 3.153, modified — Note to entry has been added.]

3.209**nape strap**

strap that, when in use, is located completely below the basal plane and aids helmet retention; it may be an integral part of the headband

[SOURCE: AS/NZS 2512.1:2009, 3.13 (d)]

3.210**neck-protector**

integral part or accessory of the helmet which protects the back of the neck from water and/or other liquids, from hot materials, radiant heat and flames

[SOURCE: ISO 11999-1:2015, 3.61]

3.211**“non-gas-tight” chemical protective clothing**

clothing which is resistant to inward leakage of liquid and gaseous chemicals, including liquid aerosols and solid particles, but will not satisfy the testing requirements defined for “gas-tight” chemical protective clothing

[SOURCE: ISO/TR 11610:2004, 3.155]

3.212**non-integral additional protective function**

additional protective device(s) approved by the manufacturer which may be attached to the helmet and intended to be removable by the user, but not specifically required in order for the helmet to satisfy this Standard

3.213**ocular**

generic term for the light transmitting part of an eye-protector (made of mesh, mineral or organic material) permitting vision

EXAMPLE Lens, visor, screen.

[SOURCE: ISO 16073:2011, 3.59]

3.214**ocular additional**

ocular used in front of or behind the mesh ocular area to provide supplementary protection

[SOURCE: ISO 16073:2011, 3.60]

3.215**ocular alternative**

ocular replacing the mesh ocular area to provide specific protection

[SOURCE: ISO 16073:2011, 3.61]

3.216

ocular area

part of a mesh type eye protector, other than the frame, which permits vision

3.217

one finger mitt

any glove covering both the back and palm of the hand and wrist, and having a separate thumb and a separate forefinger and a common covering for the remaining fingers

[SOURCE: ISO/TR 11610:2004, 3.158]

3.218

outer garment

one piece garment which is worn as an outermost layer over a base layer and under garment and which is designed to entirely cover the wearer except for the head, hands and feet

[SOURCE: ISO/TR 11610:2004, 3.162]

3.219

outer glove

outermost glove layer of a multi-layer glove system

3.220

outer material

outermost material of which the protective clothing is made

[SOURCE: ISO 11999-1:2015, 3.63]

2.221

overlap

overlap of garment that exists between jacket and trousers

3.222

over-the-head earmuff

earmuff designed to be worn with the headband passing over the top of the head

[SOURCE: ISO 16073:2011, 3.63]

3.223

over-the-head headband earplug

earplug designed to be worn with the headband passing over the top of the head

[SOURCE: ISO 16073:2011, 3.64]

3.224

pass-through

pass-thru

<protection against chemicals> a means by which air can be passed through the wall of the suit and connected to self-contained breathing apparatus to provide supplementary air

[SOURCE: ISO/TR 11610:2004, 3.165]

3.225

peak

permanent extension of the shell of a helmet above the eyes

[SOURCE: ISO 16073:2011, 3.65]

3.226**penetration**

process by which a chemical and/or micro-organism moves through porous materials, seams, pinholes, or other imperfections in a material on a non-molecular level

[SOURCE: ISO/TR 11610:2004, 3.168]

3.227**penetration - resistant insert**

footwear component placed in the sole complex to provide protection against penetration

[SOURCE: ISO 20345:2011, 3.11]

3.228**percentage heat transmission factor****TF%**

measure of the percentage of heat received by the calorimeter when a test specimen is placed in front of it. It is numerically equal to the percentage ratio of the transmitted to the incident heat flux density

[SOURCE: ISO/TR 11610:2004, 3.171, modified — TF% has been moved as a second term.]

3.229**performance level****level of performance**

number that designates a particular category or range of protection that is intended the product should provide and by which the results of testing can be graded

[SOURCE: ISO/TR 11610:2004, 3.172]

3.230**permeation**

process by which a chemical moves through a material on a molecular level

Note 1 to entry: Permeation involves:

- sorption of the molecules of the chemical into the contacted (outside) surface of a material;
- diffusion of the sorbed molecules in the material, and;
- desorption of the molecules from the opposite (inner) surface of the material.

[SOURCE: ISO/TR 11610:2004, 3.173]

3.231**permeation rate**

mass of test chemical permeating the specimen per unit time per unit area

[SOURCE: ISO/TR 11610:2004, 3.174]

3.232**polymeric materials**

high molecular weight organic compounds made by attaching repeated smaller compound units, called monomers, into a long “chain type” molecule

EXAMPLE Polyurethane or polyvinylchloride.

