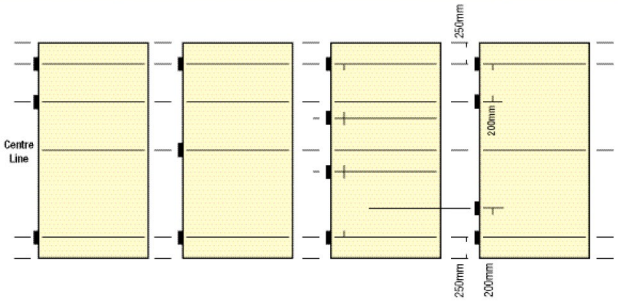
TECHNICAL CONSIDERATIONS

AJUSTED DOOR WEIGHT CALCULATION TABLE			
Actual Door Weight	Door of excess width, please refer to Slide Loading Calculation table		= Adjusted Door Weight
	Door Closer	+ 20%	
	Door Closer (Backcheck)	+ 75%	
	Extra Heavy Use	+ 10%	
	Light Use	- 10%	



Normally, three hinges are fitted to each door. Their positions are determined by the weight of door and its resistance to warping or whipping. Hinge specification is also determined by the adjusted door weight (based on the actual weight supplied by the manufacturer).

- Hinges with low bearings should be considered where opening force is to be minimised. This should be in accordance with part M
- Hinges on final exit dor should have corrosion resistance of not less than grade 3, EN1670.
- Three hinges should be used on fire and escape doors. The middle hinge should be fixed at the centre line of the door (BS 4787)
- High quality hinges with a low torque resistance must be used on final escape doors and doors which have closers fixed.
- Any hinge fixed to a fire door should be CE marked.
- Fixing screws on hinges for doors should not be less than 8mm in width and not less than 30mm in length on Fire Doors.

Hinges for use with doors of excess widths

Wider doors obviously increase the pressure and bending movement exerted on the hinge. This must be allowed for by reduction in the maximum mass of the door leaf supported by each class of hinge. The factors by which the door mass has to be adjusted for excessive widths of door are calculated by dividing the door height by its width. For a factor of 2 or greater, no allowance has to be made. When the factor is less than 2, the door mass has to be increased by the value required to bring the factor to 2 expressed as a percentage. These percentages are shown in the Side Loading Calculations Table.

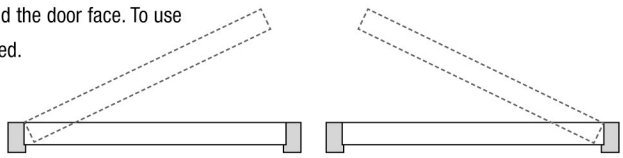
SLIDE LOADING CALCULATIONS			
DOOR SIZE		FACTOR	NORMAL INCREASE OF MASS OF DOOR LEAF%
Door Height mm	Door Width mm		
2000	1000	2	0
2000	1050	1.9	10
2000	1100	1.82	18
2000	1150	1.74	26
2000	1200	1.66	33
2000	1250	1.6	40

Specification advice - *(The ISO handing convention)*

The IOS handing convention states a combination of the direction of closing and the door face. To use this convention you use a code for the face of the door to which the item is fixed.

5.0 Clockwise closing, opening face
6.0 Anti-clockwise closing, opening face

5.1 Clockwise closing, opening face
6.1 Anti-clockwise closing, opening face



Clockwise closing
Left hand ISO. 5.0

Anti-clockwise closing
Right hand ISO. 6.0

Hinge classification to EN 1935

Hinge Grade	Usage	Test Cycles	Door Mass
1	Window	10,000	10 kg
2	Window	10,000	20 kg
3	Window/Door	25,000	20 kg
4	Door	200,000	20 kg
5	Window	10,000	40 kg
6	Window/Door	25,000	40 kg
7	Door	200,000	40 kg

Hinge Grade	Usage	Test Cycles	Door Mass
8	Window	10,000	60 kg
9	Window/Door	25,000	60 kg
10	Door	200,000	60 kg
11	Door	200,000	80 kg
12	Door	200,000	100 kg
13	Door	200,000	120 kg
14	Door	200,000	160 kg