



# TMI



ED 01 - M/ Y 12/09



## METAL DOORS & FRAMES

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## Introduction

### About Metal Doors

*TMI* has been in the business of manufacturing innovative metal products for the building and construction industry since 1997. During that time, *TMI* has established a reputation for quality, integrity and service.

Developing products applicable to the changing requirements and improvements in building industry, *TMI* has a new state of art metal doors manufacturing facility.



Fire rated and non-fire rated Steel doors are available in different configurations for commercial, residential, Industrial and Institutional buildings based on the functional needs and economical considerations. Our quality products range from standard steel doors and frame profiles, to special custom designs for various architectural and engineering applications.

Several types of doors are available for different needs, and play a very important role in a building's fire resistance; allow people to evacuate safely from a building or fire areas, while limiting the spread of fire. Fire doors serve as a regular door, while protecting life and property by reducing fire hazards.

*TMI* doorset tested in accordance with British standard BS 476 Part 22 at Warrington Certification Limited UK and certified by Certifire.



## Products

**Fire Rated Steel Doors**

**Non Fire Rated Steel Doors**

**Steel Frames for Wooden Doors**

**Smoke Proof Doors**

**Sliding Doors**

**Folding Doors**

**Access Panels**

**Steel Windows**

**Steel Screens**

**Security Doors**

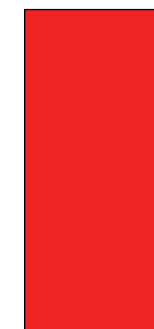
**Special Purpose Doors**

**Stainless Steel Doors**

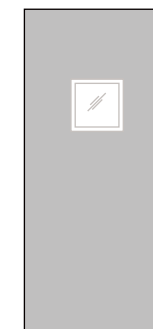
**Cell Doors & Grill Doors**



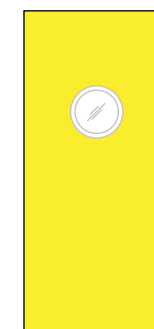
## Door Designs



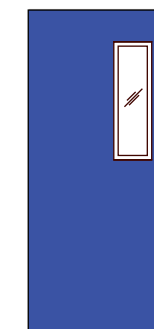
FF - Full Flush



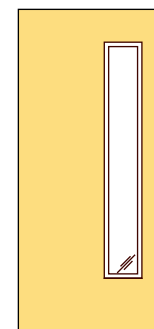
VS - Vision Square



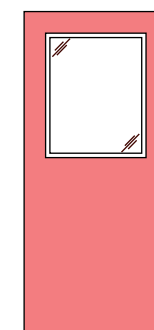
VR - Vision Round



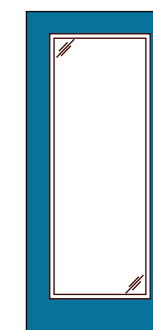
VNS - Vision Narrow Short



VNL - Vision Narrow Long



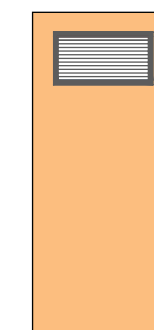
HG - Half Glaze



FG - Full Glaze



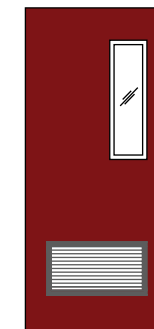
BL - Bottom Louver



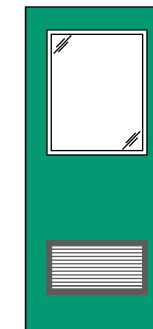
TL - Top Louver



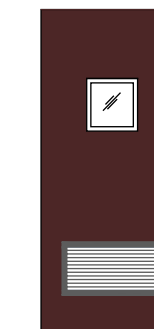
FL - Full Louver



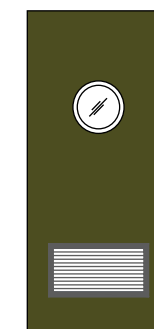
VNS/BL -Vision Narrow short with Bottom Louver



