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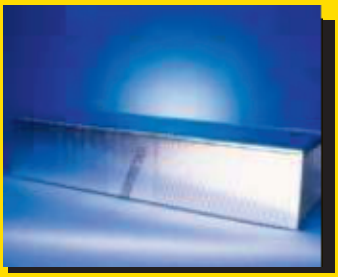
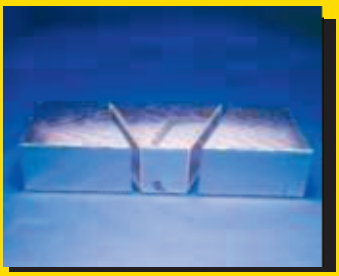
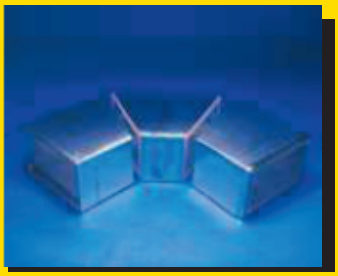
CLIMAVER PLUS R

The ductwork revolution


Fire Safe I Faster installation I Lower installation cost I Minimal material waste I Fabrication at site I Low leakage rates I Higher thermal resistance I Excellent aesthetic

Marketed by :

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SAINT-GOBAIN
ISOVER ESPAÑA

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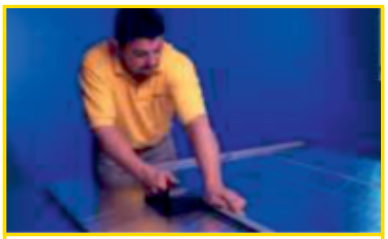
Glasswool ductboards for manufacturing air distribution ducts in air conditioning (heating and cooling) installations.

DESCRIPTION

CLIMAVER PLUS R is a high density double faced glasswool panel. Both sides of the pannel are faced with an aluminum surface.

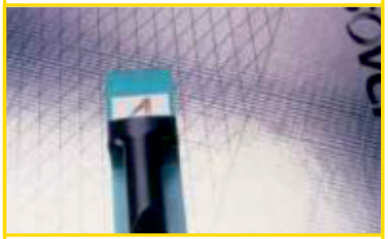
- External facing: Aluminium+reinforced glass fibre mesh+kraft.
- Internal facing: Aluminium+kraft.

(The aluminium acts as a vapour barrier and gives protection to the inner and outer surface of the duct; the reinforced glass fibre mesh provides more resistance to punching).

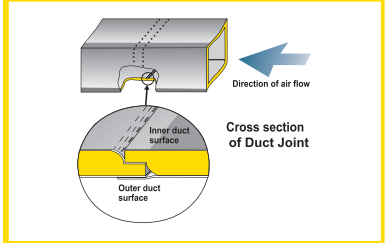


✓ Male / female edges

CLIMAVER PLUS R ductboards have exclusive design with male/female edges, in order to provide greater strengh for joints, easy installation and exceptional inside finish. This exclusive edges:



- Guarantee high strengh joints, due to the double density of pannel joining edges.
- Reduce the number of cutting operations (time saver)
- Make easier the duct assembly.



✓ Exclusive flanged male edge

CLIMAVER PLUS R has an exclusive male edge facing. The edge recovering is obtained by extending the inner surface.

✓ Ruled external facing

The external facing of Climaver Plus R ductboards has an exclusive pattern of parallel lines. These lines guide the cutting of straight ducts to obtain duct fittings using the Straight Duct Method (*)

CLIMAVER PLUS R is supplied as pannels for duct construction.

Thickness (mm)	Length (m)	Width (m)
25	3	1,19

THERMAL INSULATION

Thermal conductivity	$\lambda \leq 0{,}032$ W/m · K
Thermal resistance	$R \geq 0{,}75$ m ^{2} · K/W
(Refered to 10 °C)	

FIRE REACTION

CLIMAVER PLUS R is classified as:

- Euroclass B-s1,d0.

VAPOUR PERMEANCE

Approximate value: 0,013 g/m ^{2} mm Hg day (outer facing value).

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ACOUSTICAL ABSORPTION

The glasswool has an exceptional acoustic absorption. It can reduce the noises in the air conditioning installation (usually generated by fans).

Ex: 1 m of Climaver Plus R (duct 40 x 30 cm) reduces the noise in 6,4 dB (1000 Hz).

To evaluate the noise reduction, it is neccesary to know the absorption coefficients (α):

Frecuency (Hz)	125	250	500	1.000	2.000
Acoustical absorption α	0,20	0,20	0,20	0,60	0,50

This means the following noise reduction (by duct length).

