

Modular units for machine tools —

Part 3: Specification for workholding pallets over 800 mm nominal size

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Machine, Engineers and Hand Tools Standards Policy Committee (MTE/-) to Technical Committee MTE/1, upon which the following bodies were represented:

- Advanced Manufacturing Technology Research Institute
- Cranfield Institute of Technology
- Department of Trade and Industry [Mechanical Engineering and Manufacturing Technology Division (Mmt)]
- Health and Safety Executive
- Ministry of Defence
- Coopted members

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National foreword

This Part of BS 3884 has been prepared under the direction of the Machine, Engineers and Hand Tools Standards Policy Committee and implements agreements of the International Organization for Standardization (ISO). It is identical with ISO 8526 — “*Modular units for machine tools — Workholding pallets —*” Part 2:1990 “*Workholding pallets of nominal size greater than 800 mm*”.

Cross-references

International Standard	Corresponding British Standard
	BS 4500 <i>ISO limits and fits</i>
ISO 286-2:1988	Section 1.2:1990 <i>Tables of commonly used tolerance grades and limit deviations for holes and shafts</i> (Identical)
ISO 2768:1989	Part 3:1973 <i>Working limits on untoleranced dimensions</i> (Technically equivalent)

The Technical Committee has reviewed the provisions of ISO 299:1987 and ISO 1101:1983, to which reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard. A related British Standard to ISO 299 is BS 2485:1987 “*Specification for tee slots, tee bolts, tee nuts and tenons*”. A related British Standard to ISO 1101 is BS 308 “*Engineering drawing practice*” Part 3:1972 “*Geometrical tolerancing*”.

The introduction to ISO 8526-2 reads as follows.

“This part of ISO 8526 has been drawn up to facilitate interchangeability of workholding pallets, including those from different manufacturers. It deals with square pallets and rectangular pallets of length-to-width ratio of 1,25 and of nominal size greater than 800 mm.

If pallets with tighter tolerances than specified in this part of ISO 8526 are required, they shall be subject to agreement between the manufacturer and the user.

This part of ISO 8526 does not specify the positioning accuracy of the pallets.”

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 14, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This part of ISO 8526 specifies the dimensions of workholding pallets for use with machine tools and in manufacturing systems.

It applies to the following nominal sizes of pallet:

1 000 mm, 1 250 mm, 1 600 mm and 2 000 mm

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8526. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8526 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*.

ISO 299:1987, *Machine tool tables — T-slots and corresponding bolts*.

ISO 1101:1983, *Technical drawings — Geometrical tolerancing — Tolerancing of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings*.

ISO 2768-1:1989, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*.

3 Terminology

3.1 Nominal size

The nominal size is given by dimension a_1 [see Figure 3 a)].

3.2 General

The terms used for the purposes of this part of ISO 8526 are listed in Table 1 and illustrated in Figure 1.

Table 1 — Terminology

Reference number	Designation
1	Top surface of pallet
2	Centre hole
3	Location surface
4	Clamping surface
5	Transportation slide surface
6	Location hole
7	Edge locator (when fitted)
8	Alignment hole (when provided)
9	Fixing holes for latch mechanism
10	Resting surface

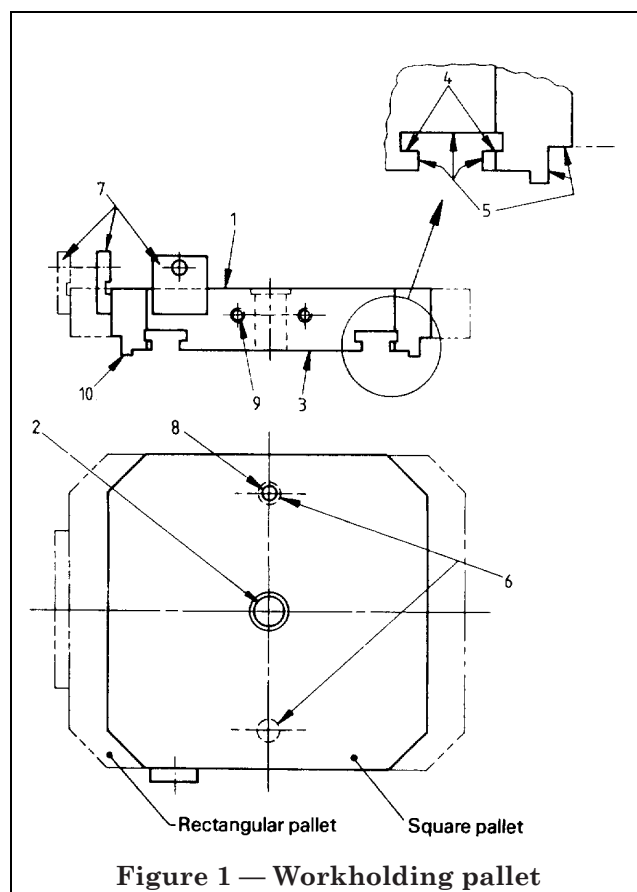


Figure 1 — Workholding pallet

4 Dimensions

Dimensions of pallets are given in Table 2.