HG/BL-Half Glaze with Bottom Louver



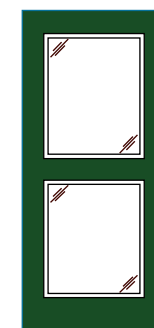
VS/BL-Vision square with Bottom Louver



VR/BL-Vision Round with Bottom Louver



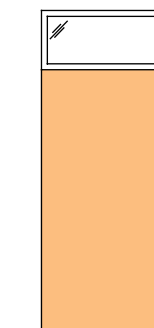
TBL - Top and Bottom Louver



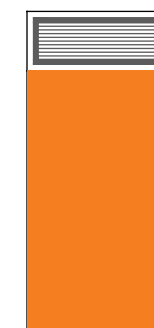
TBG - Top and Bottom Glaze



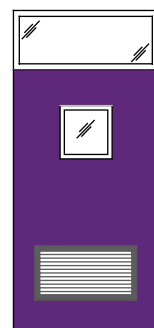
FF/TP-Full Flush with Top Panel



FF/TG-Full Flush with Top glaze



FF/TL -Full Flush with Top louver

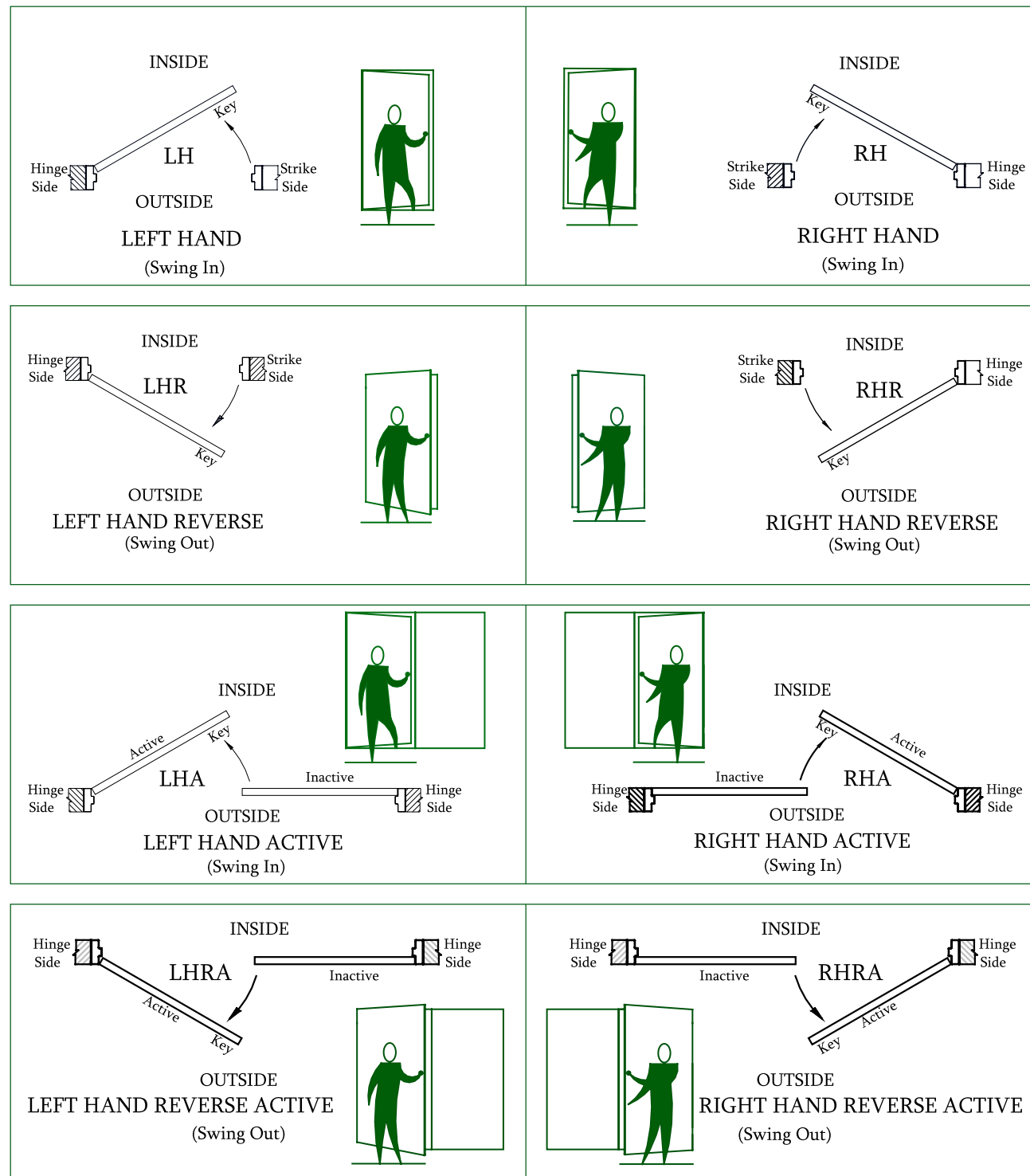


VS,BL/TG -Vision Square, Bottom Louver with Top glaze

## Door Handing Chart

The term Handing or Hand of a door is applied to doors, frames and hardware so as to indicate the direction