

## **Isikukaitsevahendid. Põlvekaitsed põlviliasendis töötamiseks**

Personal protective equipment - Knee protectors for work in the kneeling position

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 14404:2004+A1:2010 sisaldab Euroopa standardi EN 14404:2004+A1:2010 ingliskeelset teksti.

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English Version

**Personal protective equipment - Knee protectors for work in the kneeling position**

Équipements de protection individuelle - Protection des genoux pour le travail à genoux

Persönliche Schutzausrüstung - Knieschutz für Arbeiten in kniender Haltung

This European Standard was approved by CEN on 2 September 2004 and includes Amendment 1 approved by CEN on 28 November 2009.

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## Foreword

This document (EN 14404:2004+A1:2010) 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.

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of an identical text or by endorsement, at the latest by July 2010, and conflicting national standards shall be withdrawn at the latest by July 2010.

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 includes Amendment 1, approved by CEN on 2009-11-28.

This document supersedes EN 14404:2004.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** and **A1**.

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 EU Directive(s).

For relationship with EU 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, 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.

## Introduction

Kneeling is an unnatural working position. Without knee protectors, workers may suffer discomfort and immediate injuries from hard surfaces and small stones and similar objects lying on the surfaces. However no knee protector can ensure that workers will not suffer medical complications if they are required to kneel for long periods.

It is important that knee protectors do not compromise venous drainage in the leg while kneeling or standing up. Therefore it is important that it is easy for workers to change position and to stand up to re-establish a normal blood circulation at frequent intervals while wearing knee protectors.

Work in a kneeling position involves the risk of chronic diseases such as prepatellar bursitis and cartilage injuries caused by continuous pressure on the knees. Knee protection is therefore recommended for all work in the kneeling position. The protection should distribute forces evenly and prevent small hard objects on the ground causing injuries. Many workers have pre-existing damage to their knees particularly to their cartilages from sports injuries and from previous work. These injuries will be made worse by further kneeling, but knee protectors should slow the process.

Work in a kneeling position may expose the skin of the shins, knees and thighs to toxic and corrosive materials normally kept off the body while walking and standing by waterproof or water-resistant footwear. Knee protectors and trousers for use with such wet materials and particularly wet cement, should take this into account and provide adequate protection, as does footwear.

Knee protectors incorporated into trousers or attached to trousers or worn over trousers or on the bare knees should remain in place while kneeling down, and while shuffling (walking) on the knees. Their size should ensure that they protect the knees during movement.

**A1** deleted text **A1**

## 1 Scope

This document specifies the requirements for knee protectors for use in a kneeling position. Requirements for the marking of knee protectors and the information to be supplied by the manufacturer are given. Test methods are described and performance levels are defined. Where protection against additional hazards is claimed, performance requirements from other applicable standards may also be applied.

This standard does not apply to knee protectors that are medical devices or are intended for sports.

## 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.

EN 340, *Protective clothing — General requirements*

EN 863:1995, *Protective clothing — Mechanical properties — Test method: Puncture resistance*

ISO 7000, *Graphical symbols for use on equipment — Index and synopsis*

## 3 Terms and definitions

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

### 3.1

#### **knee protectors**

devices used by people kneeling down to protect their knees

### 3.2

#### **Type 1 knee protectors**

knee protectors that are independent of other clothing and fasten around the leg

### 3.3

#### **Type 2 knee protectors**

foam plastic or other padding material in pockets on trouser legs, or permanently attached to trousers

NOTE The position of Type 2 knee protectors on trousers may be fixed or adjustable.

### 3.4

#### **Type 3 knee protectors**

devices not attached to the body, but put into place as the user moves around. These may be for each knee or both knees together

### 3.5

#### **Type 4 knee protectors**

knee protectors for one or both knees, which are parts of devices with additional functions such as a frame to aid standing up, or a kneeling seat. The knee protectors may be worn on the body or be independent

### 3.6

#### **fastening**

part of a knee protector, which keeps it in the right position