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Protective garments for motorcycle riders - Part 2: Heavy-duty protective garments - Requirements

Motorradfahrerschutzbekleidung - Teil 2: Hochbelastbare Schutzkleidung - Anforderungen

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English Version

Protective garments for motorcycle riders - Part 2: Heavy-duty protective garments - Requirements

Motorradfahrerschutzbekleidung - Teil 2: Hochbelastbare
Schutzbekleidung - Anforderungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 162.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 17092-2:2017) 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 document is currently submitted to the CEN Enquiry.

This document along with EN 17092-1, EN 17092-3, EN 17092-4, EN 17092-5 and EN 17092-6, will supersede EN 13595-1:2002, EN 13595-2:2002 EN 13595-3:2002 EN 13595-4:2002.

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 89/686/EEC.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

This standard is part of a series of standards specifying requirements for particular items of protective garments. EN 17092 comprises 6 parts:

- *Part 1: Test methods*
- *Part 2: Heavy-duty protective garments — Requirements*
- *Part 3: Medium-duty protective garments — Requirements*
- *Part 4: Light-duty protective garments — Requirements*
- *Part 5: Light-duty abrasion protection garments — Requirements*
- *Part 6: Impact protector ensemble garments — Requirements*

Introduction

Motorcyclists' protective jackets, trousers, one-piece suits, two-piece suits, impact protector ensemble garments and other protective garments (hereinafter: "garments") are intended to give some amount of protection to riders without significantly reducing the ability of the rider to control the motorcycle. In addition, they are designed to provide protection for the rider during an accident or in the event of a fall from a motorcycle. Additional, particular, hazards encountered during a motorcycle accident may include: impact with and abrasion from the riding surface, impacts with the rider's motorcycle, conflicting vehicles, and other objects. Motorcyclists' protective garments are not intended to and cannot prevent traumas caused by high-energy impacts, traumas caused by severe forces of bending, twisting, torsion, flexion, or crushing as the result of striking an object, traumas caused by extreme abrasion, traumas caused by extreme movements, or traumas caused by massive penetrations. No protective garments can offer complete protection against all injuries. The principle of this standard is to define the basic performance requirements considered essential for motorcyclists' protective garments, in order for them to offer useful, classes of protection to riders according to the risks they may encounter, in the situations described above, during various riding activities and in various riding environments.

Motorcycling encompasses a diverse range of riders participating in a diverse range of activities. While all motorcyclists face similar fundamental risks when involved in an accident or a fall from a motorcycle, the type and degree of risk or hazard that a motorcyclist will encounter and the class of protection that they will need is closely linked to the riding activity, the riding environment, and the nature of the accident. In addition, because each motorcyclist participates in their chosen riding activity in different ways, within specific riding activities motorcyclists are also exposed to varying levels of risk and, therefore, require varying classes of protection. The elements that are a part of the fundamental design and functionality of a particular type of motorcyclists' protective garment, while appropriate and minimally constraining or limiting when used in a specific environment for a specific riding activity, may, on the other hand, present unacceptable constraints and liabilities in other riding environments and for other riding activities, such as increased penalties of weight, decreased range of motion and/or heat stress, and therefore, may not be acceptable for use by all riders during all motorcycle activities. This series of standards has been developed to encompass a large range of motorcycle disciplines and motorcyclists' activities, each with their own particular risks and appropriate classes of protection, to ensure that the best possible protection of an appropriate type is available for riders during their riding activities.

This standard is a part of a series of standards including EN 17092-1, EN 17092-3, EN 17092-4, EN 17092-5, and EN 17092-6, which together describe the requirements for motorcyclists' garments, according to the various classes of protection offered and EN 17092-1, which specifies the test methods to be used to test said garments, to confirm that they meet the requirements of the EN 17092-1, EN 17092-3, EN 17092-4, EN 17092-5, and EN 17092-6.