of the swing of the door. Basically the door will be either right hand or left hand. However, because doors open into or out of a building or room and some pieces of hardware may be installed or mounted on only one side of the door, it is necessary to be more specific.

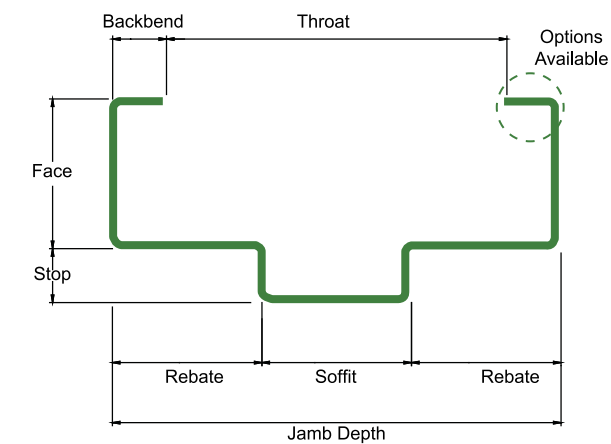
To determine the handing of a door and frame always stand outside - facing door, also recognized as the key side, cylinder side or the secured side .



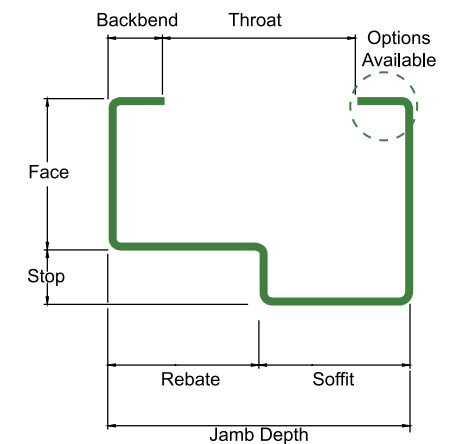
## Frame Profiles

TMI produces frames in standard profiles and dimensions. Custom designs with various types and dimensions are available, subject to tooling limits.

