



SLOVENSKI STANDARD

SIST EN 12641-1:2020

01-februar-2020

Nadomešča:
SIST EN 12641-1:2005

Intermodalne nakladalne enote in gospodarska vozila - Ponjave - 1. del: Minimalne zahteve

Intermodal loading units and commercial vehicles - Tarpaulins - Part 1: Minimum requirements

Intermodale Ladeeinheiten und Nutzfahrzeuge - Planen - Teil 1: Mindestanforderungen

Unités de transport intermodal et véhicules utilitaires - Bâches - Partie 1 : Exigences minimales

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Ta slovenski standard je istoveten z: EN 12641-1:2019

ICS:

55.180.10 Večnamenski kontejnerji General purpose containers

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12641-1

December 2019

ICS 55.180.10

Supersedes EN 12641-1:2005

English Version

**Intermodal loading units and commercial vehicles -
Tarpaulins - Part 1: Minimum requirements**

Unités de chargement intermodales et véhicules
utilitaires - Bâches - Partie 1 : Exigences minimales

Intermodale Ladeeinheiten und Nutzfahrzeuge -
Planen - Teil 1: Mindestanforderungen

This European Standard was approved by CEN on 9 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.

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, 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 United Kingdom.

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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 12641-1:2019) 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 12641-1:2005.

The main technical changes are:

- a) term 3.1 was added;
- b) Table 1 – the row 'mass per area' was added;
- c) Figure 2 – key 4 was added.

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 12641-1:2019 (E)**1 Scope**

This document specifies minimum requirements for the strength and attachment of tarpaulins used on swap bodies and utility vehicles for road and road/rail combined (intermodal transport) traffic.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1875-3, *Rubber- or plastics- coated fabrics - Determination of tear strength - Part 3: Trapezoidal method*

EN ISO 1421, *Rubber- or plastics-coated fabrics - Determination of tensile strength and elongation at break (ISO 1421)*

EN ISO 2286-2, *Rubber- or plastics-coated fabrics - Determination of roll characteristics - Part 2: Methods for determination of total mass per unit area, mass per unit area of coating and mass per unit area of substrate (ISO 2286-2)*

EN ISO 2411, *Rubber- or plastics-coated fabrics - Determination of coating adhesion (ISO 2411)*

EN ISO 7854, *Rubber- or plastics-coated fabrics - Determination of resistance to damage by flexing (ISO 7854)*

ISO 3795, *Road vehicles, and tractors and machinery for agriculture and forestry - Determination of burning behaviour of interior materials*

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

3.1
intermodal loading unit
ILU

transport unit which may be a container, swap body, semi-trailer or road-trailer and commercial vehicles suitable for inter-modal transport

Note 1 to entry: See ISO/IWA 16

4 Requirements**4.1 General**

The following minimum requirements regarding the rigidity of tarpaulins and their attachments shall be met.

4.2 Materials

The quality of the materials used for tarpaulins shall be such that the resulting product will conform to the requirements defined in Table 1 and ensure uniformity of the performance.

Table 1 — Test requirements and methods

Characteristic	Requirements	Test method according to
Breaking strength in warp and weft - at $(23 \pm 5)^{\circ}\text{C}^{\text{a}}$ - at $-25^{\circ}\text{C}^{\text{b}}$	$\geq 2\,850\text{ N/5 cm}$ $\geq 2\,200\text{ N/5 cm}$	EN ISO 1421
Resistance to tear propagation in warp and weft - at $(23 \pm 5)^{\circ}\text{C}^{\text{a}}$ - at $-25^{\circ}\text{C}^{\text{b}}$	$\geq 185\text{ N}$ $\geq 120\text{ N}$	EN 1875-3
Adhesion ^c	$\geq 100\text{ N/5 cm}$	EN ISO 2411
Dimensional stability	$\leq 1\%$	24 h at 70°C
Buckling strength	No cracks after 100 000 bending operations	EN ISO 7854
Fire resistance	Burning Rate $< 100\text{ mm/min}$	ISO 3795
mass per area ^d	$> 650\text{ g/m}^2$	EN ISO 2286-2
<p>^a i.e. room temperature.</p> <p>^b For special applications, a test temperature of -40°C may be applied by using EN 1876-1, if agreed between user and supplier.</p> <p>^c EN ISO 2411 specifies the test for the determination of the adhesiveness using glue. For the purposes of this document the connection shall be effected by the use of a welding process. This is also valid for the test. The achievable adhesive strength of the tarpaulin welded joint of the chart will be determined analogous to EN ISO 2411.</p> <p>^d From the site specific mass can be varied, if the remaining technical requirements of Table 1 will be fulfilled.</p>		

The mass per m^2 of tarpaulin material (according to EN ISO 2286-2) shall be documented on the marking (see Clause 5).

