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5 JOINERY

5.1 GENERAL REQUIREMENTS

5.1.1 Scope

- 1 This Part specifies workmanship and special detail construction for doors, windows, architraves, beads, and timber skirting, and speciality wood flooring of block or parquet strips.
- 2 Related Sections are as follows:

This Section

- Part 1 General
- Part 2 Wood Treatment
- Part 3 Structural Timber
- Part 4 Architectural Timber
- Part 6 Fasteners and Adhesives
- Part 7 Ironmongery

5.1.2 References

- 1 The following standards are referred to in this Part:
 - BS 476.....Fire tests on building materials and structures
 - BS 729.....Specification for hot dip galvanized coatings on iron and steel articles (ISO 1461 Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods)
 - BS 1186-1Timber for and workmanship in joinery. - Specification for timber; (EN 942 Timber in joinery. General requirements)
 - BS 1186-2Timber for and workmanship in joinery - Specification for workmanship
 - BS 1186-3Timber for and workmanship in joinery - Specification for wood trim and its fixing
 - BS 1202.....Specification for nails
 - BS 1204.....Synthetic resin adhesives (phenolic and aminoplastic) for wood; (BS 1204-1 Synthetic resin adhesives (phenolic and aminoplastic) for wood - Specification for gap-filling adhesives: EN 301 Adhesives, phenolic and aminoplastic, for load-bearing timber structures - Classification and performance requirements; BS 1204-2 Synthetic resin adhesives (phenolic and aminoplastic) for wood - Specification for close-contact adhesives: EN 302-1 Adhesives for load-bearing timber structures - Test methods - Part 1: Determination of longitudinal tensile shear strength; EN 302-2 Adhesives for load-bearing timber structures - Test methods - Part 2: Determination of resistance to delamination; EN 302-3 Adhesives for load-bearing timber structures - Test methods - Part 3: Determination of the effect of acid damage to wood fibres by temperature and humidity cycling on the transverse tensile strength; EN 302-4 Adhesives for load-bearing timber structures - Test methods - Part 4: Determination of the effects of wood shrinkage on the shear strength)
 - BS 1210.....Wood screws

- BS 3794.....Decorative, high pressure laminates (HPL) based on thermosetting resins; (BS 3794-1 Decorative, high pressure laminates (HPL) based on thermosetting resins - Specification for performance; BS 3794-2 Decorative, high pressure laminates (HPL) based on thermosetting resins - Methods of determination of properties; EN 438-1 High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (usually called laminates) - Part 1: Introduction and general information; EN 438-2 High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (usually called laminates) - Part 2: Determination of properties; EN 438-3 High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (usually called laminates) - Part 3: Classification and specifications for laminates less than 2 mm thick intended for bonding to supporting substrates; EN 438-4 High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (usually called laminates) - Part 4: Classification and specifications for compact laminates of thickness 2 mm and greater; EN 438-5 High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (usually called laminates) - Part 5: Classification and specifications for flooring grade laminates less than 2 mm thick intended for bonding to supporting substrates; EN 438-6 High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (usually called laminates) - Part 6: Classification and specifications for Exterior-grade compact laminates of thickness 2 mm and greater; EN 438-7 High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (Usually called Laminates) - Part 7: Compact laminate and HPL composite panels for internal and external wall and ceiling finishes)
- BS 4756.....Specification for ready-mixed aluminium priming paints for woodwork
- BS 5358.....Specification for solvent-borne priming paints for woodwork; (BS 2523 Specification for lead-based priming paints; BS 7956 Specification for primers for woodwork)

5.2 WORKMANSHIP

5.2.1 Joinery Workmanship

- 1 Timber used for joinery work is to be finished to the sizes indicated in the Project Documentation and to BS 1186.
- 2 The joinery to be constructed exactly as shown on the drawings. Where types of joints are not specifically indicated they are to be recognised forms of joints for each position and shall be made so as to comply with BS 1186, Part 2.
- 3 All joints are to be glued and screwed or doweled to BS 1204, BS 1210 or BS 1186 as applicable.
- 4 Exposed and semi-concealed joinery is to be planed and sanded to remove all machinery and other surface defects so that after application of the specified finish imperfections in manufacture will not be apparent.
- 5 Exposed edges and corners are to be sanded off to form a “ pencil rounded” arris.
- 6 Architraves, cover fillets, skirtings and the like are to be accurately shaped to fit the contour of any irregular surface against which they are required to form a close connection.

7 Joinery for painting on site is to be primed before delivery to the site to BS 4756, BS 5358.

5.3 TIMBER DOOR TYPES

5.3.1 Flush Doors

1 Minimum door leaf thickness is to be:

- (a) internal door 40 mm
- (b) external door 45 mm

2 Solid core doors to be comprise of softwood timber battens laminated together with a minimum 4mm plywood skin. The core laminations softwood are to be a maximum 50 mm wide and are to be laid alternately to balance stresses.

3 Semi-solid core doors are to contain a minimum 50% timber and are to be constructed on the stressed skin principle having a minimum 4 mm plywood skin.

4 Exterior quality doors are to be constructed using Type WBP adhesives and an exterior quality 4 mm plywood skin.

5 All facing materials including veneered materials are to be such that the following defects do not appear on the finished surfaces:

- (a) lifting at edges
- (b) blistering
- (c) sinking or raising of the surface due to knots or other defects in the core material
- (d) ripple effect whereby the construction of the core is seen on the face of the door.
- (e) to BS 3794

6 Doors are to be hardwood lipped on both horizontal and vertical edges. Lippings to be solid and measured at least 8 mm on the face of the door. Lippings to doors with a Class 1 finish are to match the face skin.

