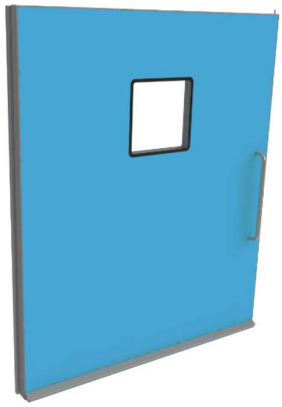
Hermetic EI Door Leaf and Frame



1. Description

The hermetic EI leaf (Fireproof with Structural Integrity) and the frame of a hermetic EI door are essential components of fire protection in buildings and healthcare environments. Both are designed to ensure optimum performance in critical situations, combining durability, fire resistance and structural integrity.

The hermetic leaf is coated with high-pressure laminate (HPL) for durability, fire resistance and aesthetic appeal. Its perimeter, made of a combination of aluminium and stainless steel, offers high structural strength and contributes to the integrity of the system. In addition, a vision panel can be incorporated into the leaf, allowing direct observation of the surroundings without compromising fire resistance or structural integrity. This design not only complies with safety standards, but also integrates harmoniously into the architectural environment, adapting to various aesthetics and design requirements. For specific applications in X-ray rooms, the hermetic EI leaf can be manufactured with 2 mm or 3 mm lead protection, providing an effective barrier against ionizing radiation. This additional option allows its use in medical environments where radiological shielding is required, without compromising fire resistance or the system's airtightness. The hermetic leaf is essential in applications where being fireproof is critical, such as in hospitals, laboratories or industrial facilities.

The frame, on the other hand, is composed of stainless-steel tubes filled with silicate, creating a strong and durable barrier. Its design allows it to be easily fixed to walls by means of plugs and screws, ensuring a robust and reliable installation. Including intumescent material in the frame provides an additional layer of protection. In the event of a fire, this material expands in a controlled manner, effectively sealing any gaps and helping to prevent the spread of fire. The engineering behind the frame guarantees structural integrity and the ability to remain fireproof, preserving the safety of people and property.

Both components, the hermetic leaf and the frame, are essential in environments where fire resistance and airtightness are a priority, such as hospitals or laboratories. Their robust construction and ability to withstand high temperatures make them a key element in safeguarding against fire hazards, providing peace of mind and meeting demanding safety standards. The possibility of incorporating lead protection in the leaf expands its application to environments requiring radiological shielding, ensuring a versatile and safe solution for various architectural and functional needs.

2. Technical Specifications

Leaf thickness [mm]	70
Minimum - maximum sliding leaf width [mm]	min. 800 - Max. 1800
Minimum - maximum sliding leaf height [mm]	min. 2000 - Max. 2500[1]
Minimum - maximum frame width [mm]	min. 829 - Max. 1859
Minimum - maximum frame height [mm]	min. 2006 - Max. 2506

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Maximum leaf weight	150Kg (with Visio+ Herm. HD operator) / 250Kg (with Visio+ Herm. HD operator with reducer)
Vision panel (optional)	Square, 450x450 mm. Corners, 30 mm radius.
Lead protection	Max. 3mm
Operator side leaf handle	Tubular handle. Stainless steel. Length 600 mm. Diam. 25 mm.
Operator opposite side leaf handle	Recessed handle. Stainless steel. Length 120 mm. Width 40mm.
Fire resistance according to UNE EN 1634-1:2016+A1:2018[2]	NON-LEADED VERSION Operator opposite side to fire (not exposed): EI_1 60 cat. B / EI_2 90 cat. A Operator fire side (exposed): EI_1 45 cat. A / EI_2 60 cat. B
	LEADED VERSION Operator opposite side to fire (not exposed): EI_1 60 cat. B / EI_2 60 cat. B Operator fire side (exposed): EI_1 30 cat. A / EI_2 30 cat. B
Fire resistance according to BS 476-22:1987[2]	NON-LEADED VERSION Operator opposite side to fire (not exposed): Integrity: 93 min. / Insulation: 93 min. Operator fire side (exposed): Integrity: 72 min. / Insulation: 54 min.
	LEADED VERSION Operator opposite side to fire (not exposed): Integrity: 83 min. / Insulation: 83 min. Operator fire side (exposed): Integrity: 45 min. / Insulation: 34 min.
Smoke control according to UNE EN 13501-2:2023[2]	Extraction and impulsion (sample outside the smoke chamber) at ambient temperature: Sa3 Sa4 Impulsion (sample outside the smoke chamber) at 200ºC: Sa4 S200
Air permeability according to UNE 85170:2016[2]	Positive pressures: Class 4 Negative pressures: Class 4
Air permeability UNE-EN 12207:2017[2]	Class D
Aluminium quality	EN AW-6063 T5 UNE-EN 755-2
Stainless steel quality	AISI 304 ASTM
Leaf flatness tolerance	10 mm
Service temperature	10ºC to 30ºC
Relative service humidity	40% to 65% RH

[1]The maximum panel height will be 2200mm in the following versions: Non-leaded EI_2 90 (operator not exposed), Non-leaded EI_1 45 (operator exposed), and Leaded EI_1 30 (operator exposed).
[2]In conjunction with the Manusa Hermetic Visio+ Operator (Hermetic EI typology) + the necessary accessories for Hermetic EI typology.

3. Typologies

Lateral opening (Right / Left)

4. Compatibility

Compatibility with operators and their accessories	
Visio+ Hermetic (+ Hermetic EI accessories)	Yes
Visio+ Hermetic lock	No
Visio+ Operator Hermetic cable chain	No

5. Applicable Standards

Fire resistance and smoke control tests on doors and opening enclosure elements, opening windows and building hardware. Part 1: Fire resistance tests on doors, opening enclosure elements and opening windows.	EN 1634- 1:2016+A1:2018
Fire tests on building materials and structures. Method for determination of the fire resistance of non-loadbearing elements of construction	BS 476-22:1987
Fire resistance and smoke control tests on doors and opening enclosure elements, opening windows and building hardware. Part 3: Smoke control tests on doors and enclosure elements.	UNE-EN 1634-3:2006
Classification according to fire performance of construction products and building elements. Part 2: Classification on the basis of data obtained from fire resistance tests, excluding ventilation installations.	UNE EN 13501-2:2023
Windows and doors. Air permeability. Test method.	UNE-EN 1026:2017
Pedestrian doors for operating rooms, clean rooms and controlled environment rooms.	UNE 85170:2016
Windows and doors. Air permeability. Classification.	UNE-EN 12207:2017

6. Finishes

Leaf panel surfaces: Customisable. Fundermax Max Compact Interior F-quality range.
Frame aluminium perimeter Leaf: RAL 9006 matt black lacquer. The minimum lacquered thickness is 60 microns.
Intumescent Material: Black PVC.
Stainless steel profiles: 400 grinding grain.

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