

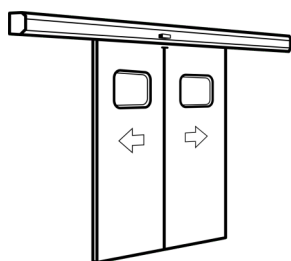
## TRANSLATED DOCUMENT

## Data Sheet

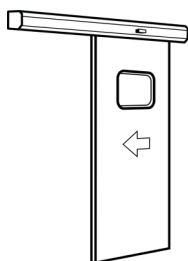
## P50 PANELLED LEAF



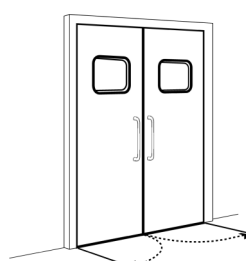
## 1 - DESCRIPTION



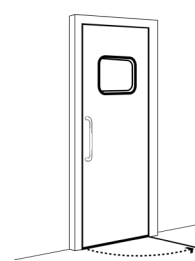
Central Sliding 2 Leaves



Side Sliding 1 Leaf



Central Swing 2 Leaves



Side Swing 1 Leaf

## i

The **manusa** P50 leaf is a panelled leaf for sliding and swing doors.

It is available in phenolic resin or stainless steel finishes.

All its elements are assembled without overlaps, and the lacquered aluminium perimeter and the peep hole (optional) are **flush** to the body of the leaf, giving it a distinguished aesthetics.

The leaf is 50 mm thick and is made up of:

- Central polyisocyanurate core (PIR).
- Outer panel (according to order) in high density phenolic laminate (HPL) or stainless steel.
- Perimeter structure in aluminium profiles.

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.
- **Hermeticity (optional)**: in both **manusa** hermetic sliding doors and hermetic swing doors, the leaf is sealed in its entire perimeter against the floor and framework maintaining the positive and negative pressure as appropriate in the clean room so preventing contamination from dirt or microorganisms.
- **Opacity to X-rays (optional)**: solution for radiology rooms, incorporating inside it the equivalent to the necessary layer of lead.

In combination with the **Hermetic Visio** operator and the **MK40** frame it is the perfect solution for hermetic sliding automatic doors.

In combination with the **MKB** frame swing hermetic doors are made, in manual and automatic versions.

## 2 - VERSIONS

The **manusa** P50 Leaf is available in different options:

- **Hermetic P50 Leaf:**

Equipped with gaskets, they allow obtaining high levels of hermetic sealing in combination with a HERMETIC VISIO operator and the frame for the MK40 sliding door.

- **Non-hermetic P50 Leaf:**

Leaf without special airtightness requirements, can be used in combination with the standard VISIO operator.

- **Leaded P50 Leaf:**

Available in both the hermetic and non-hermetic configuration, it includes specific X-ray opacity requirements for its use in X-ray rooms.

## 3 - FINISHES

The materials and finishes available for the P50 Leaf are:

- **HPL:**

Phenolic resin Max Compact as standard.

With antibacterial certification, according to the norm JIS Z 2801

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

(Optional Plus finish with SEFA 3 certification for resistance to chemical agents).

- **Stainless steel:**

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

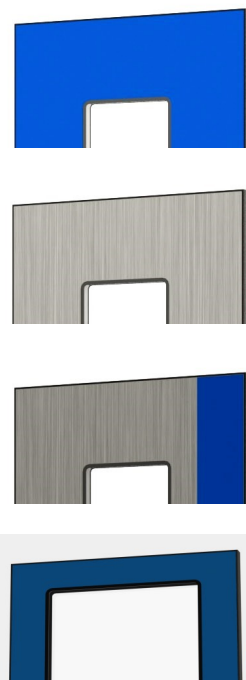
\*\*Stainless steel AISI-316 (optional) especially indicated for corrosive or saline environments.

- **Mixed:**

Attractive combination with stainless steel and HPL finish.