[SOURCE: ISO 11999-1:2015, 3.65]

3.233

predicted total area of burn injury

<flash fire testing of clothing> sum of the areas represented by the heat flux sensors which calculate at least a second degree burn injury

[SOURCE: ISO/TR 11610:2004, 3.175]

3.234

primary protective garment

compliant garment that is designed and intended to protect the wearer from a specific hazard exposure

3.235

product label

marking provided by the manufacturer on each compliant product containing applicable compliance statements, certification statements, manufacturer and model information, or other similar data

3.236

protective clothing

clothing which covers or replaces personal clothing and which is designed to provide protection against one or more hazards

[SOURCE: ISO/TR 11610:2004, 3.178]

3.237

protective clothing material

any material or combination of materials used in an item of clothing for the purpose of isolating parts of the body from a potential hazard

Note 1 to entry: For the purpose of this document, protective clothing materials include those materials used in the construction of the suit or clothing which serve as the primary barrier for the wearer. Protective clothing materials do not include materials used in the construction of integral visors, gloves, and footwear. Materials used in the construction of integral visors, gloves and footwear are tested for performance separately either in this document or to standards specific to the items being evaluated.

3.238

protective coat

protective garment designed and configured to provide protection to upper torso, neck and arms, excluding the hands and head

[SOURCE: ISO 11999-1:2015, 3.66]

3.239

protective coverage

area of the body which is covered by protective material

[SOURCE: ISO/TR 11610:2004, 3.181]

3.240

protective overall

protective garment designed and configured to provide protection to the neck, torso, arms and legs, excluding the head, hands and feet

[SOURCE: ISO 11999-1:2015, 3.67]

3.241

protective garment

single item of clothing which may consist of single or multiple layers

EXAMPLE Protective coat, protective trouser, or protective overall.

[SOURCE: ISO 11999-1:2015, 3.68]

3.242**protective hood**

interface component that provides limited protection to the head

[SOURCE: ISO 16073:2011, 3.68]

3.243**protective padding**

material that is intended to contribute to the ability of the helmet to attenuate the energy of a blow to the head

[SOURCE: AS/NZS 2512.1:2009, 3.23]

3.244**protective trousers**

trouser that provides protection to lower torso and legs excluding the feet

[SOURCE: ISO 16073:2011, 3.69]

3.245**protective wristlet**

interface component that provides limited protection to the protective garment/glove interface area

[SOURCE: ISO 16073:2011, 3.70]

3.246**proximity fire fighting**

specialized fire fighting operations, which may include the activities of rescue and fire suppression at incidents involving very high levels of radiant, convective and contact heat, such as aircraft fires, bulk flammable gas and bulk flammable liquid fires

Note 1 to entry: These operations are conducted close to the fire but do not involve fire entry.

[SOURCE: ISO/TR 11610:2004, 3.187, modified — Note to entry has been added.]

3.247**puncture**

wound in which a penetrating object makes a discrete hole through the skin which more or less closes after withdrawal of the object

[SOURCE: ISO/TR 11610:2004, 3.188]

3.248**puncture-resistant device**

reinforcement to the bottom of protective footwear that is designed to protect the wearer from a puncture hazard to the bottom of the foot

3.249**quarter lining**

material covering the inner surface of the quarters of the upper portion of footwear

3.250**radiant heat**

heat communicated by energy propagated through space and transmitted by electromagnetic waves

[SOURCE: ISO/TR 11610:2004, 3.189]

3.251

radiant heat transfer index

RHTI

whole number calculated from the mean time in seconds to achieve a temperature rise of $(24 \pm 0,2)$ °C in the calorimeter when testing by this method with a specified incident heat flux density

[SOURCE: ISO/TR 11610:2004, 3.190]

3.252

radiant protective performance

rpp

numerical value indicating the transfer of energy by way of a radiant heat exposure

3.253

radiological agents

radiation associated with X-rays, alpha and gamma emissions from radioactive isotopes, or other material in excess of normal radiation background levels

3.254

reference plane

dimensionally defined plane used for helmet positioning and measuring during testing, parallel to the basic plane, that is measured from the top of the applicable headform or the basic plane

[SOURCE: ISO 11999-1:2015, 3.71]

3.255

reflective protective clothing for specialized firefighting

protective clothing designed to provide protection against high levels of radiant, convective, and contact heat, relying on the ability of the outer materials to reflect intense radiant heat, and appropriate for specialized firefighting operations

