PD CEN/TR 17330:2019

BSI Standards Publication

Guidelines for selection, use, care and maintenance of protective clothing against foul weather, wind and cold

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National foreword

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A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

Guidelines for selection, use, care and maintenance of protective clothing against foul weather, wind and cold

Guide pour la sélection, l'utilisation, l'entretien et la maintenance des vêtements de protection contre les intempéries, le vent et le froid

Anleitungen für die Auswahl, Anwendung, Pflege und Erhaltung von Schutzkleidung gegen schlechtes Wetter, Wind und Kälte

This Technical Report was approved by CEN on 8 February 2019. It has been drawn up by the Technical Committee CEN/TC 162.

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European foreword

This document (CEN/TR 17330:2019) has been prepared by Technical Committee CEN/TC 162 “Protective clothing including hand and arm protection and lifejackets”, the secretariat of which is held by DIN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

Regulation (EU) 2016/425 indicates that PPE placed on the market complies with the essential health and safety requirements, and not necessarily with the various relevant EN or EN ISO standards. Nevertheless nearly all PPE meet the essential requirements of the standards, as harmonized standards give presumption of conformity with the requirements of the Directive.

The reader should be aware that if PPE is intended for use at a workplace, national and European legislation intended to ensure the safety of employees usually applies. When one mentions PPE, it must meet the requirements of Regulation (EU) 2016/425.

All annexes are informative.

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Introduction

This document has the aim to serve as guideline and checklist for companies preparing their own protective clothing program based on risk analysis.

The information in this document has been produced to assist users, employers and purchasers (or the person who advises the employer) in making the necessary decisions regarding the selection, use, care and maintenance of protective clothing, for employees exposed to risks related to foul weather, wind and cold.

The purpose of this technical report is to establish a guideline for protective clothing against foul weather, wind and cold with the goal to evaluate and reduce the safety risks and potential health risks associated with poorly maintained, contaminated, or damaged protective clothing. This Selection, Use, Care and Maintenance guideline (SUCAM) provides best practice, answers, criteria, and options related to foul weather, wind and cold to the persons that are selecting or using protective clothing through its life cycle with respect to protection." The main topics that an employer needs to consider are highlighted in this document. Many paragraphs of the document contain bullet-lists as examples and options that may need to be considered.

The annexes give additional details that are necessary to describe hazards and risks, the value of the test methods for the end user, etc.

Annex A gives details of the current EN or EN ISO Standards relating to clothing designed to provide protection from foul weather, wind and cold.

Please be aware of and consider compatibility with other items of PPE that both protect against foul weather, wind and cold, but consider other risks as well.

For European legislation on PPE see Regulation (EU) 2016/425 of the European Parliament and of Council of 9 March 2016 on personal protective equipment.

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1 Scope

This document provides guidance to the employers or persons advising them such as suppliers of PPE or services, inspection, insurance companies etc.) in taking the necessary decisions regarding the selection, use, care and maintenance of protective clothing against foul weather, wind and cold, and is compliant with the applicable European legislation.

This document is not exhaustive in addressing all the safety concerns associated with the use of compliant protective equipment for protection against foul weather, wind and cold and other related risks.

This document does not address all the safety concerns, if any, associated with the use of this document by testing or repair facilities. It is the responsibility of the persons and organizations using this document and any other documents related to PPE:

— to conduct a risk assessment,

— to select the protective clothing and other PPE,

— to ensure that these provide a holistic protection; this can be achieved by not only assessing the risks, but also the work place and the work environment, and to determine the applicability of regulatory limitations prior to using this document for any designing, manufacturing, and testing.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 13688:2013, *Protective clothing — General requirements (ISO 13688:2013)*

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:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
ageing
change of one or more initial properties of protective materials during the passage of time

[SOURCE: EN ISO 13688:2013, 3.1]

3.2
air permeability
AP
velocity of an air flow passing perpendicularly through a test specimen under specified conditions of test area, pressure drop and time

Note 1 to entry: AP is expressed in millimetres per second.

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[SOURCE: EN ISO 9237:1995, 3.1, modified: abbreviation added as admitted term and Note 1 to entry added]

3.3
care
provisions for cleaning, decontamination and storage of the protective clothing

3.4
cold environment
environment characterized by the combination of humidity and wind (wind-chill effect) at air temperature equal to or less than −5 °C

[SOURCE: EN 342:2017, 3.1]

3.5
compatibility
ability of clothing (protective clothing and other clothing) to be used in conjunction with other parts of PPE

3.6
cool environment
environment characterized by the combination of humidity and wind (wind cooling effect) at air temperatures above - 5°C

[SOURCE: EN 14058:2017, 3.1]

3.7
deterioration
downgrading of the effectiveness or physical characteristics of textile materials due to use, care, maintenance or storage conditions

