



# SLOVENSKI STANDARD SIST EN ISO 20471:2013

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Nadomešča:

SIST EN 471:2003+A1:2008

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**Dobro vidna obleka - Preskusne metode in zahteve (ISO 20471:2013)**

High visibility clothing - Test methods and requirements (ISO 20471:2013)

Warnkleidung - Prüfverfahren und Anforderungen (ISO 20471:2013)

Vêtements à haute visibilité - Méthodes d'essai et exigences (ISO 20471:2013)

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**Ta slovenski standard je istoveten z: EN ISO 20471:2013**

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**ICS:**

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EUROPEAN STANDARD

EN ISO 20471

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2013

ICS 13.340.10

Supersedes EN 471:2003+A1:2007

English Version

## High visibility clothing - Test methods and requirements (ISO 20471:2013, Corrected version 2013-06-01)

Vêtements à haute visibilité - Méthodes d'essai et exigences (ISO 20471:2013, Version corrigée 2013-06-01)

Hochsichtbare Warnkleidung - Prüfverfahren und Anforderungen (ISO 20471:2013, korrigierte Fassung 2013-06-01)

This European Standard was approved by CEN on 1 March 2013.

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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-CENELEC Management Centre has the same status as the official versions.

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## Foreword

This document (EN ISO 20471:2013) has been prepared by Technical Committee ISO/TC 94 "Personal safety - Protective clothing and equipment" in collaboration with 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of an identical text or by endorsement, at the latest by September 2013, and conflicting national standards shall be withdrawn at the latest by September 2013.

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 471:2003+A1:2007.

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.

For relationship with EU Directive, 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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### Endorsement notice

The text of ISO 20471:2013, Corrected version 2013-06-01 has been approved by CEN as EN ISO 20471:2013 without any modification.

**Annex ZA**  
(informative)  
**Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC**

This European Standard 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 on the approximation of the laws of the Member States relating to personal protective equipment.

Once this standard is cited in the Official Journal of the European Union 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 given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

**Table ZA.1 — Correspondence between this European Standard and Directive 89/686/EEC**

Clause(s)/subclause( s) of this EN	Essential Requirements (ERs) of Directive 89/686/EEC	Qualifying remarks/notes
4.1	1.1.2.2 Classes of protection appropriate to different levels of risk	
4.1; 4.2; 5.4	1.2.1 Absence of risks and other 'inherent' nuisance factors	
5.2; 5.3; 5.5; 6.2	1.3.2 Lightness and design strength	
6.2	1.4 Information supplied by the manufacturer	
5.6	2.2 PPE "enclosing" the parts of the body to be protected	
7.5.1	2.4 PPE subject to ageing	
8	2.12 PPE bearing one or more identification or recognition marks directly or indirectly relating to health and safety	
5.1, 6.1	2.13 PPE capable of signalling the user's presence visually	

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

INTERNATIONAL  
STANDARD

ISO  
20471

First edition  
2013-03-15

Corrected version  
2013-06-01

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**High visibility clothing — Test  
methods and requirements**

*Vêtements à haute visibilité — Méthodes d'essai et exigences*

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## ISO 20471:2013(E)

### Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 20471 was prepared by Technical Committee ISO/TC 94, *Personal safety — Protective clothing and equipment*, Subcommittee SC 13, *Protective clothing*.

This corrected version of ISO 20471:2013 incorporates the following correction:

- in the fourth paragraph of subclause 4.1 the requirement concerning the sleeves of a class 3 garment has been corrected.

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## Introduction

The performance of the conspicuity-enhancing materials to be used for high risk-related visibility clothing is specified photometrically together with minimum areas and placement (design) requirements.

Conspicuity is the property that makes an object readily attract visual attention. This is a particularly important feature in complex environments which have visually competing objects. Conspicuity is determined by an object's luminance contrast, colour contrast, pattern and design, and motion characteristics relative to the ambient background against which it is seen.

Three classes of garment are defined based on three different minimum areas of retroreflective, fluorescent and/or combined performance materials. Each of these classes will provide a different level of conspicuity, class 3 being the class that provides the highest degree of conspicuity against most backgrounds found in urban and rural situations in daylight and in night time. Users should select the required class of performance based on a risk assessment of the location/situation in which the protection afforded by clothing to this International Standard is required.

This International Standard contains requirements relating to risk assessment and risk analysis of high visibility garments. Possible designs illustrating the placement of retroreflective materials are included within the standard. Ergonomic factors such as fit/sizing, comfort, and range of motion of the wearer should be considered when selecting the most appropriate configuration of retroreflective and fluorescent materials within the garment.

Selection and use of high visibility clothing can vary among user countries and may be subject to local regulations. This International Standard contains requirements relating to risk assessment of the condition in which the high visibility clothing is to be used. This will involve consideration of the factors which may affect an observer's ability to detect that a person is present. The observer needs both to perceive and to recognize the wearer and then needs to be able to take appropriate avoidance action. The wearing of a conspicuity-enhancing high visibility garment does not guarantee that the wearer will be visible under all conditions.

The minimum requirements given within this International Standard are determined by the specific test methods and their assigned measuring values. The tests are partly performed on new materials and partly on preconditioned materials. By preconditioning (e.g. folding of retroreflective material) a load of the materials is simulated. However, it should be noted that laboratory testing may not represent real life conditions. The conspicuity performance of a garment will depend on usage (e.g. dirt, solar irradiation), care (e.g. cleaning agent, repair), storage (e.g. dust-free, lightproof), etc.

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