**External Enveloping Insulated Steel Doors**

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<th>Hardware</th>
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<td><strong>PANIC ESCAPE</strong></td>
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<td>DORMA PHA series single and double leaf panic systems with enclosed shoot bolts or equivalent product.</td>
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<td><strong>LOCKS</strong></td>
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<td>DIN standard sash locks, latches and deadlocks.</td>
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<td><strong>LEVER HANDLES</strong></td>
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<td>Stainless steel 19mm diameter with roses.</td>
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<td><strong>CLOSER</strong></td>
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<td>Dorma TS83 overhead closer with back check facility or alternative, equivalent product.</td>
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<td><strong>FLUSH BOLTS</strong></td>
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<td>Zero 2008.1/S concealed extension flush bolts with steel tips fitted to the edge of the passive leaf on double leaf doors.</td>
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- **Leaf**
  Constructed from two skins of 1.0mm thick galvanized steel folded to form a 42mm thick door unit with the vertical edges of the two skins folded to create a full height, interlocking rebated edge for increased panel strength and rigidity. A horizontal channel is located within the leaf, welded to the inner & outer skins to close off the top and bottom of the leaf.
  The void between the two skins is in-filled with a bonded mineral fibre core material and reinforcing pads are fitted within the leaf to suit surface mounted hardware options.
  Both vertical edges are reinforced with 4mm thick steel strips welded within the leaf, and the lock mechanism is installed within an inner enclosure to facilitate its removal for future maintenance or replacement.

- **Frame**
  Frames pressed from 1.5mm thick galvanized steel to form a standard, 120mm deep, double rebate profile with recessed front faces flush with the leaf edge rebates. Headers form a smooth, butt or mitred joint with the full height vertical posts with bolt fixing to block-work openings.
  Uprights are reinforced with steel plates at all hinge & lock points.

- **Thresholds**
  Low profile (12mm) extruded aluminium with integral silicone compression seal.
  Alternatively, a double rebate profile steel member welded to the base of the vertical posts (four-sided frame.)

- **Seals**
  Tubular silicone seals bonded into the frame rebate which, in conjunction with the threshold seals ensure accurate sealing of the door/frame gap for weather protection.

- **Hinges**
  Door leaves hung from 1½ or 2 pairs of 3.4mm thick, grade 316 stainless steel, high performance polymer bearing hinges, grade 14 (160Kg) to BS EN 1935: 2002.

- **Finish**
  Powder coated primer. Also available in any BS or RAL colour.

**Standards**
A&B Doors external door sets are designed and manufactured to meet the thermal insulation requirements laid down in Building Regulations, Approved Document L2: 2002 – U value 1.9W/m²K – and have been tested up to 200,000 cycles to the European Product Standard for External Doors, EN12567-1.
**Recommendations**

If the doors are only intended for emergency escape or very occasional use (low cyclage), a friction stay would be adequate, as it can be set to relatively low friction due to the reduced probability of wind loading during use. The fibre/rubber components in the friction stay will not be subjected to high usage and would therefore not require constant adjustment or replacement and the other hardware on the door will remain within its design capabilities.

If higher frequency operation is required, it will be necessary to fit a door closer with power adjustment up to Size 6 and with a ‘back-check’ facility.

**Please note.**
This document is issued for general information only and is not intended as a substitute for information contained in the relevant British Standards.
**Leaf**

Constructed from two skins of 1.0mm thick galvanized steel folded to form a 45mm thick door unit with the vertical edges of the two skins folded to create a full height, interlocking seam secured with tab-&-slot connections for increased panel strength and rigidity. A horizontal channel is located within the leaf, welded to the inner & outer skins to close off the top and bottom of the leaf.

The void between the two skins is in-filled with a bonded honeycomb core material, selected for its compression & torsional load performance, and reinforcing pads are fitted within the leaf to suit hardware options.

The hinging edge is reinforced by steel hinge mounting plates welded within the leaf, and the lock mechanism is installed within an inner enclosure to facilitate its removal for future maintenance or replacement.

