

**Kaitserõivad. Kaitse vedelate kemikaalide eest.  
Katsemeetod vastupidavuse määramiseks  
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Protective clothing - Test methods for clothing  
providing protection against chemicals - Part 4:  
Determination of resistance to penetration by a spray of  
liquid (spray test)

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 17491-4:2008 sisaldab Euroopa standardi EN ISO 17491-4:2008 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 25.09.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 15.08.2008.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN ISO 17491-4:2008 consists of the English text of the European standard EN ISO 17491-4:2008.

This standard is ratified with the order of Estonian Centre for Standardisation dated 25.09.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 15.08.2008.

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ICS 13.340.10

**Võtmesõnad:** individuaalne kaitsevarustus, kaitseriietus, kaitsmine, keemilised ühendid, läbilaskvus, tehisudu testid, töökombinesoonid, vedelikud

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English Version

Protective clothing - Test methods for clothing providing  
protection against chemicals - Part 4: Determination of  
resistance to penetration by a spray of liquid (spray test) (ISO  
17491-4:2008)

Vêtements de protection - Méthodes d'essai pour les  
vêtements fournissant une protection contre les produits  
chimiques - Partie 4: Détermination de la résistance à la  
pénétration par vaporisation de liquide (essai au brouillard)  
(ISO 17491-4:2008)

Schutzkleidung - Prüfverfahren für  
Chemikalienschutzkleidung - Teil 4: Bestimmung der  
Beständigkeit gegen das Durchdringen von  
Flüssigkeitsspray (Spray-Test) (ISO 17491-4:2008)

This European Standard was approved by CEN on 14 August 2008.

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This European Standard exists 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 CEN Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
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## Foreword

This document (EN ISO 17491-4:2008) 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, in collaboration with Technical Committee ISO/TC 94 "Personal safety - Protective clothing and equipment".

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 February 2009, and conflicting national standards shall be withdrawn at the latest by February 2009.

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.

This document supersedes EN 468:1994.

This document 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).

For relationship with EC Directive(s), see informative Annex ZA, which is an integral part of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, 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 the United Kingdom.

## **Annex ZA (informative)**

### **Relationship between this part of ISO 17491 and the Essential Requirements of EU Directive 89/686/EEC Personal Protective Equipment**

This part of ISO 17491 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide one means of conforming to Essential Requirements of the New Approach Directive 89/686/EEC.

Once this part of ISO 17491 is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard, together with the relevant requirements given in the product standards, confers, within the limits of the scope of both standards, a presumption of conformity with the Essential Requirements of Directive 89/686/EEC Personal Protective Equipment, Annex II, Clause 3.10.2.

**WARNING** — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

## Introduction

This part of ISO 17491 describes a test method for determining the spray penetration resistance of chemical protective clothing Type 4 (with spray-tight connections between different parts of the clothing and, if applicable, between the clothing and other items of personal protective equipment) and Type 6 (limited performance protective clothing).

Such clothing comprises one or more items covering the full surface of the body and is intended to be worn under conditions where there is a risk of exposure to a spray of a liquid chemical. Other requirements with regard to this type of clothing and its constituent materials can be found in the respective product standards (see Bibliography [4]).

Interlaboratory testing has shown that this test method is a repeatable pass/fail method.

A document on the selection, use and maintenance of chemical protective clothing is available (see Bibliography [5]).

**CAUTION — Some of the procedures specified in this part of ISO 17491 involve the use of processes which could lead to hazardous situations and hence appropriate precautions should be taken.**

# Protective clothing — Test methods for clothing providing protection against chemicals —

## Part 4: Determination of resistance to penetration by a spray of liquid (spray test)

### 1 Scope

This part of ISO 17491 specifies methods for determining the resistance of chemical protective clothing to penetration by sprays of liquid chemicals at two different levels of intensity:

- a) Method A: low-level spray test. This is applicable to clothing that covers the full body surface and is intended to be worn when there is a potential risk of exposure to small quantities of spray or accidental low-volume splashes of a liquid chemical.
- b) Method B: high-level spray test. This is applicable to clothing with spray-tight connections between different parts of the clothing and, if applicable, between the clothing and other items of personal protective equipment, which covers the full body surface and which is intended to be worn when there is a risk of exposure to sprayed particles of liquid.

This part of ISO 17491 does not address chemical permeation resistance of the materials from which the chemical protective clothing is made.

### 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.

ISO/TR 11610, *Protective clothing — Vocabulary*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TR 11610 and the following apply.

#### 3.1

##### **connection**

assemblage or join

#### 3.2

##### **calibrated stain**

fluorescent or visible stain, with a defined minimum area, generated by dropping a specified quantity of test liquid on to an absorbent overall

**NOTE** The calibrated stain is used to measure liquid penetration during spray and jet testing of chemical protective clothing.