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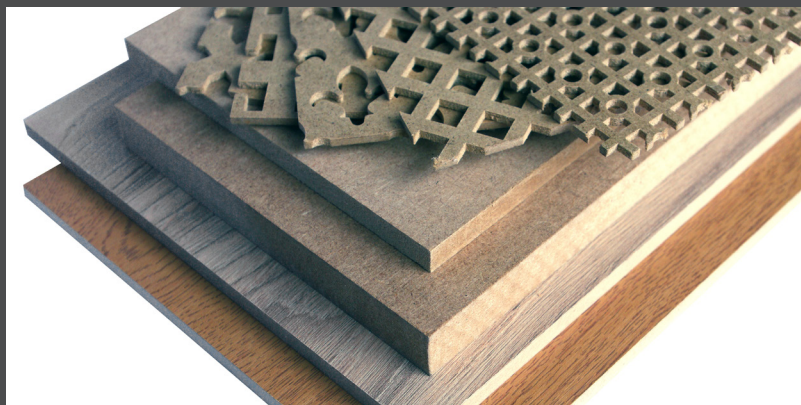
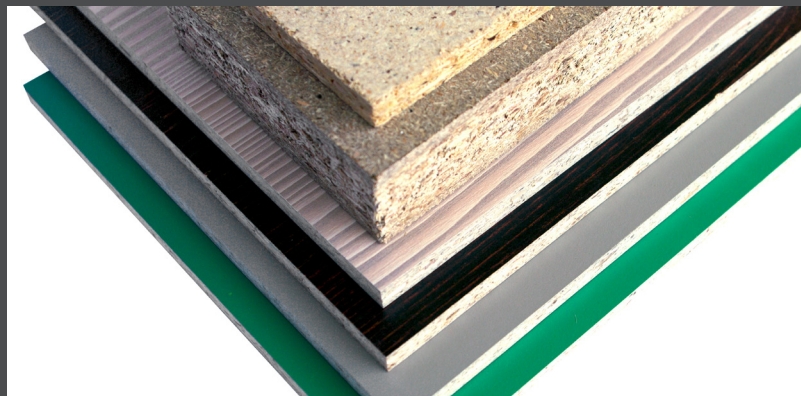


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WOOD
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Panel Guide

Version 4



3 Panels for non-construction use

3.1 Requirements for non-construction use

The requirements for panels in construction applications are covered in PanelGuide *Section 2*. This section deals specifically with non-construction applications. The term 'construction' relates to use in any fixed part of a building or other civil engineering structure. Construction uses can therefore be either load-bearing or non load-bearing and the term 'construction' should not be confused with the term 'structural'. More specifically 'construction' refers to any application covered by the Construction Products Regulation (CPR)¹ and the harmonised European standard implemented in the UK as *BS EN 13986*². As explained in *Section 2.1*, wood-based panels intended for construction shall be CE marked, accompanied by a Declaration of Performance (DoP) and impose specific responsibilities on the different economic operators (manufacturer, distributor and importer).

However, the end use of a panel is often unknown at the time of manufacture, and many general purpose products used in non-construction applications may still therefore be those produced in accordance with the requirements of the CPR and *BS EN 13986*. Such non-construction applications include furniture, packaging and transport.

As stated above, for these types of product the CPR is not relevant but the panels used may still be produced to one of the EN specification standards if this suits the control system in operation at the factory. However, this is not compulsory and an alternative specification can be agreed between the customer and supplier. For some end uses there are relevant British Standards or industry standards that give guidance on the use and selection of wood-based panels, but in most cases, the specifier has the option to specify a product in accordance with an



Figure 3.1: Van interior using WISA-Multifloor and WISA-Multiwall panel products
Photo: UPM-Kymmene Wood Oy

existing standard or to produce his own specification. As a result, it is the specifier and his client's requirements that normally determine the requirements for the panel.

3.2 Panels satisfying the requirements for non-construction uses

3.2.1 Introduction

In non-construction applications the panel specifications are determined in accordance with the requirements of the particular end use. The design and selection process for non-construction applications is represented in PanelGuide *Section 2, Figure 2.1*. In general terms, the requirements will be that the panels must:

- have a satisfactory appearance
- be sufficiently strong and stiff to resist the applied loads
- be manufactured with a glue type appropriate to the end-use environmental conditions
- be capable of being easily cut and fixed in place
- have an adequate service life
- be available at an acceptable cost.

