



DOORS & DOORS

DESIGN ● ENGINEERING ● CONSULTANCY
excellence delivered

FIRE DOOR

THE IMPORTANCE OF- FIRE DOORS

Fire kills 3 person every hour
Every 6 minutes there is a reported fire emergency in India

What is Fire Door?

Fire Door, as the name suggests should act as a barricade against smoke and fire. It should be designed and installed to protect life and property. In many fire accidents, 'Smoke' is the killer rather than blaze. Fire door should have the minimum following qualities-

Work as normal door in normal conditions.

It provide easy outlet to occupants in a fire situation.

Prevents spreading of fire/smoke.

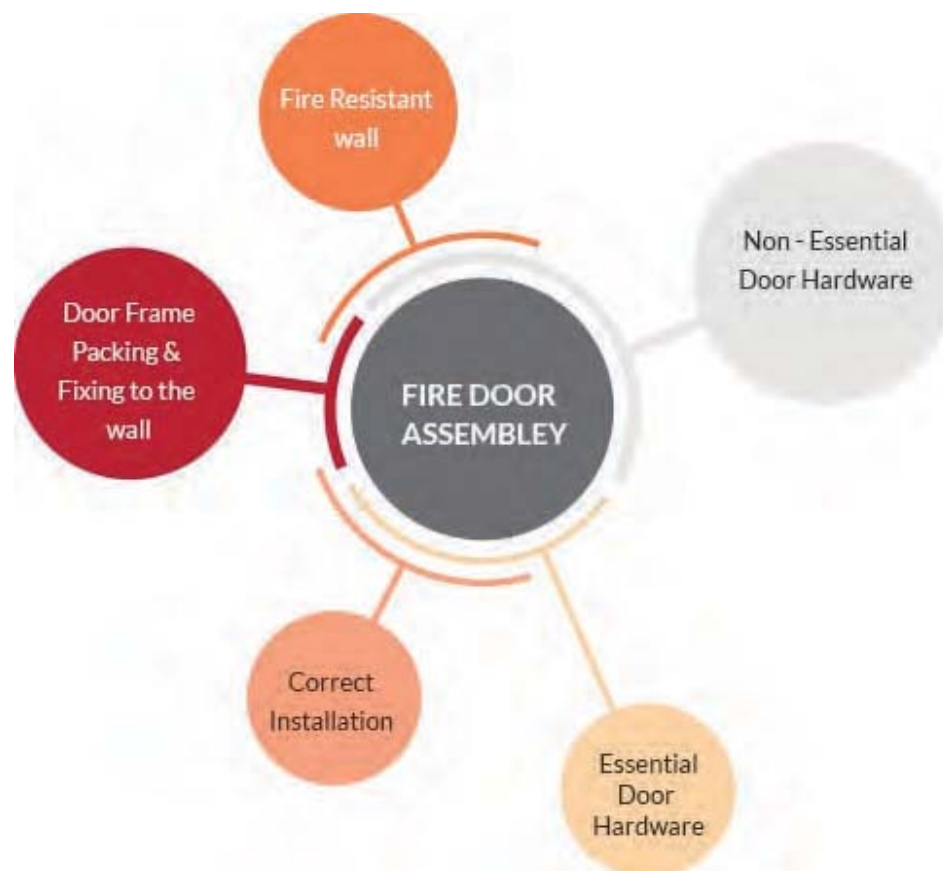
The property, and essentially, life should be protected.

Meet the requirements of international and local building codes.

The fire rating of the fire door is important.

Depending on occupancy, fire ratings are defined by codes, standards and keeping an eye on response time of local public fire protection departments.

