SLOVENSKI STANDARD
SIST EN 464:1996

01-februar-1996

Varovalna obleka za zaščito pred tekočimi in plinastimi kemikalijami, vključno z aerosoli in trdnimi delci - Preskusna metoda: Določanje neprepustnosti plinotesnih oblek (notranji tlačni preskus)

Protective clothing - Protection against liquid and gaseous chemicals, including aerosols and solid particles - Test method: Determination of leak-tightness of gas-tight suits (Internal pressure test)

Schutzkleidung - Schutz gegen flüssige und gasförmige Chemikalien, einschließlich Flüssigkeitsaerosole und feste Partikel - Prüfverfahren: Bestimmung der Leckdichtigkeit von gasdichten Anzügen (Innendruckprüfverfahren)

Vetements de protection - Protection contre les produits chimiques liquides et gazeux, y compris les aérosols liquides et les particules solides - Méthode d'essai: Détermination de l'étanchéité des combinaisons étanches au gaz (essai de pression interne)

Ta slovenski standard je istoveten z: EN 464:1994

ICS:

13.340.10	Varovalna obleka	Protective clothing

SIST EN 464:1996 en

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 464

June 1994

UDC 614.895.5:687.174:614.878:620.165.29

Descriptors: Personal protective equipment, protective clothing, gas permeability, gas permeability tests, leak detection

English version

Protective clothing for use against liquid and gaseous chemicals, including aerosols and solid particles - Test method: Determination of leak-tightness of gas-tight suits (Internal Pressure Test)

Vêtements de protection contre les produits liquides et gazeux, y compris les aérosols liquides et les particules solides - Méthode d'essai: Détermination de l'étanchéité des combinaisons étanches au gaz (essai de pression interne)

Schutzkleidung zur Anwendung gegen flüssige und gasförmige Chemikalien einschließlich Flüssigkeitsaerosole und feste Partikel - Prüfverfahren: Bestimmung der Leckdichtigkeit von gasdichten Anzügen (Innendruckprüfverfahren)

This European Standard was approved by CEN on 1994-06-20. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Ref. No. EN 464:1994 E

Foreword

This European Standard has been prepared by the Technical Committee CEN/TC 162 "Protective clothing including hand and arm protection and lifejackets", the secretariat of which is held by DIN.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

This European Standard shall be given the status of a National Standard, either by publication of an identical text or by endorsement, at the latest by December 1994, and conflicting national standards shall be withdrawn at the latest by December 1994.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

Introduction

Gas-tight chemical protective clothing is worn in conjunction with appropriate respriratory protective devices, in order to isolate the body of the wearer from the environment.

Although the danger to the wearer arises from leakage in an inward direction, this test method assesses the outward leakage of air after the gas-tight suit has been inflated so as to stretch the material of construction, thereby enabling the test method to be capable of detecting very small imperfections, e.g. holes, splits or tears.

1 Scope

This European Standard describes a test method to assess the resistance of a gas-tight suit to the penetration of gases through, for example, essential openings, fastenings, seams, overlaps between items, pores and any imperfections in the materials of construction.

2 Definitions

For the purposes of this standard the following definitions apply :

2.1 Assemblage: A permanent fastening between two or more different garments, or between chemical protective clothing and accessories, obtained, for example by sewing, welding, vulcanising, gluing.

2.2 Gas-tight suit: A 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 protection against harmful liquids, particles and gaseous or vapour contaminants.

2.3 Join: A non-permanent fastening between two different garments, or between chemical protective clothing and accessories.

2.4 Penetration: The process by which chemical flows through holes or essential openings in the material. The holes may be the result of mechanical damage.

2.5 Connection: An assemblage or join.

3 Principle

After the suit has been inflated to a defined pressure, the extent of the subsequent leakage of air is assessed by recording the pressure reached after a defined period of time.

> NOTE: Garment users should appreciate that the test does not simulate penetration by gases in an inward direction (see the explanation given in the introduction).

4 Test apparatus

4.1 A source of compressed air, supplying air at the ambient temperature of testing area which must be within the range (20 ± 5)°C.

4.2 Pressure measurement device, with the capability of measuring up to (1800 ± 30) Pa.

4.3 Vent valve closure components, such components may be plugs or other means that are to be supplied for test purposes by the manufacturer.

4.4 Stop clock or appropriate timing device, capable of measuring to the nearest second.

5 Procedure

5.1 Lay out the suit including gloves and boots, and full facemask if appropriate, on a suitable flat and clean surface away from any sources of heat and/or currents of air.

5.2 Remove any creases and folds in the suit as far as practicable.

5.3 Leave the suit for a minimum of 1 h at ambient temperature (20 ± 5)°C.

5.4 Make an inflation connection.

5.5 Carefully blank off the valves etc., with appropriate means of closure supplied by the manufacturer.

5.6 Using compressed air, inflate the suit carefully to a pressure of (1750 ± 50) Pa.

5.7 Maintain the pressure at (1700 ± 50) Pa for 10 min by the addition of air, if necessary, and at the same time ensure that any creased areas are unfolded and that the suit is stretched as appropriate.

> NOTE: During this period the temperature is stabilized and the pressure throughout the suit reaches equilibrium.

5.8 After the period of 10 minutes has elapsed (see 5.7), adjust the pressure in the suit to (1650 ± 30) Pa.

5.9 Allow a further 6 minutes to elapse. Note and record the pressure in the suit in Pascals.

> NOTE: Pay careful attention to the cleanliness and the refitting of valves which have been obstructed or removed to carry out the test, to ensure that they function satisfactorily after the test.

6 Test report

The test report shall include the following information:

a) the establishment of the test in accordance with this standard;

b) the manufacturer/supplier and any identifying mark;

c) the pressure recorded in 5.9 and the test temperature;

d) any further qualifying remarks and observations.