



# UL Label and British Standard Doors

Steel fire-rated Doors





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# Hörmann fire protection

Because it's good to be on the safe side



## Fire doors are designed to protect property and life in the event of a fire

For this, the door must serve as a fire and smoke barrier. Studies have shown that more people have lost lives due to smoke asphyxiation than fire.

Fire Doors must serve four main functions

- serve as a regular door at all times and provide ready egress from a fire area during a fire
- inhibit spreading of fire
- protect life and property by reducing smoke hazards.

When an opening requires strength, durability, or maximum fire resistance, steel doors and frames provide the qualities to meet these needs. Due to growing access control needs, fire doors have today evolved to accommodate the growing electrified functions a door must support.

Designed to meet the life-safety requirements in various types of buildings and structures, Hörmann fire doors help compartmentalise and contain the spread of fire. These doors complement existing passive fire-fighting systems.

These doors also meet all the stipulated international, national and regional fire safety standards. These doors are available with honeycomb core as standard infill material with other optional cores. These doors are rated for 45, 60, 90, 100, 120 and 180 minutes' fire withstanding ability. All fire doors are factory finished with epoxy primer and polyurethane-finish paint.

## Applications

These doors can be used in high-rise buildings, metro railway stations, telecom centers, power plants, cellular network stations, garment processing units, shopping malls, industrial plants, multiplexes, hotels, auditoriums, software parks, restaurants, etc. Hörmann doors and frames are designed to perform and in the most demanding environment.

## Warranties

All our products carry a warranty of 1 year against manufacturing defects.



## Standards and Certifications

- Tested to UL 10B & UL10C and confirming to NFPA 80
- Fire doors are tested as per BS 476 Part 22 in Warrington



## Features

- Available in galvanised or stainless steel
- UL labeled doors for 45, 60, 90, 120, 180 minutes
- Clear vision lite for up to 120 minutes' fire rating
- No welding joints and sharp edges, interlocking at the stiles
- Factory prepped to receive all types of hardware
- High aesthetics and robust structure
- Fully flush constructions
- Easy to install on a flush wall opening & dry wall partitions
- Factory finished for primer and paint finishes.

## Optional Features

- Wood Grain can be provided as an optional finish.

## Matching appearance

Hörmann advises Door leave, frames and applications from one source!



## Hollow metal swinging Fire Door selection guide

At Hörmann, we are equipped to offer Fire Doors tested and certified to American and British Standards. The significant requirements of each of these standards are listed below.

### American

**NFPA 80-1999, NFPA 252-1995,  
UL 10B, UL 10C, UBC 7-2 and IBC 2000.**

- A fire door must have a label attached indicating the fire test rating.
- Doors are rated for 3/4 of the rating of the surrounding wall.
- Every fire door must have a labeled self-latching device to engage the strike. Dead bolts may not be used in place of latch bolts.
- A fire door MUST be self-closing.
- Steel ball bearing hinges must be used. Brass, bronze or other bases cannot be used. Plain bearing hinges cannot be used as well.
- If a fire door is held open, it must be equipped with a listed / tested, heat responsive or electromagnetic device, fusible link or a smoke detection device.
- Only listed / tested fire door hardware shall be used.
- A fire door with glass opening must be provided with a listed / tested glass, a steel frame and glazing bead.
- Every assembly configuration such as transom panel, louver, vision panel, frame material, thickness of metal, leaf construction, core type, door set type (single, double or double egress), etc., must be covered by the test certificate or global assessment report issued by the testing agency.

### British

**Part 2, BS 476, Parts 20 & 22.  
Building Regulations 2000-Fire Safety-  
Part B.**

- Labeling is not obligatory but recommended.
- According to BS, a fire door can be tested without having leaf of an active latch bolt but with only a self-closing device.
- A fire door MUST be self-closing. Only the active door leaf of an access panel (service ducts) or cupboards, can however be installed without a closer but with a dead lock and a "Fire Door, Keep Shut" sign placed clear on the door face.
- Unless shown to be satisfactory when tested as part of a fire door assembly, the components of any hinge on which the door is hung should be fire rated.
- If a fire door is held open, it must be equipped with a tested, automatic release mechanism actuated by an automatic fire detection and alarm system, fusible link (not if door is fitted in an opening provided as means of escape), or a door-closed delay device.
- Two fire doors may be fitted in the same opening so that the total fire resistance is the sum of their individual fire resistances.
- Signs and other items of hardware containing plastic should not be fitted on the non-fire side of the metal door or frame.

# Fire doors

Single and double-leaf



## Door Leaf

**Material options** Galvanised Steel  
Stainless Steel

**Sheet thickness** 1.6 mm                      1.2 mm  
16 gauge                                      18 gauge

**Infill** (See page 8) Honeycomb Kraft  
Steel Stiffened Doors  
Polyurethane Foam

### Technical Data for door leaf

Non-temperatur rise doors (integrity)	Single Leaf	Double Leaf
Door thickness	46 mm (1 3/4")	—
Min. door opening width	357 mm (1' 2")	714 mm (2' 4")
Max. door opening width	1219 mm (4' 0")	2438 mm (8' 0")
Max. door opening height	3048 mm (10' 0")	3048 mm (10' 0")
Temperatur rise doors (insulation)	Single Leaf	Double Leaf
Max. door opening width	1219 mm (4' 0")	2404 mm (7' 11")
Max. door opening height	2743 mm (9' 0")	2445 mm (8' 0")

**Note:** The sizes mentioned above are for the door leaf and do not include the frame.

**Optional extras see page 8-9**

## Door Frames

**Material options** Galvanised Steel  
Stainless Steel

**Sheet thickness** 2.0 mm                      1.6 mm  
14 gauge                                      16 gauge

### Technical Data for standard frames (D x H)

Size of double rebate frame	143 x 57 mm*
Size of single rebate frame	100 x 70 mm
Frame assembly	Mitered Butted Welded

\* Other sizes are available. Max depth for Labelled doors can be 350 mm.