Depending on the fire hazard class,the fire should be restricted from spreading to nearby areas. So, suitable rated fire doors shall be installed to meet local, national and international codes



Doors & Doors since the year 2004 offer assistance in developing cost-effective and innovative solutions to meet the most demanding specifications. We have pioneered in testing wooden fire doors- 3 meters in height and above with PROMAT calcium silicate non-combustible matrix-engineered mineral boards while Promatech H, Promina 60 and Promatech L500 used in the construction of our Fire Doors. These Fire Doors have passed stringent tests. Our team of highly trained specialists provides technical support during estimation, design and manufacturing. The necessity of these doors is governed by national building codes as well as directives of local fire fighting and municipal authorities. These doors, in general, are certified for 30 minutes, 60 minutes, 90 minutes, and 120 minutes, fire rating for insulation, integrity and stability



Fire door is always a set- 'Door Set'. Fire Door set means, a Frame, Door shutters/ along with hardware, and its fixing procedure at site. It should be tested as per standard. Fire doors, which are to be installed in buildings, must adhere to IS 3614, Part 2, BS 476, Parts 20 & 22 and NBC Building regulations. When we follow these codes and standards, it calls for a 'Door Set' testing under defined fire conditions. It has to pass successfully through three criterias - Insulation, Integrity and Stability. 'Door Set' should be tested and not individual parts. The complete door assembly needs to be installed as per tested sample by the 'Door Set Manufacturer'. In case of a fire if doors remained open it will lead to spreading of fire and heat and may block egress to people. Thus fire doors should be installed with a door closure. Fire door assembly needs 'Fire rated' hardware. Melting temperature of any component of hardware should not be less than 800oC. Hardware should be in line with fire rating requirement. However, in day-to-day use it should work with door functional requirements based on occupancy and type of duty.

Today, modern architecture demands large openings to give a feel of openness and bring in more light. This makes for great ambiance! But how do we secure these large spaces from fire to prevent loss of life and equipment, especially when large investments are made in light of these challenges? To meet these expectations Doors & Doors have tested a series of large doors from 2.4 meters to 3 meters, passing EN BS standard up to 145 minutes.

Shown here is the completion of a successful test of 3 meters X 2.4 meters Double Leaf Fire Door with vision panel.



These doors are tested at Spectro Analytical Labs Ltd., a NABL approved test lab in Greater Noida for BS EN 1634-1. Stringent inspection is conducted prior to and during the time of installation as well as during and post-testing to see the remains of the door from within. This helps in verifying that accurate materials as specified are being used. Tests were also being carried out at IPIRTI, the government approved lab in Bengaluru.

3 meters X 1.2 meters Single Leaf Fire Door with vision panel.



Fire Door Certification Label :

Each fire-rated door sold on the market must include a permanent label showing the following information:

- The door manufacturer.
- Whether the opening is equipped with fire exit hardware.
- if it is a smoke door assembly
- The fire rating



ACOUSTIC WOODEN FIRE DOORS

The wooden fire doors by Doors & Doors can be converted into Acoustic Wooden Fire Doors, thus providing you with a multifunctional product. This is a combination of fire as well as sound retardant properties. The construction of the wooden fire door with sound retardant properties is the same as that of a Standard Wooden Fire Door with the addition of an Automatic Drop Seal as well as Silicone Self Adhesive Seals on the sides and the corners of the panel.

Shown here is a tested Acoustic Double Leaf 120 minutes Fire Rated Door.
Size: 2400 mm x 2700 mm x 90 mm thick (Single shutter weight: 180 kg)



Doors & Doors has also launched a Glazed Fire Doors System with MS Frame in India.



- These will come to you as a complete 'Door System', which means the glass is provided with complete framing. These 'systems' are tested in reputed laboratories to ensure that they conform to the highest standards.
- Previously dark, solid firewalls were the only option to segregate escape routes, common areas, and staircases. However, Doors & Doors offer slimline mild steel & frame for fire-rated glass doors.
- Our minimal welded steel frames give outstanding performance when it comes to fire resistance and smoke control. Thus, they provide the perfect solution for modern office buildings, schools, and hospitals, where aesthetics and the ability to meet stringent building regulations must go hand in hand.

