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**General-purpose flat pallets for through transit  
of goods — Design rating and maximum  
working load**

**iTeh STANDARD PREVIEW**  
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*Palettes plates d'usage général pour le transport de marchandises — Capacité  
nominale et charge maximale de service*

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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.

The main task of ISO technical committees is to prepare International Standards. In exceptional circumstances a technical committee may propose the publication of a technical report of one of the following types:

- type 1, when the necessary support within the technical committee cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development requiring wider exposure;
- type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example).

Technical reports are accepted for publication directly by ISO Council. Technical reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

ISO/TR 10232, which is a technical report of type 2, was prepared by Technical Committee ISO/TC 51, *Pallets for unit load method of materials handling*.

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## Introduction

In 1981, Technical Committee ISO/TC 51, *Pallets for unit load method of materials handling*, set up Working Group 3 to produce a draft proposal on performance requirements for pallets, related to the methods of test being developed by Working Group 2.

ISO/TC 51/WG 3 evaluated performance in relation to the designed load capacity of a pallet for a uniformly distributed load, called the design rating, or rating ( $R$ ). However, it was recognized that the actual safe working load for a pallet of a given rating, as determined by test, could vary with the type of load carried and that, for a specific type of load, the maximum working load may be smaller or larger than the rating of a pallet.

A draft document listing examples of the relationship between the rating and safe working load was considered by ISO/TC 51 at its ninth meeting in 1983 and it was agreed to be suitable for development as an ISO Technical Report, to provide general guidance on the subject to all involved in the selection and use of pallets.

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# General-purpose flat pallets for through transit of goods — Design rating and maximum working load

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## 1 Scope

This Technical Report provides guidance on the relationship between the design rating of a pallet ( $R$ ) and its maximum working load in practice, which depends on the nature of the load being carried.

It applies to general-purpose flat pallets whose rating has been determined by testing in accordance with ISO 8611 using the performance requirements set out in ISO/TR 10233.

## 2 Normative references

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

ISO 8611 : 1988, *General-purpose flat pallets for through transit of goods — Test methods*.

ISO/TR 10233 : 1989, *General-purpose flat pallets for through transit of goods — Performance requirements*.

## 3 Definitions

For the purposes of this Technical Report, the following definition applies.

**rating ( $R$ )**: The designated load capacity of the pallet, in kilograms, assuming an evenly and uniformly distributed load.

## 4 Relationship between rating and maximum working load

For through transit, pallets are often loaded in such a way that the load being carried (the payload) contributes to the overall performance of the loaded pallet. Therefore a given design of pallet is suitable for several different payloads and will have several different maximum working loads depending on the nature of the particular payload.

However, a given pallet without payload has only one rating ( $R$ ), namely its designated load capacity with a uniformly distributed load. This rating, expressed in kilograms, is determined by test and cannot be changed, for example a rating of 1 000 kg might be referred to in a test report as 1 000 kgR.

During palletization, it is the duty of the responsible supervisor to ensure that a safe working load is not exceeded. Table 1 shows the relationship, for different types of load, between the pallet rating ( $R$ ) and the payload of the pallet which may be considered the maximum working load.

Table 1 — Rating and maximum working load relationship with different types of payload

Disposition of load on pallet	Example of load on pallet	Area of deck under load <sup>1)</sup>	Maximum working load as a factor of the rating <i>R</i>	Example of maximum working load on a 1 000 kgR pallet kg
Point load	Electric motor	< 0,3 <i>A</i>	0,6 <i>R</i>	600
Patch or concentrated load	Large case (but smaller than pallet)	Between 0,3 <i>A</i> and 0,85 <i>A</i>	<i>R</i>	1 000
Uniformly distributed or articulated load (UDL)	Cold flowing butyl rubber sheets	> 0,85 <i>A</i>	<i>R</i>	1 000
Unbonded uniformly placed load	Non-interlocked cases	> 0,85 <i>A</i>	1,25 <i>R</i>	1 250
Bonded uniformly placed load	Interlocked cartons in regular pattern	> 0,85 <i>A</i>	1,5 <i>R</i>	1 500
Solid load	Horizontal concrete slabs	> 0,85 <i>A</i>	1,5 <i>R</i>	1 500

1) *A* = total plan area of pallet deck

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