### Standard heights (Wall openings)

2100 mm	2200 mm	2400 mm	2700 mm	3000 mm
6' 10 3/4"	7' 2 5/8"	7' 10 1/2"	8' 10 1/4"	9' 10 1/8"

**Note:** For actual frame opening size please see the door data sheet for both labelled and BS doors.

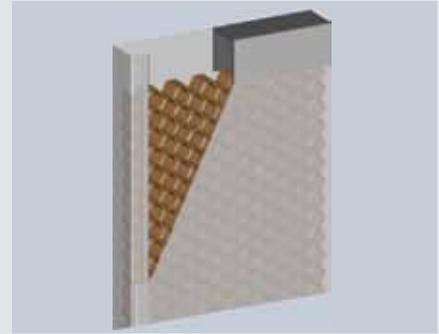
**Optional extras see page 10-11**

# Door Leaf

## Infill

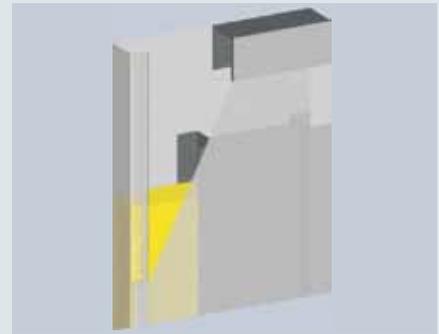
### Honeycomb Kraft Paper

With its unique properties enhances the structural integrity of the doors with minimal additional weight. The final finish on the door is predominantly dependent on the quality of the honeycomb kraft and the glue which is used to get the flat surface. This infill material invariably has high crushing strength leading to impact resistance. The quality and consistent flat surface achieved thanks to the infill material is exceptional to the material and design of the doors.



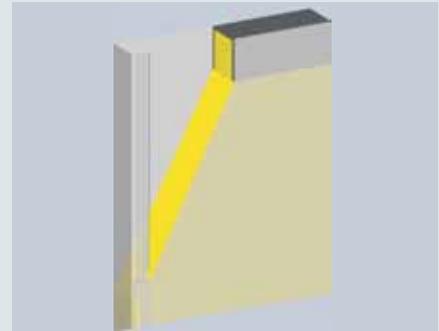
### Steel Stiffened Doors

Used for exterior applications, these doors are known for their rigidity and are available in varying strength and quality. While the thickness of the stiffeners can vary, we offer stiffeners of 20 gauge galvanised steel. Spacing between stiffeners may vary from 4" to 6". They are welded to each other at the top and bottom and to the inside door skin. The cavities are filled with special core. For temperature rise doors, all cavities are filled with mineral rock wool.



### Polyurethane Foam

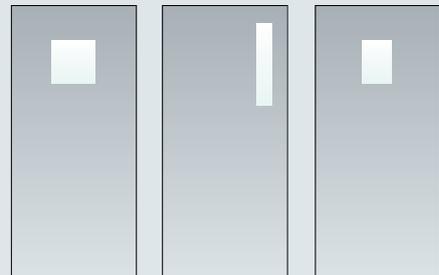
Is used as an insulator and provides complete surface support, impact resistance and exceptional thermal resistance. It offers the lowest "U" value (approx. 0.09) and the highest "R" factor (approx. 11.1). This core has certain limitations on application and fire rating of the doors. Not recommended for use on BS fire doors.



### Vision lite

Door leaf can be provided with vision lite for visibility.

- The sizes mentioned are for 90 min and 120 min labeled doors
- Labeled doors with 45 min rating can have glass of 1296 sq. inches/ Vision Lite
- Max width/height is 54" for Vision Lite of size 1296 sq. inches.
- Max width for 100 sq. inches is 12" and max height in 33"



V  
250 x 250 mm

N  
125 x 500 mm

R  
200 x 300 mm

### Louvers

Labeled doors can be provided with optional louvers with fusible link for a maximum size of 24" x 24" in 1½ hrs. rated doors. Not applicable on BS doors.



# Door Leaf Finishes

## Painted Finishes

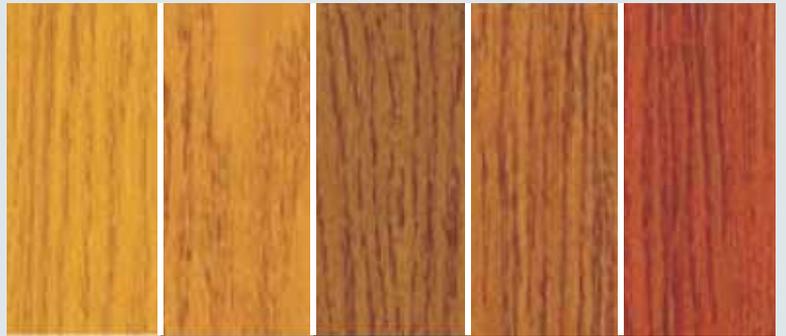
All our steel doors are factory finished and etched primed to take any paint. We offer a wide range of semi gloss paint finishes.



## Wood Grain Finish

Wood Grain doors offer the perfect combination and alternative for architects who prefer to use “Steel” over “Timber”. These doors offer the ‘elegance of wood’ with the ‘strength of steel’.

- Features:**
- Aesthetically superior
  - Robust structure
  - Fully flush construction
  - Vermin proof
  - Never warps



## Stainless Steel Finish

We can offer any door in stainless steel 304 grade with No. 2B and No. 4 finishes.



# Door Frame

## Standard Design



### Frames

Available in mitered joint and butted assembly, our frames are supplied in knock down form for easy assembly at site. Welded frames are supplied on special request.