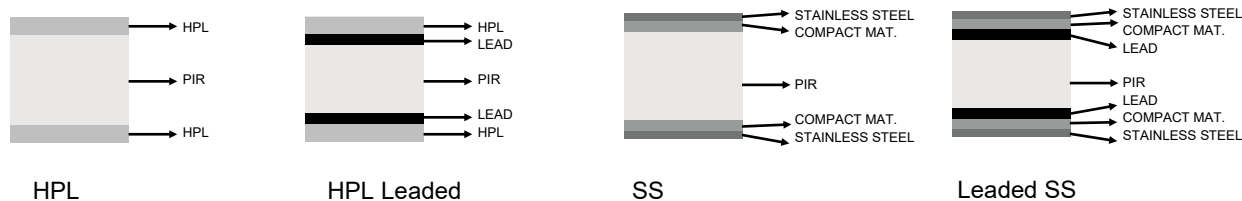
- **Full Glass:**

A tempered glass leaf with a 150 mm perimeter in HPL or stainless steel finish.



COMBINATIONS	HPL	STAINLESS STEEL	MIXED	FULL GLASS
Leaf front	HPL colour*	AISI-304 / AISI-316**	HPL + INOX AISI-304 / AISI-316**	HPL / INOX AISI-304 / AISI-316**
Leaf perimeter	Lacquered aluminium 9011	Lacquered aluminium 9011	Lacquered aluminium 9011	Lacquered aluminium 9011

The structure of the panel according to the type of finish is as follows:



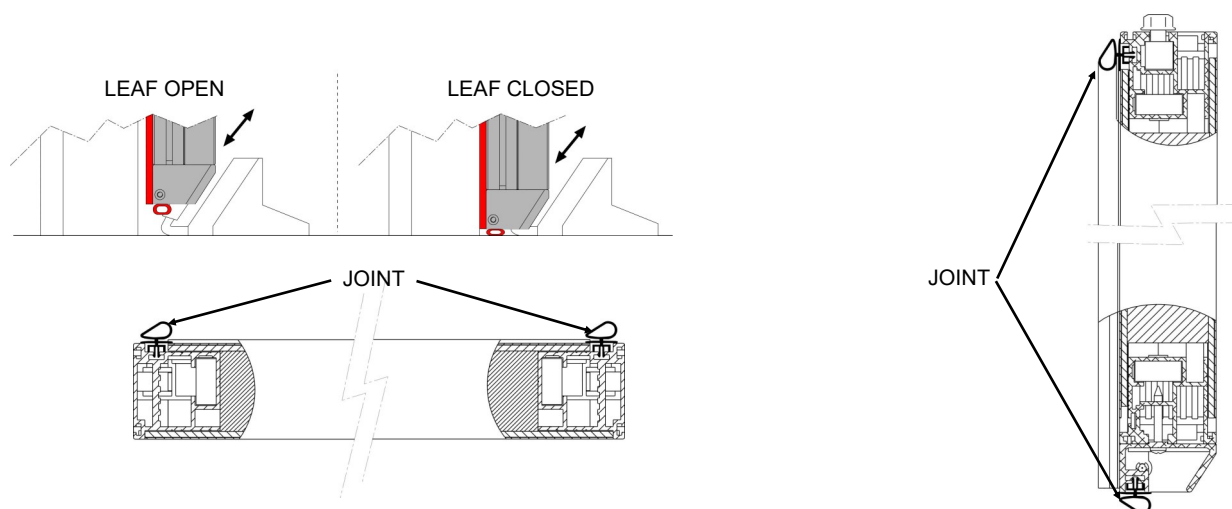
## 4 - FEATURES

As an option, the **manusa** P50 Leaf is equipped with special hermetic sealing and X-ray opacity characteristics for applications in which one or both requirements are necessary.

### 4.1 Hermetic sealing

The **manusa** P50 Hermetic Leaf is specially designed for installation in Clean Rooms with hermetic sealing requirements.

In **sliding doors with P50 leaf** hermetic sealing comes thanks to the gasket installed in the entire perimeter of the leaf, that combined with the **Hermetic Visio operator** and the **MK40 frame** allows achieving the permeability to air values contained in the following table.



The **manusa** Hermetic Sliding 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.

