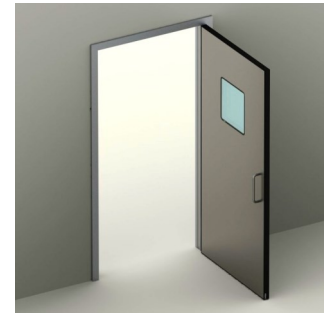
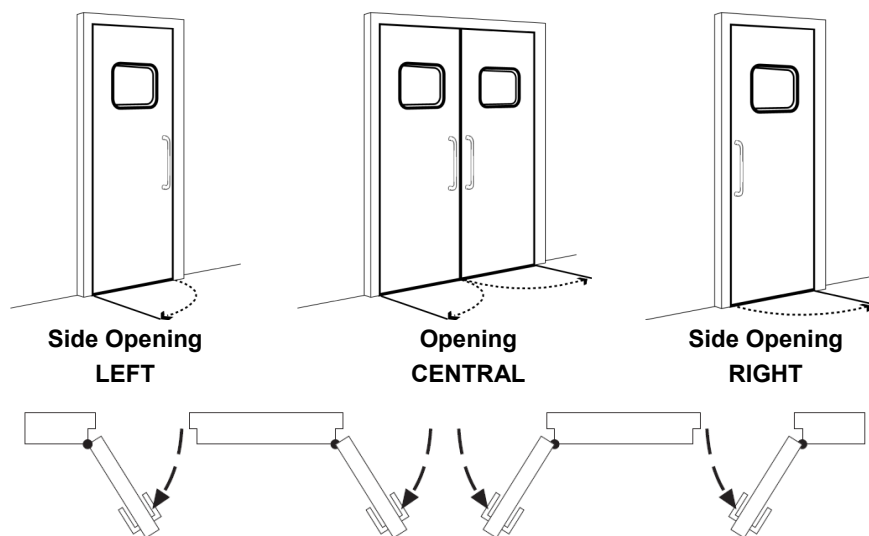


Data Sheet

SWING DOOR**P50 PANEL LEAF + MKB FRAME****1 - DESCRIPTION****i**

Side opening swing door (one leaf) or middle (two leaves). These can be manual or automatic with the incorporation of a surface motor group. If they are manual, each leaf can make sweep of up to 180°.

It is a product specifically designed for the **health sector** with the objective of guaranteeing:

- **Cleaning:** the smooth surface of the frame, and the lack of facing nuts and bolts, make it easier to clean and achieve the correct hygiene in the most demanding environments.
- **Safety:** with elements that guarantee electrical continuity for the correct electrostatic discharge.
- **Hermetic sealing (optional):** when the leaf closes, it seals against the side and the top of the frame. It has a mechanical system at the bottom that drops to carry out this function against the floor. Its design allows sealing the entire perimeter of the door and maintaining positive pressure in the clean room to prevent contamination from dirt or microorganisms.
- **Opacity to X-rays (optional):** solution for radiology rooms, incorporating inside it the equivalent to 2 mm of lead.

The 50 mm thick P50 leaves have polyisocyanurate (PIR) inside, and the exterior panel of high density phenolic resin (HPL) or AISI 304 stainless steel (AISI-316 as an option). There is a joint on the bottom of the leaf that guarantees the hermetic sealing between the leaf and the floor when the door is closed.

They also optionally have hidden hinges to make cleaning easier and therefore guarantee hygiene.

The MKB frames are designed to cover the openings on both sides, and can be adapted to any wall thickness over 60 mm.

2 - FINISHES

FINISH COMBINATIONS	HPL	STAINLESS STEEL
Leaf front	HPL colour*	AISI-304 / AISI-316**
Leaf perimeter	Lacquered aluminium 9011	Lacquered aluminium 9011
Frame front	Anodised/lacquered aluminium	AISI-304 / AISI-316**
Frame perimeter	Anodised/lacquered aluminium	Anodised/lacquered aluminium
Interframes	HPL colour*	AISI-304 / AISI-316**

The available materials and finishes for the swing door elements are:

1.- HPL:

Max Compact phenolic resin as standard. With antibacterial certification, according to the norm JIS Z 2801

*Standard colours: blue, green, white and beige.