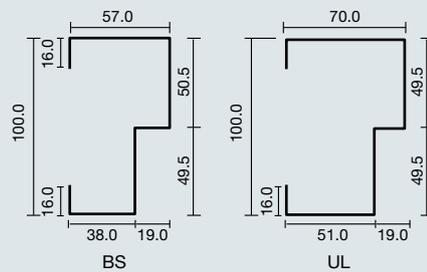
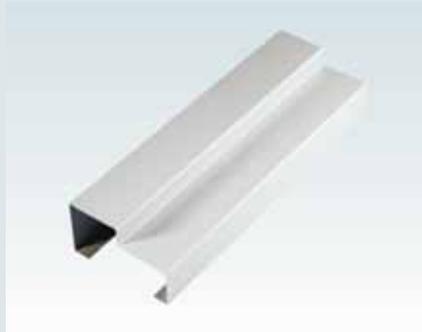
### Features

- Available in galvanised and stainless steel
- Frames available in single and double rebate
- All frames are prepared for receiving hardware
- Frames can also be designed for flush fixing
- Primed and finish painted

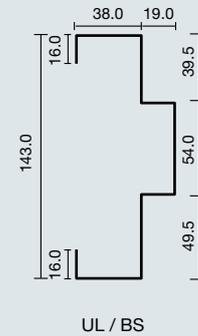
### Optional

- Frames with Architave
- KERF frames with inbuilt seals

### Single rebate frame



### Double rebate frame



### Hardware preparation

#### Hinge Jamb

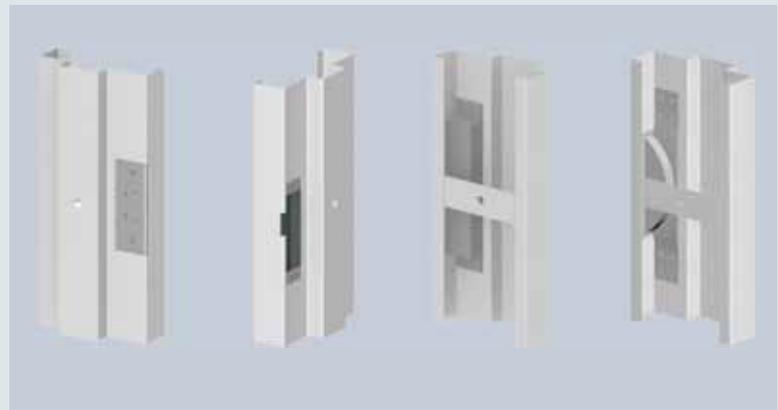
5.0 mm thick steel hinge reinforcement door and frame for receiving the hinge.

#### Strike Jamb

3 mm thick steel lock strike reinforcement with tapped holes welded to the frames.

#### Mortar Guard

1.2 mm thick steel plaster guard or mortar guard is provided at the back of all hardware cutouts in the frame.



Hinge Jamb

Strike Jamb

Strike-Mortar Guard

Hinge-Mortar Guard

### Frame assembly Details

(Mitered and bolted joint frames are supplied in knock down form)



Mitered Joint (Double rebate)



Bolted Joint (Double rebate)



Welded Joint (Double rebate)

# Door Frame Options



## Anchoring and Fixing Details

Frames can be designed for fixing on typically plastered opening, masonry opening or dry wall partitions.

Hörmann offers a wide range of unrivalled options in aesthetics and finishing.

## Tee-Anchoring

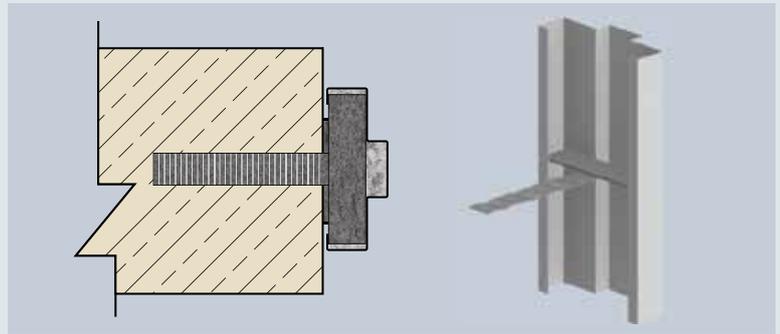
First fix provides maximum engagement into the constructed wall, with slip-on anchors made out of galvanised steel.

## Expansion Anchors

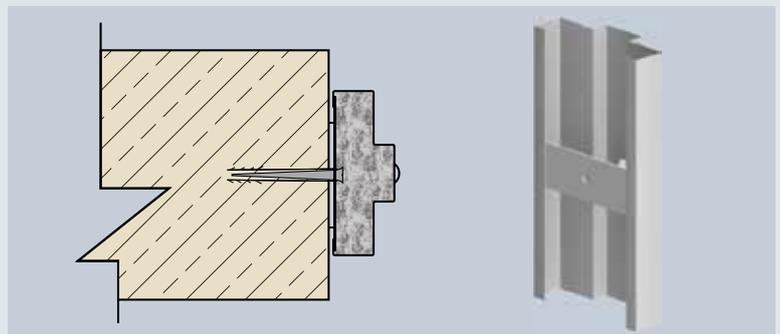
Used in masonry openings or finished plastered openings. The frames are bolted to the clear opening with 8 mm expansion anchors. Screws are rested on the backplate.

## Bolted Anchors

Frames fixed on 'C' Channel are bolted directly on to the back plate.

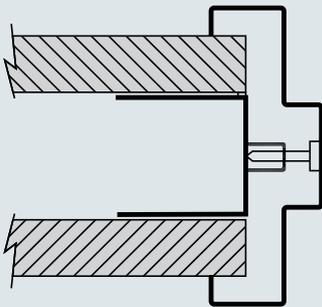


Double rebate - T - Anchor

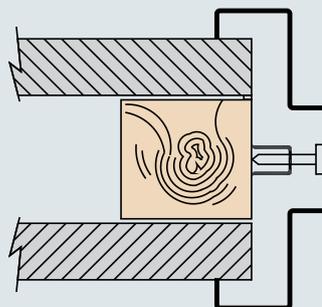


Double rebate - Back Plate

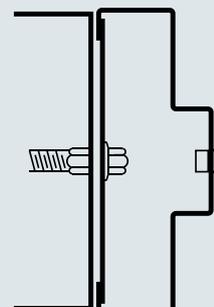
## Dry Wall Fixing



Frames installed with steel stud



Frames installed with wood stud



Frames installed on 'C' channel

# Fire-Doors

## Data sheets for UL Labeled / Fire rated Doors and Frames



**Underwriters  
Laboratories**

Hörmann offers UL labeled doors as per the American standards NFPA 80-1999, NFPA 252-1995, UL 10B, UL10C and UBC 7-2. Doors are tested under three categories covering temperature rise doors, nontemperature rise doors and steel stiffened doors.

