

ICS 13.340.01

English version

PPE for Chemical, Biological, Radiological and Nuclear, (CBRN) Hazards

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties, the constitution of which is indicated in the foreword of this Workshop Agreement.

The formal process followed by the Workshop in the development of this Workshop Agreement has been endorsed by the National Members of CEN but neither the National Members of CEN nor the CEN Management Centre can be held accountable for the technical content of this CEN Workshop Agreement or possible conflicts with standards or legislation.

This CEN Workshop Agreement can in no way be held as being an official standard developed by CEN and its Members.

This CEN Workshop Agreement is publicly available as a reference document from the CEN Members National Standard Bodies.

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



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	3
Introduction	4
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Risk management	8
4.1 Risk management approach.....	8
4.2 Classification of zones (hot, warm, cold).....	10
5 Threat Scenarios	11
5.1 General.....	11
5.2 CBRN Categorization	12
5.2.1 General.....	12
5.2.2 Biological threats.....	12
5.2.3 Chemical threats	12
5.2.4 Radiological/nuclear threats.....	13
6 Stakeholders in an Incident	14
6.1 Categories of stakeholders.....	14
6.2 Explanation.....	15
6.3 Targets to be protected	15
7 Selection of PPE in CBRN incidents:.....	16
7.1 General.....	16
7.2 Selection of PPE for personnel in a CBRN incident.....	16
8 Performance requirements - Protection	20
9 Requirements	20
9.1 CBRN Requirements	20
9.2 Marking	20
10 Training.....	20
11 Recovery	21
Annex A (Informative).....	22
Annex B (Informative).....	25
Annex C (Informative).....	28
Bibliography	29

Foreword

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties on 2009-12-21, the constitution of which was supported by CEN following the public call for participation made on 2008-06-16/17.

A list of the individuals and organizations which supported the technical consensus are listed below :

Blücher NL BV, the Netherlands
 Avon Protection Systems, Belgium
 Kuper Security integrated solutions, Israël
 SAZ Business Consulting, Germany
 999 Team Tech, UK
 IB consultancy, the Netherlands
 Dräger Safety AG & Co.KGaA, Germany
 European Corporate Security Association – ECSA
 Circle Ned Trade Consult, the Netherlands
 Ian Hageman, Personal Defender, UK

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

The CWA has been developed through the collaboration of a number of contributing partners in the Manufacture, Use, Testing or those Providing CBRN PPE industries.

The formal process followed by the Workshop in the development of the CEN Workshop Agreement has been endorsed by the National Members of CEN but neither the National Members of CEN nor the CEN-CENELEC Management Centre can be held accountable for the technical content of the CEN Workshop Agreement or possible conflict with standards or legislation. This CEN Workshop Agreement can in no way be held as being an official standard developed by CEN and its members.

The final review/endorsement round for this CWA was started on 2009-10-07 and was successfully closed on 2009-12-21. The final text of this CWA was submitted to CEN for publication on 2009-12-24.

This CEN Workshop Agreement is publicly available as a reference document from the National Members of CEN: AENOR, AFNOR, BSI, CSNI, CYS, DIN, DS, ELOT, EVS, IBN, IPQ, IST, HZN, LVS, LST, MSA, MSZT, NEN, NSAI, ON, PKN, SEE, SIS, SIST, SFS, SN, SNV, SUTN and UNI.

Comments or suggestions from the users of the CEN Workshop Agreement are welcome and should be addressed to the CEN-CENELEC Management Centre.

Following a resolution being adopted by CEN BT WG 161 Security and Protection of the Citizen, which related to the lack of any guidance on CBRN PPE, consideration was given by DG Justice, Law and Security, who then agreed to make available the funding for this Workshop Agreement.

Introduction

With the ever increasing number of natural disasters, industrial accidents and terrorist attacks, it was stated that there were no specific standards or guides on CBRN PPE (Chemical, Biological, Radiological or Nuclear Personal Protective Equipment) for Manufacturer's, Users, Notified Bodies and those who determine it necessary to provide CBRN PPE which is tested and certified, for selection and use in such events.

As far as legal obligations are concerned, all PPE must comply with the requirements of the PPE Directive 89/686/EEC. For the use of PPE the EU Directive 89/656/EEC has to be complied with. Directive 89/656/EEC excludes PPE for use by Emergency Services, but some EU member states have adopted additional legislation for this purpose.

Consideration was also given to the Medical Services Directive 93/42/EEC with regard to the design and testing of CBRN PPE. Since CBRN products are not considered sterile, self certification applies for most of these products. To overcome the problems of self certification self declaration, any CBRN PPE, even marketed as a medical device, shall be tested and certified by an accredited third party.

The present Standards affording protection against CBRN threats for civilian use are British Standard 8467 (protective clothing), BS 8468 (respiratory protection), NFPA 1971:2007 with the CBRN Option, and an Israeli hood standard certified for CBRN protection (PM-750 Personal Protection Respirator).

