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(54) **Cavity wall having dilatation joint**

(57) Cavity wall having an inner leaf, an outer leaf and a cavity situated in between them, wherein a dilatation joint is present in the outer leaf, wherein in the cavity, at the location of the dilatation joint, a strip-shaped screen has been arranged extending over the

height of the joint. Preferably the screen forms a profile, wherein the screen has been provided with folding lines between profile portions, which folding lines preferably are equidistant from each other.

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Description

[0001] The invention relates to a cavity wall having a dilatation joint. The invention furthermore relates to a provision for counteracting the penetration of damp/water into the cavity via the dilatation joint.

[0002] Dilatation joints have been arranged in the outer leaf of the cavity wall, in order to offer room to in particular horizontal shrinkage or stretch of the outer leaf. The minimal width of the joint has to be approximately 2 mm. In order to prevent precipitation passing through the joint and ending up in the cavity, against a layer of insulation material, such as glass wool plates, placed in there, the joint is sealed with a resilient putty. In order for said putty to follow the deformations it has to have a relatively considerable size, to which end the joint is made broader, usually as large as approximately 1 cm.

[0003] Particularly when the joint faces the south, particularly the south-west, the adhesion of putty and masonry considerably deteriorates in the course of time, as a result of which the putty comes loose and ends up hanging outside the joint. This can already happen within 10 years. Moreover the putty may discolour and no longer suit the colour of the masonry and/or give the wall a dirty look. For this reason it is necessary to replace the putty, however, one often fails to do so in view of the costs or because it is inconvenient.

[0004] It is furthermore disadvantageous that the putty has to be arranged in an extra action, after the masonry is ready, by another workman, especially hired for arranging putty. He places a band of swelling material in the joint, as back support, and then injects the putty in the joint. This entails considerable costs.

[0005] It is an object of the invention to improve on this.

[0006] From one aspect the invention to that end provides a cavity wall having an inner leaf, an outer leaf and a cavity situated in between them, wherein a dilatation joint is present in the outer leaf, wherein in the cavity, at the location of the dilatation joint, a strip-shaped screen has been arranged extending over the height of the joint.

[0007] The strip-shaped screen can easily be placed by the bricklayers, during laying the bricks of the outer leaf. The joint itself can now be left as it is, may even be left entirely open, and will always have the same look from the outside. The open joint moreover ensures a transverse ventilation between cavity and the outside air, as a result of which too large differences in pressure over the outer leaf are counteracted. The joint can be kept narrower, just enough for the shrinkage and stretching movements and for stopping insects, that means in the order of magnitude of 2-4 mm. The width of the strip-shaped screen can remain limited to for instance one or several dm.

[0008] Manageability and placeability can be improved when the screen forms a profile.

[0009] It is preferred here that the screen has been provided with folding lines between profile portions,

which folding lines preferably are equidistant from each other. The folding lines make transport in flat condition possible -improved when the profile portions themselves are flat as well- and make a simple adjustment to the local dimensions possible.

[0010] Said adjustment is further improved when the screen can be cut through at the location of the folding lines, and can thus be cut to size.

[0011] Preferably the folding lines are substantially horizontally oriented and the profile portions have a flat side facing the outer leaf. As a result water falling on the screen is discharged to the outer leaf.

[0012] Preferably the screen is placed in a zig-zag shaped manner, having outer folding lines at the side of the outer leaf and inner folding lines at the side of the inner leaf. The outer folding lines may here support against the outer leaf. The screen can thus bridge the nett cavity space and will take the zig-zag shape suited to it, securing itself to some extent.

[0013] When the cavity has been provided with a layer of insulation material which is attached against the inner leaf, the screen can support against the layer of insulation material, in particular with the inner folding lines. At that location the screen may be attached on the layer of insulation material, particularly by means of nails, such as the so-called PN sandwich nails. To that end the screen may have been provided with prefabricated holes for attachment means, such as nails. Also without nails, the screen supporting against the layer of insulation material and against the outer leaf can form an extra means for locally keeping the layer of insulation material flat, and thus function as an extra spacer.

