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71 Applicant: **de Bruin, Arij Roelof**
Gildelaan 121
NL-5081 PS Hilvarenbeek(NL)

Applicant: **Kleemans, Hubertus Petrus**
Franciscus
Achter de Kerk 10
NL-5081 CX Hilvarenbeek(NL)

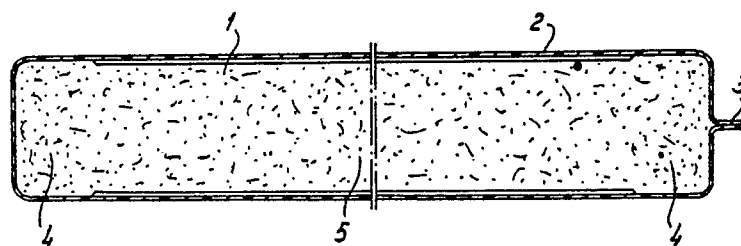
72 Inventor: **de Bruin, Arij Roelof**
Gildelaan 121
NL-5081 PS Hilvarenbeek(NL)
Inventor: **Kleemans, Hubertus Petrus**
Franciscus
Achter de Kerk 10
NL-5081 CX Hilvarenbeek(NL)

74 Representative: **Baarslag, Aldert D. et al**
Nederlandsch Octrooibureau
Scheveningseweg 82 P.O. Box 29720
NL-2502 LS 's-Gravenhage(NL)

54 **Sound-absorbing element.**

57 A sound-absorbing element, comprising a layer (1) of sound-absorbing material enveloped by a film casing (2). At least two opposite edges of the layer (1) are provided with an edge reinforcement (4), the thickness of which is at least equal to that of the layer (1). Due to the support provided by the edge reinforcements (4), the film casing (2) is not pressed against the surfaces of the absorbing layer (1), as is the case with known elements. This leads to a much better sound-absorbing effect.

fig - 1



Sound-absorbing element

The invention relates to a sound-absorbing element, comprising a layer of sound-absorbing material enveloped by a film casing.

Such an element is known and is used in particular in rooms in which ceilings and/or walls have to have a smooth, tight surface. This is the case, for example, in the food industry, where on account of the hygiene regulations walls and ceilings have to be easy to clean and must collect little or no dirt.

Another example of an application is in the field of manufacturing electronic parts in rooms where dust development must be largely avoided.

In order to obtain as taut a surface as possible, the film is stretched over the absorbent layer. It is known to use a shrink film for this, in such a way that the layer is first of all totally enclosed in the film, following which the latter is shrunk through the action of heat and in the end lies taut over the layer.

However, when the element thus obtained is tested it is found that the original sound-absorbing effect of the separate layer is no longer achieved. The film acts as a sort of sound board and reflects part of the sound waves. They therefore cannot reach the layer of absorbing material, with the result that the sound-absorbing effect of the element is largely lost.

The object of the invention is therefore to produce a sound-absorbing element of the type mentioned in the preamble which has a better sound-absorbing effect.

This object is achieved according to the invention in that at least two opposite edges of the layer are provided with an edge reinforcement, the thickness of which is at least equal to that of the layer. When the element according to the invention is tested it is found that the sound-absorbing effect is much better than that of the known element. The explanation for this is that the film is now not pressed against the surfaces of the absorbing layer, as is the case in the known element. The edge reinforcement ensures that the stretched film just rests against or is a slight distance away from the surfaces of the absorbing layer. This means that the film can move more or less with the sound vibrations and pass these on to the sound-absorbing layer. The result of this is that a good sound-absorbing effect is still obtained.

In order to obtain the best possible soundproofing, the distance between film and sound-absorbing layer is selected so that it is not too great, for example less than 2 mm on either side of the layer.

The sound-absorbing element according to the

invention can be designed in various ways.

According to a first embodiment, provision is made for the layer to be of mineral wool and the edge reinforcement to be of a compressed edge part of the mineral wool which is stronger than the rest of the layer. Such an embodiment is obtained, for example, through the starting material of the sound-absorbing layer being larger at the edges than elsewhere before the compression. After compression, a layer of uniform thickness, but with greater density at the edges, is then obtained. The thickness of the edges can, of course, be kept a little greater than in the rest of the layer.

According to a second embodiment, provision is made for the edge reinforcement to be made of a separate strip of rigid material. This strip can also be of the same thickness or a little thicker than the sound-absorbing layer. The strip is held in place by the enveloping casing.

In order to prevent dust or particles from emerging in the event of any damage, provision is made between the film and the layer for a protecting film of higher tearing and tensile strength.

The invention will be explained further below with reference to the drawings.

Fig. 1 shows a cross section through a first embodiment of a sound-absorbing element.

Fig. 2 shows a cross section through a second embodiment.

Fig. 3 shows a variant of Fig. 2.

The sound-absorbing element shown in Fig. 1 comprises a layer 1 of sound-absorbing material, such as mineral wool, and a shrink film 2 placed around it. The weld of the shrink film 2 is indicated by 3. The layer 1 is designed with greater density at its edges 4 than in the central part 5, so that the layer 1 virtually cannot be compressed as a result of the shrinkage of film 2. The edge 34, as shown, can also be slightly thicker than the central part 5. These measures mean that film 2 under the influence of sound load can vibrate freely and can pass on the sound vibrations to layer 1, where they are absorbed.