### Doors

- Swinging doors are tested for a maximum of 3 hrs. for hollow metal type and 1½ hrs. for composite metal doors, both single and pairs with astragal
- 3 hrs. rating for non-temperature rise
- 1½ hrs. for 232°C temperature rise (30 minutes) for hollow metal type and 1½ hrs

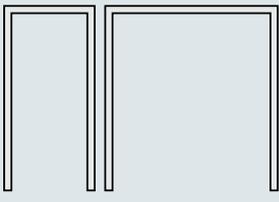
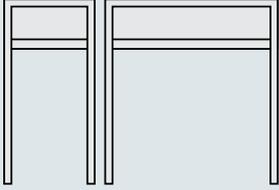
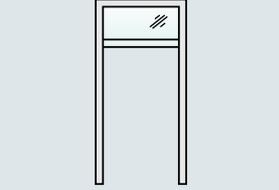
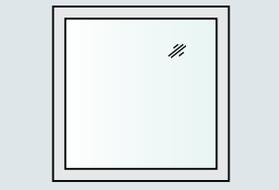
### Frames

- Frames are tested for use as a component in fire door assemblies that meet the requirements of UL10C, UBC 7-2 (1997) Part I (positive pressure) and UBC 7-2 (1997) Part II (air leakage / smoke, "S")
- Door frames for use as a component in fire door assemblies that meet the requirements of UL10B (neutral pressure)
- Three-sided steel frame with or without transoms, single swing and pairs, of welded or knockdown / welded construction

	Non-temperature Rise Doors					Temperature Rise Doors
<b>Infill</b>	Honey Comb Core / Polyurethane / Steel-Stiffened					Special Core
<b>Label</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>T</b>
<b>Rating</b>	3 hours	2 hours	1 ½ hours	1 hour	3/4 hour	1 ½ hours
<b>Max. Glass Area</b>	—	100 sq.in. (0.06 sq.m.) per door	100 sq.in. (0.06 sq.m.)	100 sq.in. (0.06 sq.m.)	1296 sq. in.** (0.84 sq. m.)	100 sq. in. (0.06 sq. m.)

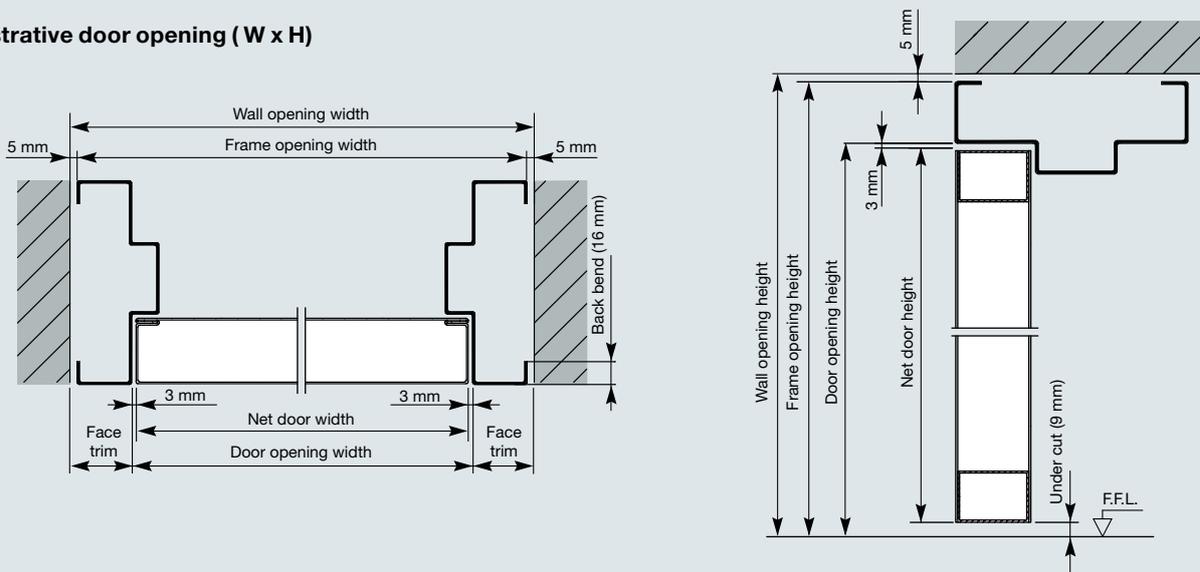
\*\*1296 sq. in perlite. Not to exceed 54" w or h.

			UL Label rating					
			Non-temperature Rise Doors				Temperature Rise Doors	
Doors		Door opening Max. size	3 hours	2 hours	1 ½ hours	1 hour	3/4 hour	1 ½ hours
<b>Honey Comb core</b>								
<b>1,2 mm, 1,6 mm G 18, G 16</b>	Single Leaf	1219 x 2438 mm (4' 0" x 8' 0")	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	
	Double Leaf	2438 x 2438 mm (8' 0" x 8' 0")						
<b>Polyurethane</b>								
<b>1,2 mm, 1,6 mm G 18, G 16</b>	Single Leaf	1219 x 2438 mm (4' 0" x 8' 0")			<b>C</b>	<b>D</b>	<b>E</b>	
	Double Leaf	2438 x 2438 mm (8' 0" x 8' 0")						
<b>Steel Stiffened Doors / Special core</b>								
<b>1,2 mm, 1,6 mm G 18, G 16</b>	Single Leaf	1219 x 2743 mm (4' 0" x 9' 0")	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>T</b>
	Double Leaf	2404 x 2445 mm (7' 11" x 8' 0")						
<b>1,2 mm, 1,6 mm G 18, G 16</b>	Single Leaf	1219 x 3048 mm (4' 0" x 10' 0")	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	
	Double Leaf	2438 x 3048 mm (8' 0" x 10' 0")						
<b>Lead Line Doors</b>								
<b>1,2 mm, 1,6 mm G 18, G 16</b>	Single Leaf	1219 x 3048 mm (4' 0" x 10' 0")	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	
	Double Leaf	2438 x 3048 mm (8' 0" x 10' 0")						