[0014] The profile portions can form channel-shaped plates, for increased rigidity, for instance a sandwich plate having straight channel partitions or having a corrugated sheet in between. The profile portions may have been extruded as one unity, particularly from a synthetic material.

[0015] For increasing easy handling and adjustment to the local dimensions it is preferred that the screen has been built up from a number of identical screen members, that have been arranged one above the other, particularly with an overlap. The screen members may have a length or height in the order of magnitude of 1 m. This has the further advantage that already at a certain height of masonry a part of the screen can be placed, without the screen extending upwards from the work with a large free length.

[0016] The dilatation joint may be situated in a straight portion of the outer leaf. In case the joint is situated in or near a corner the screen can advantageously be formed or deformed in accordance with said corner.

[0017] From another aspect the invention provides a strip-shaped screen suitable and intended for a cavity wall according to the invention.

[0018] From a further aspect the invention provides a method for utilising the strip-shaped screen according to the invention in a cavity wall.

[0019] The invention will be elucidated on the basis of an exemplary embodiment shown in the attached drawings, in which:

Figure 1 shows an exemplary embodiment of a strip-shaped screen according to the invention, in an already zig-zag shaped folded condition, with a corner detail thereof according to figure 1A;

Figure 2 shows the strip-shaped screen according to figure 1, after placing, during laying the bricks of the outer leaf of a cavity wall;

Figure 3 shows a horizontal cross-section of a completed cavity wall, wherein the strip-shaped screen of figure 1 has been accommodated;

Figure 4 shows a vertical cross-section according to arrow IV in figure 3; and

Figure 5 shows an alternative screen arrangement according to the invention, at the location of a corner in the cavity wall.

[0020] The strip-shaped screen 1 in figure 1 has been made of synthetic material and comprises a number of strips 2, that are connected to each other by means of folding lines 3 and 4. The strip-shaped screen 1 has been obtained from larger plates of sandwich panels, having (see detail figure 1A) a lowermost panel 5, an uppermost panel 6, and longitudinal partitions 7 in between, which between them define channels 8. Said plate material is resistant to bending to a reasonable extent. Grooves are pressed in the plate material, alternately at the one side and the other side, by means of rollers in the known manner, in order to form folding lines 3 and 4, so that as shown in figure 1, the strip can be folded zig-zag shaped. Holes 9 for attachment means have furthermore been made in the "valley" folding lines 3.

[0021] The strip 1 has a width of approximately 20 cm. The distance between the folding lines may here be approximately 10 cm. The length of the strip, in unfolded condition, may be in the order of magnitude of 1 m to 1.50 m, for instance 1.30 m.

[0022] The strip 1 is lightweight, easy to fold and place. Said placing for instance takes place as shown in figure 2, wherein a cavity wall 10 during its building is shown. The cavity wall 10 has an inner leaf 11 and an outer leaf 12, and in between them a cavity 14. In the cavity 14 layer of insulation material 13, for instance glass wool plates or glass wool blankets, or PS foam, rock wool, or other insulation material, has been placed against the inner leaf 11. Against the joint side of the outer leaf 12 that has already been built up, a setting lath 19 has been placed, having a thickness of some millimetres. Subsequently a strip-shaped screen 1 according to the invention has been placed in the space

18 left over of the cavity 14, between the bricks 15 of the outer leaf 12 and the layer of insulation material 13, approximately for half its width. In figure 2 the other half is still visible. The strip-shaped screen 1 can be slid in in a somewhat stretched condition, and after that be let go of, after which the strip-shaped screen will give way a little due to gravity, until the folding lines 3 and 4 contact the layer of insulation material 13 and the inner surface of the outer leaf 12, respectively. Subsequently suitable nails, such as so-called PN nails, can be inserted through the holes 9 and into the layer of insulation material 13, in order to secure the level of the screen 1. This only needs to be done at the location of some of the folding lines 3.

[0023] Subsequently the outer leaf can be built at the lower side, and after that the setting lath 19 can be removed.

