

Tensional strapping — Guide to selection and use of tensional strapping

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British Standard

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National foreword

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Tensional strapping - Guide to selection and use of tensional strapping

Cerclages sous tension - Guide pour la sélection et l'utilisation de cerclages sous tension

Umreifungsbänder - Auswahl und Anwendung

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Foreword

This document (EN 13891:2003) has been prepared by Technical Committee CEN/TC 261 "Packaging", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by December 2003, and conflicting national standards shall be withdrawn at the latest by December 2003.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard gives guidance on the selection and use of steel and non-metallic tensional strapping. The term steel strapping covers flat band strapping. Non-metallic strapping covers webless strapping and extruded thermoplastic strapping.

NOTE 1 EN 13246 specifies the breaking strength and dimensional tolerances of steel strapping and gives guidance on surface finishes of steel strapping.

NOTE 2 EN13394 specifies the dimensional tolerances and tensile properties of non-metallic tensional strapping and webless (textile) strapping and gives guidance on surface finishes available.

2 General

2.1 Applications

Tensional strapping is applied to packages by semi-automatic, automatic, or automated equipment (see clause 4) and tied or sealed while under tension. It may be applied to wooden boxes or crates, solid and corrugated fibreboard packaging cases, bundles, bales, palletized and unitised loads, to manufacturing processes, and as a safety factor in internal handling, e.g. temporary banding.

2.2 Purpose

Many of the recommendations set out in other Sections of this European Standard provide for the use of tensional strapping, applied correctly, as an integral part of the container or package. Some reasons for this are as follows:

- a) it reinforces and strengthens packages, protecting them against the hazards of transportation, thus assisting and ensuring safe arrival at destination;
- b) it allows economies to be effected in load constructions and on other packaging materials;
- c) it renders the contents of the packages less liable to pilferage;
- d) it may be used as a method of closure or of reinforcing the closure.

In addition, certain conditions experienced in handling and transit require the use of strapping as an additional safeguard, e.g. load restraint.

2.3 Lifting and lashing

Only certain grades of tensional steel strapping are designed to be used for mechanical lifting purposes (see EN 13247). Other grades of tensional steel strapping should not be used for lifting purposes.

NOTE Non-metallic strapping should not be used for lifting purposes.

2.4 Choice of strapping

In determining the size, number and type of straps to be used, consideration should be given to the shape, size and distribution of mass of the package or load, the material from which it is made, and the handling, storage and transport conditions likely to be encountered.

NOTE EN 13246 specifies tensional steel strapping.
EN 13394 specifies non-metallic tensional strapping.

3 Types of equipment

3.1 For use with steel and non-metallic strapping

The types of equipment for use with steel and non-metallic tensional strapping are listed in Table 1. There is a full range of options with various degrees of mechanisation with additional options, if required.

The advice and guidance of manufacturers are offered freely in evaluating the requirements of a given strapping application and recommending suitable systems. Within the types of equipment set out in Table 1 there are obviously special features designed for specialised applications as well as secondary factors which will enhance standard equipment. Suppliers will provide the detailed information upon which a choice can be made.

Table 1 — Types of equipment for use with steel and non-metallic strapping

Hand operated
Power assisted, portable
Fully powered, portable
Semi-automatic machines
Automatic machines
Semi-automatic pack compression
Automatic pack compression
Custom automatic machines
Note Suppliers should be consulted to advise on the suitability of strapping to meet the requirements of specific application equipment.

3.2 For use with semi-automatic, automatic and automated types of strapping

The types of equipment recommended for use with semi-automatic, automatic and automated types of strapping equipment are classified as follows.

- Semi-automatic: Machinery, generally static, which does not have a strap chute for feeding strapping around the article to be strapped. Feeding is by hand, the machine operator placing the leading end of a strap into the mechanism so that the remaining operations of the cycle, i.e. tensioning, sealing and cutting off, can be completed automatically.
- Automatic: Machinery with a fixed track for feeding the strapping. All operations of the complete strapping cycle are carried out on activation of the start control.
- Automated: Automatic machinery with additional electronic or other controls and a powered method of presenting packs to the strapping machine. An automated system could be capable, without the presence of an operator, of controlling the input flow of packs, strapping them at the correct points for the requisite number of straps to be applied (at predetermined positions), activating the strapping machine and ejecting the strapped pack. Automation is a control system of variable sophistication, according to the requirements of the user and the strapping application.