

GENERAL: This document defines **SIGNUM Timber 44 dB Acoustic cum 120 Minute Fire Resistant Door specifications** which meet with **IS 3614 Part 2** and **BS 476 Part 22** standards for Fire Resistance and **ASTM E90/ ISO 10140-2, ASTM E413** and **ISO 717-1** for Sound Transmission Loss (**STC**) measurement. The product conforms to **integrity criteria for 120 minutes and insulation criteria for 120 minutes (FD120 ID Fully Insulated Classification)** as mentioned in IS 3614/ BS 476 Part 22. It includes proprietary design and performance specifications.

MATERIALS

Timber used for frame and shutter shall be seasoned hardwood or other species as per requirements. Core shall be sandwich type multi layered non-combustible composite. Intumescent strip shall be Rigid PVC type of size 10 mm x 4 mm and 20 mm x 4 mm. Anchor Bolts shall be of size M8 x 75 mm, galvanized. Vision Panel (optional) shall be of hermetically sealed double glazed unit (DGU) type to achieve a fire rating of 120 minutes as per standards.

CONSTRUCTION

Frame: Timber frames shall have a single rebated profile of 120 mm x 55 mm constructed from seasoned timber. Frames shall be treated with proprietary fire retardant chemical FRPT100 and seasoned till maximum moisture content is less than 15%. Grooves for intumescent strip of size 20 mm x 4 mm shall be provided on both vertical and horizontal jambs of the frame. Frames shall be factory-assembled with mitered joints ready for direct installation at site. Support strip shall be provided on bottom of frame between vertical jambs to prevent warping/ damage during transport or installation. Provision for anchor bolt fasteners on each vertical jamb for fixing to Wall/ RCC surface shall be made. Center to center distance between the anchor fasteners shall not be more than 600 mm.

Shutter: Timber shutters shall be 50 mm thick, fully flush double skinned, finished with PVC/ timber edge band on all four edges. Grooves for intumescent strip of size 10 mm x 4 mm shall be provided on all three edges of the shutter except bottom edge. Shutters shall have no visible screws or fasteners on either face. Shutters shall be constructed out of 43mm thick Composite Core Combination of 6mm Non Combustible Boards on Both Sides with Mineral Wool Insulation Infill, factory pressed with 3.5 mm commercial composite boards on both sides. Special Noise insulating acoustic gaskets shall be mounted on door periphery on 3 sides (and in the meeting edges in case of double doors) along with bottom drop down gasket/ seal to ensure maximum sound insulation from edges of door. Shutter shall be press finished with veneer or laminate on both faces. Shutters shall be provided with machined cut-outs for iron mongerey such as lock body, concealed door closer, flush bolts, drop down gaskets etc. Reinforcement timber blocks shall also be provided at necessary locations (as per approved drawings) to support surface mounted iron mongery items such as doors closers, all drops, pull handles. Beading for vision panel shall be square or rectangular in shape with an HDHMR angled profile of 30 x 30 mm, with both sides bonded to the shutter face. Clearances at jambs and heads shall not be more than 3 mm between the frame and shutter. Floor level to shutter bottom clearance i.e. undercut shall not be more than 19 mm.

FINISHES

Timber Frames shall be suitably prepared and a coat of anti-termite paint (black) applied to face in contact with walls. All other faces shall be polished and coated with melamine/ PU Clear or duly primed and finished with top coat of PU Paint to match laminate on shutter or machine-pressed with laminate to match shutter faces.

Shutter surfaces shall be suitably prepared and finished with polish and coat of melamine/ PU Clear in case of veneers or primed with top coat of PU paint in case of ply or laminated and edges painted/edge banded to match laminate shade as per project requirement. Paint shade shall be of approved RAL colour shade for the project and wherever used, primer shall be 35 microns DFT and top coat of two component polyurethane paint also 35 microns DFT.

QUALITY ASSURANCE

Timber Acoustic cum Fire rated doors shall be manufactured by a unit having valid BIS License and ISI Label/ Mark and certified for its quality systems as per ISO 9001: 2015 standards from a recognized certifying authority. The door unit shall be designed and manufactured to comply with IS 3614 specifications and shall have a fire rating label, to indicate fire resistance of door as well as door identification number and date of manufacturing. Acoustic door unit shall be GreenPro certified to be eco-friendly by CII-IGBC (Indian Green Building Council).

TESTING

Entire fire door assembly complete with iron mongery shall be type tested and certified for its fire rating by CBRI or CPRI and by ARAI for its sound transmission loss rating. Type test reports shall be submitted for all projects with no further testing required, unless agreed to between the client and SIGNUM.

PACKAGING

Frames and shutters shall be covered with 3 mm foam sheets and wrapped with clear stretch film to prevent damages to surface finish during transportation and at site. Packaging labels shall be applied to each set as per project schedule for easy identification at site. Additional protection such as side bolsters from card-board paper shall be used to protect during transit and at-site storage. All frames shall be stacked flat and shutters flat/ vertically on top of bolsters in clean, dry, well-ventilated areas.