Classes of motorcycle protective garments and the principle of risk category zoning

Classes of Protection

Garments designed to provide protection for motorcycle riders are tested according to the class of protection they afford. The performance requirements for the classes of protection are detailed by specific standards as follows:

- EN 17092-2 — Class AAA garments. The highest level of protection, against the highest level of risks. Some common examples are: one-piece or two-piece suits. These garments are likely to have severe and limiting ergonomic, weight and thermal penalties, which some riders will not find acceptable for their specific riding activities.
- EN 17092-3 — Class AA garments. The second highest level of protection, against the risks of the greatest diversity of riding activities. Some common examples are: garments designed to be worn

by themselves or to be worn over other clothing. These garments are expected to have lower ergonomic and weight penalties than EN 17092-2 garments and some riders will not find these penalties acceptable for their specific riding activities.

- EN 17092-4 — Class A garments. The third highest level of protection. Some common examples are: garments, designed to be worn by themselves or to be worn over other clothing by riders in extremely hot environments. EN 17092-4 garments are expected to have the least ergonomic and weight penalties.
- EN 17092-5 — Class B garments. This class is for specialized garments, designed to provide the equivalent abrasion protection of EN 17092-4 garments but without the inclusion of impact protectors. Some common examples are: modular garments suitable to be combined with other garments providing impact protection. EN 17092-5 garments do not offer impact protection and it is recommended that they be worn with, at least, EN 1621-1 shoulder and elbow impact protectors, in the case of a jacket, or EN 1621-1 knee impact protectors, in the case of trousers, installed in the garment, if it is designed to accept them or in another form, in order to offer complete minimum protection.
- EN 17092-6 — Class C garments. This class is for specialized non-shell garments, designed only to hold one or more impact protectors in place, either as an undergarment or as an over-garment. EN 17092-6 garments are designed to provide impact protection for areas covered by the impact protector(s) and they do not offer complete minimum abrasion and impact protection.

This standard contains the requirements for EN 17092-2.

Risk category zoning

The performance requirements of the various aforementioned standards for motorcyclists' protective garments are, in turn, based on specific performance requirements for the garments' "risk category zones". Risk category zones are defined according to the likelihood that the area of the garment included in the zone will be subject to mechanical stress, in the event of an accident. There are three zones, as follows:

- Zone 1 - the areas of motorcyclists' protective garments that have a high risk of damage e.g. impact, abrasion, and tearing.
- Zone 2 - the areas of motorcyclists' protective garments that have a moderate risk of damage e.g. abrasion and tearing.
- Zone 3 - the areas of motorcyclists' protective garments that have a low risk of damage e.g. tearing.

1 Scope

This European Standard specifies general requirements for motorcyclists' protective garments of Class AAA: Heavy-duty protective garments, which are intended to provide limited protection to the wearer against injury. It does not apply to: motorcyclists' garments for motorsport competition events organized by a sanctioning body or motorcyclists' garments, such as those commonly associated with off-road disciplines, unless said off-road use garments have installed impact protection.

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 1621-1, *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*

prEN 1621-3, *Motorcyclists' protective clothing against mechanical impact — Part 3: Motorcyclists' chest protectors — Requirements and test methods*

EN 1621-4, *Motorcyclists' protective clothing against mechanical impact - Part 4: Motorcyclists' inflatable protectors - Requirements and test methods*

EN ISO 3377-1, *Leather - Physical and mechanical tests - Determination of tear load - Part 1: Single edge tear (ISO 3377-1)*

EN ISO 13688:2013, *Protective clothing - General requirements (ISO 13688:2013)*

EN ISO 4674-1, *Rubber- or plastics-coated fabrics — Determination of tear resistance — Part 1: Constant rate of tear methods (ISO 4674-1)*

prEN 17092-1:2017, *Protective clothing garments for motorcycle riders — Part 1: Test methods*

3 Terms and definitions

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

3.1

garment

jacket or trouser separate, one-piece or two-piece suit, impact protector ensemble clothing, and other protective motorcycle rider clothing types excluding protective motorcycle rider clothing for the head, neck, hands, or feet

3.1.1

jacket

garment constructed to provide protective coverage for the upper part of the body generally from the neck to the waistline or below, including the arms. A system to link the jacket to trousers may be present

Note 1 to entry: For two-piece suits, jackets are the part of the suit that provides protective coverage for the upper part of the body, generally from the neck to the waistline or below, including the arms.