[0024] The situation shown in figure 3 is then achieved, in which it can be seen that the strip-shaped screen 1 has been fitted between the layer of insulation material 13 and the outer leaf 12. It does not matter here how big the distance is between insulation material and outer leaf, because due to the zig-zag shape and the folding lines a situation as shown in figure 3, in which both folding lines are supported, can at all times be achieved.

[0025] The joint 16 between adjacent bricks 15 and the outer leaf 12 can here be given a small thickness d of for instance 3 mm. As can be seen in figure 4 the strip-shaped screen 1 each time provides a dewatering surface because of the strips 2, towards the outer leaf 12, the water being discharged in the surface of the outer leaf 12 as a result of the support at the location of the folding lines 4.

[0026] In figure 4 it is shown that in vertical direction consecutive screens 1 can be brought in overlap with each other, wherein two strips 2 of a top screen are laid over the lowermost two strips of a bottom screen that has already been secured, after which the top screen is secured with the said PN nails, at the location of bottom folding line 3 of said top screen.

[0027] In figure 5 a situation is shown in which a dilatation joint 30 is situated in or near a corner in the cavity wall 10. The strip-shaped screen 31 according to the invention used here also has a kind of zig-zag shape, but has been folded here in horizontal direction into a strip that is also angular in horizontal cross-section, and as it were forms a part of a bellows, having inner folding lines 32 and outer folding lines 33, in between which strips 34, inclining to the inside, and strips 35, inclining to the outside have been formed.

[0028] The same bellows construction, but then not angularly folded, can also be used at the location of the earlier discussed dilatation joint situated in a straight cavity wall, as schematically shown in figure 5 by 31'.

[0029] The strip-shaped screens according to the invention can be placed by the bricklayer, during bricklaying activities. It is not necessary that after completion of

the bricklaying activities a workman with another expertise performs activities on the dilatation joints, such as the injection of putty.

Claims

1. Cavity wall having an inner leaf, an outer leaf and a cavity situated in between them, wherein a dilatation joint is present in the outer leaf, wherein in the cavity, at the location of the dilatation joint, a strip-shaped screen has been arranged extending over the height of the joint.

2. Cavity wall according to claim 1, wherein the screen forms a profile.

3. Cavity wall according to claim 2, wherein the screen has been provided with folding lines between profile portions, which folding lines preferably are equidistant from each other, wherein the screen preferably can be cut through at the location of the folding lines.

4. Cavity wall according to claim 3, wherein the profile portions are flat.

5. Cavity wall according to claim 3 or 4, wherein the folding lines are substantially horizontally oriented and the profile portions have a flat side facing the outer leaf.

6. Cavity wall according to claim 3, 4 or 5, wherein the screen is placed in a zig-zag shaped manner, having outer folding lines at the side of the outer leaf and inner folding lines at the side of the inner leaf, wherein preferably the outer folding lines support against the outer leaf.

7. Cavity wall according to any one of the preceding claims, wherein the cavity has been provided with a layer of insulation material which is attached against the inner leaf, wherein the screen supports against the layer of insulation material.

8. Cavity wall according to claims 6 and 7, wherein the inner folding lines support against the layer of insulation material.

9. Cavity wall according to claim 7 or 8, wherein the screen has been attached on the layer of insulation material, particularly has been attached on the layer of insulation material at the location of the inner folding lines, wherein preferably the screen has been attached on the layer of insulation material by means of nails.

10. Cavity wall according to claim 9, wherein the screen

has been provided with prefabricated holes for attachment means, such as nails.

11. Cavity wall according to claim 3 or 4, wherein the profile portions form channel-shaped plates.

12. Cavity wall according to claim 3 or 4, wherein the profile portions have been extruded as one unity.

13. Cavity wall according to any one of the preceding claims, wherein the strip-shaped screen has a horizontal width of one or several dm.