While there are many standards relating to non-construction applications, few of these include specific requirements for panel products and the specifier therefore has



Figure 3.2: OSB box
Photo: Norboard



Figure 3.3: Flatbed truck using WISA bonded floor solution
Photo: UPM-Kymmene Wood Oy

to decide upon the panel type that is most likely to meet his performance criteria. In some cases, the specifier may have the option of using one of the many general purpose panels or of selecting a product manufactured specifically for the end-use. *Table 3.1* lists a number of non-construction applications, grouped by category, and indicates:

- the product types that have commonly been found to be suitable
- some of the more important design considerations
- sources of further information.

These applications are also discussed in more general terms in the following sections.

Having selected an appropriate product, the specifier should check that the information available demonstrates that it:

- is capable of performing adequately against his criteria
- can be correctly installed
- is available within his budget and timescales.

Table 3.1: Suitability of wood-based panels for use in non-construction applications

Key: PW = plywood; OSB = oriented strand board; PB = particleboards (including flaxboard); MDF = medium density fibreboard; FB = fibreboard; CBPB = cement-bonded particleboard; FXB = flaxboard

Application	Typical products	Important design considerations	References for further information
FURNITURE			
General	PW, PB, OSB, MDF, FXB	Strength, stiffness, screw holding, impact, surface quality, dimensional stability	BS 4875 [in several parts]. Strength and stability of furniture ³
Bookcases and shelving	PW, PB, OSB, MDF, FXB	Strength, stiffness, creep	FIRA Bulletin No 57 'Shelf design guide' ⁴
Contract and office furniture	PW, PB, MDF, FXB	Strength, stiffness, screw holding, impact, surface quality	BS 5459 [in several parts]. Specification for performance requirements and tests for office furniture ⁵ BS EN 15372 Furniture. Strength, durability and safety. Requirements for non-domestic tables ⁶ BS EN 16121 Non-domestic storage furniture. Requirements for safety, strength, durability and stability ⁷ BS EN 14073-2 Office furniture. Storage furniture. Safety requirements ⁸ BS EN 14073-3 Office furniture. Storage furniture. Test methods for the determination of stability and strength of the structure ⁹ BS EN 14727 Laboratory furniture. Storage units for laboratories. Requirements and test methods ¹⁰ BS EN 527-3 Office furniture. Work tables and desks. Methods of test for the determination of the stability and the mechanical strength of the structure ¹¹
Educational furniture	PB, MDF, PW	Strength, stiffness, screw holding, impact, surface quality, dimensional stability, fire	BS 5873-4 Educational furniture. Specification for strength and stability of storage furniture for educational institutions ¹² BS 5873-5 Educational furniture. Specification for security of fixed secure storage furniture for educational institutions ¹³ BS EN 1729-2 Furniture. Chairs and tables for educational institutions. Safety requirements and test methods ¹⁴
Beds	OSB, PB, MDF, FB, PW	Strength, stiffness, stability, screw holding	BS 8509 Children's beds for domestic use. Safety requirements and test methods ¹⁵ BS EN 747-1 Furniture. Bunk beds and high beds . Safety, strength and durability requirements ¹⁶ BS EN 747-2 Furniture. Bunk beds and high beds. Test methods ¹⁷ BS EN 1725 Domestic furniture. Beds and mattresses. Safety requirements and test methods ¹⁸ BS EN 1130-1 Furniture. Cribs and cradles for domestic use. Safety requirements ¹⁹ BS EN 1130-2 Furniture. Cribs and cradles for domestic use. Test methods ²⁰
Tables	PB, MDF, PW	Surface quality, dimensional stability, strength, stiffness, screw holding	BS EN 12521 Furniture. Strength, durability and safety. Requirements for domestic tables ²¹ BS EN 1730 Furniture. Tables. Test methods for the determination of stability, strength and durability ²²
Foil/veneer laminates	PW, PB, MDF, FB, FXB	Surface quality, dimensional stability	BS 4965 Decorative laminated plastics sheet veneered boards and panels ²³ BS EN 14322 Wood-based panels. Melamine faced boards for interior uses. Definition, requirements and classification ²⁴ BS EN 14323 Wood-based panels. Melamine faced boards for interior uses. Test methods ²⁵