Sr. No.	Rating	Size		Shutter Thickness	Type of Door	Test done in following Research Institute	Objective
		Width	Height				
1.	145 min	2400 mm	3000 mm	90 mm	Wooden Door with Vision Panel	Spectro SSA Labs Pvt. Ltd.	Doors was tested in accordance with BS EN 476-1:2014 , Determination of fire resistance of fully insulated door & shutter assemblies with vision panel.
2.	120 min	1200 mm	3000 mm	90 mm	Wooden Door with Vision Panel	Spectro SSA Labs Pvt. Ltd.	Doors was tested in accordance with BS 476-Part 20 & part 22 :1987, Determination of fire resistance of fully insulated door & shutter assemblies with vision panel.
3.	120 min	1200 mm	2700 mm	90 mm	Wooden Door	Indian Plywood Industries Research & Training Institute (IPIRTI)	Doors was tested in accordance with BS476-Part22:1987, Determination of fire resistance of fully insulated door & shutter assemblies.
4.	120 min	2400 mm	2700 mm	90 mm	Wooden Door	Indian Plywood Industries Research & Training Institute (IPIRTI)	Doors was tested in accordance with BS476-Part22:1987, Determination of fire resistance of fully insulated door & shutter assemblies.
5.	120 min	1200 mm	2400 mm	64 mm	Wooden Door	Spectro SSA Labs Pvt. Ltd.	Doors was tested in accordance with BS 476-Part20, Determination of fire resistance of fully insulated door & shutter assemblies with drywall
6.	120 min	1000 mm	2100 mm	60 mm	Wooden Door	The Automotive Research Association of India (ARAI)	Evaluation of the fire resistance of insulated single leaf wooden door in terms of stability, integrity & insulation as per IS 3614 Part(2):1992
7.	120 min	1000 mm	2150 mm	63 mm	Wooden Fire Rated Cum Acoustic Door	The Automotive Research Association of India (ARAI)	Measurement of sound transmission loss of above mentioned mercury acoustic and fire doors as per ASTM E-413 and weighted sound reduction index RW (C; Ctr) & spectrum adaptation term as per ISO 717-1
8.	60 min	1000 mm	2150 mm	53 mm	Wooden Fire Rated Cum Acoustic Door	The Automotive Research Association of India (ARAI)	Measurement of sound transmission loss of above mentioned mercury acoustic and fire doors as per ASTM E-413 and weighted sound reduction index RW (C; Ctr) & spectrum adaptation term as per ISO 717-1
9.	30 min	1000 mm	2150 mm	40 mm	Wooden Door	Indian Plywood Industries Research & Training Institute(IPIRTI)	30 Minutes mercury fire rated wooden door (Shutter + Frame). Tested for fire rating of 30 minutes as per BS 476 Part (20 & 22):1987
10.	60 min	1200 mm	2400 mm	50 mm	Wooden Door	Spectro SSA Labs Pvt. Ltd.	Doors was tested in accordance with BS 476-Part 20 & part 22 :1987, Determination of fire resistance of fully insulated door & shutter assemblies
11.	120 min	1200 mm	2400 mm	50 mm	Metal Glazed Door	Spectro SSA Labs Pvt. Ltd.	Doors was tested in accordance with BS 476-Part 20 & part 22 :1987, Determination of fire resistance of fully insulated door & shutter assemblies

COMMON MYTHS OF FIRE DOORS

1. Myth: Painting a door with flameproof paint makes it a fire door.

False: This would not be recognized as a fire door by British Woodwork Foundation (BWF), the leading authority on fire door safety. A door is made up of many compatible and fire-tested materials and components, all listed on the fire door certificate.

2. Myth: I shouldn't put any furnishings in front of the fire door, even if they are light and easy to move.

True: Quite simply, do not have any obstructions in front of a fire door. Make sure you have a clear pathway to get out, in case of a fire. Smoke and flames could prevent you from seeing clearly in front of you. Surveys recently carried out, showed that 74 percent of tradespeople had seen a blocked or obstructed fire door.

3. Myth: The gap between the fire door and the door frame doesn't matter.

False: The dimension of the gap around the entire perimeter of the door is critical to preventing the passage of toxic fumes and smoke in the event of a fire. Recent research revealed 34 percent of fire doors fitted had excessive gaps (over 3mm). On a fire door with smoke seals, this gap is commonly 3 mm but always check the fire door certificate. The gap under the door can be slightly larger (up to 8 mm), but it does depend on the door. Ideally, you should not be able to see any light from under the door.