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

Total Pressure		Air leak (Vx)	Air permeability with respect to Total Surface (Va)	Air permeability with respect to Joint Length	Result
Nominal (Pa)	Real (Pa)	m <sup>3</sup> /h	m <sup>3</sup> /h · m <sup>2</sup>	m <sup>3</sup> /h · m	
-15	-15	4.56	1.36	0.61	CLASS 4
-20	-19	5.28	1.58	0.71	
-30	-31	6.35	1.90	0.85	
-40	-39	7.13	2.13	0.96	
-50	-49	7.73	2.31	1.04	
-75	-74	9.43	2.82	1.27	
-100	-99	10.68	3.20	1.44	
15	17	0.78	0.23	0.10	CLASS 6 EXCEPTIONAL
20	17	0.78	0.23	0.10	
30	26	2.09	0.62	0.28	
40	36	3.43	1.02	0.46	
50	46	4.53	1.35	0.61	
75	71	7.15	2.14	0.96	
100	97	9.71	2.91	1.31	

The file number of the classification obtained by **manusa** is the following:

Hermetic P50 Side Sliding Door File No. 07/32304784

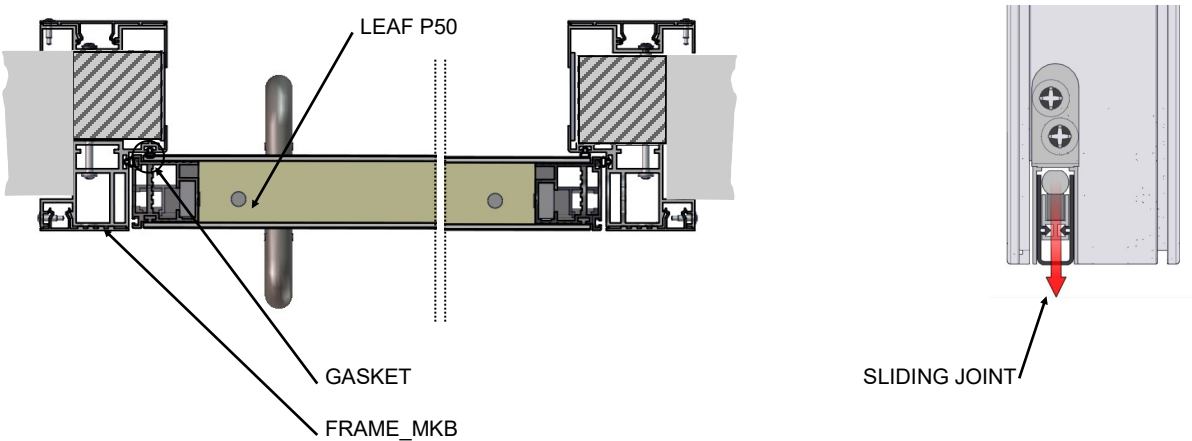
The tests have been carried out in the APPLUS laboratories (LGAI).

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

Class	Permeability to air with respect to Total Surface Total $\text{m}^3/\text{h} \cdot \text{m}^2$	Specification
0		Without determined requirements
1	24	
2	12	
3	6	
4	3	
5	1.5	
6		Exceptional: agreement customer/ manufacturer

In **swing doors** permeability to air is reduced due to the combination of the P50 leaf with the sliding joint inside it, together with the MKB frame that has a hermetic seal all around it.

The classification obtained in this type according to the UNE-EN 12427:2000 is CLASS 4. (see document D00434 for further information).



