



SLOVENSKI STANDARD

SIST EN 12640:2020

01-februar-2020

Nadomešča:
SIST EN 12640:2000

Intermodalne nakladalne enote in gospodarska vozila - Pritrdilna mesta za zavarovanje tovora - Minimalne zahteve in preskusi

Intermodal loading units and commercial vehicles - Lashing points for cargo securing - Minimum requirements and testing

Ladungssicherung auf Straßenfahrzeugen - Zurrpunkte an Nutzfahrzeugen zur Güterbeförderung - Mindestanforderungen und Prüfung

Unités de transport intermodal et véhicules utilitaires - Points d'arrimage et systèmes d'arrimage - Prescriptions minimales et essais

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Ta slovenski standard je istoveten z: EN 12640:2019

ICS:

43.080.01	Tovorna vozila na splošno	Commercial vehicles in general
55.180.99	Drugi standardi v zvezi z distribucijo blaga s prevozom	Other standards related to freight distribution of goods

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EUROPEAN STANDARD

EN 12640

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2019

ICS 55.180.99

Supersedes EN 12640:2000

English Version

Intermodal loading units and commercial vehicles - Lashing points for cargo securing - Minimum requirements and testing

Ladungssicherung auf Straßenfahrzeugen - Zurrpunkte
an Nutzfahrzeugen zur Güterbeförderung -
Mindestanforderungen und Prüfung

This European Standard was approved by CEN on 23 September 2019.

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.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 12640:2019) has been prepared by Technical Committee CEN/TC 119 “Intermodal Loading Units and Cargo Securing (ILUCS)”, 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 June 2020, and conflicting national standards shall be withdrawn at the latest by June 2020.

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

This document supersedes EN 12460:2000. The main technical changes are:

- a) in clause 3, the terms and definitions were updated;
- b) in clause 4, the following content was added:
 - vehicles GVM under 3.500 kg;
 - lashing angles were updated;
 - defined reference hook;
 - strength of lashing points updated;
 - number and arrangement of lashing points updated.
- c) in clause 5, verifications were updated;
- d) in clause 6, testing was updated;
- e) in clause 7, marking was updated;
- f) the following clause and Annexes are new:
 - clause 8;
 - Annex A;
 - Annex B.

Annex A is normative and Annex B is informative.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

EN 12640:2019 (E)

1 Scope

This document specifies the minimum requirements and test methods for lashing points for cargo securing on commercial vehicles and intermodal loading units for cargo transport.

This document does not apply to:

- Vehicles and intermodal loading units manufactured before publication of this standard;
- Vehicles and intermodal loading units designed and constructed exclusively for the transport of bulk materials;
- Vehicles and intermodal loading units designed and constructed exclusively for the transport of specific cargo with particular securing requirements;
- Vehicles (delivery vans) in conformance to ISO 27956;
- ISO series 1 freight containers.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

CTU

Cargo Transport Unit

commercial vehicle and intermodal loading unit

3.2

cargo securing devices

components, which are form-fit, and / or force-fit acting in combination with the cargo and the vehicle or the vehicle structure (e.g. plug stakes/ stanchions, transverse beams, wedges)

3.3

lashing angles

3.3.1

longitudinal lashing angle β_x

angle between lashing device and longitudinal axis (x-axis) of a CTU in the plane of the loading area

Note 1 to entry: See Figure 1.

3.3.2**transverse lashing angle β_y**

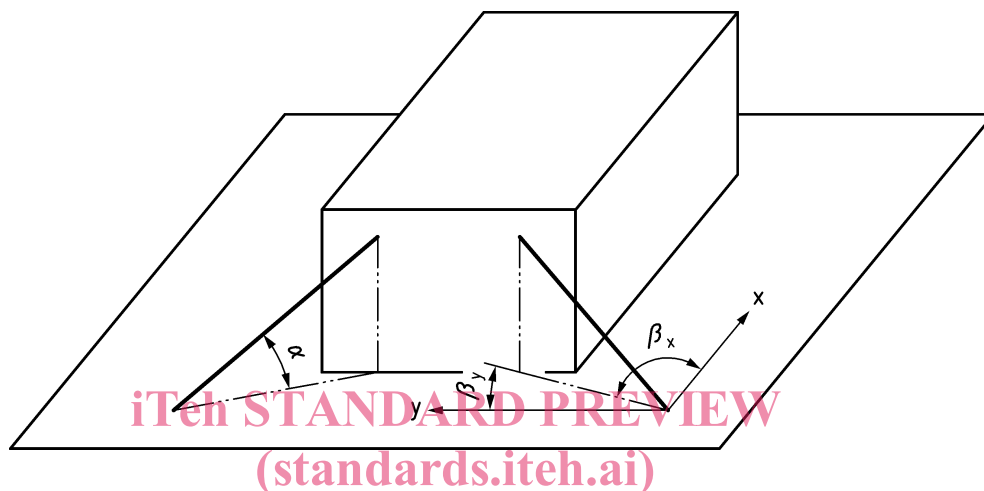
angle between lashing device and transverse axis (y-axis) of a CTU in the plane of the loading area

Note 1 to entry: See Figure 1.

3.3.3**vertical lashing angle α**

angle α between lashing device and the horizontal plane of the loading area

Note 1 to entry: See Figure 1.