Table 3.1: Continued

Application	Typical products	Important design considerations	References for further information
FURNITURE (continued)			
Seating	PW, PB, OSB, MDF		BS EN 12520 Furniture. Strength, durability and safety. Requirements for domestic seating ²⁶ BS EN 16139 Furniture. Strength, durability and safety. Requirements for non-domestic seating ²⁷ BS EN 1728 Furniture. Seating. Test methods for the determination of strength and durability ²⁸
Kitchen units	PW, PB, MDF, FXB	Strength, stiffness, moisture resistance, surface quality, screw holding	BS EN 14749 Domestic and kitchen storage units and worktops. Safety requirements and test methods ²⁹ BS 6222-2 Domestic kitchen equipment. Fitted kitchen units, peninsular units, island units and breakfast bars. Performance requirements and test methods ³⁰ BS 6222-3 Domestic kitchen equipment. Performance requirements for durability of surface finish and adhesion of surfacing and edging materials. Specification ³¹
Storage units	PW, PB, MDF, FXB	Strength, stiffness, moisture resistance	ISO 7170 Furniture. Storage units. Determination of strength and durability ³²
High chairs		Dependent on design	BS EN 14988-1 Children's highchairs. Safety requirements ³³ BS EN 14988-2 Children's highchairs. Test methods ³⁴
Playpens		Dependent on design	BS EN 12227 Playpens for domestic use. Safety requirements and test methods ³⁵
Children's furniture	PW, PB, MDF	Strength, stiffness, durability, safety	FIRA/FRQG C001 Furniture. Children's domestic furniture. General safety requirements ³⁶ FIRA/FRQG C003 Furniture. Children's domestic furniture. Tables and desks. Requirements for strength, stability and durability ³⁷ FIRA/FRQG C004 Furniture. Children's domestic furniture. Storage furniture. Requirements for strength, stability and durability ³⁸
Kitchen units – worktops	PW, PB, MDF, FXB	Moisture resistance, surface quality, impact, dimensional stability, strength, stiffness	BS EN 14749 Domestic and kitchen storage units and worktops. Safety requirements and test methods ³⁹ BS 6222-2 Domestic kitchen equipment. Fitted kitchen units, peninsular units, island units and breakfast bars. Performance requirements and test methods ⁴⁰ BS 6222-3 Domestic kitchen equipment. Performance requirements for durability of surface finish and adhesion of surfacing and edging materials. Specification ⁴¹
Hospital bedside lockers			BS 1765-1 Hospital bedside lockers. Specification for general purpose bedside lockers for patients ⁴² BS 1765-2 Specification for hospital bedside lockers. General purpose lockers of wooden construction with facilities for hanging day clothes ⁴³
Upholstered furniture frames	PW, PB, OSB, MDF	Strength, stiffness, screw holding	
PACKAGING			
General	PW, PB, OSB, FXB		BS 3130-6 Glossary of packaging terms. Wooden packaging ⁴⁴
Boxes and packing cases	PW, PB, OSB, FXB	Strength, stiffness, fastener performance, impact resistance, moisture resistance	BS 1133-8 Packaging code. Guidance on wooden boxes, cases and crates ⁴⁵
Containers for agricultural produce	PW, OSB	Strength, stiffness, fastener performance, impact resistance, moisture resistance, durability	BS 7611 Specification for potato storage boxes for mechanical handling ⁴⁶
Pallets	PW, PB, OSB, FXB	Strength, stiffness, fastener performance, impact resistance, moisture resistance, durability	BS EN 12246 Quality classification of timber used in pallets and packaging ⁴⁷ BS EN 13545 Pallet superstructures. Pallet collars. Test methods and performance requirements ⁴⁸ BS EN 13698-1 Pallet production specification. Construction specification for 800mm × 1200mm flat wooden pallets ⁴⁹ BS EN 13698-2 Pallet production specification. Construction specification for 1000mm × 1200mm flat wooden pallets ⁵⁰