2.- Stainless steel:

Available in AISI-304 and AISI-316 in Scotch 400 grain finish.

**Stainless steel AISI-316 (optional) especially indicated for corrosive or saline environments.

3.- Anodised aluminium:

Anodisation consists of a protective surface layer, generated from an electrolytic process. The minimum thickness is 15 microns.

4.- Lacquered aluminium:

Lacquering is a protective coating of oven polymerized plastic paint. The minimum thickness is 60 microns. Entire RAL range available.

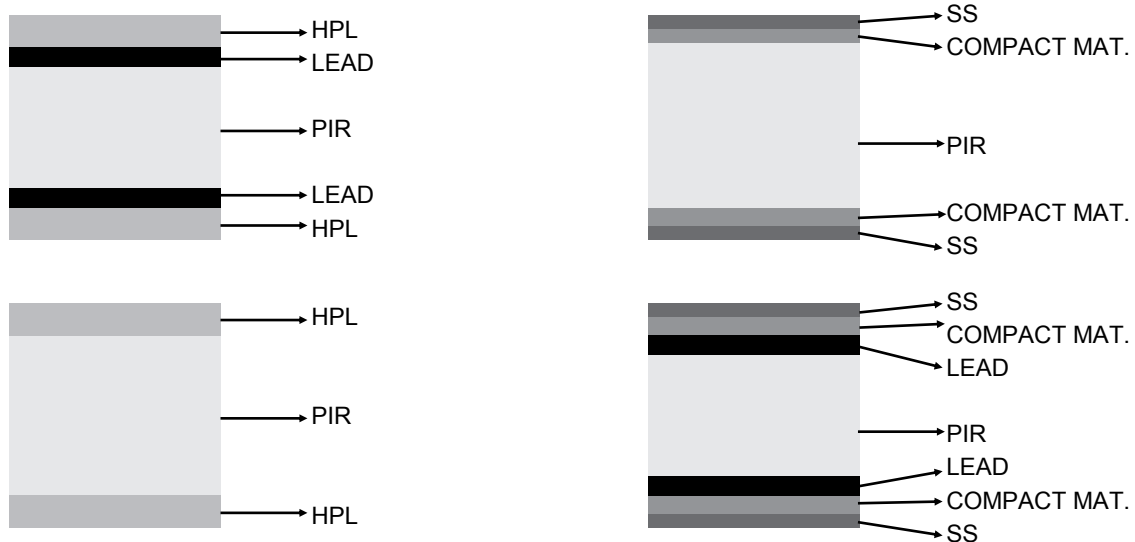
3 - SYSTEM COMPONENTS

The Manusa swing door is made up of the P50 panel leaf and MKB frame.

3.1 P50 panel leaf

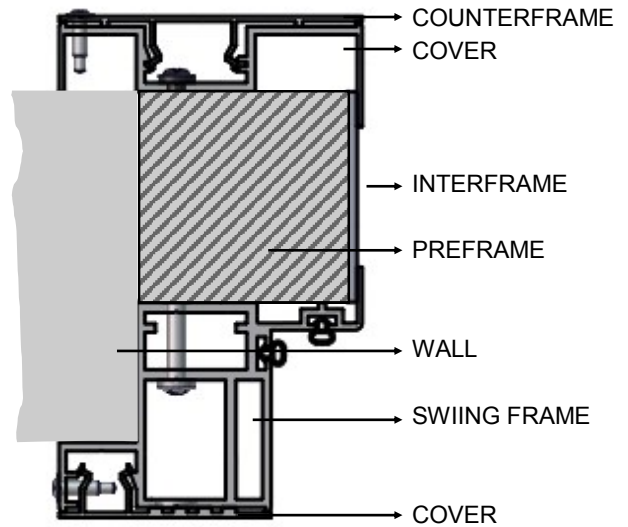
The P50 panelled leaf is made up of a sandwich of several materials and a perimeter structure of aluminium profiles. The central nucleus of the leaf is made up of a 40 mm thick polyisocyanurate (PIR) board.