Frame Type	Door Size			Frame Size		
	Type	Max. Door Size	Max. Rating	Jamb Depth	Max. Panel Size	Max. Overall Size
<b>Three sided frames</b>						
	Masonry Fixing	Single Leaf: 1219 x 3048 mm (4' 0" x 10' 0")  Double Leaf: 2438 x 3048 mm (8' 0" x 10' 0")	3 h, 2 h, 1½ h, 1 h, ¾ h	Min. 75 mm (3")  Max. 350 mm (14")		Single Leaf: 1311 x 3055 mm (4' 4" x 10' 2")  Double Leaf: 2536 x 3055 mm (8' 4" x 10' 2")
<b>Transom frames with Panel</b>						
	Masonry Fixing	Single Leaf: 1219 x 3048 mm (4' 0" x 10' 0")  Double Leaf: 2438 x 3048 mm (8' 0" x 10' 0")	2 h, 1½ h, 1 h, ¾ h	Min. 120 mm (4")  Max. 350 mm (14")	Single Leaf: 1219 x 813 mm (4' 0" x 2' 8")  Double Leaf: 2438 x 813 mm (8' 0" x 2' 8")	Single Leaf: 1311 x 3055 mm (4' 4" x 10' 2")  Double Leaf: 2536 x 3055 mm (8' 4" x 10' 2")
<b>Transom frames with Glass</b>						
	Masonry Fixing	Single Leaf: 1219 x 3048 mm (4' 0" x 10' 0")	¾ h	Min. 120 mm (4")  Max. 350 mm (14")	Single Leaf: Max Glass size shall not exceed 1296 sq. in.	Single Leaf: 1311 x 3055 mm (4' 4" x 10' 2")
Max. Glass area: 0.836 Sq.m (1296 sq.in)						
<b>Borrowed Lite frames</b>						
	Masonry Fixing	Single: 1016 x 1016 mm (3' 4" x 3' 4")	¾ h			
Max. Glass area: 0.836 Sq.m (1296 sq.in)						

\* Overall frame size shown is for a double rebate frame of dimension 143 x 57 mm. Larger openings can be obtained by changing the face trim.

**Illustrative door opening (W x H)**



# Fire-Doors

Data sheets for standard fire doors tested as PER BS 476



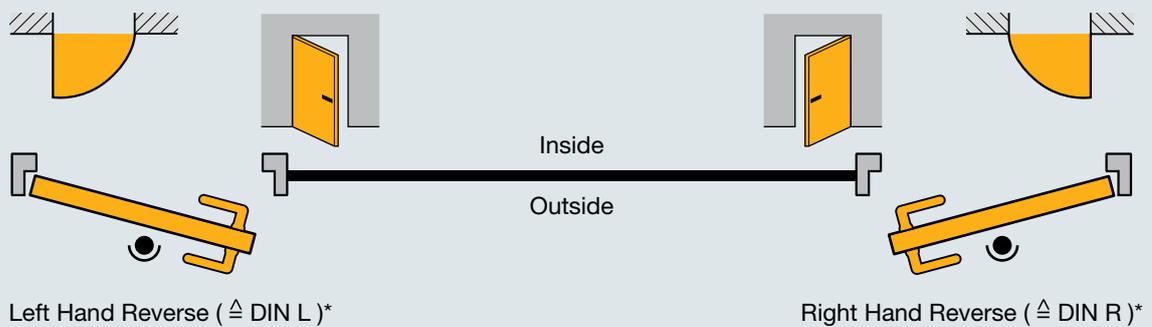
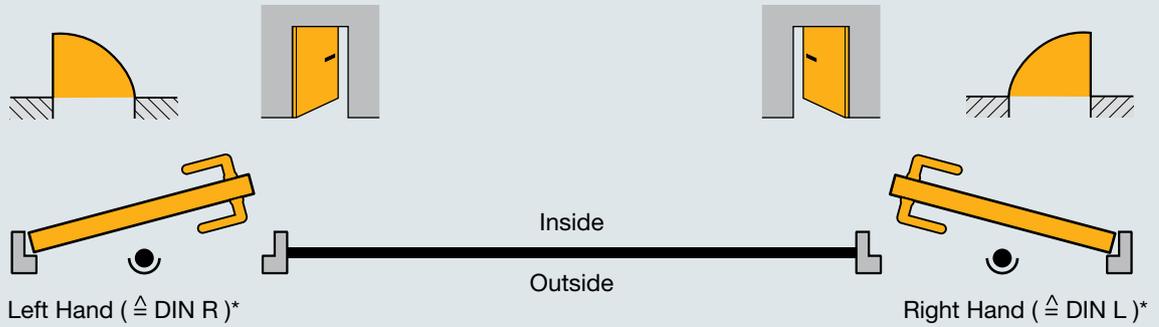
Door/Frame		Max. Wall Opening	Fire rating	
			60 min	120 min
<b>Flush Door with Honey Comb Infill material</b>				
<b>Single Leaf</b>	1,2 mm, 1,6 mm G 18, G 16	1125 x 3000 mm	●	
	1,2 mm, 1,6 mm G 18, G 16	1125 x 2800 mm	●	●
	1,2 mm, 1,6 mm G 18, G 16	1200 x 2500 mm	●	●
<b>Double Leaf</b>	0,8 mm, 1,2 mm G 18, G 16	2150 x 3000 mm	●	
	1,2 mm, 1,6 mm G 18, G 16	2150 x 2800 mm	●	●
	1,2 mm, 1,6 mm G 18, G 16	2400 x 2500 mm	●	●
<b>Vision Lite Door with Honey Comb Infill material</b>				
<b>Single Leaf</b>	1,2 mm, 1,6 mm G 18, G 16	1125 x 3000 mm	●	
	1,2 mm, 1,6 mm G 18, G 16	1125 x 2800 mm	●	●
	1,2 mm, 1,6 mm G 18, G 16	1200 x 2500 mm	●	●
<b>Double Leaf</b>	0,8 mm, 1,2 mm G 18, G 16	2150 x 3000 mm	●	
	1,2 mm, 1,6 mm G 18, G 16	2150 x 2800 mm	●	●
	1,2 mm, 1,6 mm G 18, G 16	2400 x 2500 mm	●	●