[SOURCE: ISO/TR 11610:2004, 3.193]

3.256

removable accessory

<high-visibility warning clothing> item which is temporarily attached to a garment or on to part of the body and is removable without the aid of tools

[SOURCE: ISO/TR 11610:2004, 3.196]

3.257

removable inner liner

winter liner

inner garment designed to be attached to or to be worn separately under an outer garment in order to provide thermal insulation

[SOURCE: ISO 11999-1:2015, 3.72]

3.258

retention system

complete assembly by means of which the helmet is retained in position on the head during use. It may include a harness

[SOURCE: AS/NZS 2512.1:2009, 3.27]

3.259

retroreflection

reflection of light in which the reflected rays are preferentially returned in the direction close to the opposite of the direction of the incident rays, with this property being maintained over wide variations of the direction of the incident rays

[SOURCE: ISO 11999-1:2015, 3.74]

3.260**retroreflective material**

material from which the reflected rays are preferentially returned in direction close to the opposite of the direction of the incident rays

[SOURCE: ISO/TR 11610:2004, 3.203]

3.261**re-usable chemical protective clothing**

chemical protective clothing that is constructed from materials which allow the clothing to be cleaned after repeated chemical exposures such that it remains suitable for continued use

[SOURCE: ISO/TR 11610:2004, 3.192]

3.262**rigid outsole**

sole which cannot be bent through an angle of 45° under a load of 30 N

Note 1 to entry: Testing is performed in accordance with ISO 20344:2011, 8.4.1.

[SOURCE: ISO 20345:2011, 3.9]

3.263**risk**

probability of a specific undesired event occurring so that a hazard is realized

[SOURCE: ISO/TR 11610:2004, 3.205]

3.264**rubber**

vulcanized elastomers

[SOURCE: ISO 11999-1:2015, 3.75]

3.265**safety alert**

procedure by which a manufacturer or other party notifies users, the marketplace, and distributors of potential safety concerns regarding a product

[SOURCE: ISO 11999-1:2015, 3.1]

3.266**sagittal plane of the helmet**

plane corresponding with the longitudinal vertical median plane of the headform when the helmet is adjusted on it according to the manufacturer's instructions

3.267**seam**

permanent junction between two or more pieces of material created by sewing, welding or other methods

[SOURCE: ISO 11999-1:2015, 3.77]

3.268**major A seam**

outer layer or outer shell seam assemblies where rupture could reduce the protection of the garment by exposing the moisture barrier, thermal barrier, undergarment, other clothing, or skin

[SOURCE: ISO 11999-1:2015, 3.78]

3.269

major B seam

inner layer seam assemblies where rupture could reduce the protection of the garment by exposing the next layer of the garment, the wearer's station/work uniform, other clothing, or skin

Note 1 to entry: Each TC can identify the various inner layers in the annex if so desired.

[SOURCE: ISO 11999-1:2015, 3.79, modified — original text “moisture barrier or thermal barrier seam assembly where rupture could reduce the protection of the garment by exposing the next layer of the garment, undergarment, other clothing, or skin”. Note to entry added in modified text.]

3.270

minor seam

remaining seam assembly that is not classified as major A or major B seams

[SOURCE: ISO 11999-1:2015, 3.80]

3.271

seam sealing material

material applied to a seam to prevent the transfer of liquids through the seam

EXAMPLE Adhesive tape.

[SOURCE: ISO 11999-1:2015, 3.81]

3.272

**seat region
counter area**

rear 10 % of the total length of the footwear (upper and sole)

[SOURCE: ISO 20345:2011, 3.13]

3.273

second-degree burn injury

irreversible burn damage at the epidermis/dermis interface in human tissue (also second-degree burn)

[SOURCE: ISO/TR 11610:2004, 3.207]

3.274

second-degree burn injury area

<flash fire testing of clothing> sum of the areas represented by heat flux sensors which calculate a burn injury at the epidermis/dermis interface in human tissue (also second-degree burn area)

[SOURCE: ISO/TR 11610:2004, 3.208]

3.275

selection

process and assessment of determining what protective clothing and equipment (PCE) is necessary for protection of fire and emergency services response personnel from an anticipated specific hazard or other activity, the procurement of the appropriate PCE, and the choice of the proper PCE for a specific hazard or activity at an emergency incident

3.276

separate/separation

material response to outside stimulus evidenced by splitting or delaminating

3.277

shelf life

length of service life for a protective ensemble element that has undergone proper care and maintenance, but has not been used in actual responses or training