According to the outer finish of the leaf and its possible use in radiology rooms, we have the following combinations of materials in its composition:

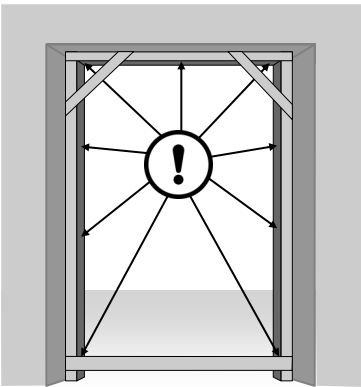


3.2 MKB frame

The MKB frame is especially designed to guarantee the correct operation of a hermetic door on any type of wall. It allows covering the opening where we want to position the door on both sides, offering a solid block without irregularities that guarantees the correct coupling of the leaf. Its design allows it to be adapted to any wall with thicknesses over 60 mm.



NOTE: Preframe on site

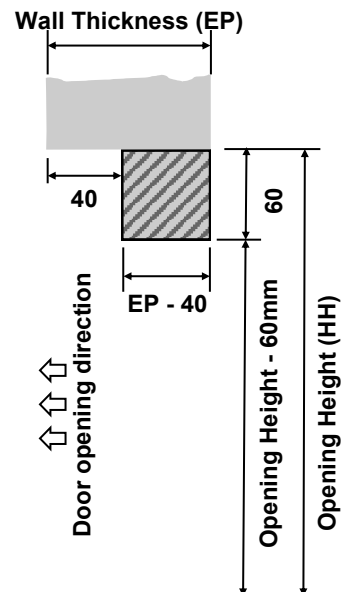
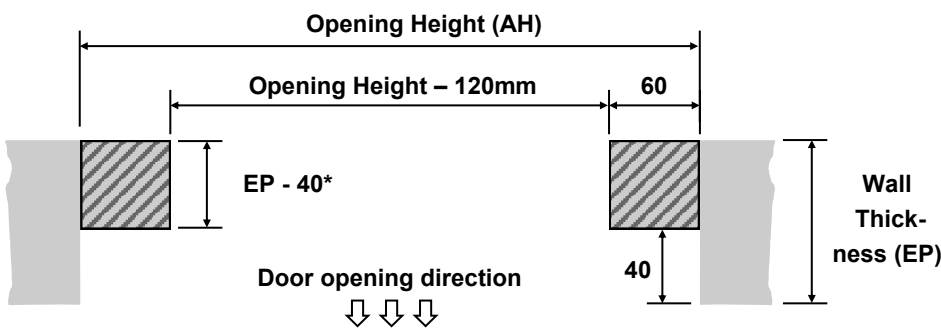


! IMPORTANT: There has to be a prior preframe installation that guarantees the correct fixing of the MKB frame.

This preframe may be wood, brick, metal... but it should be strong enough to allow a safe fixing of the door's frame and guarantee the its correct operation.

*In the case of walls with LEAD cladding, the total preframe thickness (EP-40) must include the thickness of the necessary lead, as there should be 40 mm free for the assembly of the frame.

ASSEMBLY VALUES FOR THE PREFRAME



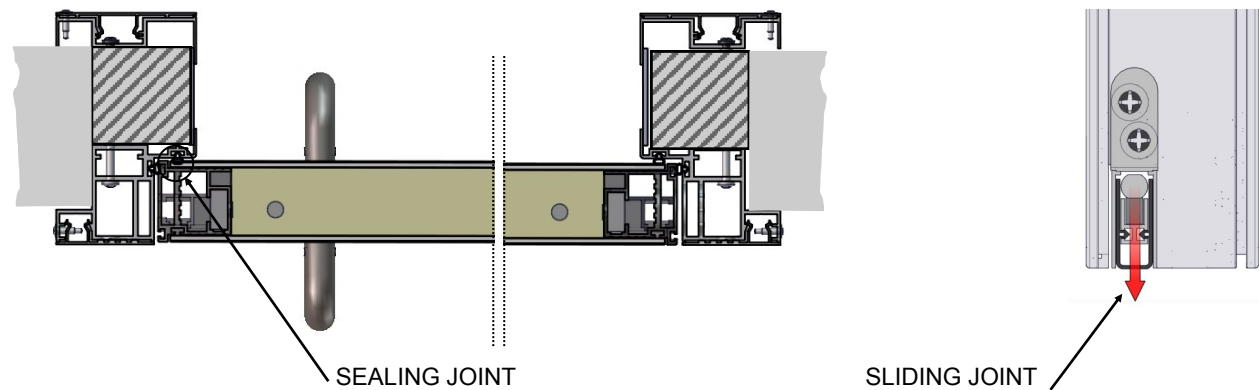
4.-OPTIONAL FEATURES

Optionally, the **manusa** Swing Door is equipped with special hermetic sealing and opacity to X-ray characteristics for applications in which one or both requirements are necessary:

4.1 Hermetice peeling

The MKB frame has a seal along all of its perimeter that guarantees keeping the room in optimum hygiene and climatic conditions.

