

PANEL FOR AIR DUCTS

DESCRIPTION

5

OBJECT OF THE INVENTION

The present invention relates to a panel for air ducts,
specifically for forming ducts intended to distribute air
10 conditioning.

The purpose of the invention is twofold:

1. To achieve optimal leaktightness in the coupling between
the different sections that are formed from panels,
15 forming what are the air conditioning distribution ducts.
2. To indicate the correct direction of air flow for better
air performance and more efficient maintenance.

BACKGROUND OF THE INVENTION

20

The ducts provided for the distribution of air conditioning
are obtained from panels of mineral-wool-based or other
insulating material, preferably glass wool, with one or two
external coverings.

25

However, the panels in question have longitudinal lines
usually in the covering in order to obtain tubular bodies having
a quadrangular or rectangular section less than the total width
of the panel.

30

To achieve these elbows or junctions in those air conditioning ducts, the panel is expected to include oblique lines in two opposite directions, which enable the corresponding cut and the forming of the tubular bodies that can be attached
5 to the end of others without the need for accessories for measuring angles, and thereby form changes in direction or elbows, and even junctions.

In this regard, Utility Model U 200201601 can be cited, in
10 which a panel for air conditioning distribution ducts is described, which has the particular feature that the panel, in line with its end face or covering includes a plurality of rectilinear and oblique markings that form two beams with opposite tilts, such markings being selectively used to make
15 cuts on the panel and to shape figures from the straight tubular body, the inclination of said markings corresponding to the more common angle when manufacturing figures.

In addition, that utility model describes the fact that it
20 further incorporates a plurality of rectilinear and transverse markings in the axial direction, which are references for the longitudinal measurement of the straight sections of the duct.

When sections are coupled to form a network of ducts, the
25 problem with these ducts is ensuring leaktightness therebetween, as complementary elements or additional accessories are usually required such as clips and sealing tape (usually aluminium adhesive).

It is also difficult, from a separated position, to determine whether the duct is correctly mounted to the air flow direction, to ensure proper inspection of the installation.

5

DESCRIPTION OF THE INVENTION

The panel disclosed herein has been designed to solve the aforementioned problems, so that the panel based on the panel described in the aforementioned Utility Model U 200201601, has the particular feature that one of the panel body edges includes an area delineated by special markings which marks a band, which can have different configurations and indicates the minimum area which the adhesive tape that secures the flap of the adjacent duct section must reach in order to ensure the leaktightness of the duct when formed. Failure to do so would not ensure the declared leaktightness, whereby the sealing between the various sections of the duct could become unstuck. This area should be covered with the flap of the adjacent side of the contiguous section which is fixed by staples and tapes, or any other method, further achieving a rigid connection of the duct sections.

The leaktightness of the connection is achieved by adhesive aluminium tape superimposed on the flap, perimetally to the duct, the width of the aluminium tape being greater of course than the actual flap, namely, the tape protrudes from one side of the flap to cover the previously defined band, thereby achieving a perfectly tight seal between the tubular modules.

30

On the other hand, the panel has a number of arrows that indicate the flow direction of the air flow that identify, from a distant position, that the direction of the panels is correct in terms of flow, in order for the building inspector or the
5 supervisor of the facility to perform inspections.

DESCRIPTION OF THE DRAWINGS

As a complement of the description being made hereinbelow
10 and for a better understanding of the characteristics of the invention, according to an example of a practical preferred embodiment thereof, attached as an integral part of the aforementioned description is a set of drawings where, for purposes of illustration and in a non-limiting manner, the
15 following is shown:

Figure 1 shows a view corresponding to a perspective of a panel from which a section of the air conditioning duct is obtained, all made in accordance with the object of the
20 invention.

Figure 2 shows a perspective view of the coupling of two adjacent modules, partially sectioned, and with an enlarged view thereof, wherein it can be seen how the two duct sections are
25 coupled.

Figure 3 shows how to secure the leaktightness of the connection or coupling between sections, as shown in Figure 2, and whose leaktightness is achieved by fixing an outer aluminium
30 tape superimposed on the flaps that make up the dovetail coupling between the duct sections.

PREFERRED EMBODIMENT OF THE INVENTION

5 As seen in the figures referred to, the panel (1) of the invention, as is conventional, is a panel made of mineral wool or other insulating materials, which is covered by a sheet of aluminium or other material on its outer face, wherein the panel (1) is provided with longitudinal lines (2), parallel to each
10 other, to form sections between them having a length less than or equal to the side of the panel, the faces corresponding to a tubular module (3), as shown in figures 2 and 3, which may have a quadrangular or rectangular section, and in any case these lines (2) will define that which corresponds to the ends of the
15 ducts (3) referred to.

 In addition to these lines (2) for forming ducts (3), the panel (1) is affected by oblique marking lines (4) which together with other lines (4') transverse to the lines (2),
20 enable sections to be formed that are used in changes of trajectory, direction, junctions, corresponding to the air distribution ducts.

 However, from these characteristics, the novelty of the
25 invention is that in line with one edge of the panel (1) a marking zone (5) has been provided which indicates a minimum surface area to be adhered to the adhesive tape, such that the flap (7) of the adjacent panel overlaps and adheres effectively with tape establishing a dovetailed coupling means of the
30 opposite end corresponding to another adjacent or contiguous section (3) to the one previously mentioned. In other words, the

sections (3) are coupled by dovetailing, namely, by plugging the end of a section marked "leaktightness band" on the flaps of the adjacent section to form the corresponding air conditioning distribution duct, wherein the flaps (5) mentioned are
5 overlapped on the side faces of the opposite end corresponding to the adjacent section.

By means of this dovetail coupling obtained from forming the flap (5), a rigid connection between contiguous sections (3) is
10 achieved, ensuring the leaktightness by means of an outer aluminium tape (6), wider than the flap (5), being secured by overlapping thereto, in order to seal the connection, as shown in figure 3. The fixing between sections (3) through the flaps (5) is normally carried out by clamping the flaps in order to
15 ensure the rigid connection previously discussed, while the outer aluminium tape (6), adhesively secured and widely covering the width of the flap (5), ensures a perfectly leaktight coupling between duct sections (3).

20 Similarly, by using arrows (8) the direction of the air will be indicated to prevent incorrect assembly that may impair the aerobics and cleaning, which can generate noise in the installation and maintenance thereof.

CLAIMS

1. Panel for air ducts, which being of the type formed by a
5 mineral-wool-based core, preferably with an external covering of
aluminium and provided with scoring guidelines for forming
prismatic-section ducts by means of folding, preferably
quadrangular or rectangular, the panel further including oblique
marking lines which, together with lines transverse to those
10 specified above, can be cut to form respective sections used as
elbows, changes of direction or junctions in the duct, is
characterised in that the panel body edges includes a band
marked with lines, shading or another form of delineation
corresponding to the limit to be reached by an aluminium
15 adhesive tape used to secure the flap on the male side of the
duct and corresponding to the safety zone which must be covered
with adhesive tape to ensure adhesion and to ensure watertight
sealing.

20 2. Panel for air ducts according to claim 1, characterised
in that it comprises indicators showing the air flow direction,
such as arrows or the like, on its surface.