SLOVENSKI STANDARD
SIST EN ISO 12777-2:2001

01-februar-2001

Preskusne metode veznih elementov palete - 2. del: Ugotavljanje odpornosti proti odstranjevanju in puljenju paletnih žebljev in trakov (ISO 12777-2:2000)

Methods of test for pallet joints - Part 2: Determination of withdrawal and head pull-through resistance of pallet nails and staples (ISO 12777-2:2000)

Prüfungen von Verbindungen an Paletten - Teil 2: Prüfung des Auszugs- und Kopfdurchzugswiderstandes von Nägeln und Klammern (ISO 12777-2:2000)

Méthodes d'essai des assemblages de palettes - Partie 2: Détermination de l'arrachage et de la résistance de la tete des clous et clous cavaliers de palettes (ISO 12777-2:2000)

Ta slovenski standard je istoveten z: **EN ISO 12777-2:2000**

ICS:

55.180.20 Veļ namenske palete General purpose pallets

SIST EN ISO 12777-2:2001 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 12777-2

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ICS

English version

Methods of test for pallet joints - Part 2: Determination of withdrawal and head pull-through resistance of pallet nails and staples (ISO 12777-2:2000)

Méthodes d'essai des assemblages de palettes - Partie 2: Détermination de l'arrachage et de la résistance de la tête des clous et clous cavaliers de palettes (ISO 12777-2:2000)

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This European Standard was approved by CEN on 15 April 2000.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN ISO 12777-2:2000 E

Foreword

The text of the International Standard ISO 12777-2:2000 has been prepared by Technical Committee ISO/TC 51 "Pallets for unit load method of materials handling" in collaboration with 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 October 2000, and conflicting national standards shall be withdrawn at the latest by October 2000.

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 12777-2:2000 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

Annex ZA (normative)
Normative references to international publications with their relevant European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

Publication	Year	Titlel	EN	Year
ISO 445	1996	Pallets for materials handling - Vocabulary	EN ISO 445	1998
ISO 1133	1997	Plastics - Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics	EN ISO 1133	1999
ISO 6891	1983	Timber structures - Joints made with mechanical fasteners - General principles for the determination of strength and deformation characteristics	EN 26891	1991
ISO 8970	1989	Timber structures - Testing of joints made with mechanical fasteners - Requirements for wood density	EN 28970	1991
ISO 12777-1	1994	Methods of test for pallet joints - Part 1: Determination of bending resistance of pallet nails, other dowel-type fasteners and staples	EN ISO 12777-1	1996

INTERNATIONAL STANDARD

ISO 12777-2

First edition
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Methods of test for pallet joints —

Part 2: Determination of withdrawal and head pull-through resistance of pallet nails and staples

Méthodes d'essai des assemblages de palettes —

Partie 2: Détermination de l'arrachage et de la résistance de la tête des clous et clous cavaliers de palettes

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 12777 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 12777-2 was prepared by Technical Committee ISO/TC 51, *Pallets for unit load method of materials handling*.

ISO 12777 consists of the following parts, under the general title *Methods of test for pallet joints*:

— *Part 1: Determination of bending resistance of pallet nails, other dowel-type fasteners and staples*

— *Part 2: Determination of withdrawal and head pull-through resistance of pallet nails and staples*

— *Part 3: Determination of pallet joint strength*

Introduction

In 1988 ISO/TC 51 considered developing standard test methods for pallet joints. It became evident that the lack of International Standards on nail testing meant that fasteners (essential elements of pallet joints) could not be characterized sufficiently to enable worthwhile progress on full joint testing. Although there were existing, or partially developed, nail testing principles, it was considered that, in a practical situation where, for quality control purposes or comparisons of nail quality, reasonably accurate and rapid nail strength data were required, one or both, of the two existing commercial nail testers were better suited to the needs of pallet makers, pallet test laboratories and nail manufacturers. This is now ISO 12777-1.

Preliminary work led the manufacturers of both machines to make design modifications to improve accuracy. An evaluation, carried out with the cooperation of the manufacturers/agents of each nail test machine, demonstrated that the technical requirements for nail test machines/principles were met by both machines. The principles of these test methods are given in ISO 12777-1. They are primarily concerned with pallet joints in shear configuration.

This part of ISO 12777 extends the possibility of characterizing nails with relation to their axial configuration and the methods involve standard laboratory testing equipment. However, these tests are more complex than those in part 1 and are not suitable for routine quality control of pallets or pallet joints. Additionally, the highly significant influence of delayed testing must be considered in all parts of ISO 12777. Values of strength frequently increase even a few days after wood joint assembly and delayed testing may be more relevant to long-term pallet usage.

Methods of test for pallet joints —

Part 2: Determination of withdrawal and head pull-through resistance of pallet nails and staples

1 Scope

This part of ISO 12777 specifies methods of determining the resistance of pallet nails and staples to axial load by specifying test methods for determining:

a) characteristics and maximum load for axially loaded nailed or stapled joints (wood to wood);

b) characteristics and maximum load for axially loaded nailed or stapled joints (for wood to wood-based materials and wood to non-wood-based materials, such as plastics).

These test methods apply to joints with all types of nails up to 7 mm in diameter (including plain round shank, square, fluted, twisted, helical and annular threaded) and may also be suitable for other fasteners such as wood staples.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 12777. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 12777 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 445:1996, *Pallets for material handling — Vocabulary*.

ISO 1133, *Plastics — Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics.*

ISO 1183:1987, *Plastics — Methods for determining the density and relative density of non-cellular plastics.*

ISO 3130, *Wood — Determination of moisture content for physical and mechanical tests.*

ISO 3131, *Wood — Determination of density for physical and mechanical tests.*

ISO 6891:1983, *Timber structures — Joints made with mechanical fasteners — General principles for the determination of strength and deformation characteristics*.

ISO 8970, *Timber structures — Testing of joints made with mechanical fasteners — Requirements for wood density.*

ISO 12777-1, *Methods of test for pallet joints — Part 1: Determination of bending resistance of pallet nails, other dowel-type fasteners and staples*.