Fig. 2 shows a sound-absorbing element in which the edge reinforcement comprises separate strips 6. These strips 6 can also be of the same thickness or slightly thicker than the layer 1.

Finally, in Fig. 3 a sheet 7 is disposed between film 2 and layer 1. Sheet 7 has great resistance to damage, such as perforation, and its purpose is to prevent the material of layer 1 from coming out in the event of ruptures in film 2.

Claims

1. Sound-absorbing element, comprising a layer of sound-absorbing material enveloped by a film casing, characterized in that at least two opposite edges of the layer are provided with an edge reinforcement, the thickness of which is at least equal to that of the layer. 5

2. Sound-absorbing element according to Claim 1, characterized in that the thickness of the edge reinforcement is less than 4 mm greater than that of the layer. 10

3. Sound-absorbing element according to Claim 1 or 2, characterized in that the layer is of mineral wool and the edge reinforcement of a compressed edge part of the mineral wool which is stronger than the rest of the layer. 15

4. Sound-absorbing element according to Claim 1 or 2, characterized in that the edge reinforcement comprises a separate strip of rigid material. 20

5. Sound-absorbing element according to one of the preceding claims, characterized in that a protecting film of greater tearing and tensile strength is provided between the film and the layer. 25

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fig - 1

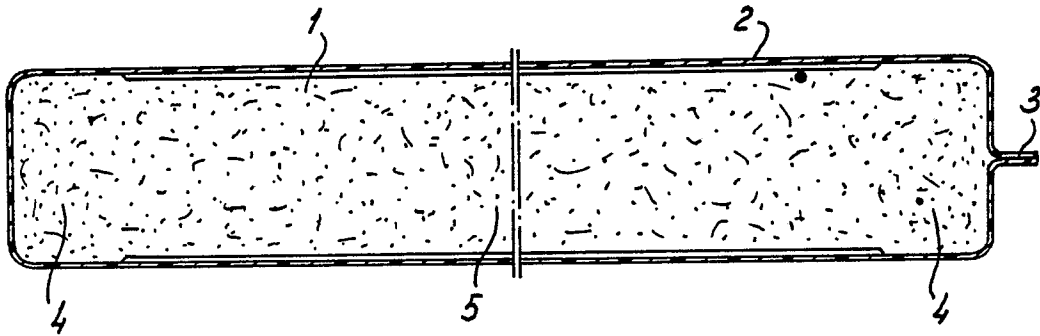


fig - 2

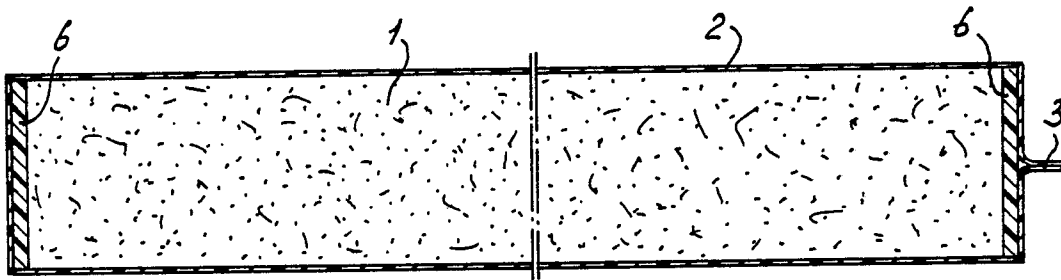
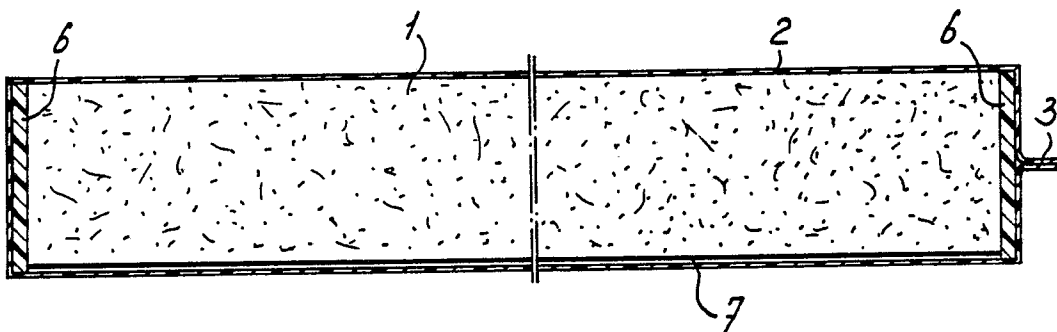


fig - 3





DOCUMENTS CONSIDERED TO BE RELEVANT															
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)												
Y	US-A-4 428 454 (CAPAUI et al.) * Column 3, lines 24-46; column 6, line 63 - column 7, line 47; figures 9,10 * ---	1-3	E 04 B 1/84												
Y	US-A-2 802 764 (SLAYTER) * Column 3, line 7 - column 4, line 16; figures 1-3 * -----	1-3													
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)												
			E 04 B												
The present search report has been drawn up for all claims															
Place of search THE HAGUE		Date of completion of the search 17-01-1989	Examiner CLASING M.F.												
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