4. Myth: I can find everything I need to know about my fire door once it's fitted.

True: Every fire door must have a current independently accredited test certificate. This proves the door's fire rating, test criteria, and manufacturing compliance. It shows that the door's components meet strict performance and compliance standards. It also gives critical information about installation. Look for a label or plug on top (or occasionally on the side) of the door. Without a certification mark, you cannot be sure this really is a fire door.

5. Myth: Any lock can be fitted onto a fire door because it's made of metal, and metal doesn't burn in a fire.

False: The lock must be fire tested and BWF fire door certified. Metal gets extremely hot in the event of a fire and it can quickly go from being the strongest element of your door to the weakest. The additional fitting of intumescent protection can provide a minimum of 30 minutes of fire protection.

6. Myth: Fire doors should be locked.

False: Don't block it or lock it. Chaining the doors shut or blocking them in any way is dangerous and may be a violation of fire safety codes. Using anything other than fire-rated, fail-safe hardware can lead to injury or even loss of life in an emergency that requires quick evacuation. Finding the doors blocked can be a significant safety hazard and cause further panic for an already scared crowd.

TYPES OF HARDWARE

Using the right kind of hardware is very important.

Following are various types of standard hardware items that may be needed on fire doors



Door Closure



SS Lever Handle



Panic Bar



Hinges



Mortise Lock



Dead Bolt



Latch Bolt



Rim Lock



Cylinder with one side key or other side turn lock



Cylinder with both sides key



Half Cylinder with Key

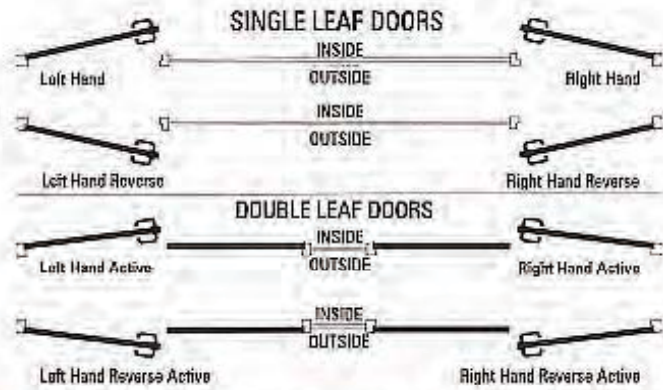


Cylindrical Lock



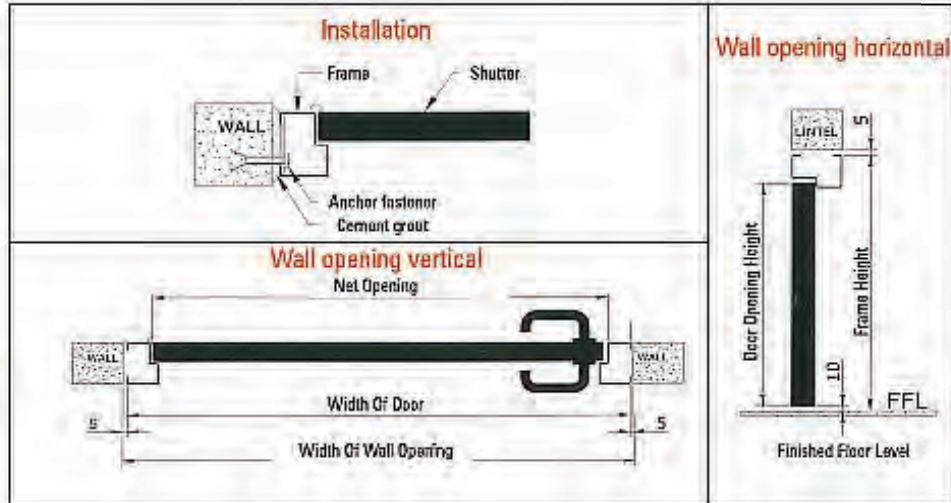
T Handle

Handling of Door: Depending on the opening direction and hinge position doors type is detected. Following drawings give us the standardized nomenclature used universally.



Installations of Doors:

Fire doors are installed in various types of wall openings such as Brick wall, Block wall, Concrete wall, Dry wall, etc. Depending on the type of wall, door manufacturer suggestion installation method by using Anchor fastener, Hold pass arrangements, etc





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