There is a sliding joint mechanism on the bottom of the leaf that guarantees the hermetic sealing between the leaf and the floor when the door is closed.



In facilities where the swing door is installed between two rooms where there is difference in pressure, we recommend the door be planned and installed so that the positive pressure always acts in the direction of the door's closing, which helps to keep it in the closed position.

The **manias** Hermetic Swing Doors have been tested to determine air permeability of the product at low pressures. This test has been carried out with a positive overpressure in the direction of the closing operation.

Note: the tested facility had an electromechanical swing operator and the measurements have been carried out with the operator activated and deactivated.

RESULTS OF THE AIR PERMEABILITY TEST according to UNE-EN 12427:2000

Swing Op.	Total pressure	Air leak (Vx)	Air permeability with respect to Total Surface (Va)	Result
Act./Deact.	Pressure (Pa)	m ³ /h	m ³ /h · m ²	
ACTIVATED	10	3.81	1.76	CLASS 4
	20	4.43	2.05	
	30	5.11	2.36	
	40	5.34	2.47	
	50	5.81	2.68	
DEACTIVATED	10	5.30	2.45	CLASS 3
	20	7.45	3.44	
	30	8.40	3.88	
	40	8.50	3.94	
	50	8.53	3.95	

Nota: la instalación ensayada disponía de un operador batiente electromecánico y las mediciones se han realizado con el operador activado y desactivado.

The dossier number of the classification obtained by **manusa** is:

Swing Door P50 Dossier no. 23898

The tests have been carried out in the IDEMCO - Tecnalia Laboratorios.

This classification is carried out according to the table extracted from the standard:

Class	Air permeability regarding Total Surface $\text{m}^3/\text{h} \cdot \text{m}^2$	Specification
0		No specific requirements
1	24	
2	12	
3	6	
4	3	
5	1.5	
6		Exceptional: customer/manufacturer

4.2 Opacity to X-rays

For facilities where there is an X-ray device, the possibility exists, on special order, of incorporating the equivalent of 2 mm of lead in a **manias** Swing Door.

A reference table is included below to assess the required lead thickness according to some of the conditions of the facility.

This table is only for information purposes, as to guarantee compliance of current legislation, a prior engineering study would have to be carried out for the facility by the customer, to determine the required lead thickness in the door. The complete facility would then have to be authorised after installing the X-ray device in the room.

*The primary barrier is understood to be the wall behind the chamber in the direction of the primary beam. The rest of the walls, floor and ceiling would be secondary barriers. In facilities for X-rays, the primary barrier is incorporated in the image system, and therefore all the walls would be secondary.

