

Kaitserõivad mootorratturitele mehaaniliste löökide eest. Osa 4: Täispuhutavad turvapadjad mootorratturile. Nõuded ja katsemeetodid

Motorcyclists' protective clothing against mechanical impact - Part 4: Motorcyclists' inflatable protectors - Requirements and test methods

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 1621-4:2013 sisaldab Euroopa standardi EN 1621-4:2013 ingliskeelset teksti.	This Estonian standard EVS-EN 1621-4:2013 consists of the English text of the European standard EN 1621-4:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 16.01.2013.	Date of Availability of the European standard is 16.01.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.340.10

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Aru 10, 10317 Tallinn, Eesti; www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:
Aru 10, 10317 Tallinn, Estonia; www.evs.ee; phone 605 5050; e-mail info@evs.ee

ICS 13.340.10

English Version

Motorcyclists' protective clothing against mechanical impact - Part 4: Motorcyclists' inflatable protectors - Requirements and test methods

Vêtements de protection contre les chocs mécaniques pour
motocyclistes - Partie 4 : Protecteurs gonflables pour
motocyclistes - Exigences et méthodes d'essai

Motorradfahrer-Schutzkleidung gegen mechanische
Belastung - Teil 4: Aufblasbare Protektoren für
Motorradfahrer - Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 3 November 2012.

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 CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of 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 United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
Foreword.....	4
Introduction.....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions.....	6
4 Requirements.....	8
4.1 General.....	8
4.2 Innocuousness.....	9
4.2.1 Colour.....	9
4.2.2 Hard components.....	9
4.2.3 Temperature exposure evaluation.....	9
4.3 Zones of protection.....	9
4.4 Intervention time.....	9
4.5 Duration time.....	9
4.6 Retention of the inflatable protector.....	9
4.7 Impact attenuation.....	10
4.8 Sizing and size marking.....	10
4.9 Ergonomic requirements.....	10
4.10 Trigger system function.....	10
4.10.1 Activation force.....	10
4.10.2 Activation energy.....	10
4.10.3 Connection of airbag system to motorcycle.....	10
5 Sampling.....	10
6 Test methods.....	11
6.1 Preconditioning and testing atmosphere.....	11
6.2 Innocuousness.....	11
6.2.1 Colour fastness to water.....	11
6.2.2 Protection from hard components.....	11
6.2.3 Temperature exposure evaluation (applicable only for hot gas generators).....	11
6.3 Measurement and marking of zones of protection.....	11
6.4 Intervention time.....	11
6.4.1 General.....	11
6.4.2 Determination of the activation time.....	11
6.4.3 Determination of the inflation time.....	13
6.5 Determination of duration of inflated status.....	13
6.6 Impact attenuation.....	13
6.7 Ergonomic tests.....	13
6.7.1 General.....	13
6.7.2 Tests.....	14
6.8 Evaluation of the function of the mechanism of activation.....	14
6.8.1 Evaluation of activation force.....	14
6.8.2 Evaluation of the activation energy.....	14
6.8.3 Connection to the motorcycle.....	14
6.9 Uncertainty.....	14
7 Test results.....	15
8 Test report.....	16
9 Marking.....	16

10	Information supplied by the manufacturer.....	17
	Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC	18

Figures

Figure 1	— Trigger cable fixed to the motorbike behind the biker	12
Figure 2	— Trigger cable is fixed to the motorbike in front of the biker	12
Figure 3	— Example of graphical symbol.....	16

Tables

Table 1	— Summary of the requirements	8
Table 2	— Transmitted force and performance levels	10

Foreword

This document (EN 1621-4:2013) 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 2013, and conflicting national standards shall be withdrawn at the latest by July 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 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.

EN 1621 consists of the following parts, under the general title "Motorcyclists' protective clothing against mechanical impact":

- Part 1: Motorcyclists' limb joint impact protectors — Requirements and test methods
- Part 2: Motorcyclists' back protectors — Requirements and test methods
- Part 3: Motorcyclists' chest protectors — Requirements and test methods¹⁾
- Part 4: Motorcyclists' inflatable protectors — Requirements and test methods

According to the CEN/CENELEC Internal Regulations, the national standards organisations 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.

1) Under development

Introduction

Motorcyclists' inflatable protectors are devices either embedded within or worn on top of other clothing, which aim to reduce the severity of injuries in case of motorcycle accidents.

The protectors covered by this standard give protection only when inflated.

The performance requirements have been selected to provide the best practical compromise between protection, comfort, and ergonomic requirements. Protectors that are too stiff or heavy will not be worn. The test methods are designed to provide information on protection against mechanical impacts. The force levels in the tests do not relate directly to the forces riders are exposed to in accidents, but experiences have shown that products meeting the requirements of this European Standard may reduce the severity of injuries caused by impacts.

In order to encourage the adoption of certified protection by the highest possible number of users, two performance levels are specified for inflatable protectors. These are level 1 for protectors designed to give protection whilst having low ergonomic penalties associated with its use and level 2 for protectors providing an increased protection with respect to level 1. There may be, however, weight and restriction penalties associated with level 2 protection.

1 Scope

This European Standard covers requirements and test methods for mechanically activated inflatable protectors for motorcycle riders (in the following text called „protector“). It specifies the minimum level of protection, the minimum intervention time of inflated bag, and the minimum coverage to be provided by motorcyclists' protectors worn by riders. The requirements of this standard are applicable to various design of inflatable protectors and refers to all body areas and their combinations which are claimed to be protected. Inflatable protectors covered by this standard may be incorporated in motorcycle garments or equipped with by appropriate restraint systems and worn on their own.

This European Standard contains the requirements for the performance of the system during an accident and details of the test methods, requirements for sizing, ergonomics, innocuousness, labelling and the provision of information.

Inflatable protectors other than mechanically activated are not covered by this standard.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 1621-1:2012, *Motorcyclists' protective clothing against mechanical impact — Part 1: Motorcyclists' limb joint impact protectors — Requirements and test methods*

EN 1621-2, *Motorcyclists' protective clothing against mechanical impact — Part 2: Motorcyclists' back protectors — Requirements and test methods*

EN ISO 105-E01, *Textiles — Tests for colour fastness — Part E01: Colour fastness to water (ISO 105-E01)*

EN ISO 11642, *Leather — Tests for colour fastness — Colour fastness to water (ISO 11642)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1621-1:2012 and the following apply.

3.1

inflatable motorcyclist's protector

specific device worn by motorcyclists, which will automatically inflate in the event of an accident

3.2

intervention time

sum of the activation time plus the inflation time in milliseconds

3.3

activation time

period of time used by the triggering system to fire the gas generator, corresponding to the interval of time from the beginning of the accident to the start of the inflation of the protector

3.4

inflation time

time period required for the airbag to be fully inflated