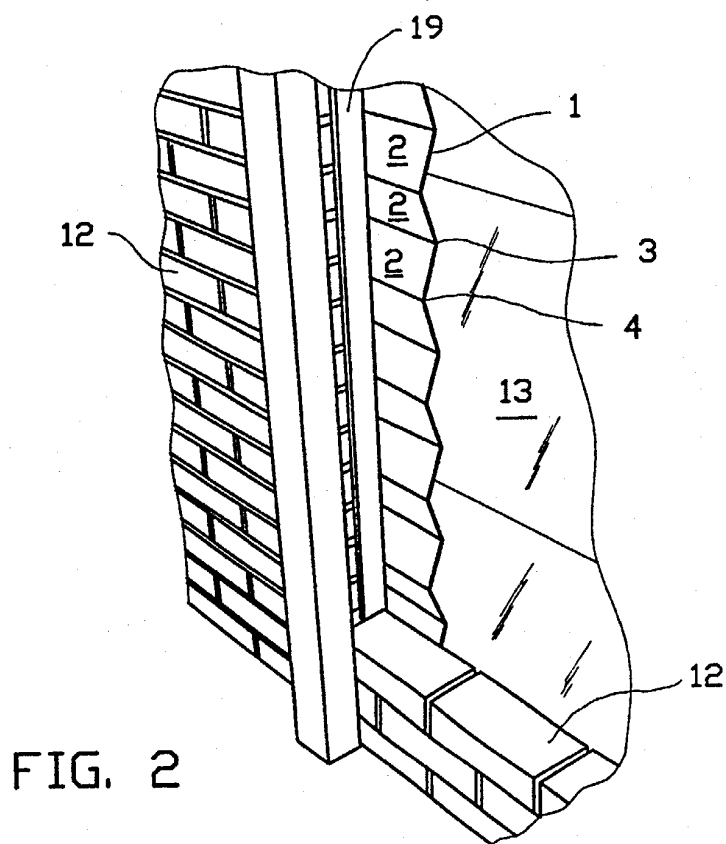
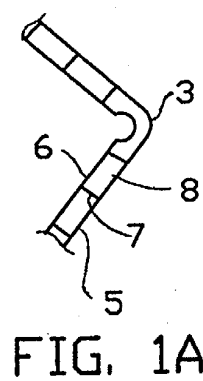
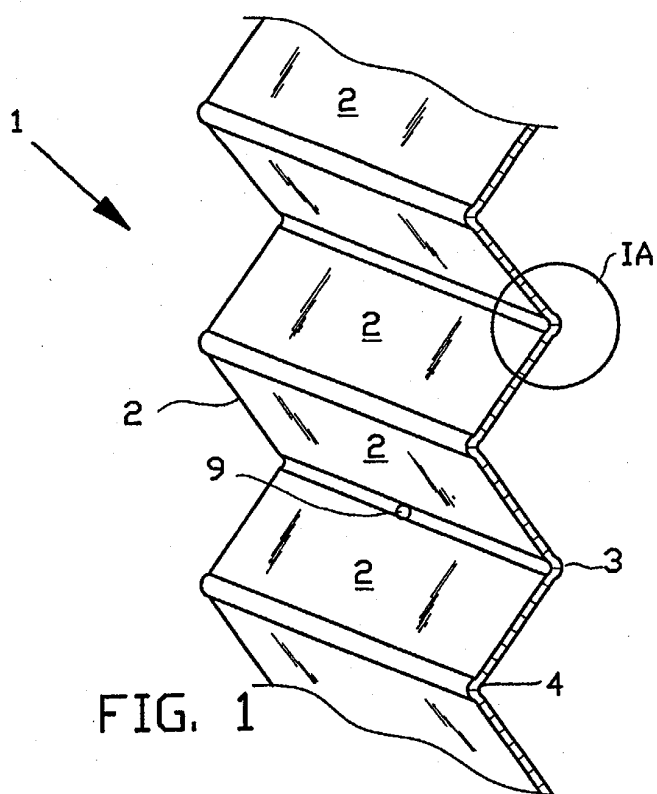
14. Cavity wall according to any one of the preceding claims, wherein the screen has been built up from a number of identical screen members, that have been arranged one above the other, particularly with an overlap, wherein preferably the screen members have a length or height in the order of magnitude of 1 m.