Note: The sizes mentioned above are the maximum wall opening as tested.

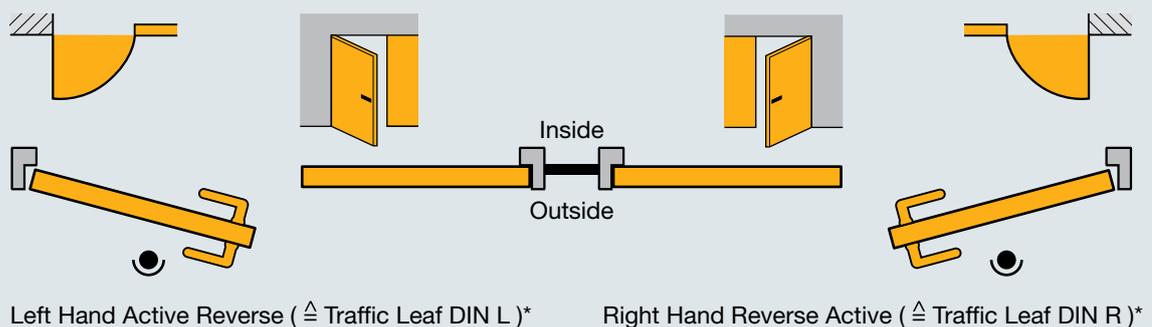
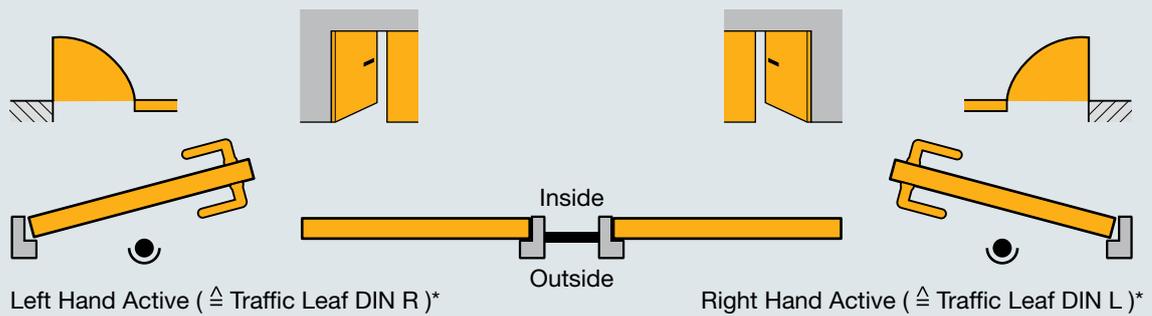
# Fire-Doors

## Universal handing of Doors according to UAE reading conventions

### Single leaf door



### Double leaf door



\* According to European reading conventions

# Specification

## for UL Labeled Doors



**Underwriters  
Laboratories**

## 1. General

### 1.01 Scope

Specification covers the design, supply of materials, manufacture and installation of factory made and approved type of fire steel doors of 45 minutes', 90 minutes' and 180 minutes' fire rated labeled doors. Manufactured and installed by Hörmann and tested to UL 10C standards, conforming to NFPA 80 and ANSI A250.8.

## 2. Products

### 2.01 Material and Finishes

A. Material - Frame to be manufactured from 1.60 mm (16 gauge) galvanised steel sheets complying with the latest IS 277 Code of GPL Grade with Z 120 Coating or its Equivalent British Standard. Fire door shutter to be manufactured from 1.25 mm (18 gauge) galvanised sheets.

B. Finishes – Frames and Shutters to be suitably cleaned with solvents and etch primed for receiving primer and top coats. Shutters to be primed in zinc phosphate stoving primer (can withstand a minimum 250 hours of salt spray tests).

#### Optional Finishes

- Shutters to be finished in thermo setting Polyurethane paint (can withstand a minimum 250 hours of salt spray tests) of approved colour and make as specified by the architect.
- Stainless steel doors to be finished to number four matt finish.
- Wood grain finish of approved texture to be provided as a final finish on doors and frames as recommended by the architect.

### 2.02 Construction of Frames

Door frame profile to be double rebated of dimension 143 x 57 mm (+ / - 0.3) with bending radius of 1.4 mm. All preparations and reinforcements shall be conforming to UL test procedures as per the required fixing methodology outlined in the schedule. All frames to have reinforcement pads for fixing of door closer, at appropriate location as per manufacturer's details.

Frames to have factory finished pre-punched cut-outs to receive specific hardware and ironmongery along with the requisite mortar guard.

Frames to be provided with hinge plates pre-drilled to receive hinges for screw mounted fixing. Frames to have rubber shutter silencer on strike jambs for single shutter frames and on the head jambs for double shutter frames. Provide knockdown field assembled type frames unless otherwise indicated. Provide frames, other than slip-on drywall type with a minimum of three anchors per jamb suitable for the adjoining wall construction.