3.8
ensemble
combination or assembly of multiple items that are individually compliant and provide protection to the head, upper torso together with arms and hands, the lower torso together with feet, and respiratory protection, and that together fulfil all the requirements

3.9
ergonomics
scientific discipline concerned with the understanding of interactions among human and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance

[SOURCE: EN ISO 26800:2011, 2.2, accepted term and note to entry deleted]

3.10
field evaluation
non-laboratory assessment of an ensemble, ensemble element, or item

3.11
fit
quality, state, and manner in which clothing, when worn, relates to the individual human body or other PPE

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3.12
garment
individual component of a clothing ensemble covering a part of the body, except separate garment for head, hands and feet and providing protection against hypothermia

[SOURCE: EN 342:2017, 3.2]

3.13
hardware
non-fabric items used in protective clothing including those made of metal or plastic, e.g. fasteners, rank markings, buttons, zippers

[SOURCE: EN 469:2005, 3.7]

3.14
hazard
situation which can be the cause of harm or damage to the health of the human body

[SOURCE: EN ISO 13688:2013, 3.2, modified: Note 1 to entry deleted]

3.15
hygiene
any practice or activity that you do to keep protective clothing healthy and clean

3.16
insulation required
IREQ
required resultant thermal insulation calculated on the basis of the thermal parameters of the environment (e. g. air temperature, mean radiant temperature, air velocity, relative humidity) and the body metabolism

[SOURCE: EN 14058:2017, 3.6.3, modified: term split into term and acronym, Note 1 to entry deleted]

3.17
integrity
construction of the protective clothing that ensures the proper functioning of the protective clothing

Note 1 to entry: Seams, zippers and other closures provide integrity if they constitute solid barriers which ensure suitable protection while offering some flexibility by design.

3.18
maintenance
preservation from loss or deterioration by applying procedures for inspection, repair and ultimate removal from service

3.19
outer shell material
outermost material of which the protective clothing is made

[SOURCE: EN 342:2017, 3.11]

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3.20
protective clothing
clothing which covers or replaces personal clothing and which is designed to provide protection against one or more hazards

[SOURCE: EN ISO 13688:2013, 3.4]

3.21
resistance to water penetration
WP
hydrostatic pressure supported by a material as a measure of the opposition to the passage of water through material

Note 1 to entry: WP is expressed in pascal.

[SOURCE: EN 342:2017, 3.9]

3.22
resultant effective thermal insulation
I_{cler}
thermal insulation from skin to outer clothing surface under defined conditions measured with or calculated for a moving manikin determined in relation to the naked body surface area

Note 1 to entry: I_{cler} is expressed in square metres Kelvin per watt

[SOURCE: EN 342:2017, 3,8]

3.23
risk
probability of a specific undesired event occurring so that a hazard is realized

[SOURCE: EN ISO 13688:2013, 3.2]

3.24
risk assessment
overall process that identifies hazards, estimates the potential severity of injury or damage to health, estimates the likelihood of occurrence of injury or danger to health determines the protective clothing against cold and cool and other protection measures required

3.25
selection
process of determining the type of protective equipment (garments) that is necessary for the required protection

3.26
tensile strength
force at which a fibre or fabric will break when pulled in one dimension

3.27
textile fabric
planar structure consisting of yarns or fibres

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3.28
thermal lining
non-watertight layer providing thermal insulation

[SOURCE: EN 14058:2017, 3.4]

3.29
thermal resistance
insulation
R_{ct}
temperature difference between the two faces of a material divided by the resultant heat flux per unit area in the direction of the gradient

Note 1 to entry: It is a quantity specific to textile materials or composites, which determines the dry heat flux across a given area in response to a steady applied temperature gradient. The dry heat flux can consist of one or more conductive, convective and radiant components.

Note 2 to entry: The thermal resistance is expressed in square metres kelvin per watt.

[SOURCE: EN ISO 11092:2014, 2.1]

3.30
trousers
element of the protective ensemble that provides protection to the lower torso and legs, excluding the ankles and feet

3.31
use
application of protective clothing including its limitations

3.32
verified independent service provider
ISP
independent service provider verified by a third-party certification organization and who conducts, as individual or combined services, advanced inspection, advanced cleaning, basic repair, or advanced repair

3.33
water vapour resistance
R_{et}
water vapour pressure difference between the two faces of a material divided by the resultant evaporative heat flux per unit area in the direction of the gradient

Note 1 to entry: It is a quantity specific to textile materials or composites, which determines the "latent" evaporative heat flux across a given area in response to a steady applied water vapour pressure gradient. The evaporative heat flux can consist of both diffusive and convective components.

Note 2 to entry: The water vapour resistance is expressed in square metres pascal per watt.

[SOURCE: EN ISO 11092:2014, 2.2]

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