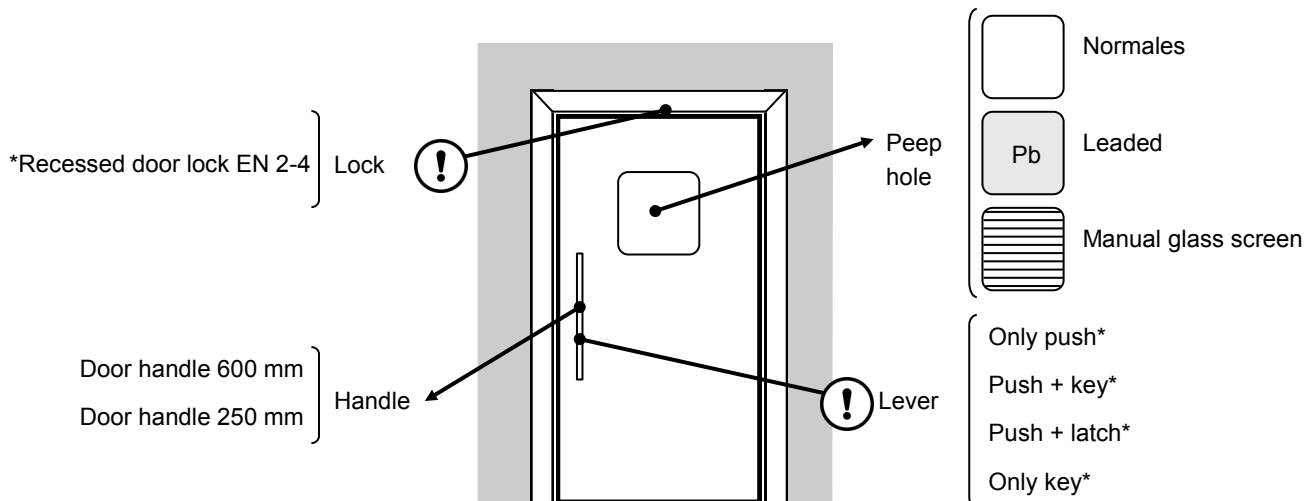
Examples of barriers			
Secondary barrier of $W=300 \text{ mA}\cdot\text{min}/\text{week}$, to restrict the dose to $0.1 \text{ mSv}/\text{week}$			
Voltage (kV)	Distance (m)	Thickness Pb (mm)	Concrete (mm)
85	2	1.0	105
85	3	0.8	85
100	2	1.05	90
100	3	0.85	70
125	2	1.1	90
125	3	0.9	70

5 - ACCESSORIES

Manusa swing doors allow for the use of the most normal accessories in automatic doors: radars, photocells, operating selector, pushbuttons...

For more specific elements (interface, concentrators...) you must consult our technicians.

Other exclusive accessories for this type of doors are as follows:



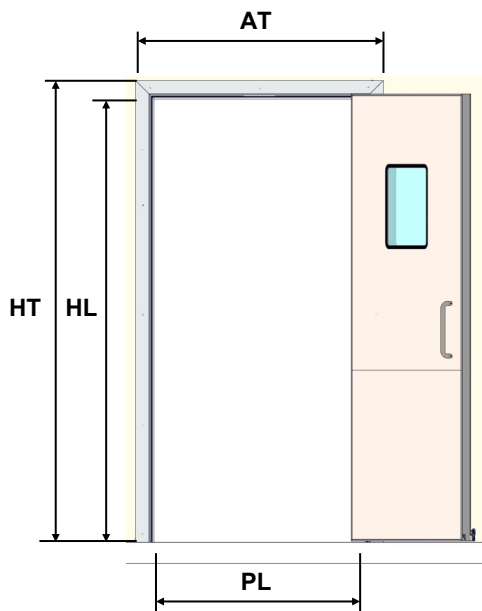
! IMPORTANT:

For a swing door to be hermetic, it should always meet one of the four combinations (A, B, C or D) of accessories indicated in the table:

***THE DOOR LOCK AND THE LEVERS ARE ONLY AVAILABLE IN MANUAL DOORS: THEY ARE NOT COMPATIBLE WITH AUTOMATIC DOORS.**

	A	B	C	D
Electromechanical op.	X	-	-	-
door lock	-	X	-	X
levers	-	-	X	X

6 - TECHNICAL FEATURES



TECHNICAL FEATURES

Aluminium	EN AW-6063 T5 UNE-EN 755-2
Stainless steel	AISI 304 ASTM AISI 316 ASTM - Optional
Minimum dimensions side door	605 x 1934 mm (PL x HL)
Maximum dimensions side door	1154 x 2457 mm (PL x HL)
Maximum dimensions side door LEADED	929 x 2457 mm (PL x HL)
Minimum dimensions double leaf door	1260 x 1934 mm (PL x HL)
Maximum dimensions double leaf door	2358 x 2457 mm (PL x HL)
Maximum dimensions double leaf LEADED	1916 x 2457 mm (PL x HL)

APPLICABLE DIRECTIVES

Construction products	89/106/EEC
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NOTA: The characteristics indicated in this manual are purely informative and are in no way binding.

The manufacturer reserves the right to make modifications without prior notice.

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manusa

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