DRAFT

ÖNORM EN 12195-1

Edition: 2008-03-01

Load restraint assemblies on road vehicles — Safety

Part 1: Calculation of securing forces

Ladungssicherungseinrichtungen auf Straßenfahrzeugen — Sicherheit —
Teil 1: Berechnung von Sicherungskräften

Dispositifs d'arrimage des charges à bord des véhicules routiers — Sécurité —
Partie 1: Calcul des forces de retenue

Note:
Because of possible comments, the final version of this ÖNORM can differ from the present Draft.
Please send your comments (in writing) by **2008-04-15** to ON.

Publisher and printing
ON Österreichisches Normungsinstitut
Austrian Standards Institute
Heinestraße 38, 1020 Wien

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ICS 55.180.99; 53.080

Identical (IDT) with prEN 12195-1:2008-01

Supersedes ÖNORM EN 12195-1:2004-04

responsible ON-Committee ON-K 163
Cargo transfer

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Explanations concerning Draft

The present Draft European Standard **EN 12195-1** has been submitted to CEN members for voting. In case of a positive result of the voting as required by CEN/CENELEC regulations, this Draft will be published as EN.

Like all member organizations of CEN, ON is basically obliged to implement European Standards in Austria and to withdraw conflicting standards.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 12195-1

January 2008

ICS 55.180.99; 53.080

Will supersede EN 12195-1:2003

English Version

Load restraint assemblies on road vehicles - Safety - Part 1: Calculation of securing forces

Dispositifs d'arrimage des charges à bord des véhicules routiers - Sécurité - Partie 1: Calcul des forces de retenue

Ladungssicherungseinrichtungen auf Straßenfahrzeugen - Sicherheit - Teil 1: Berechnung von Sicherungskräften

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 168.

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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Ref. No. prEN 12195-1:2008: E

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Foreword

This document (prEN 12195-1:2008) has been prepared by Technical Committee CEN/TC 168 “Chains, ropes, webbing, slings and accessories - Safety”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 12195-1:2003.

EN 12195 consists of the following parts under the general title “*Load restraint assemblies on road vehicles – Safety*”:

Part 1: Calculation of securing forces

Part 2: Web lashing made from man-made fibres

Part 3: Lashing chains

Part 4: Lashing steel wire ropes

Annex A to Annex F are informative.

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Introduction

This Part of EN 12195 has been prepared to provide one means of conforming with the essential safety requirements to calculate securing forces for load restraint assemblies to be used in the Common European Market and thus enabling the free movement of goods.

This Part of EN 12195 contributes to the harmonization of the calculation of load securing on road vehicles by defining the different procedures and equations of load securing.

Blocking and lashing procedures and appropriate combinations are described for load securing. The equations used are based on relevant scientific and, in particular, on mechanical laws and practical experience. For this purpose, a suitable vehicle with appropriate assemblies for blocking, bracing and securing is to be used to ensure safe load transportation. Transportation safety should be guaranteed by the dimensioning of load securing according to this Standard. The extent to which the hazards acting on the load during transport and resulting from the forces of load are addressed is given in the scope of this standard. In addition, load restraint assemblies for securing of loads on vehicles with respect to their securing and load bearing ability, which are not covered by this standard, should conform to the other parts of this standard and to EN ISO 12100 Part 2.

1 Scope

This Part of EN 12195 refers to the design of securing methods (blocking, lashing, and combinations) for securing of loads for surface transport by road vehicles or parts of them (lorries, trailers, containers and swap bodies), including their transport on vessels or by rail and/or combinations thereof. Hump shunting during railway transport is excluded. (Web lashings see EN 12195-2, lashing chains see EN 12195-3, lashing steel wire ropes see EN 12195-4).

This standard does not apply for vehicles with a total weight lower than 3,5 t.

Note: Lighter vehicles may have braking systems, which give higher values of acceleration on the road.

For dimensioning of load securing a distinction is made between steady loads and loads liable to tilting.

Furthermore, the acceleration coefficients for surface transport are specified.

For over top lashing the force loss in the tension force of the lashing at the outer edges between load and lashing is taken into account. The securing forces to be chosen for calculation in this EN 12195-1 are static forces produced by blocking or tensioning of lashings and dynamic forces, which act on the lashing as a reaction of the load movements.

Examples for the application of calculations are given in the Annexes.

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 ISO 12100-2, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles*

EN 12195-2:2000, *Load restraint assemblies on road vehicles — Safety — Part 2: Web lashing made from man-made fibres*

EN 12195-3, *Load restraint assemblies on road vehicles — Safety — Part 3: Lashing chains*

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EN 12195-4, *Load restraint assemblies on road vehicles — Safety — Part 4: Lashing steel wire ropes*

EN 12640, *Securing of cargo on road vehicles — Lashing points on commercial vehicles for goods transportation - Minimum requirements and testing*

EN 12642:2006, *Securing of cargo on road vehicles — Body structure of commercial vehicles — Minimum requirements*

EN 1492-1, *Textile slings — Safety — Part 1: Flat woven webbing slings, made of man-made fibres, for general purpose use*

EN 1492-2, *Textile slings — Safety — Part 2: Roundslings, made of man-made fibres, for general purpose use*

3 Terms, definitions, symbols, units and abbreviations

For the purposes of this draft European Standard, the following terms, definitions, symbols, units and abbreviations apply.

3.1 General terms and definitions

3.1.1
load restraint assembly
systems and devices for the securing of loads

[EN 12195-2:2000]

3.1.2
lashing
securing method where bendable devices are used in the securing of the load on a load carrier

3.1.3
tensioning device
mechanical device inducing and maintaining a tensile force in a load restraint assembly (e. g. ratchets, winches, overcentre buckles)

[EN 12195-2:2000]

3.1.4
tension force indicator
device which indicates the force applied to the lashing system by means of the tension devices and movement of the load or elastic deformation of the vehicle body, acting on the lashing equipment

[EN 12195-2:2000]

3.1.5
attachment point
rigid part of the load, e. g. eyebolt, to place the load restraint assembly

3.1.6
lashing point
securing device on a load carrier to which a lashing may be directly attached .A lashing point can be e. g. an oval link, a hook, a D-ring, a lashing rail

3.1.7
standard tension force
S_{TF}
residual force after physical release of the handle of the tensioning device

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