### Double Rebate Frame



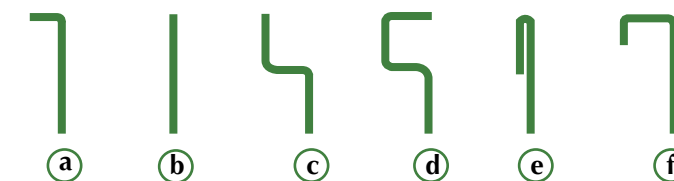
### Single Rebate Frame



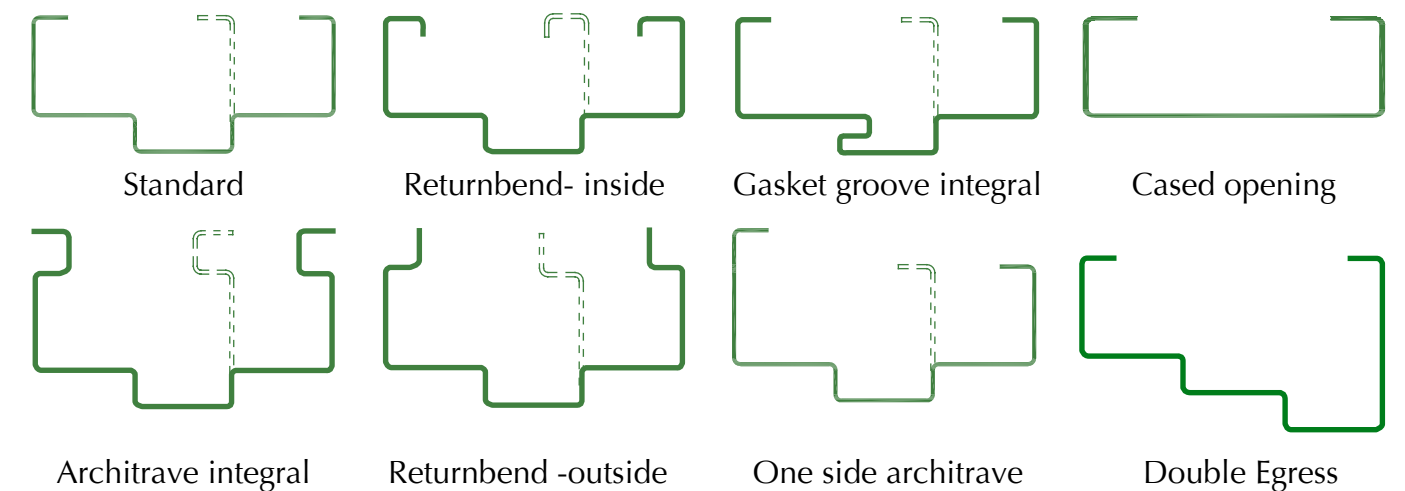
### Standard Frame Dimensions

Backbend mm	Face mm	Stop mm	Rebate mm	Soffit
18	50 or 25	18	50	Varies

### Available options



### Examples of custom frame profiles



Single rebate opening shown dotted.



## Frame Construction

Steel sheet formed to single or double rebate profile, Corners mitered and welded or knock down type construction. Hinge reinforcing plates, lock strike plate, fixing straps, hardware mounting plates, mortar guards and temporary frame spreader are welded to the frame.