Table 3.1: Continued

Application	Typical products	Important design considerations	References for further information
SHOPFITTING			
Bars/counters	PW, PB, MDF, FXB	Moisture resistance, surface quality, impact, dimensional stability, strength, stiffness	
Display/exhibition cabinets	PW, PB, MDF, FXB	Strength, stiffness, dimensional stability, impact resistance, surface quality	
Shelving	PW, PB, OSB, MDF, FXB	Strength, stiffness, creep	FIRA Bulletin No 57 'Shelf design guide' ⁵¹
Exterior signs and fascias	PW, MDF, CBPB	Moisture resistance, durability, fastener performance, surface quality, strength, stiffness	BS 559 Specification for the design and construction of signs for publicity, decorative and general purposes ⁵²
TRANSPORT			
Aircraft	PW		BS 6V 3 Specification for aircraft material. High strength plywood for aircraft ⁵³ BS 2V 35 Specification for plywood for aeronautical purposes ⁵⁴
Vehicles and containers (decks, sides etc)	PW, OSB	Strength, stiffness, moisture resistance, durability, impact resistance, fastener performance, abrasion resistance	
Marine craft	PW	Durability, moisture resistance, surface quality, strength, stiffness, impact resistance	BS 1088-1 Marine plywood. Requirements ⁵⁵ BS 1088-2 Marine plywood. Determination of bonding quality using the knife test ⁵⁶ BS EN ISO 12215-3 Small craft. Hull construction and scantlings. Materials. Steel, aluminium alloys, wood, other materials ⁵⁷
AGRICULTURAL			
Agricultural buildings	PW, OSB, CBPB	Strength, stiffness, moisture resistance, durability, impact resistance	BS 5502-21 Buildings and structures for agriculture. Code of practice for selection and use of construction materials ⁵⁸ BS 5502-22 Buildings and structures for agriculture. Code of practice for design, construction and loading ⁵⁹
Retaining walls	PW, OSB, CBPB	Strength, stiffness, moisture resistance, durability, impact resistance	
Silos/storage bins	PW, OSB, CBPB	Strength, stiffness, moisture resistance, durability, impact resistance	
Fences			BS 1722-11 Fences. Specification for prefabricated wood panel fences ⁶⁰
OTHER			
Adhesive			BS EN 204 Classification of thermoplastic wood adhesives for non-structural applications ⁶¹ BS EN 205 Adhesives. Wood adhesives for non-structural applications. Determination of tensile shear strength of lap joints ⁶² BS 1203 Hot-setting phenolic and aminoplastic wood adhesives. Classification and test method ⁶³ BS EN 12765 Classification of thermosetting wood adhesives for non-structural applications ⁶⁴

Finally, the specifier should draw up a specification that ensures the requirements are met. The specification should include:

- the product type
- a reference to any appropriate specification standard
- the markings required on the panel
- the need for any independent quality assurance
- the correct installation and maintenance procedures.

If a specific brand of product has been selected then this should be named in the specification and it should be

made clear whether or not substitution by similar alternative products is acceptable.

3.2.2 Furniture

Furniture is a major market for wood-based panels. The wood-based panels family has made significant inroads into the traditional solid timber furniture market, with MDF and particleboard in particular securing a large share of the market.

The term 'furniture' encompasses a wide range of products with a correspondingly wide range of end-use

requirements but in general terms all these products are required to:

- have a high quality surface appearance
- be strong and stiff
- resist impact and abuse
- have good machining properties (including low grit content)
- have good fastener performance.

In many furniture applications, panels are used with some form of applied facing, which can include: wood veneer, laminate, melamine and many others.

There are many British Standards relevant to furniture, but only some of these are relevant to wood-based panels.

Further specific advice on the use of wood-based panels in furniture can be sought from any of the PanelGuide partners, from FIRA International (Tel: 01438 777700) or from any of the panel manufacturers.

3.2.3 Packaging

Next to furniture, packaging is one of the largest non-construction uses of wood-based panels. The most important criteria for panels used in packaging are:

- strength and stiffness
- impact resistance
- fastener performance
- moisture resistance and durability (depending upon use).

