ISO 17723-1:2019 (E)

PPE ensembles for firefighters undertaking hazardous materials response activities — Part 1: Gas-tight, vapour-protective ensembles for emergency response teams ("type 1")

Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Ensemble requirements

4.1 General requirements
4.1.1 Minimum ensemble configuration
4.1.2 Hood visor
4.1.3 Respiratory protective device
4.1.4 Designation of ensemble use
4.1.5 Integration of ensemble
4.1.6 Attachment of lifeline and other equipment
4.1.7 Optional requirements for integrity for escape from chemical flash fire
4.2 Ensemble requirements pertaining to chemical protective suits
4.2.1 Additional or other PPE
4.2.2 Protective covers for exhaust valves
4.2.3 Suit design
4.2.4 Whole suit performance
4.2.5 Practical performance test
4.3 Ensemble requirements pertaining to gloves
4.3.1 Outer gloves
4.3.2 Removal and replacement of gloves
4.4 Ensemble requirements pertaining to footwear
4.4.1 Bootees
4.4.2 Separate boots
4.4.3 Footwear splash flap

5 Requirements for suit materials

5.1 General requirements
5.1.1 Suit material layers
5.1.2 Materials for testing of permeation resistance
5.1.3 Materials for testing of physical properties
5.2 Permeation resistance
5.3 Suit material physical properties
5.4 Suit material flame resistance
5.4.1 Requirements
5.4.2 Limited-use suits
5.4.3 Re-usable suits

6 Requirements for suit components and assemblies

6.1 Seams
6.1.1 Seam strength
6.1.2 Seam permeation resistance
6.2 Visors
6.2.1 Visor materials for testing
6.2.2 Visor physical performance

6.2.3 Distortion of vision
6.2.4 Visor permeation resistance
6.2.5 Chemical degradation of visor
6.3 Gloves
6.3.1 Attached gloves
6.3.2 Assembly strength between gloves and suit sleeve
6.3.3 Glove material permeation resistance
6.3.4 Glove material physical properties
6.3.4.1 Cut resistance
6.3.4.2 Puncture resistance
6.3.4.3 Abrasion resistance
6.3.4.4 Tear resistance
6.4 Footwear
6.4.1 Requirements for ensembles incorporating bootees and separate boots
6.4.2 Requirements for ensembles using attached boots
6.4.3 Additional requirements
6.4.4 Resistance to flame
6.4.5 Permeation resistance
6.4.5.1 Sampling and conditioning
6.4.5.2 Requirements
6.5 Closures
6.5.1 Closure physical performance
6.5.2 Closure system permeation resistance

7 Optional requirements for protection against chemical terrorism and biological agents under non-military circumstances

7.1 Additional ensemble requirement
7.2 Additional ensemble material requirements
7.2.1 Chemical terrorism agent permeation resistance
7.2.2 Biological agent penetration resistance

8 Labelling

9 Instructions for use and information supplied by the manufacturer

Annex A (normative) Practical performance test

A.1 General requirements
A.2 Work simulation tests
A.3 Work simulation test at low temperature
A.4 Detachable gloves
A.5 Information to be recorded
A.6 Assessment

Annex B (informative) Guidelines for selection of personal protective equipment for hazardous materials response

B.1 Risk assessment
B.1.1 Recommended process
B.1.2 Identification of hazards
B.1.3 Estimating the likelihood of exposure
B.1.4 Determination of risk
B.1.5 Operational selection
B.2 Selection of gas-tight, vapour-protective ensembles
B.3 Spray-tight, liquid splash-protective ensembles
B.4 Other personal protective equipment to be used with ensembles

Annex C (informative) Adapted test cell for testing closures (zipper)

Annex D (normative) Distortion of vision test for visors

Annex E (normative) Cumulative chemical permeation test requirements for chemical terrorism agents

E.1 Sulfur mustard and Sarin
E.2 Acrylonitrile, acrolein and dimethyl sulfate

Annex F (normative) Permeation preconditioning (flexing and abrasion)

F.1 Flexural fatigue procedure for suit materials
F.2 Abrasion procedure for suit materials

Annex G (informative) Illustration of hierarchy of terms related to a chemical protective ensemble

Page count: 31