**Key**

α vertical lashing angle

β_x longitudinal lashing angle

β_y transverse lashing angle

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Figure 1— Definition of lashing angles

3.4**lashing capacity (LC)**

maximum allowed force that a lashing point is designed to sustain in use

3.5**lashing device**

device designed not to be permanently attached to the CTU in order to secure the cargo

Note 1 to entry: Lashing devices as described in e.g. EN 12195-2/ EN 12195-3/EN 12195-4.

3.6**lashing points**

securing devices to which lashing devices may be directly attached

3.6.1**single lashing points**

securing devices spaced according to 4.5 which may be e.g. an oval link, a hook or a ring

EN 12640:2019 (E)**3.6.2****multiple-point lashing systems**

lashing rail or multi-point lashing systems in the outer frame, or multiple attachment and continuous lashing systems at walls and/or floor/roof with a longitudinal distance smaller than that described in 4.5

4 Requirements**4.1 General**

Lashing points shall be designed such that they transmit the forces they receive into the structural elements of the CTU. They shall be located as near as possible to the platform's longitudinal edges and/or integrated in the outer frame.

For vehicles with GVM < 3500 kg the described location is not mandatory.

For special load securing optional lashing points and/or load securing devices may be fixed.

Lashing points defined in 3.6 should not be directly mounted in structure materials (e.g. wood, plastic), where the structure is subject to damage from normal loading operations.

4.2 Design requirements of single lashing points

When mounted on top of the loading platform, in rest position they shall not project above the horizontal level of the loading platform.

The recesses in the loading platform required to accommodate the lashing points should be as small as possible.

Lashing points shall be available to withstand the lashing forces according to Table 1 applied from any direction within the conical area determined as follows (see Figure 1):

- vertical lashing angle α from about 0° to 90°, deviation of 5° is allowed;
- longitudinal lashing angle (β_x) from 0° to at least 180°, deviation of 5° is allowed.

The angle requirements may be fulfilled by combination of different single lashing points and/or multi-point lashing systems.

Lashing points shall be able to take hooks as defined in Figure 2, when GVM of the CTU is more than 7 500 kg.

4.3 Design requirements of multi-point lashing systems

Multi-point lashing systems shall be able to fulfil:

- vertical lashing angle α from 0° to 90°, deviation of 5° is allowed;
- longitudinal lashing angle (β_x) from 0° to at least 180°, deviation of 5° is allowed.

Multi-point lashing systems shall be able to take hooks as defined in Figure 2.

Continuous lashing systems not able to use the reference hook, shall be able to fulfil the requirements of lashing angles and forces.

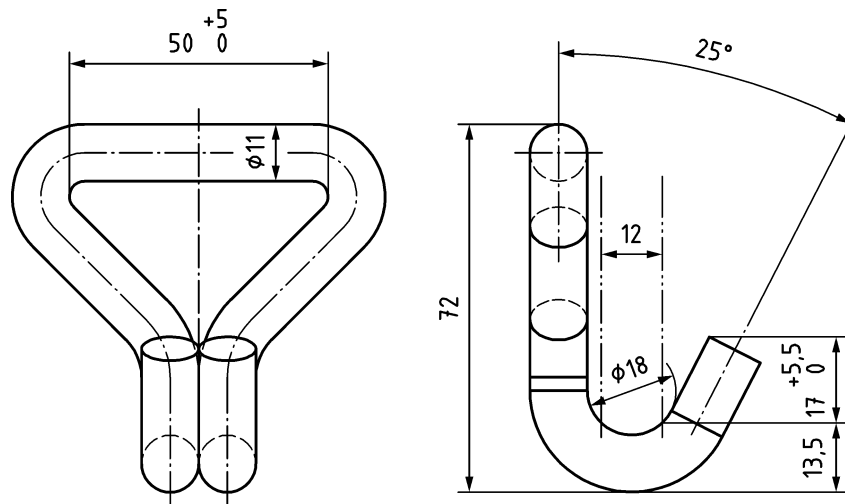


Figure 2— Reference hook

Multi-point lashing systems shall be able to withstand the lashing forces according to Table 1 on a length of 1 m at 3 positions at the same time in the same direction.

The angle requirements may be fulfilled by a combination of different single lashing point and/or multi-point lashing systems.

4.4 Strength of the lashing points

Each lashing point according to 3.6 shall be designed for a minimum lashing capacity as specified in Table 1.

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 Table 1— Minimum lashing capacity

Gross vehicle mass (m) in kilogram [kg]	Minimum lashing capacity (LC) for lashing points in deka Newton [daN] ^a
$m \leq 750$	400
$750 < m \leq 3500$	600
$3500 < m \leq 7500$	800
$7\ 500 < m \leq 12\ 000$	1000
$m > 12000$ or Intermodal loading units	2 000

^a 100 daN = 1 kN.

4.5 Number and layout of the lashing points

4.5.1 Number of lashing point pairs

The number of lashing point pairs n shall be determined by the highest result of the following:

- loading length in meters divided by 0,85;
- the payload in daN multiplied by 0,75 divided by LC in daN.

The number of lashing point pairs n shall be rounded down to next integer but not less than 2.