Relevant standards for packaging include:

- *BS 1133* – a multi-part standard covering various forms of packaging and the factors affecting the selection of materials and design of the packaging. *BS 1133-8 Packaging code. Guidance on wooden boxes, cases and crates*⁶⁵ deals with wooden boxes, cases and crates and includes information on the use of plywood, particleboard, OSB and fibreboards in packaging.
- *BS 3130* – a glossary of packaging terms. *BS 3130-6 Glossary of packaging terms. Wooden packaging*⁶⁶ relates to wooden packaging.
- *BS 7611* – which specifies boxes to contain 1 tonne of potatoes, together with the performance requirements and test methods for three classes of box. Guidance is given on the manufacture of boxes from solid timber or from OSB or plywood. The references to grades of plywood and OSB are still in accordance with the old British Standard and need updating to the new EN specifications.
- *BS EN 12246* – covers the quality classification of timber used in pallets and packaging, but currently only refers to solid timber and not wood-based panels.

3.2.4 Shopfitting

Because of their flexibility and ease of working, wood-based panels are frequently used in shopfitting applications. The range of finishes and sizes available makes panels very suited to the rapid fitting out of large display areas. Panels can be used for a wide range of shopfitting applications including:

- wall panelling
- storage racks
- counters and bars
- special display units.



Figure 3.4: Medite Tricoya® used for exterior shop front signage in Ireland

Photo: Accsys Technologies

Panels can be laminated, painted or stained to create a wide range of finish effects.

MDF in particular is becoming more popular for shopfitting as it allows easy moulding of edges and corners and can be routed to create an embossed relief effect. Panels can also be slotted to carry various forms of display mounts. Products treated to improve their fire performance, termed MDF FR, are also available for applications where this is required in order to meet safety regulations.

In load-bearing situations, such as shelving, it is important that the effects of long-term loads are accounted for in the design. Wood-based panels have a tendency to 'creep' – that is the initial deflection under a given load will increase with time. This can be accounted for in calculations, and guidance on this can be found in the FIRA publication *FIRA Shelf Design Guide*⁶⁷. Alternatively, reference can be made to PanelGuide *Section 2* for design by structural calculation.

Although low formaldehyde panels are widely available, in situations where particularly sensitive items are on display, as in museum work, 'formaldehyde free' or 'zero formaldehyde' panels are now available. These are made using non-formaldehyde resins, such as isocyanates,

but such panels can really only be described as very low formaldehyde or 'zero added formaldehyde' as wood itself contains a small amount of naturally occurring formaldehyde.

Exterior grades of panels are also used for exterior signs and fascias, principally using either plywood or 'exterior' grades of MDF, the latter being suitable for use in a Service Class 2 protected exterior environment. *BS EN 622* does not currently include an exterior grade of MDF but there are a number of commercial products on the market. In exterior situations, it is important with all panel types (with the exception of wood-based panels made with acetylated wood) that the faces are suitably coated and the edges sealed to protect the panel from the effects of moisture and sunlight.

3.2.5 Transport

Wood-based panels and plywood in particular have long been used in various transport applications including:

- trucks and trailers
- buses and coaches
- caravans
- small boats
- shipbuilding
- railway goods wagons and passenger carriages
- freight containers
- light aircraft.

In many of these transport applications, panels are used with some form of applied facing, which can include:

- film facing
- laminate facing
- glass reinforced polymer facings.

These help to:

- improve the durability
- reduce the risk of accidental damage
- increase the service life of the panels
- reduce the risk of distortion due to water absorption.



Figure 3.5: Car trailer using WISA Multiwall panels
Photo: UPM-Kymmene Wood Oy



Figure 3.6: WISA Birch panels installed in a bus
Photo: UPM-Kymmene Wood Oy

BS 1088 defines the requirements for 'marine plywood'. The Standard is published in two parts. Part 1 deals with the requirements for marine plywood, which are now based around published European standards and Part 2 describes the use of the traditional knife test as a quality control tool.