### 2.03 Construction of Doors

Doors to be press formed to 46 mm thick double skin hollow door with lock seam joints at stile edges. Doors to have no visible screws or fasteners on either face. Doors should have an interlocking arrangement at the stile edges for flat surface on either side. Internal reinforcement to be provided at top bottom and stile edges for desired fire rating. Doors to be factory prepared with pre-punched cutouts and reinforcements to receive ironmongery as per final finish hardware schedule. Doors to have pre-drilled hinge plates. Doors with locks to have concealed lock box with lock fixing brackets with pre-tapped holes. Doors with door closer reinforcement pads to be provided at appropriate locations as per manufacturer's design. Maximum size of the vision panel shall be 100 square inches per leaf and no dimension shall exceed 33 inches.

#### Optional Infill

- Honey comb core: Doors shall be reinforced with honey comb core completely filling the inside of the doors and laminated to inside faces of both panels.
- Steel Stiffened: Doors shall be stiffened with steel stiffeners and sound deadened with special core as the infill material. The stiffeners should be fabricated from 20 gauge (0.8 mm) steel located between 4" to 6" interval and welded at the top and bottom. Steel stiffened doors to be provided in areas as and where specified.
- Polyurethane Core: filled with sound deadened and insulated with a rigid polyurethane core bonded to the inside of the door.

## 3. Installation

### 3.01 Installation of Frames and Doors

All frames and doors should be installed on the respective openings with right fasteners and as Doors shall be stiffened and recommended by the manufacturer. After fixing, the frame shall be grouted with cement mortar 1:3 or Plaster of Paris or Gypsum powder as approved. The gap between frame and wall to be closed by cement pointing using cement mortar 1:3.

# Specification

for standard fire doors tested as PER BS 476



## 1. General

### 1.01 Scope

Specification covers the design, supply of materials, manufacture and installation of factory made and approved type of fire steel doors of 60 minutes', 120 minutes' and 240 minutes' fire rating. Manufactured and installed by Hörmann and tested to Warrington under the Certifire programme and BS 476.

## 2. Products

### 2.01 Material and Finishes

A. Material - Frame to be manufactured from 1.60 mm (16 gauge) galvanised steel sheets complying with the latest IS 277 Code of GPL Grade with Z 120 Coating or its Equivalent British Standard. Fire door shutter to be manufactured from 1.25 mm (18 gauge) galvanised sheets.

B. Finishes – Frames and Shutters to be suitably cleaned with solvents and etch primed for receiving primer and top coats. Shutters to be primed in zinc phosphate stoving primer (can withstand a minimum 250 hours of salt spray tests).

#### Optional Finishes

- a. Shutters to be finished in thermo setting Polyurethane paint (can withstand a minimum 250 hours of salt spray tests) of approved colour and make as specified by the architect.
- b. Stainless steel doors to be finished to number four matt finish.
- c. Wood grain finish of approved texture to be provided as a finish on doors and frames as recommended by the architect.

### 2.02 Construction of Frames

Door frame profile to be double rebated of dimension 143 mm x 57 mm (+ / - 0.3) with bending radius of 1.4 mm. All preparations and reinforcements shall be conforming to BS test procedures as per the required fixing methodology outlined in the schedule. All frames to have reinforcement pads for fixing of door closer, at appropriate location as per manufacturer's details.

Frames to have factory finished pre-punched cut-outs to receive specific hardware and ironmongery along with the requisite mortar guard.

Frames to be provided with hinge plates predrilled to receive hinges for screw mounted fixing. Frames to have rubber shutter silencer on strike jambs for single shutter frames and on the head jambs for double shutter frames. Provide knockdown field assembled type frames unless otherwise indicated. Provide frames, other than slip-on drywall type with a minimum of three anchors per jamb suitable for the adjoining wall construction.

### 2.03 Construction of Doors

Doors to be press formed to 46 mm thick double skin hollow door with lock seam joints at stile edges. Doors to have no visible screws or fasteners on either face. Doors should have an interlocking arrangement at the stile edges for flat surface on either side. Internal reinforcement to be provided at top bottom and stile edges for desired fire rating. Doors to be factory prepared with pre-punched cutouts and reinforcements to receive ironmongery as per final finish hardware schedule. Doors to have pre-drilled hinge plates, with hinge guard covers. Doors with locks to have concealed lock box with lock fixing brackets with pre-tapped holes. Doors with door closer reinforcement pads to be provided at appropriate locations as per manufacturer's design.

#### Optional Infill

- a. Honey comb core: Doors shall be reinforced with honey comb core completely filling the inside of the doors and laminated to inside faces of both panels.
- b. Mineral wool core: High density mineral wool core should be used as infill material for insulated doors.

## 3. Installation

### 3.01 Installation of Frames and Doors

All frames and doors should be installed on the respective openings with right fasteners and as recommended by the manufacturer. After fixing, the frame shall be grouted with cement mortar 1:3 or Plaster of Paris or Gypsum powder as approved. The gap between frame and wall to be closed by cement pointing and frames to be filed with cement mortar 1:3 if approved.

# Hörmann product range

Everything from a single source for your construction project

## 1 Sectional doors

These space-saving door systems can be adapted to different industrial facilities using various track applications. Hörmann offers you tailored solutions for every application.

## 2 Rolling shutters and rolling grilles

Thanks to a simple construction with just a few components, rolling shutters are both economical and sturdy. Hörmann supplies rolling shutters in widths and heights of up to 11.75 m and 9 m respectively, or as special doors which are even higher.

## 3 Steel and aluminium folding doors

Hörmann folding doors in steel and aluminium are recommended for halls with low traffic frequency and little headroom, as well as areas where no roof load is permitted.

## 4 High-speed doors

Hörmann high-speed doors are used both inside and as exterior doors to optimise the flow of traffic, improve room conditions and save energy. The Hörmann programme includes vertically and horizontally opening transparent doors with flexible curtains.

## 5 Loading technology

Hörmann offers you complete loading systems for the logistics sector. The advantages: reliable planning, dependable execution of construction work and high functionality thanks to precisely matched components.

