

Minimum material requirement for securing a load of paper reels

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Non-slip mats



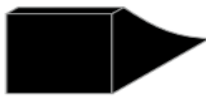
Lashing strap/long-lever ratchet
(pretensioning force STF)



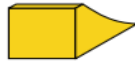
Edge protectors for pallets



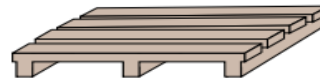
Edge protectors with a groove



Large wedge/chock for securing the load



Small wedge for safety during loading/unloading



Pallet

Edge protectors

For a tie-down lashing with a load of at least 800 daN (test value)

- An edge limb must be designed to curve in line with the reel profile
- Edge groove or alternative design to protect the reel edge
- Pressure-distributing and imprint-reducing profiling
- Non-slip and fabric-friendly strap attachment
- Transfer coefficient (“k-factor”) of at least 1.6 for the most uniform distribution of lashing forces on both sides
- Use in a temperature range from at least -20°C to +50°C
- Free of any damage (chips, cracks, deformations, etc.)
- Wear-resistant marking by manufacturer (imprint, embossing or similar):

Name of the manufacturer

Product name / article number

Positioning instruction (for example, top/belly)

Date of manufacture (MM/YY)



Edge protectors with a groove

Non-slip material

Certified/proven coefficient of sliding friction of $\mu \geq 0.6$ with appropriate material pairing (reel/loading surface)

- Width of the material ≥ 200 mm
- Thickness of the material approx. 3 mm
- High pressure stability and dimensional stability even in damp and wet conditions
- Free of any damage and contamination that impairs function (discard state)

Preferably wear-resistant marking by the manufacturer (imprint, embossing or similar):

- Name of the manufacturer
- Product name / article number



Non-slip mats

Non-slip vehicle floors

Certified/proven coefficient of sliding friction of $\mu \geq 0.6$ with appropriate material pairing (reel/loading surface)

Check for any function-impairing contamination or damage

The coefficient of sliding friction of at least $\mu = 0.6$ must be guaranteed.

The manufacturer's information and product information must be followed.

The vehicle must be provided with a clearly visible marker indicating the use of a non-slip floor. This could be located inside the last stanchion of the vehicle, for example. Ideally, a reference to the vehicle identification number will be provided.

Lashing straps (basis DIN EN 12195-2)

STF value of preferably 500 daN so that the edges of the paper reels are not overloaded.

Strap elongation $\leq 5\%$

Free of any damage that results in the discard state (tears or knots in the strap, deformations to the tensioning element, illegible label, etc.)

GS mark (optional)



Lashing strap/long-lever ratchet

Head sling for securing the load (EN 12195)

Length: 3.8 m

Orange strap, 100% polyester according to EN 12195-2

Strap width of 50 mm without profile hook with 200 mm flat loop on both sides

Total length: outside-outside 3,800 mm

Notes:

→ The requirements listed are based on the guidelines VDI 2700 main edition, sheet 2, sheet 9, sheet 14, sheet 15 and DIN EN 12195-2 (lashing straps)