7 If the construction of the door is such that the lock, hinges or bolts can only be fitted where blocks are provided to receive them, the position and extent of the blocks are to be indicated by a suitable markings on the edge of the door. Where a surface mounted closer or a flush bolt is specified, blocks shall also be suitably positioned to receive them.

8 Where a flush or mortised door closer is specified a solid timber rail insert minimum 75 mm wide is to be provided for all door types. Closers are to not be fixed to the end grain of solid core doors.

9 Openings for glazing or grilles in semi-solid core doors are to be formed with a sub-frame all round the opening minimum 36 mm wide.

10 The maximum deviation from a true plane on either face of a door when measured by a straightedge is to be:

- (a) (bow in length : 3 mm
- (b) horizontal bow : 2 mm
- (c) deviation from the true plane (twist) : 4 mm
- (d) the ends of the braces are to be splay notched to the ledges and the ends of the ledges set back 15 mm from the edges of the door. The direction of the braces should be upwards from the hanging stile.

5.3.2 Fire Resisting Door Assemblies

- 1 Half-hour and one-hour fire resisting door assemblies are to have a minimum fire resisting performance when tested in accordance with BS 476, Part 8 of 30/30 and 60/60 respectively.
- 2 The door and frame of fire resisting door assemblies are to be supplied by the same manufacturer and be installed strictly in accordance with his instructions.
- 3 A copy of the Test Certificate shall be submitted to the Engineering for each type of door assembly supplied.
- 4 The doors to generally comply with the requirements of Part 5.2.1 and are to have a minimum 4 mm plywood skin.
- 5 The doors are to be marked on the hanging stile with an appropriate reference indicating the fire resisting performance of the door assembly.
- 6 Doors are to be fitted with an automatic self-closing device and be hung on a minimum of three hinges, manufactured from non-combustible material having a melting point in excess of 850°C. Rising butt hinges are not acceptable as an automatic self-closing device. No 'HOLD OPEN OPTION' is permitted unless the magnetic catch is operated by the fire alarm system.

5.3.3 Hanging Timber Doors

- 1 The maximum clearance between frames and door when hung is to be 3 mm.
- 2 The maximum clearance between an internal door and finished floor level is to be 6 mm (unless noted to be undercut) and between an external door and threshold or finished floor level to be 3 mm.
- 3 External doors and doors exceeding 20 kg in weight are to be hung on three 100 mm x 75 mm hinges as a minimum.
- 4 Hinges to be stainless steel, aluminium or brass as noted in the project documentation or as directed by the Engineer and to BS 729 where applicable.

5.3.4 Door and Window Frames, Sub-frames and Linings

- 1 Frames, sub-frames and linings are collectively referred to as "frames" in this Part.
- 2 Frames are to be manufactured with either mortise and tenon or tongued joints so as to be square and flat.
- 3 The backs of frames are to be painted with two coats of primer to BS 5358, or BS 4756 before installation.
- 4 Frames to be fixed plumb, level and securely to prevent deflection or movement.
- 5 Frames built-in as the surrounding structure is constructed are to be fixed with cramps at maximum 600 mm centres. One cramp to be located 200 mm from the bottom of the frame and one 200 mm from the top or at the nearest adjacent bed joint. All cramps are to be secured to the frame by two screws. Alternative fixing methods are to be approved by the Engineer and to BS 1202, BS 1204, and BS 1210 as applicable.
- 6 Frames which are to be built-in are to be temporarily braced sufficient to prevent distortion.
- 7 Frames to previously prepared openings are to be fixed with screw fastenings at maximum 450 mm centres. One fastening is to be located 200 mm from the bottom of the frame and one 200 mm from the top.
- 8 Packing between the frame and reveal to accurately position the frame in a previously prepared opening is to be hardwood, located only where the fastenings tighten against the reveal.

9 Screw fastenings are to extend into the structural reveal by at least 40 mm or the thickness of the frame excluding any stop, whichever is the greater.

10 Door frames which occur in wet areas should not extend below the finished floor level.

5.4 PURPOSE MADE FITTINGS

5.4.1 General Requirements

1 Fittings to be constructed in accordance with Part 7 and are to be installed plumb and true.

2 Critical site dimensions are to be checked before commencing manufacture of the fittings and no fittings dimension is to be altered without the approval of the Engineer.

3 All surfaces are to be smooth and free from splinters and no parts to have exposed rough or sharp edges whether on the inside or outside of the fitting.

4 Where a door overlaps the frame or another door the face of the rebate is not to be more than 1.5 mm from the face of the frame or door at any point.

5 Where a door is fitted into the surrounding framework the clearance between each edge of the door and the frame or another door should not be more than 1.5 mm.

6 Door hinges or pivots are to be fitted in alignment.

7 Drawers should slide freely and be fitted with runners and guides so that there is no undue play in any direction which could produce wedging or jamming.

8 Where a drawer overlaps the frame, the face of the rebate is not to be more than 1.5 mm from the face of the frame at any point when the drawer is closed.

9 Where a drawer is fitted into the surrounding frame work the clearance around the edge of the drawer when closed is not to be more than 1.5 mm.

5.5 ARCHITRAVES, QUADRANTS, BEADS

5.5.1 General Requirements

1 Architraves, quadrants, beads and the like are to be in unjointed lengths between angles or ends of runs. Angle joints to be mitred.

2 Architraves and quadrants should not be installed until after the wall coverings have been formed or constructed.

3 Glazing beads where required are to be wrought splayed and rounded and be neatly mitred and fixed with small brads or lost-head mails.

5.6 TIMBER SKIRTINGS

5.6.1 General Requirements

1 Skirting are to be fixed with screws at maximum 600 mm centres.

2 Angle joints to be mitred. Joints in the running length should be kept to a minimum and where necessary be splayed.

END OF PART