There are no standards to give guidance regarding the requirements and testing for proper CBRN PPE, for all categories of personnel who could be involved. This Workshop Agreement makes reference to standards, standards-like documents, legislation, guidance, that should be taken into consideration in order to mitigate the effects (direct or indirect) and consequences of CBRN events on EU Citizens.

There is presently no CEN Technical Committee, or indeed mechanism that can handle "Ensemble" standards, which is the compulsory route when addressing functional PPE that should protect adequately against CBRN. This is a matter that the Commission will need to consider. With the introduction of the new CEN TC 391 Security and Protection of the Citizen, it is felt this could be an avenue where such Ensemble Standards could be developed. However, the workshop gave priority to all individuals who might be engaged in a CBRN incident regardless whether or not these are professional responders or civilians who by job description have a duty to fulfil in such events.

The target audience of this document is therefore widespread and diverse. All stakeholders will need to consider the potential for such a CBRN incident and its impact on their premises and workers, in compliance with applicable regulations.

The members of the Workshop determined that they would develop CBRN PPE to protect the citizen by equipping Professional First Responders, Duty holders, Responsible Persons, Victims and members of the public who were the responsibility of those Occupiers, who had a legal responsibility towards them. The issue of CBRN protection for the citizens of the EU was determined to be too politically sensitive for the CWA to determine any resolution. Instead, the decision was taken to report this matter to DG JLS and this was done by the Chairman in preparation to the final meeting on 23 September 2009. This resulted in a new proposal being prepared by NEN, seeking support from DG JLS for a comprehensive Feasibility study to ascertain present gaps in the provision of CBRN protection for the Citizen and further areas regarding CBRN Detection, Decontamination and protection of Emergency Responders.

It is recognized that there are many potential types of CBRN event/incidents and this CWA has attempted to utilize those risks identified in the IMPACT study conducted by TNO for the EU Commission as a basis for threat levels. See Annex B.

In the initial stages of any CBRN event/incident, it is most unlikely that First Responders, Duty Holders, Employers or Victims would recognize what was involved; therefore the need for preventive CBRN PPE protection has to be considered. There may be occasions when it is imperative to evacuate large numbers of

potential victims, who might be contaminated; the Management of Emergency Services at such incidents is addressed by CWA 16107.

In the initial risk assessment conducted by the responsible person, consideration should be given to the protection for the untrained citizen faced with unknown but presumed pathogenic or toxic substances.

Such protection is defined as non occupational defence during evacuation or emergency movement through the presumed or confirmed hazard to an area of safety. In such circumstances, protection is identified as any device issued by the responsible person/duty holder, with self supply and is recognised as a broad base but limited protection.

At the scene of any incident/event (that turned out to be a CBRN incident) those affected may need immediate assistance in getting away from the hot zone. To achieve this in a hostile environment simple but effective CBRN PPE is required.

In certain scenarios rescues might not be possible until a full dynamic risk assessment has been carried out, this may mean first responders donning full ensemble CBRN PPE to carry out such a risk assessment. The Incident Commander at any such incident would need to give consideration to keeping all persons affected at the incident site within a designated quarantine area.

1 Scope

This CEN Workshop Agreement aims at increasing the protection of those initially and primarily involved with any CBRN incident. This will cover Emergency Responders, Duty Holders, and Responsible Persons, Employers and Victims or potential victims. All of these people are potentially at risk from a CBRN incident.

This CWA provides both general guidance and codes of practice and requirements, testing, marking and certification of PPE to be applied in CBRN situations.

This CWA gives guidance on selection, as well as safety and effectiveness of PPE for CBRN scenarios. For use, care and maintenance the manufacturer's instructions have to be regarded.

This CWA contains guidance and risk assessment templates, which will allow those at risk to determine what level of risk this could be and the PPE required protecting the designated groups we have identified. Additional issues such as instruction, training and use of PPE are also addressed.

The management of any CBRN incident requires a variety of skills and those persons responsible should also refer to CWA 16107.

2 Normative references

The following referenced documents are indispensable for the application 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.

CWA 16107:2010, *Emergency Services Capability Framework*

NOTE CWA 16107 is applicable when considering the roles all of those recognised as having a role whilst attending a CBRN event.

3 Terms and definitions

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

3.1
biological agents
biological materials that are capable of causing an acute disease or long term damage to the human body, the goods and the environment (including animal and vegetal organisms)

3.2
CBRN agents
agents of chemical, biological, radiological or nuclear origin that are affecting human, animal or vegetable health by exposure of any kind

C > Chemical Agents
threats by toxic, flammable or explosive chemicals

B > Biologic Agents
threats by fungi, bacteria, viruses or sub-viral particles which may cause health problems

R > Radiologic Agents
threat by compounds which emit radiation which may cause health problems

Nuclear Agents > Atomic degradation Agents
threats by agents which contain elements whose nuclei degrade, emit radiation and form new and potential health threatening compounds or elements