5 Top surface

5.1 Corners

Corners shall be removed from pallets (see dimension c in Table 2).

5.2 T-slots and threaded holes

Either T-slots or threaded holes may be provided in the top surface. Pitches of threaded holes and T-slots and T-slot dimensions shall comply with ISO 299. Dimensions and pitches of T-slots and threaded holes are given in Table 2.

NOTE 1 The top surface may be left plain, if desired, for special applications.

NOTE 2 Radial slots may be used for special applications. Their dimensions are given in Annex A, Figure A.1 and Figure A.2.

5.3 Types of top surface

The different types of top surface are as follows:

- type 1: surface with threaded holes [see Figure 2 a)];
- type 2: surface with T-slots [see Figure 2 b)];
- type 3: surface with T-slots and cross-tenons [see Figure 2 c)];
- type 4: plain surface (see Figure 5);
- type 5: surface with radial T-slots (see Figure A.1);
- type 6: surface with twin radial T-slots (see Figure A.2).

5.4 Centre hole

A centre hole shall be provided and may be used as a reference hole for work positioning on the pallet and/or as a reference hole for pallet manufacturing (see Figure 1).

The depth of the counterbore, d_4 , if present, shall always be greater than the depth of the central tenon slot of the pallet.

5.5 Alignment hole

An alignment hole, d_6 , may be provided for use in positioning the workpiece or fixture on the pallet and/or as a reference hole for pallet manufacturing purposes (see Figure 1).

NOTE It is necessary to provide means of preventing ingress of swarf and coolant to the bottom surface.

6 Location of workpiece

Workpieces or fixtures shall be located on the top surface by one of the following methods:

- a) by means of edge locators (see Figure 4 and Table 3);

NOTE For type 2 and type 3 top surfaces, the mounting holes for the edge locators are at the discretion of the manufacturer. The positions of the fixing holes for the fixture should be the same as those shown in Figure 4.

- b) by means of a centre hole and an associated alignment hole (where the top surface of the pallet has threaded holes) [see Figure 2 a)];
- c) by means of a centre hole and a reference slot (where the top surface of the pallet has T-slots) [see Figure 2 b)];

- d) by means of two perpendicular tenon (crossed-tenon) slots [see Figure 2 c)];

- e) by means of two or three straight-through location holes, d_6 [see Figure 3 a) and Figure 3 b)].

NOTE 1 It is necessary to provide means of preventing ingress of swarf and coolant to the bottom surface.

NOTE 2 The straight-through feature is optional.

7 Bottom surface

7.1 Location of pallet on the receiver (on the machine tool)

Location of the pallet on the receiver shall be by means of one of the following methods (see Figure 3):

- a) by two cylindrical holes on the pallet [see Figure 3 a)] and two cylindrical pins on the receiver;
- b) by two or three tapered holes on the pallet [see Figure 3 b)] and two or three tapered pins on the receiver.

7.2 Shape and dimensions

The shape and dimensions of the bottom surface are given in Figure 3 a) and Table 2.

8 Designation of pallets

The designation of a pallet is given by

- the number of this part of ISO 8526;
- its nominal size and length, $a_1 \times a_1$ or $a_1 \times a_2$;
- its top surface type (see 5.3);
- the pitch of its T-slots or threaded holes;
- the method of workpiece location [see clause 6, a) to e)];
- the method of locating the pallet on the receiver [see 7.1, a) and b)].

EXAMPLE

Designation of a square pallet, of nominal size and length $1\,000 \times 1\,000$, with top surface type 2, with 100 mm pitch of T-slots, with workpiece location by means of centre hole and reference slot c), and pallet location on the receiver by means of cylindrical holes a):

ISO 8526-2 – 1 000 × 1 000-2-100-c-a

EXAMPLE

Designation of a rectangular pallet, of nominal size and length $1\,000 \times 1\,250$, with top surface type 2, with 100 mm pitch of T-slots, with workpiece location by means of centre hole and reference slot c), and pallet location on the receiver by means of tapered holes b):

ISO 8526-2 – 1 000 × 1 250-2-100-c-b