Straigh duct noise reduction (dB/m)						
Cross section (mm)	200 x 200	2,81	2,81	2,81	11,09	8,83
	300 x 400	1,64	1,64	1,64	6,47	5,15
	400 x 500	1,26	1,26	1,26	4,99	3,97
	400 x 700	1,10	1,10	1,10	4,36	3,97
	500 x 1.000	0,84	0,84	0,84	3,33	2,65

MECHANICAL PROPERTIES

CLIMAVER PLUS R boards have R5 rigidity, according to EN13403 (European Standard for non-metallic ducts). This rigidity is the maximum level of the ones established by this standard.

CLIMAVER PLUS R ductboards can stand static pressure under 800 Pa with no evidence of fissures or swellings (test according to EN 13403).

PRESSURE DROPS

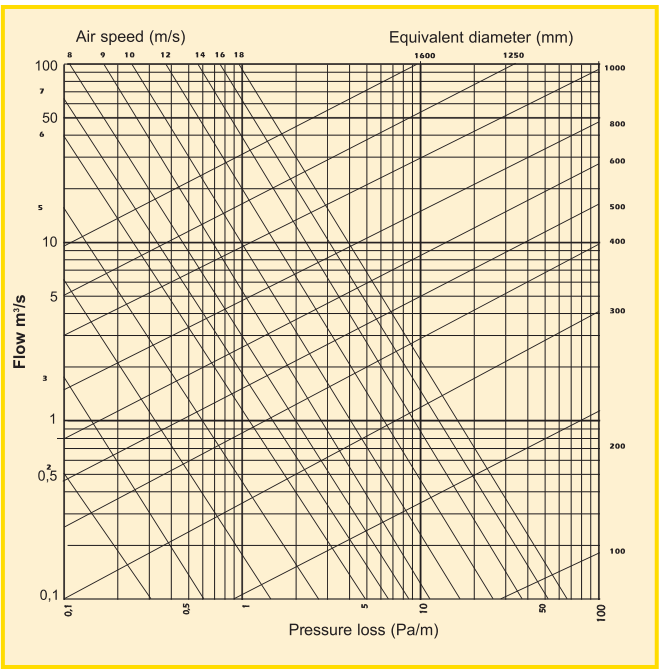
The inner lining surface area of the CLIMAVER PLUS and CLIMAVER PLUS R has a maximum roughness equivalent to that of galvanised sheet metal.

Laboratory tests on straight and elbowed duct installations have shown pressure losses to be similar in both cases.

Thus, a pressure loss due to friction can be reduced up to 40% using this system with respect to the rest of the line depending on the geometry of the ducts and air speed.

Pressure loss calculation: The ASHRAE pressure loss instrument for galvanised sheet metal or equivalent, such as the one below, can be used to calculate the pressure loss in CLIMAVER PLUS air ducts. In this case, the equivalent diameter of the rectangular duct section (a x b) is given:

$$d = 1{,}3 \cdot \frac{(a \times b)^{0{,}625}}{(a + b)^{0{,}25}}$$



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ASSEMBLY

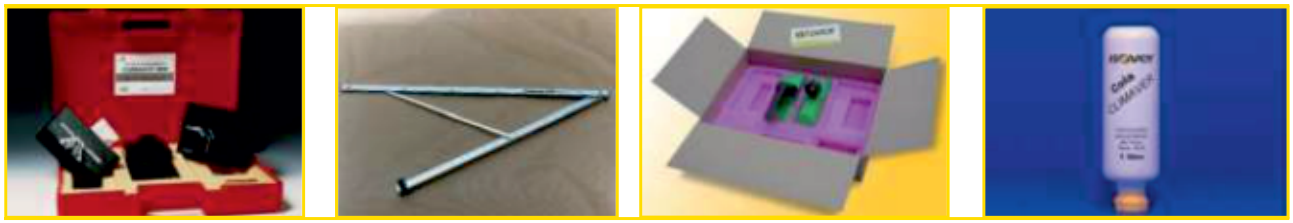
Although there are other assembly methods, the recommended method is the “Straight Duct Method”, MTR(*). This method uses a straight duct as the basis to obtain duct fittings, and, therefore, the ductwork.

The Straight Duct Method uses two types of accessories:

- Climaver tools. There are two types of Climaver tools: Climaver MM, (suitcase and ruler) used to groove the pannel so that it can be fold into duct section, and Climaver MTR, which are used to cut the straight duct and obtain the pieces that will be used to obtain duct fittings.

- Climaver Glue and Climaver Tape. Used to seal the joints of the pieces in order to obtain duct fittings. Climaver Glue has been specially developed to glue glass wool.

Climaver tape must be made of pure aluminium, 50mm thickness and 65 mm width.



The Straight Duct Method has clear advantages:

- Precision
- Resistance and Quality
- Lower pressure drops
- Cleaner work

Instructions for the Straight Duct Method are provided in the MTR Brief Guide or the Assembly Handbook. Both are available by request.

(*) MTR ae the Spanish initials for Straight Duct Method: Método del Tramo Recto