

pallets and packaging.

design and features.

wood is the world's favourite packing material

- readily available worldwide
- highly versatile, providing great strength at minimal cost
- repairable, re-usable and re-cyclable
- the world's only naturally renewable constructional material.



Wooden pallets, crates and packing cases play an important part in the movement and storage of goods throughout the world. Although they appear, at face value, to consist of little more than a few pieces of wood fastened together into a form that allows a product to be transported, in fact they are the end product of a sophisticated industry.

Careful design and high quality standards ensure a performance that will protect the investment of the goods in which they are transported.

They also make a significant contribution to Health and Safety matters (see safety in the use of pallets from the Health and Safety Executive www.hsebooks.co.uk/homepage.html).

Whether the goods are high or low tech, transport and warehousing represent a significant cost.

Specifying the correct packaging and pallet type and size can not only ensure goods arrive in perfect condition, but also minimise costs.

Pallet and case manufacturers are committed to work with their customers to produce an

integrated pallet design and warehouse plan that can result in better quality storage and protection of goods as well as making cost savings and complying with health and safety regulations.



it's big business

The scale of the business is huge. Every year over 1.5 billion pallets are produced worldwide, using approximately 60 million cubic metres of timber.

In Europe we produce around 350 million pallets and packing cases, using almost 20 million cubic metres of timber a year – a sizeable proportion of Europe's total annual production of around 100 million cubic metres of sawn timber.



pallet design

Pallets provide a safe, effective transport and storage platform throughout the storage and distribution process. An appropriately designed pallet can reduce product damage and increase material handling efficiency in all phases of the unit load process.

Pallet specifications can be designed to accommodate the performance requirements of any type of automated equipment.

A correctly designed pallet should take into account the unit load weight requirements as well as the material handling situations the load will encounter – e.g. free span racking and truck handling.

Pallets fall into two main categories – two-way and four-way entry.

Dimensions are always specified in the format of length and width. The length is the deck dimension in the direction of the stringers or stringer boards. Width is usually the dimension crucial to handling.

Quality pallets from accredited manufacturers are produced to rigid specifications to ensure they are capable of taking the expected weight of products safely - a major factor in health and safety requirements.



Four way entry pallets are composed of Top Deck Boards, Stringers, Blocks and Bottom Deck Boards.



Two way pallets are composed of Top Deck Boards, Bearers and Bottom Deck Boards.

packing cases

Wooden packing cases make a significant contribution to reducing product damage and should comply with BS 1133 section 8.

They are manufactured mainly from European softwood.

Kiln dried timber (with a moisture content of 18-22% or lower) provides higher quality components, making these products stronger than if they were made from unseasoned timber.

Plywood is also widely used in packing case applications. Its favourable strength-to-weight ratio can help save transport and fuel costs.

Specially coated plywoods can be used for flight cases, instrument boxes and many other re-usable packaging solutions.

Plywood is safe and hygienic in foodstuffs transportation and complies with BS 3755:1964 (sensory evaluation of odour and flavour in accordance with British Standards).

key points to consider

- What's the working load? If a pallet takes one tonne of goods and is to be stacked three high, it must be designed to take a static load of three tonnes.
- Are you aiming to re-use pallets? A good quality specification will enable pallets to be re-used – typically over 20 times – with minimal repair costs.
- How are you going to secure the load; by strapping? or stretch wrapping?
- Will the pallets be stored indoors or outdoors? and what type of handling equipment will move them?
- What dimensions within the warehouse and distribution systems need to be integrated?
- What pallet markings are needed to identify ownership, branding etc?
- Pallets made in standard sizes, e.g. 800mm/1000mm/1140mm/1200mm are usually more cost effective than non-standard sizes.
- Are the pallets intended for the export market? If so, are they required to meet ISPM15 phytosanitary standards?
- Does the pallet need to be dried to a maximum agreed moisture content?

important

Market pressures have resulted in lower specifications being used in some instances.

Lower specifications can lead to health and safety risks.

Users should ensure that wooden packaging is fit for purpose.

OSB (oriented strand board) has similar properties to plywood.

Chipboard has good strength but in general does not withstand moisture without loss of strength.





health and safety issues when using pallets and cases

It is important that wooden packaging is used in the manner for which it was designed. Operators must be instructed on the key issues concerning health and safety:

- Good pallet/case design
- Good construction
- Quality materials
- Correct use and size of pallet/case
- Regularly maintained or new pallets
- Good handling practice

Pallet design should satisfy, where possible, the requirements of BS ISO 6780:1988 and BS ISO 8611:1991. Case design should satisfy BS 1133 section 8.

For further information and guidance see the Health and Safety website www.hse.gov.uk

what type of timber pallet or case?

Consultation between the user and manufacturer should take place to determine the type, size and use for the pallet and how the pallets and cases will be moved, stacked and stored. This not only ensures Health and Safety regulations are met, but also that important commercial issues, such as cost-effectiveness and reduced damage, are taken into account.

Some points to consider:

- Are the loads to be solid or liquid, or other?
- Can the nature of the products affect the pallet or case, e.g. corrosive properties?
- Have the loads that the pallets or cases will bear been taken into account?
- Where will the pallets or cases be used? Indoors, outdoors, or in special circumstances e.g. chemical works or food storage?
- How are the products to be packaged?
- How will the pallets or cases be moved, stacked and stored?
- Attention to type of product should be given to determine any additional wrapping requirements.



planning for pallets and cases

Planning for pallets and cases before organising your warehouse or storage facilities can make future logistics much easier and more cost-effective. Problems are often created at this stage by pallets and cases being selected at random, or because they seem to be cheaper, without proper consideration to their actual use.

- A pattern of use which provides stability and even load distribution should be established from the beginning
- The cube of unit load should be considered, as excessive height can cause handling instability
- Safeguard against instability by using load retention aids, e.g. shrink wrapping, to ensure safer storage and reduce the movement of product
- Consideration should be given to checking pallet stability where constant relocation is required, or where pallets are frequently rotated in a warehouse or storage.

maintenance, inspection and use

Regular inspection, along with the implementation of a schedule for repairs and pallet renewals, is recommended. This ensures any damage that could affect either a pallet's function, or its function with other pallets, can be detected and action taken to avoid accident or damage, involving greater costs and possibly serious injury.

- Disposable pallets should be clearly differentiated from reusable pallets
- Check for handling damage
- When using fork lifts, ensure that 75% of the forks are inside the pallet before lifting and that they enter the pallet squarely
- Do not use pallets other than for their designed use
- When using pallets in an automated process, such as conveyor belt operations, check that roller spacings are less than the deck boards spacings to avoid damage
- Has sound timber been used in the components, particularly when pallets have been repaired?

for more information

Timcon (the Timber Packaging and Pallet Confederation) www.timcon.org, **wood. for good.** www.woodforgood.com, **FEFPEB** (the European Federation of Wooden Pallet and Packaging Manufacturers) www.fefpeb.org, **Brepal** (the organisation responsible for the management of the "Euro Pallet Scheme" in the UK) www.epal-pallets.org