4.2 Electrical safety

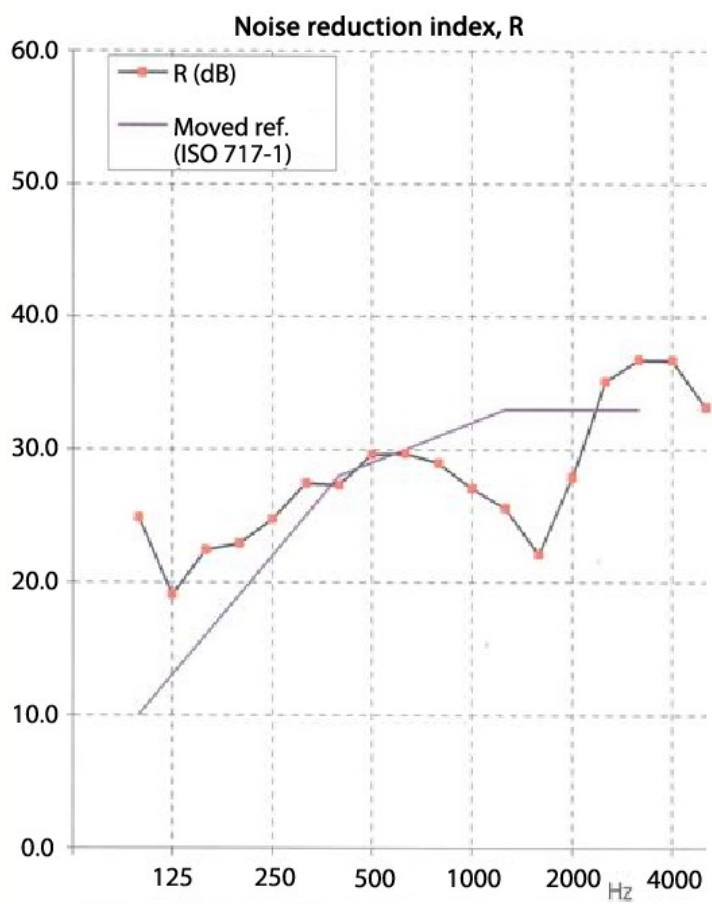
To comply with the electrotechnical low voltage regulation (ITC-38), all the accessible metal parts of the P50 leaf are separately connected for their subsequent jointing to the building's equipotential busbar.

Impedance between these parts is always under 0.1Ω.

### 4.3 Acoustic insulation

Hermetic Sliding Doors equipped with **manusa** hermetic P50 Leaves have been subjected to a measurement test in an acoustic insulation laboratory to the airborne acoustical noise of construction elements according to regulation UNE-EN ISO 140- 3:1995.

Frequency (Hz)	R (db)	Uncertainty $\pm U$
100	24.9	5.5
125	19.0	5.5
160	22.4	3.5
200	22.9	3.0
250	24.8	3.0
315	27.4	2.5
400	27.3	2.5
500	29.6	2.5
630	29.7	2.0
800	28.9	2.0
1000	27.0	1.5
1250	25.6	2.0
1600	22.1	2.0
2000	27.9	2.0
2500	35.1	2.0
3150	36.7	2.0
4000	36.7	2.0
5000	33.2	2.0



<b>Global weighted noise reduction index A,R:</b>	<b>27.7dBA</b>
<b>Weighted noise reduction index, Rw (C100-5000; Ctr,100-5000):</b>	<b>29 (-1;-3)dB</b>

The file number of the classification obtained by **manusa** is the following:

Hermetic P50 Side Sliding Door No. 07/32305121

The tests have been carried out in the APPLUS laboratories (LGAI).

### 4.4 X-ray Opacity

For facilities where this is an X-ray device, the possibility exists, on special order, of incorporating the equivalent of 2 mm or 3 mm of lead in a **manusa** P50 Leaf, obtaining the P50 Leaded version.

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

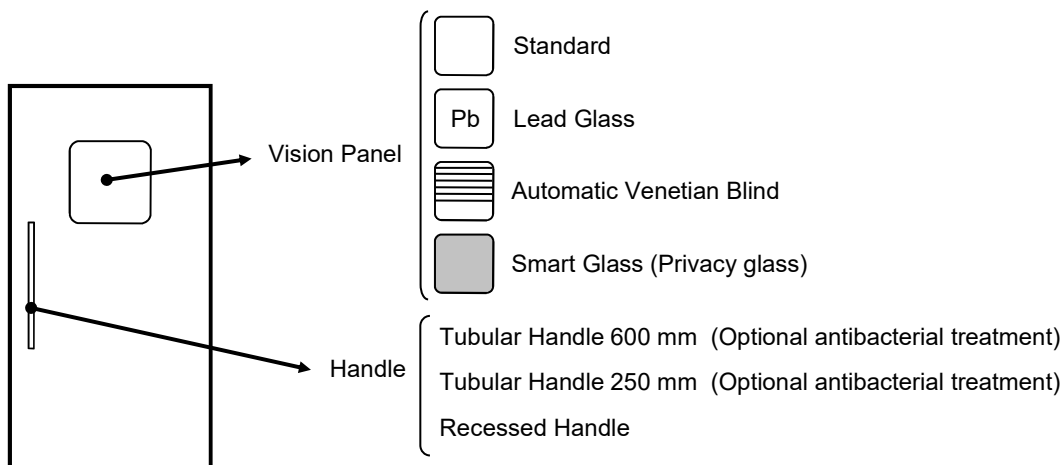
This table is only for information purposes, as to guarantee compliance of current legislation, a prior engineering study would have to be carried out for the facility by the customer, to determine the required lead thickness in the door. The complete facility would then have to be authorised after installing 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 with W=300 mA. min/weeks, to limit the dose to 0.1 mSv/week			
Voltage (kV)	Distance (m)	Pb thickness (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