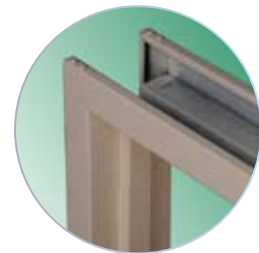
### Corner Construction



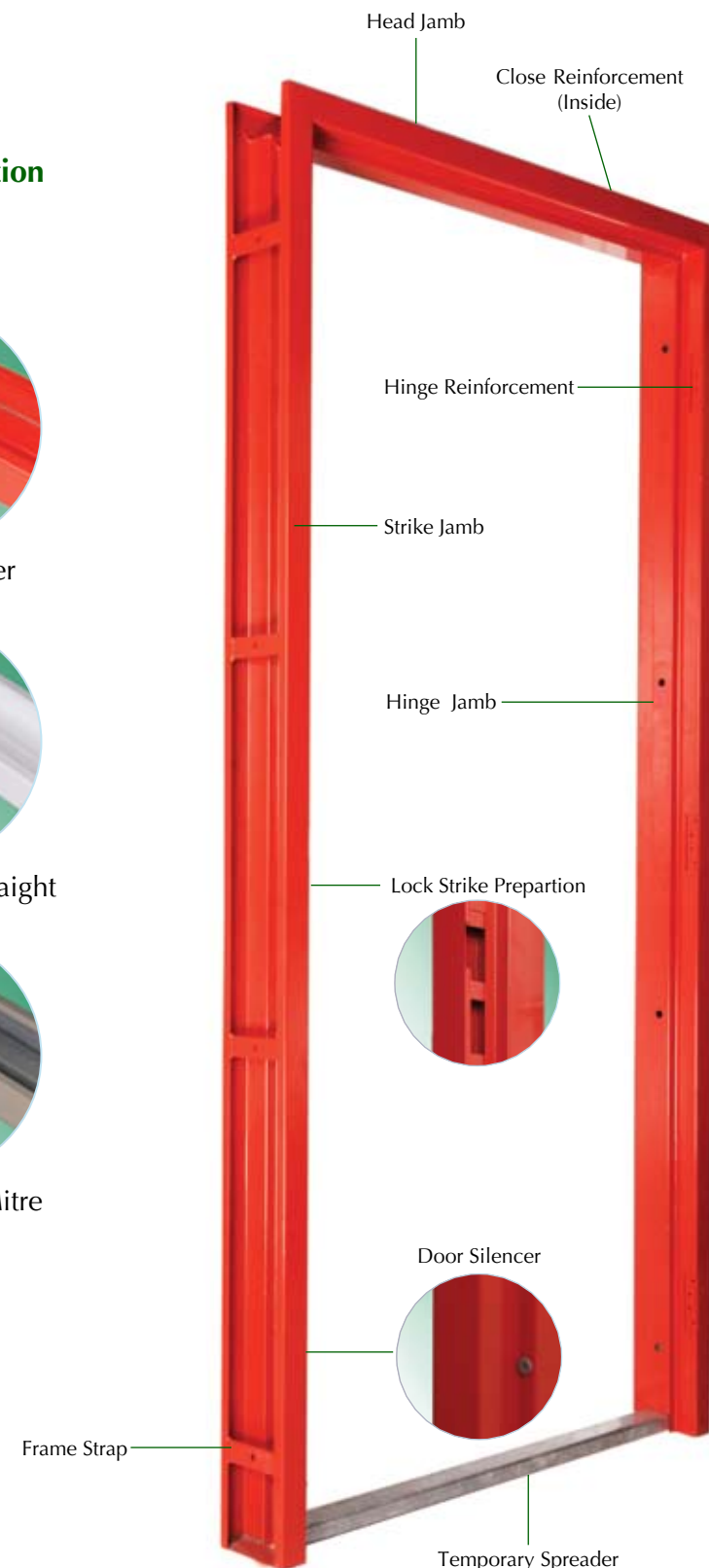
Welded Corner



Knock down Straight



Knock down Mitre



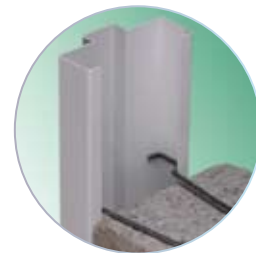
### Fixing Methods



Expansion Anchor



T Anchor



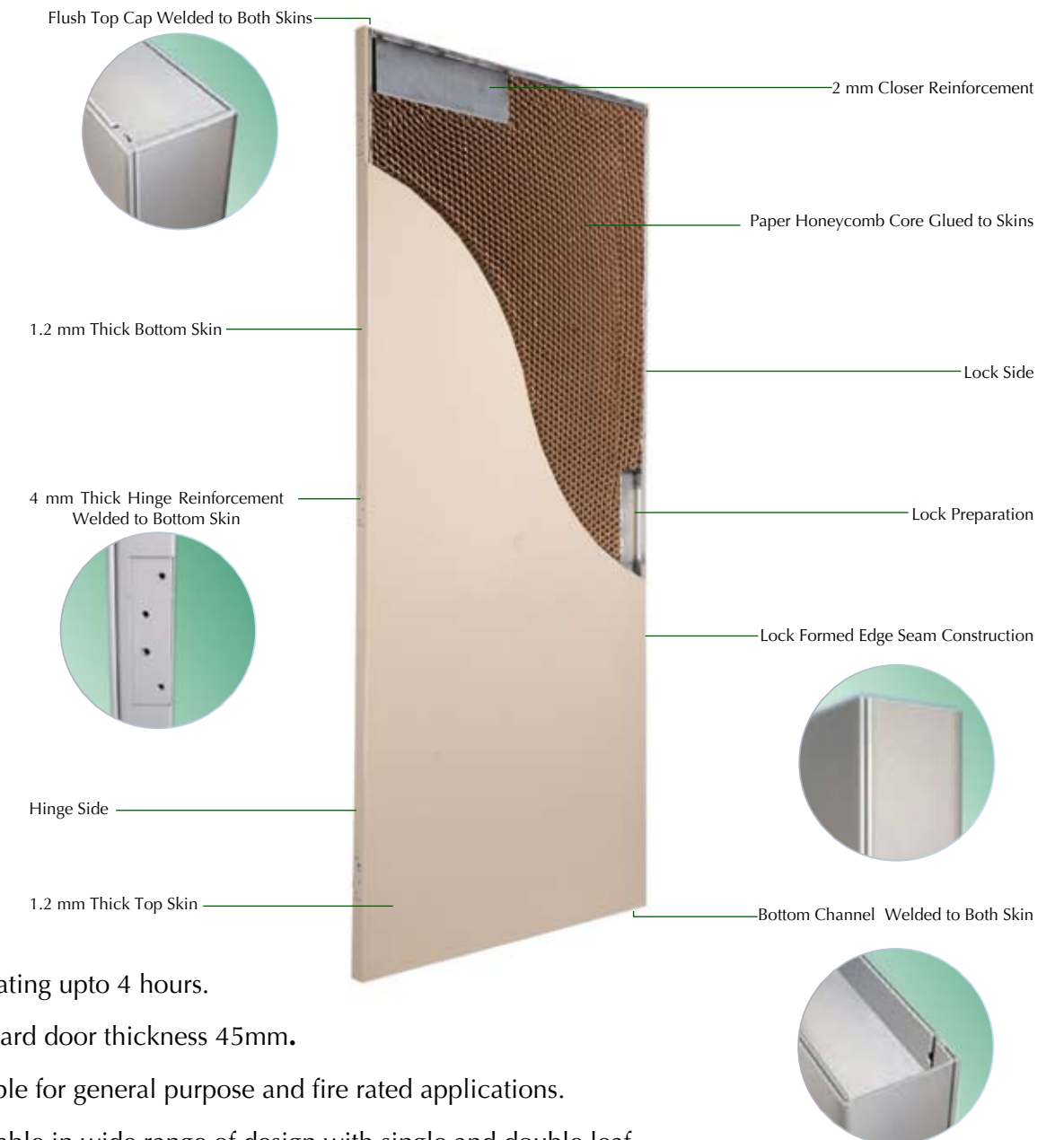
Wire Anchor



Strap Anchor

## Door Construction Honeycomb

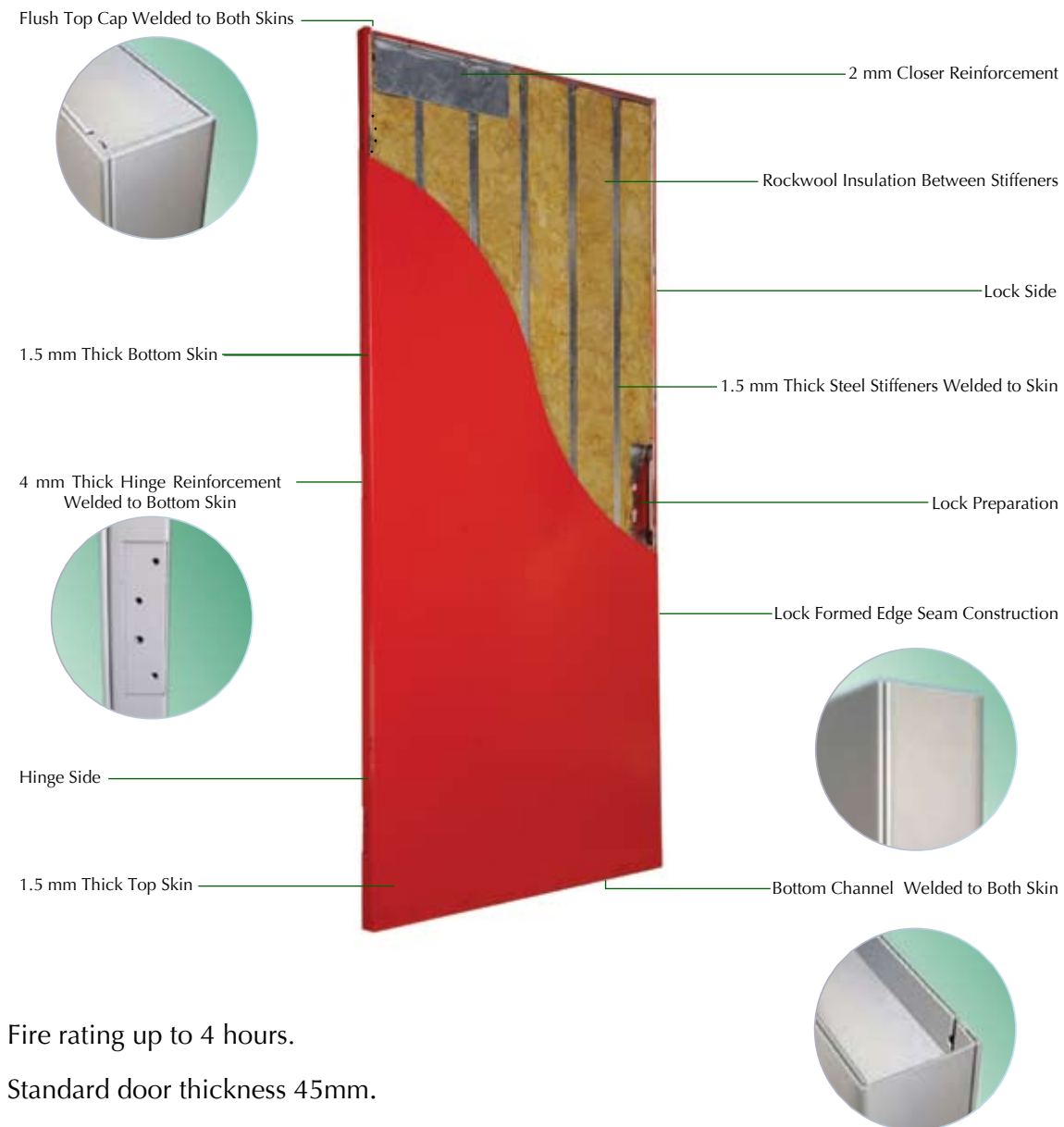
Honeycomb core doors are constructed of two steel sheets with interlocking edge seams. The hardware cut-outs are made and reinforcement plates welded within the leaf. Paper honeycomb is glued to face sheets providing strength and rigidity to panels. The top and bottom closed with U channels welded to face sheets.



- Fire rating upto 4 hours.
- Standard door thickness 45mm.
- Suitable for general purpose and fire rated applications.
- Available in wide range of design with single and double leaf.
- Face sheets supported by honeycomb core provides exceptionally flat surfaces.
- Continuous Mechanical interlock on vertical edge seams provides strength and rigidity.
- Honeycomb core provides high strength to weight ratio.
- Vision panel with various glass configurations are available.
- Available with metal louver and fire rated fusible link louver.
- Finish polyester powder coated with RAL or custom colors.

## Door Construction Rockwool

Rockwool core doors are constructed of two steel sheets with interlocking edge seams. The hardware cut-outs are made and reinforcement plates welded within the leaf. Stiffeners are welded to door skin and the void areas between stiffeners filled with rockwool. The top and bottom closed with U channels welded to face sheets.