BS 1088 specifies a very high quality plywood intended for use in boats and ships, but the material is also used in other applications where a high performance level and long service life are required. The plywood has to be manufactured from virtually defect-free veneers of species with a good durability, using a high quality adhesive. Suppliers should ensure that material supplied is correctly marked by the manufacturer in accordance with the Standard. If the material is to be used in construction applications, it is a legal requirement for it to also comply with the requirements of the Construction Products Regulation (CPR), see *Section 2*.

3.2.6 Agriculture

Agricultural applications include:

- buildings
- animal cubicles
- feed troughs
- gates and fencing
- greenhouses and staging
- hoppers and feed bins
- silage retaining walls
- storage bins
- water tanks.

Most agricultural buildings in the UK are exempt from planning regulations and, in many cases, the requirements of the Building Regulations will not be appropriate unless the building is used as a residence or is heated. As such, they are included here under non-construction uses but they will still in many cases be load bearing. Despite often being outside the scope of Building Regulations, agricultural buildings are subject

to the requirements of the CPR and many such structures will still be designed in accordance with *BS EN 1995-1-1* (Eurocode 5)⁶⁸ or *BS 5268-2* (now withdrawn)⁶⁹.

BS 5502 is the current British Standard dealing with buildings and structures for agriculture. It is a Standard published in more than 80 parts, dealing with different materials and types of structure. Part 21 is a code of practice for the selection and use of construction materials. Part 22 is a code of practice for design, construction and loading. In the case of load-bearing structures the design must ensure that the structure is safe, even if it is not designed in accordance with the structural design codes *Eurocode 5* or *BS 5268-2*.

3.2.7 Other applications

Other applications for wood-based panels include:

- fire surrounds
- toys
- picture frames and backs
- models and moulds
- work benches
- notice boards and signs
- headboards and pelmets
- acoustic insulation
- theatre staging and scenery
- musical instruments.

3.3 References

- 1 Construction Products Regulation (CPR), Regulation 305/2011/EU
- 2 BS EN 13986. Wood-based panels for use in construction. Characteristics, evaluation of conformity and marking, BSI
- 3 BS 4875 [in several parts]. Strength and stability of furniture, BSI
- 4 FIRA Bulletin No 57 'Shelf design guide' <http://www.fira.co.uk/technical-information/article/57/choosing-your-kitchen-furniture>
- 5 BS 5459 [in several parts]. Specification for performance requirements and tests for office furniture, BSI
- 6 BS EN 15372. Furniture. Strength, durability and safety. Requirements for non-domestic tables, BSI
- 7 BS EN 16121. Non-domestic storage furniture. Requirements for safety, strength, durability and stability, BSI
- 8 BS EN 14073-2. Office furniture. Storage furniture. Safety requirements, BSI
- 9 BS EN 14073-3. Office furniture. Storage furniture. Test methods for the determination of stability and strength of the structure, BSI
- 10 BS EN 14727. Laboratory furniture. Storage units for laboratories. Requirements and test methods, BSI
- 11 BS EN 527-3. Office furniture. Work tables and desks. Methods of test for the determination of the stability and the mechanical strength of the structure, BSI
- 12 BS 5873-4. Educational furniture. Specification for strength and stability of storage furniture for educational institutions, BSI
- 13 BS 5873-5. Educational furniture. Specification for security of fixed secure storage furniture for educational institutions, BSI
- 14 BS EN 1729-2. Furniture. Chairs and tables for educational institutions. Safety requirements and test methods, BSI
- 15 BS 8509. Childrens beds for domestic use. Safety requirements and test methods, BSI
- 16 BS EN 747-1. Furniture. Bunk beds and high beds . Safety, strength and durability requirements, BSI
- 17 BS EN 747-2 Furniture. Bunk beds and high beds. Test methods, BSI
- 18 BS EN 1725. Domestic furniture. Beds and mattresses. Safety requirements and test methods, BSI
- 19 BS EN 1130-1. Furniture. Cribs and cradles for domestic use. Safety requirements, BSI
- 20 BS EN 1130-2. Furniture. Cribs and cradles for domestic use. Test methods, BSI
- 21 BS EN 12521. Furniture. Strength, durability and safety. Requirements for domestic tables, BSI
- 22 BS EN 1730. Furniture. Tables. Test methods for the determination of stability, strength and durability, BSI
- 23 BS 4965. Decorative laminated plastics sheet veneered boards and panels, BSI
- 24 BS EN 14322. Wood-based panels. Melamine faced boards for interior uses. Definition, requirements and classification, BSI
- 25 BS EN 14323. Wood-based panels. Melamine faced boards for interior uses. Test methods, BSI
- 26 BS EN 12520. Furniture. Strength, durability and safety. Requirements for domestic seating, BSI
- 27 BS EN 16139. Furniture. Strength, durability and safety. Requirements for non-domestic seating, BSI
- 28 BS EN 1728. Furniture. Seating. Test methods for the determination of strength and durability, BSI
- 29 BS EN 14749. Domestic and kitchen storage units and worktops. Safety requirements and test methods, BSI
- 30 BS 6222-2. Domestic kitchen equipment. Fitted kitchen units, peninsular units, island units and

