

GENERAL: This document defines **SIGNUM 120 Minute Fully Glazed Steel Fire Door and Partition specifications** which meet with **IS 16947 / IS 3614** standards for Fire Resistance. The product conforms to **integrity for 120 minutes, radiation for 120 minutes and insulation criteria for 20 minutes (E120/ EW120/ EI20 Classification)**. 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. Infill shall be mineral wool of min. density 96 kg/m³. Intumescent strip shall be Rigid PVC type of size 20 mm x 4 mm. Frame Anchor fastener shall be of size M8 x 100 mm, polyamide sleeve with countersunk galvanized carbon steel screw. Fire Rated Glass shall be non-wired minimum 11 mm thick inter-layered glass, with 89% light transmission, minimum 37dB sound insulation, 1B1 Impact rating and 120 minutes of Radiation Control.

CONSTRUCTION

Frame: Steel frames shall have a multi-step rebated profile of 50 x 60 mm on horizontal side and 35 x 60 mm on vertical sides having built-in rebate constructed from out of 1.2 mm thick GI sheet. Intumescent strips shall be applied on both vertical jambs and top horizontal jamb of frame. Frames shall be fabricated at factory pre-equipped with iron-mongery preparation and reinforcements. Frames shall be in knock down form with miter joints to be assembled using self-tabs directly at site.

Shutter: Steel shutters shall be 60 mm thick press formed consisting of vertical styles, top rail and side rail 60mm x 60mm wide and bottom rail of 110mm x 60mm made out of 1.2 mm thick GI sheet duly filled with Mineral Wool Insulation having min. density 96 kg/m³. Shutters shall have no screwed, welded/ fuse-jointed or riveted joints on either face. Shutters shall be factory prepared with pre-punched cut-outs and reinforcements to receive iron mongery. Beading for glass shall be of 40 mm width out of 1.2 mm thick GI Sheet, screwed to the shutter at every 200 mm c/c. Top cover shall be provided for concealed fixing at site, with no screws visible. A ceramic tape of size 3 x 20 mm shall be placed between the beading and the glass.

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.

Partition: Frames for partitions shall have a multi-step rebated profile of 50 x 60 mm on horizontal side and 35 x 60 mm on vertical sides having built-in rebate constructed from out of 1.2 mm thick GI sheet. Intumescent strips shall be applied on both vertical jambs and top horizontal jamb of frame. Frames shall be fabricated at factory pre-equipped with iron-mongery preparation and reinforcements. Frame sections shall be in knock down form with butt joints to be assembled directly at site. Glass beading shall be of 40 mm width out of 1.2 mm thick GI Sheet, screwed to the frame at every 200 mm c/c. Top cover shall be provided for concealed fixing at site, with no screws visible. A ceramic tape of size 3 x 20 mm shall be placed between the beading and the glass.

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 approve 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 certified for its quality systems as per ISO 9001: 2015 standards from a recognized certifying authority. Fully Glazed Steel door unit shall be designed and manufactured to comply with IS 16947/ 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. Fully Glazed Steel 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. 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.