- Fire rating up to 4 hours.
- Standard door thickness 45mm.
- Suitable for general purpose and fire rated applications.
- Available in wide range of design with single and double leaf.
- Designed for high Frequency and severe traffic openings.
- Continuous mechanical interlock on vertical edge seams provides strength and rigidity.
- Rock wool insulation limits thermal and sound transmission.
- Vision panel with various glass configurations are available.
- Available with metal louver and fire rated fusible link louver.
- Finish polyester powder coated with RAL or custom colors.

## Stainless Steel Door & Frame

TMI offers a variety of Stainless steel doors, With outstanding finish and corrosion protection for aesthetic or practical requirements.



- 45mm thick stainless steel full flush.
- Construction for heavy-duty and standard duty.
- Ideal for high-style architectural environments, pharmaceutical, foodstuffs industry, chemical plants, coastal areas etc.
- Polystyrene or honeycomb core.
- Core provides insulation characteristics and resistance to impact.
- Core is chemically bonded to face sheets providing total surface support.
- Seamless construction by continuous welding.
- Available with Stainless steel glass trim.



## Technical Specifications

TMI steel doorset manufactured from prime quality pre-galvanised steel sheet to BS EN 10346:2009, ASTM A653, and JIS G3302 standards with Zinc coating ranging from 120gm-275gm/ Sq.m. Door frames to BS 1245 manufactured from 1.5 or 2.0mm thick steel sheet formed to single or double rebate profile, Corners mitred or butt joint with welded or knock down type construction. Hinge reinforcement 4.0mm thick, lock strike plate reinforcement, other hardware mounting plates, mortar guards are welded to the frame. In welded type frame temporary spreader is fixed at the bottom to maintain the integrity of the frame during transportation and installation. Frame anchors, In existing wall bolt fixing with steel expansion type anchor, 3.0mm thick steel strap welded to the frame and holes in the frame plugged by cap. In prefix type snap-in type T strap (1.2mm) or wire anchor (Ø3.5mm) is used.

The door leaf, 45mm thick manufactured from steel sheet of 1.2mm thick for paper honeycomb core, glued to face sheets. The Rockwool core doors are made from 1.5mm thick sheet, Steel stiffeners are vertically welded to the door skin, the void between stiffeners and door skin is filled with Rockwool. Hinge reinforcement (4.0mm), lock reinforcement and other hardware mounting plates are welded within leaf. The vertical edge is lock formed and both skins are closed by mechanical interlocking and the corners spot welded. The top and bottom edges are capped off with channels, welded to door faces.

Glazing to the door leaf can be fixed by using metal trim and metal louvers as well.

All steel doors and frames are powder coated with approved color.

## Storage Conditions

- All products are stored in the designated area, Store in clean, dry and well ventilated area.
- All products shall be well packed and covered to protect from damage from any cause.
- All doors and frames shall be stored vertically under cover.
- The units shall be placed on wooden blocks to prevent rust and possible damage.
- Provide space between the doors to promote air circulation.
- If the wrapper on the door becomes wet, it must be removed immediately.

## Doorset fire Tests

Tested & Certified by : Warrington Certification Limited, Part of Exova (UK) Ltd.

Frame 1.5mm, Leaf 1.2mm, Core Paper honeycomb Glued to skins. Glazing 300 mm x300 mm  
Test date 18-September-2009 Reference 186693



Evaluation of the doorset against the requirements of BS 476: Part 22: clause 8, showed that the doorset satisfied the requirements. **Integrity 264minutes\***.

Frame 2.0mm, Leaf 1.5mm, Core steel stiffener with Rockwool, Glazing 150 mm x600 mm  
Test date 17-September-2009 Reference 186691



Evaluation of the doorset against the requirements of BS 476: Part 22: clause 8, showed that the doorset satisfied the requirements for the following periods. **Integrity 264minutes\* and Insulation 19minutes.**

\* Test duration. The test was discontinued after a period of 264 minutes.



## Steel Door Hardware

*TMI* is proud to offer a complete range of doors and hardware packages to suit your requirements. International brand hardware supplied by *TMI* offer quality, value, great customer benefits, and an independent choice for architects, building owners and contractors.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.