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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

Reference number
ISO 12777-2:2000(E)

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Foreword

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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.