The exclusive accessories for this type of door are as follows:



In swing doors the option of configuring the leaf with other special accessories exists: handles, door closer, etc. Consult according to special requirements.

## 6 - TECHNICAL CHARACTERISTICS

### TECHNICAL CHARACTERISTICS

Aluminium quality	EN AW-6063 T5 UNE-EN 755-2
Stainless Steel quality	AISI 304 ASTM AISI 316 ASTM - In option
Flatness tolerance	5 mm
Service temperature	10 °C to 30 °C
Relative service humidity	40% to 65% HR

### APPLICABLE DIRECTIVES

Construction products	89/106/CEE
Low Voltage	2006/95/CE

## Considerations for electropolarized glasses

### INSTALLATION

- 1– Every power source is associated with a specific glass and is tested together with its glass at the warehouse. This should be respected on site too, because otherwise the glass can be overloaded and damaged.
- 2– No silicone different from the one provided by the supplier should be used under any circumstances. If any other silicone gets in contact with the glass, it can be damaged.

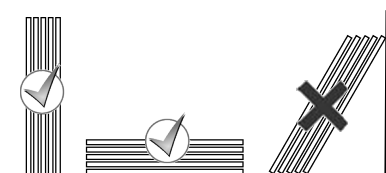
### MAINTENANCE:

- 1– The glasses must remain turned off at least 4 hours per day (24h) and must be turned on and off regularly.
- 2– Cleaning must be done in the OFF mode and with water or products with no alcohol. The liquid can never touch the Edge of the glass.
- 3– Annual check-ups: The wiring, the converter, the silicone, etc. must be checked.

### WARRANTY:

The level of transparency and appreciation of the slight variations in the colour that obey to the product characteristics are excluded from the warranty.

## 7 - STORAGE, TRANSPORT AND CLEANING RECOMMENDATIONS



⚠ Transport and store the leaves always in their original packaging, always totally horizontal or vertical, but never **sloping**.

⚠ Do not pile over 6 leaves on top of each other.



⚠ Store the leaves in closed and dry enclosures, not exposed to direct sunlight or to the rain, **with stable and controlled weather conditions**:

- Recommended storage temperature from 10 to 30 °C
- Recommended storage temperature from 40 to 65%

Out of these ranges, and in the event of sudden variations in both conditions, the P50 leaf may suffer dimensional and surface flatness variations.



⚠ For the **normal cleaning** of the leaf we distinguish between the products to be used depending on the finish of the leaf:

- Stainless steel: normal detergents for basic cleaning or specific for stainless steel.
- HPL: normal detergents for basic cleaning and organic solvents to remove waste such as varnishes, glues and resins.
- Gaskets: normal detergents for basic cleaning.

In the event of **disinfection** requirements of the leaf, the following products can be used:

- Stainless steel: sodium hypochlorite (bleach) in aqueous solution at 0.5%. Then rinse with plenty of water and dry.
- HPL: Ethanol 70%, Formalin 1% and 5% p-chloro-m-cresol 0.3%, Tosychoramide sodium 1%, 5% Alkyl Benzyl Dimethyl ammonium chloride 0.1%, Alcohol, Aldehydes, Phenols, Ammonium quaternary compounds.
- Gaskets: sodium hypochlorite (bleach) in aqueous solution at 0.5%. Then rinse with plenty of water and dry.

ⓘ For any queries or doubts about the compatibility of any chemical or cleaning element consult the manufacturer before applying it. For maintenance of gaskets we recommend using spray with PRFTE or silicone spray after checking that their use is allowed in the environment where the door is located .

**NOTE:** The characteristics indicated in this document are purely informative, and not in any way contractual.

The manufacturer reserves the right to modifications without prior notice.

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