

STORAGE OF GOODS

(See also: [Warehousing\(87\)](#); [Cold Store Warehousing\(15\)](#))

GENERAL CONSIDERATIONS

These will include:

- handling equipment used;
- space available;
- type of storage system chosen;
- permissible floor loadings;
- potential for mezzanine flooring (NB Planning Permission may be required - check with the Planning and Development Department of the Council);
- shape and general fragility of the article, e.g.
 - long, thin - horizontal racks
 - box shaped - built into a stack, with suitable bonding
 - cylindrical - storage on side or on end, suitably secured.

BULK MATERIALS

Heaps- require suitably constructed bays of sufficient strength, and regular inspection of materials and storage areas.

METHODS FOR PARTICULAR MATERIALS

(A) **TIMBER**

1. **Timber and Board**

Of the 49 fatal accidents in the woodworking industry between 1981-1986, 30 involved works transport, falls from timber stacks or the collapse of timber or board stacks. The method of stacking of sawn timber will be determined by the length of time the timber is likely to be in stock and the degree of drying out required.

Stacks should

- be on firm, level ground with substantial bearers;
- utilise spacers ('sticks') which are sound and of adequate and uniform size;
- be built of timber of similar lengths;
- at very exposed sites, be built with a diagonal of its plan in line with the wind;
- have no loose material on the top;
- have suitable independent anchorages for tarpaulins, if used;
- have sound and secure banding, if used;
- be periodically inspected;
- in general not exceed a height of 1 1/2 times the face width;
- not have staggered timber ends protruding as a means of access up the stack.

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2. **Log Timber**

(a) Pyramid Stacks

- larger logs at the bottom;
- bottom layer secured against rolling.

(b) Stacking against lateral supports

- securely anchored stanchions or lateral supports;
- sufficient strength.

3. **Boards**

(a) Flat

- ideally should be stored flat on a level surface;
- suitable pallets, battens or purpose-built racking system should be used;
- even distribution of load to be ensured through using battens of adequate length over the width of the stack.

(b) Pigeon hole system

- alternative method to the preferred (flat) method;
- boards to have adequate support in the vertical position.

(B) **GLASS**

Detailed guidance is contained in, or referred to in, the Glass and Glazing element of this manual.

(C) **METAL SHEETS AND PLATES**

Detailed guidance is contained in, or referred to in, the Steel Stockholding element of this manual.

(D) **BOX-SHAPED OR LOOSE MATERIALS IN SACKS**

- These are commonly stored on pallets.
- Need to 'tie-in' or bond layers with a stack by varying the pattern of laying.
- May be advisable to 'set-in' the stack at each face by half an item width.
- Corners should be built first and the inside then filled in.
- Maximum height of a stack will vary; damage to lower items in stack will affect its stability.

PALLETS

Pallets assist the unitisation of loads for handling and storage by mechanical means.

Flat Pallets

- Accidents usually arise from poor design, construction, unsuitability, poor maintenance or handling.

- As a general guide, the height of the stack should not exceed the longest base dimension of the pallet.
- Where permissible, should not stack palletised loads more than 4 loads high (in general) or 6 high (in limited circumstances).
- Safe pallet use is detailed in booklet GN(PM)15 (see references) and includes:
 - damage inspection and out-sorting routine;
 - proper handling and storage;
 - proper use with lift trucks i.e. forks to extend in at least 3/4 of the pallet; mast to be vertical; pallet against the heel of the forks; correct fork spacing.
- HS(G)76 'Health and safety in retail and wholesale warehouses' contains extensive guidance on the use of pallet-related equipment (stretch wrap machines, inverters, converters, roll containers).

RACKING SYSTEMS

- The term racking is used to describe a skeleton framework of fixed or adjustable design to support loads without the use of shelves. It is usually qualified, e.g. pallet racking, tyre racking.
- Common types include adjustable pallet racking, mobile racking, cantilever racking and live storage racking.
- The basic principles for safe installation/use include:
 - following manufacturer's instructions;
 - sound, level floors;
 - suitably secured to building (if needs to be)
 - where necessary (e.g. with lift truck operations) to be fixed to the floor; also depends on height : depth ratio
 - adequate width of aisles
 - notice affixed stating maximum load
 - system/means to establish weight of palletised loads before storage decision
 - highly visible colours for key components, e.g. horizontal beams
 - protection with column guards or guide rails, particularly at corners; conspicuous colouring
 - maintenance to include regular planned inspections, defect reporting system, suitable record keeping
 - safe systems for placing and retrieving stock
- Extensive guidance on racking is contained in 'Recommended Practice for the Use of Static Racking'. (See References/Further Details)

CHECKLIST - STORAGE OF GOODS

1. Have you carried out risk assessments of goods storage at your premises? YES NO
2. Have you identified and implemented control measures, i.e. precautions and policies covering:
 - selection, design and installation YES NO
 - working practices and procedures YES NO
 - maintenance and defect reporting YES NO
3. Have you a system to log maintenance checks, remedy of defects etc? YES NO
4. Do you inform, instruct and train your staff (as appropriate) with regard to safe working procedures etc. and log such training? YES NO

REFERENCES/FURTHER DETAILS

- *1. Booklet HS(G)76 - Health and Safety in Retail and Wholesale Warehouses- (HSE) ISBN 0-11-885731-2
- *2. Guidance Note PM15 - Safety in the use of pallets (HSE). ISBN 0 7176 1522 7.
- *3. HSE Information Sheet (Woodworking) No. 2 - Safe stacking and handling of timber and board - (HSE).
www.hse.gov.uk/pubns/wis2.pdf

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- * Available to view by prior arrangement at Nuneaton and Bedworth Borough Council, Environmental Health Services, Council House, Coton Road, Nuneaton. CV11 5AA
- ** Free copy available from Nuneaton and Bedworth Borough Council at the above address.

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