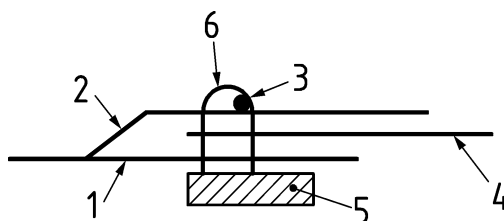
4.3 Construction of tarpaulin

If the tarpaulin is composed of several pieces, the connections of the pieces shall be such that the same requirements (see Table 1) are met as for the material.

4.4 Divided tarpaulins

Vertically divided tarpaulins shall only be used if their conjunction matches the requirements of Table 1. Openings are only valid if the conjunction corresponds to the application specific requirement of the transport carrier and the mission critical tightness against external influences is guaranteed. See Figure 1.

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**Key**

- | | |
|-----------------------------|------------------------------|
| 1 left hand tarpaulin piece | 4 right hand tarpaulin piece |
| 2 overlap | 5 stanchion (vertical) |
| 3 vertical rope | 6 bracket (lacing eye) |

Figure 1 — Fixation of vertical divided tarpaulins (Example customs similar closing)**4.5 Fixation of tarpaulins**

To fulfil customs regulation, with the exception of the area around the stanchions, the distance between eyelets shall be no greater than 200 mm (horizontally and vertically). In the region of the stanchions, the distance may increase but shall be no more than 300 mm. The loops both vertical and horizontal shall always be arranged in line. Zigzag attachments (sling-clasp) shall not be acceptable.

The tarpaulin shall be secured with a suitable rope between the swap body brackets and the eyelets of the tarpaulin. Additional anchorings of the tarpaulin (for example: tension triangles) are valid.

The following ropes are permissible:

- hemp or sisal ropes not less than 8 mm in diameter which shall be covered with an additional transparent plastic sheath;
- steel wire ropes not less than 3 mm in diameter;

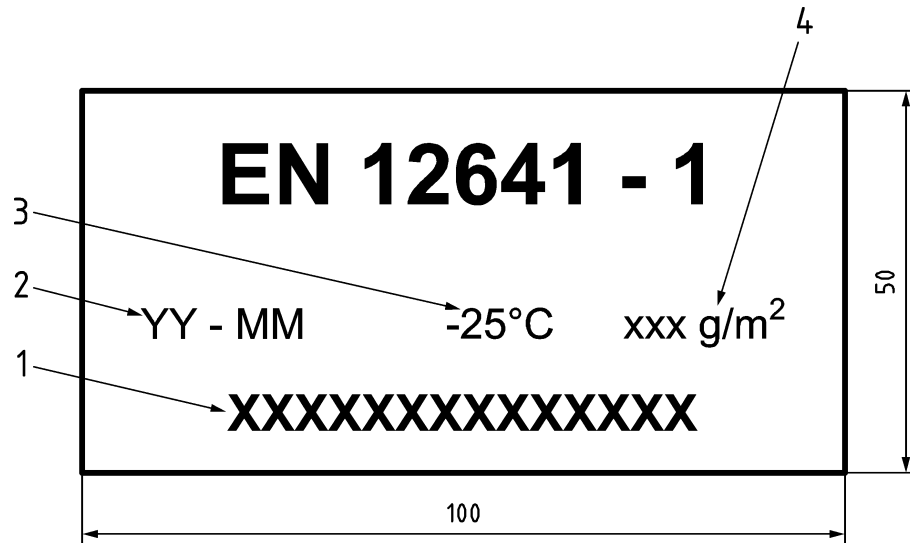
Steel wire ropes with additional transparent plastic sheath may be used.

For other cases of application, the attachments have to be performed in this way that they match the application specific requirements.

5 Marking

Tarpaulins for which compliance with this document is claimed shall only be manufactured from materials durably marked with the following (see example Figure 2):

- number of this document; i.e. EN 12641-1;
- date of manufacture (year and month);
- name of the tarpaulin manufacturer or trademark;
- mass per area of tarpaulin material (g/m^2);
- lowest permissible minus temperature (i.e. - 25 °C or - 40 °C).

**Key**

- 1 name of the tarpaulin manufacturer or trade mark
- 2 date of manufacture (year and month)
- 3 lowest possible minus temperature
- 4 mass per area of tarpaulin material (g/m²)

Figure 2 — Marking of tarpaulins
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