**Frame**

Frames pressed from 1.5mm thick galvanized steel to form a standard, 120mm deep, double rebate profile. Headers form a smooth, butt or mitred joint with the full height vertical posts with bolt fixing to block-work openings.

Uprights are reinforced with steel plates at all hinge & lock points.

**Thresholds**

Low profile (12mm) extruded aluminium with integral silicone compression seal.

Alternatively, a double rebate profile steel member welded to the base of the vertical posts (four-sided frame.)

**Seals**

Tubular silicone seals bonded into the frame rebate which, in conjunction with the threshold seals ensures accurate sealing of the door/frame gap for smoke protection in the initial stages of fire and meets the requirements of BS5588:Part1.

**Hinges**

Door leaves hung from 1½ or 2 pairs of 3.4mm thick, grade 316 stainless steel, full ball-bearing hinges for smooth operation, in high cyclic/heavy duty applications, and as fire tested with the doors.

**Finish**

Powder coated primer. Also available in any BS or RAL colour.

**Standards**

A&B Doors fire rated door sets are designed, manufactured and tested to the European fire test standards, BS EN1634-1 for periods of up 240 minutes integrity in most conventional door configurations including latched and latchless.

Cycle tested for 200,000 opening and closing operations to BS EN1191:2000.
Performance & Design Criteria

Fire doors are tested for integrity or integrity & insulation to BS476: Part 22 or the new European Standard BS EN1634-1 and the compliance with each criterion is noted in minutes.

E - Integrity – The ability to remain free of gaps in excess of 150mm x 6mm, or any fissure which would allow the passage of hot gaseous products of combustion or any flaming on the non-fire side of the door, sustained in excess of 10 seconds.

I - Insulation – The ability to restrict the mean temperature rise of the unexposed face to below 140°C or 180°C at any one location.

Basic Fire Door Designation

In the UK there is normally only one number quoted with reference to fire rated hinged doors, that number referring to the integrity requirement only. FD120 is a 120 minute integrity rating.

Smoke Control

The basic designation number may also be suffixed by a letter “S”, denoting that the door is also required to resist the passage of smoke at ambient temperatures, as defined by BS476 Section 31.1.

Insulated Glazing in fire doors

Because insulated doors are not normally specified, it is not necessary to use insulated glazing within doors, providing the glazing is no greater than 25% of the door area, in buildings served by a single stairway, or no greater than 50% in buildings with access to more than one stairway.
General Purpose Hinged Steel Doors

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The void between the two skins is in-filled with a bonded honeycomb core material, selected for its compression & torsional load performance, and reinforcing pads are fitted within the leaf to suit hardware options.

The hinging edge is reinforced by steel hinge mounting plates welded within the leaf, and the lock mechanism is installed within an inner enclosure to facilitate its removal for future maintenance or replacement.

**Frame**

Frames pressed from 1.5mm thick galvanized steel to form a standard, 120mm deep, double rebate profile. Headers form a smooth, butt or mitred joint with the full height vertical posts with bolt fixing to block-work openings.

Uprights are reinforced with steel plates at all hinge & lock points.

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Low profile (12mm) extruded aluminium with integral silicone compression seal. Alternatively, a double rebate profile steel member welded to the base of the vertical posts (four-sided frame.)

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**Finish**

Powder coated primer. Also available in any BS or RAL colour.

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**Hardware**

**LOCKS**
DIN standard sash locks, latches and deadlocks.

**LEVER HANDLES**
Stainless steel 19mm diameter with roses.

**CLOSERS**
DORMA TS 71 or TS83 overhead closers or equivalent product.

**FLUSH BOLTS**
Zero 2008.1/S concealed extension flush bolts with steel tips fitted to the edge of the passive leaf on double leaf doors.

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**Standards**

A&B door sets are Cycle tested for 200,000 opening and closing operations to BS EN1191: 2000
Recommendations

If the doors are only intended for emergency escape or very occasional use (low cyclage), a friction stay would be adequate, as it can be set to relatively low friction due to the reduced probability of wind loading during use. The fibre/rubber components in the friction stay will not be subjected to high usage and would therefore not require constant adjustment or replacement and the other hardware on the door will remain within its design capabilities.

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