## 6 Fire sliding doors

Hörmann can provide you with single or double-leaf sliding door solutions suitable for all areas and required fire protection classes.

## 7 Multi-function doors and reinforced internal doors

Hörmann multi-function doors and reinforced internal doors are suitable for indoor and outdoor use. Our single and double-leaf doors can be used wherever robust door elements are required. With numerous additional functions, such as fire and smoke protection, acoustic insulation or burglar protection.

## 8 Fire and smoke-protection box frame parts

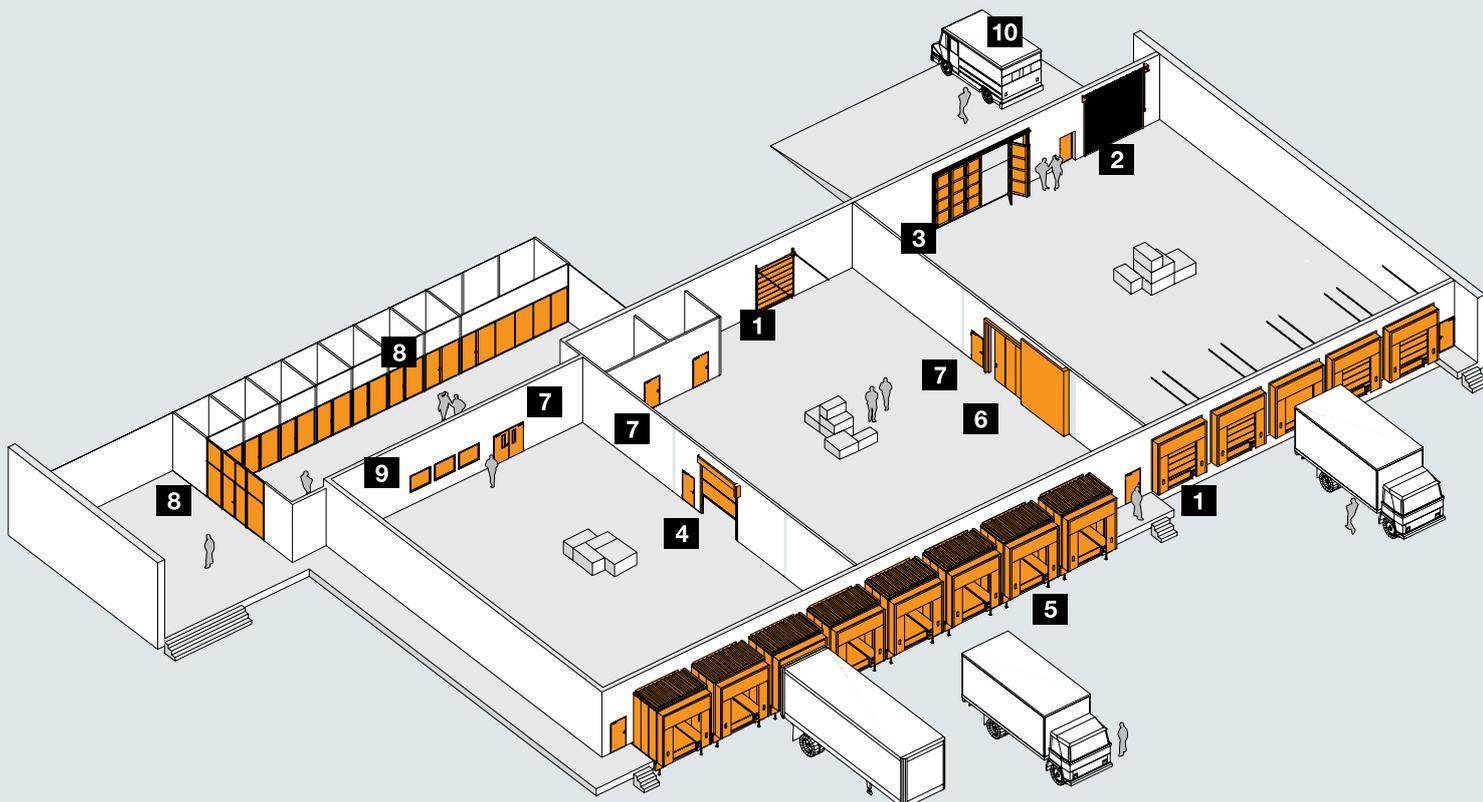
Hörmann can supply you with doors and fixed glazing made of steel and aluminium for areas where appearance is important, such as administration areas in industrial building.

## 9 Visibility windows

Hörmann visibility glazings are used as windows or room-high elements to provide more light and better visibility.

## 10 Service

Only intact, professionally maintained systems ensure smooth production processes and secure traffic ways. The statutory inspections and necessary repairs are professionally carried out and documented with an inspection and maintenance contract.





# Hörmann: Quality without Compromise



Hörmann KG Amshausen, Germany



Hörmann KG Antriebstechnik, Germany



Hörmann KG Brandis, Germany



Hörmann KG Brockhagen, Germany



Hörmann KG Dissen, Germany



Hörmann KG Eckelhausen, Germany



Hörmann KG Freisen, Germany



Hörmann KG Ichtershausen, Germany



Hörmann KG Werne, Germany



Hörmann Genk NV, Belgium



Hörmann Alkmaar B.V., Netherlands



Hörmann Legnica Sp. z o.o., Poland



Hörmann Beijing, China



Hörmann Tianjin, China



Hörmann LLC, Montgomery IL, USA



Hörmann Flexon, Leetsdale PA, USA

Hörmann is the only manufacturer worldwide that offers you a complete range of all major building products from one source. We manufacture in highly-specialised factories using the latest production technologies. The highly-specialised network of sales and service companies throughout Europe, and activities in the USA and China, make Hörmann your strong partner for first-class building products, offering "Quality without Compromise".

**GARAGE DOORS**

**OPERATORS**

**INDUSTRIAL DOORS**

**LOADING EQUIPMENT**

**HINGED DOORS**

**DOOR FRAMES**

