

GENERAL: This document defines **SIGNUM 49 dB Acoustic cum 120 Minute Fire Resistant Steel Door specifications** which meet with **IS 3614 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 120 minutes integrity criteria (FD120 UD Classification)** as mentioned in IS 3614/ BS 476 Part 22. It includes proprietary design and performance specifications.

MATERIALS

Galvanized Steel sheets for frame sections and shutter skin shall conform to IS 277 with zinc coating of 120 g/m² (total of both sides). Sheet thicknesses shall be as per Fire Type Test Report
Core shall be proprietary fire retardant heat cum sound insulating material
Intumescent strip shall be Rigid PVC type of size 10 mm x 4 mm
Anchor Bolts shall be of size M8 x 75 mm, galvanized for corrosion resistance
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: Steel frames shall have a triple rebated profile of 150 mm x 75 mm with bending radius of 1.4 mm constructed from minimum sheet thickness of 1.5 mm.

Frames shall be fabricated at factory pre-equipped with iron-mongery preparation and reinforcements. Frames shall be in knock down form with butt joints for bolted assembly directly at site.

Shutter: Steel shutters shall be 75 mm thick, press formed, double skin type construction with folded interlocking seam joints at stile edges, with minimum sheet thickness of 1.2 mm. Shutters shall have no visible screws or fasteners on either face and shall be constructed out of proprietary fire retardant heat cum sound deadening insulating material bonded to the inner surfaces of the sheets with suitable permanent glue. Shutters shall be factory prepared with pre-punched cut-outs and reinforcements to receive iron mongery. Special Noise insulating proprietary SIGNUM designed acoustic gasket seals shall be mounted on door periphery on 3 sides (and in the meeting edges in case of double doors) along with automatic bottom drop down gasket/ seal to ensure maximum sound insulation from edges of door. Flange for vision panel shall be square or rectangular in shape with a profile of 40 x 6 mm, with one side welded to the shutter face and the other side screwed. 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

Frame and Shutter surfaces shall be suitably prepared and cleaned with solvents prior to coating. Frames and shutters shall be finished powder coated at factory as per approved RAL colour shades. The dry film thickness (DFT) for the powder coating shall be not less than 50 microns as per IS 13871.

QUALITY ASSURANCE

Steel 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. Steel 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 adhesive based PE sheets to prevent damages to surface finish during transportation and at site. 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 knocked down frames shall be stacked flat and shutters flat/ vertically on top of card-board/ other bolsters in clean, dry, well-ventilated areas.