



BSI Standards Publication

**Protective clothing - Guidelines for selection, use,
care and maintenance of chemical protective clothing**

National foreword

This Published Document is the UK implementation of CEN/TR 15419:2017. It supersedes PD CEN/TR 15419:2006, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PH/3/3, Chemical, Biological, Radioactive and Nuclear Personal Protective Equipment.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2017
Published by BSI Standards Limited 2017

ISBN 978 0 580 98705 2

ICS 13.340.10

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 December 2017.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

TECHNICAL REPORT

CEN/TR 15419

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

November 2017

ICS 13.340.10

Supersedes CEN/TR 15419:2006

English Version

Protective clothing - Guidelines for selection, use, care and maintenance of chemical protective clothing

Habillement de protection - Recommandations
pour la sélection, l'utilisation, l'entretien et la
maintenance des vêtements de protection chimique

Schutzkleidung - Empfehlungen für die Auswahl, die
Verwendung, die Pflege und die Bereithaltung
von Schutzkleidung gegen Chemikalien

This Technical Report was approved by CEN on 29 October 2017. It has been drawn up by the Technical Committee CEN/TC 162.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

European foreword	5
Introduction	6
1 Scope	7
2 Normative references	7
3 Terms, definitions and abbreviations	8
3.1 Terms and definitions	8
3.2 Abbreviations	9
4 Selection	9
4.1 General	9
4.2 Assessment of the nature of the hazard	10
4.3 Assessment of the risk	11
4.4 Assessment of the need of protection (developing a product specification for CPC)	12
4.5 Additional considerations	12
4.5.1 General	12
4.5.2 Quality assurance offered by the supplier	12
4.5.3 Logistics	12
4.6 Garment material selection criteria (definition of CPC material criteria)	13
4.6.1 General	13
4.6.2 Chemical barrier properties	13
4.6.3 Mechanical properties	15
4.6.4 Resistance to ignition	17
4.7 Selection of CPC	17
4.7.1 Obligations of manufacturers	17
4.7.2 Defining the level of protection required for each activity from the protective clothing	18
4.7.3 Collecting information on available protective clothing	20
4.7.4 Usability of the protective clothing and compatibility with other equipment	20
5 Use and training for safe use	21
5.1 General Information	21
5.2 Information for use	21
5.3 Training	22
5.4 Documentation	24
6 Care	24
6.1 General	24
6.2 Decontamination and cleaning	25
6.2.1 Cleaning	25
6.2.2 Decontamination	25
6.3 Storage	26
7 Maintenance	26
7.1 General	26
7.2 Inspection	27
7.2.1 Ageing factors	27
7.2.2 General	27
7.2.3 Inspection schedule	28
7.2.4 Elements to be inspected	28
7.2.5 Decisions	29
7.3 Repair and alterations	29
7.4 Disposal	30
Annex A (informative) Rationale	31

Annex B (informative) Risk assessment scheme	39
Annex C (informative) Example of a label	44
Bibliography	46

European foreword

This document (CEN/TR 15419:2017) 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.

This document supersedes CEN/TR 15419:2006.

Introduction

Although the general SUCAM document developed within CEN/TC 162 provides a lot of useful information, it was felt that a specific SUCAM document for chemical protective clothing (CPC) was necessary, in view of the very specific problems linked with the use of CPC (very large variety of risks, disinfection, etc.).

Workplace hazards should be reduced to the lowest level reasonably achievable. This can be done by eliminating the risk, by taking engineering measures such as encapsulation of the risk, by system control and/or by providing safe work place practices, which can include the use of CPC.

This means that the role of CPC in controlling the residual risk should be established in the correct context. The performance requirements for CPC should be characterized in terms of the nature, quantity and physical form of the hazardous chemical and the likelihood of contamination.

PPE should be evaluated as a whole, not only by its performance related to protection. Other factors such as usability and maintenance should also be taken into account to match the equipment and the intended use. Selection and use are more people-related, whereas care and maintenance are more product-related.

The risk related to the use of chemicals varies widely with the nature of the hazard and the conditions and duration of exposure to the chemicals. Therefore, risk and exposure assessment should be done very carefully in order to avoid overprotection and to ensure full acceptance of the protective clothing, which is often used in extremely dangerous work environments.

1 Scope

This Technical Report is primarily intended for users, specifiers and others with responsibility for the procurement and provision of chemical protective clothing. It is also intended to be used by manufacturers in their dialogue with the users of PPE.

This Technical Report is intended to clarify the inter-relationship of the set of standards, developed by CEN/TC 162 WG 3, and to explain the main ideas behind these standards. This set of standards has been developed in support of the European legislation on PPE and is currently used as a major technical tool for the assessment and certification of CPC before it is put on the European market.

These guidelines are intended to assist users and specifiers in selecting the correct type of CPC for the task to be performed, and to help them ensure it is used according to the manufacturer's instructions to provide adequate protection during its entire lifetime. Lifetime and effectiveness of protective clothing depend largely on care and maintenance. When cleaning, disinfection and end-of-life disposal are considered the environmental impact should also be taken into account.

This Technical Report does not address chemical nuisance factors without potential impact on a person's health and safety, e.g. smell.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 420, *Protective gloves — General requirements and test methods*

EN 863, *Protective clothing — Mechanical properties — Test method: Puncture resistance*

EN 13034, *Protective clothing against liquid chemicals — Performance requirements for chemical protective clothing offering limited protective performance against liquid chemicals (Type 6 and Type PB [6] equipment)*

EN 13274-4, *Respiratory protective devices — Methods of test — Part 4: Flame tests*

EN 14325:2004, *Protective clothing against chemicals — Test methods and performance classification of chemical protective clothing materials, seams, joins and assemblages*

EN 14605:2005+A1:2009, *Protective clothing against liquid chemicals — performance requirements for clothing with liquid-tight (Type 3) or spray-tight (Type 4) connections, including items providing protection to parts of the body only (Types PB [3] and PB [4])*

EN 16523-1, *Determination of material resistance to permeation by chemicals — Part 1: Permeation by liquid chemical under conditions of continuous contact*

EN ISO 6530, *Protective clothing — Protection against liquid chemicals — Test method for resistance of materials to penetration by liquids (ISO 6530:2005)*

EN ISO 7854, *Rubber- or plastics-coated fabrics — Determination of resistance to damage by flexing (ISO 7854)*

EN ISO 9073-4, *Textiles — Test methods for nonwovens — Part 4: Determination of tear resistance (ISO 9073-4)*

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

EN ISO 13982-2, *Protective clothing for use against solid particulates — Part 2: Test method of determination of inward leakage of aerosols of fine particles into suits (ISO 13982-2)*