- breakfast bars. Performance requirements and test methods, BSI
- 31 BS 6222-3. Domestic kitchen equipment. Performance requirements for durability of surface finish and adhesion of surfacing and edging materials. Specification, BSI
- 32 ISO 7170. Furniture. Storage units. Determination of strength and durability, BSI
- 33 BS EN 14988-1. Children's highchairs. Safety requirements, BSI
- 34 BS EN 14988-2. Children's highchairs. Test methods, BSI
- 35 BS EN 12227. Playpens for domestic use. Safety requirements and test methods, BSI
- 36 FIRA/FROG C001. Furniture. Children's domestic furniture. General safety requirements, FIRA
- 37 FIRA/FROG C003. Furniture. Children's domestic furniture. Tables and desks. Requirements for strength, stability and durability, FIRA
- 38 FIRA/FROG C004. Furniture. Children's domestic furniture. Storage furniture. Requirements for strength, stability and durability, FIRA
- 39 BS EN 14749. Domestic and kitchen storage units and worktops. Safety requirements and test methods, BSI
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- 43 BS 1765-2. Specification for hospital bedside lockers. General purpose lockers of wooden construction with facilities for hanging day clothes, BSI
- 44 BS 3130-6. Glossary of packaging terms. Wooden packaging, BSI
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- 46 BS 7611. Specification for potato storage boxes for mechanical handling, BSI
- 47 BS EN 12246. Quality classification of timber used in pallets and packaging, BSI
- 48 BS EN 13545. Pallet superstructures. Pallet collars. Test methods and performance requirements, BSI
- 49 BS EN 13698-1. Pallet production specification. Construction specification for 800mm × 1200mm flat wooden pallets, BSI
- 50 BS EN 13698-2. Pallet production specification. Construction specification for 1000mm × 1200mm flat wooden pallets, BSI
- 51 FIRA Bulletin No 57 'Shelf design guide' <http://www.fira.co.uk/technical-information/article/57/choosing-your-kitchen-furniture>
- 52 BS 559. Specification for the design and construction of signs for publicity, decorative and general purposes, BSI
- 53 BS 6V 3. Specification for aircraft material. High strength plywood for aircraft [obsolescent], BSI
- 54 BS 2V 35. Specification for plywood for aeronautical purposes [obsolescent], BSI
- 55 BS 1088-1. Marine plywood. Requirements, BSI
- 56 BS 1088-2. Marine plywood. Determination of bonding quality using the knife test, BSI
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- 58 BS 5502-21. Buildings and structures for agriculture. Code of practice for selection and use of construction materials, BSI
- 59 BS 5502-22. Buildings and structures for agriculture. Code of practice for design, construction and loading, BSI
- 60 BS 1722-11. Fences. Specification for prefabricated wood panel fences, BSI
- 61 BS EN 204. Classification of thermoplastic wood adhesives for non-structural applications, BSI
- 62 BS EN 205. Adhesives. Wood adhesives for non-structural applications. Determination of tensile shear strength of lap joints, BSI
- 63 BS 1203. Hot-setting phenolic and aminoplastic wood adhesives. Classification and test method, BSI
- 64 BS EN 12765. Classification of thermosetting wood adhesives for non-structural applications, BSI
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