15. Cavity wall according to any one of the preceding claims, wherein the dilatation joint is entirely open.

16. Cavity wall according to any one of the preceding claims, wherein the dilatation joint has a width of more than 2 mm and less than 4 mm.

17. Cavity wall according to any one of the preceding claims, wherein the joint is situated in a straight portion of the outer leaf.

18. Cavity wall according to any one of the claims 1-16, wherein the joint is situated in or near a corner in the outer leaf, and has been turned.



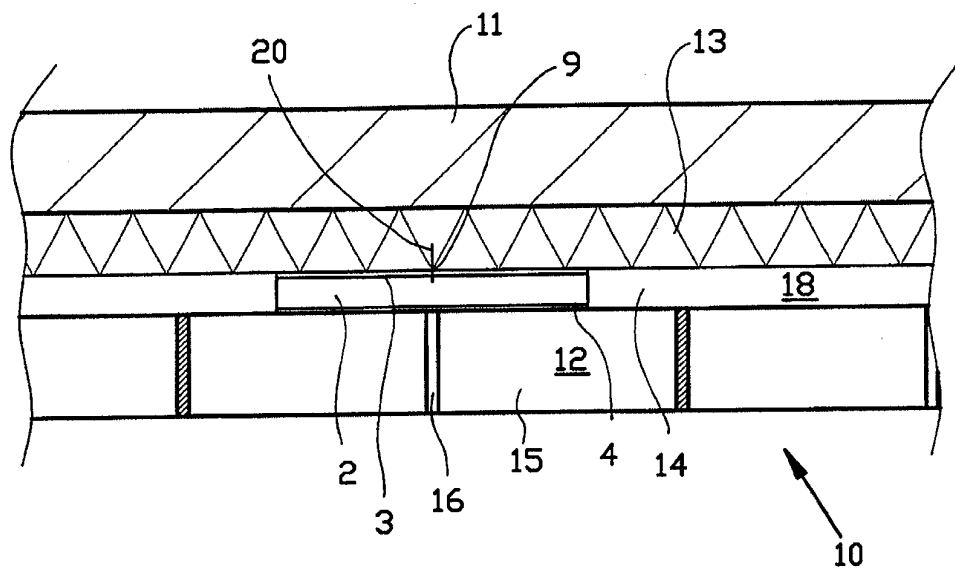


FIG. 3

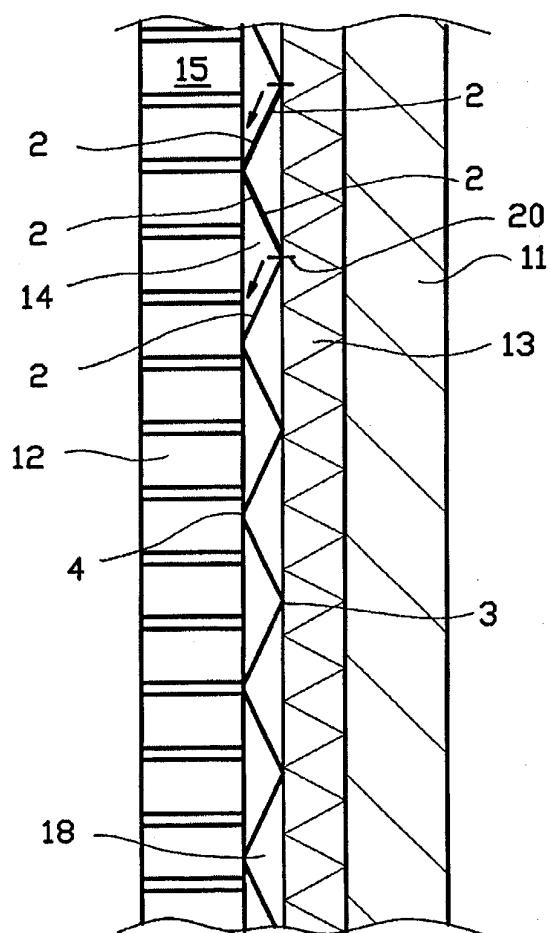


FIG. 4

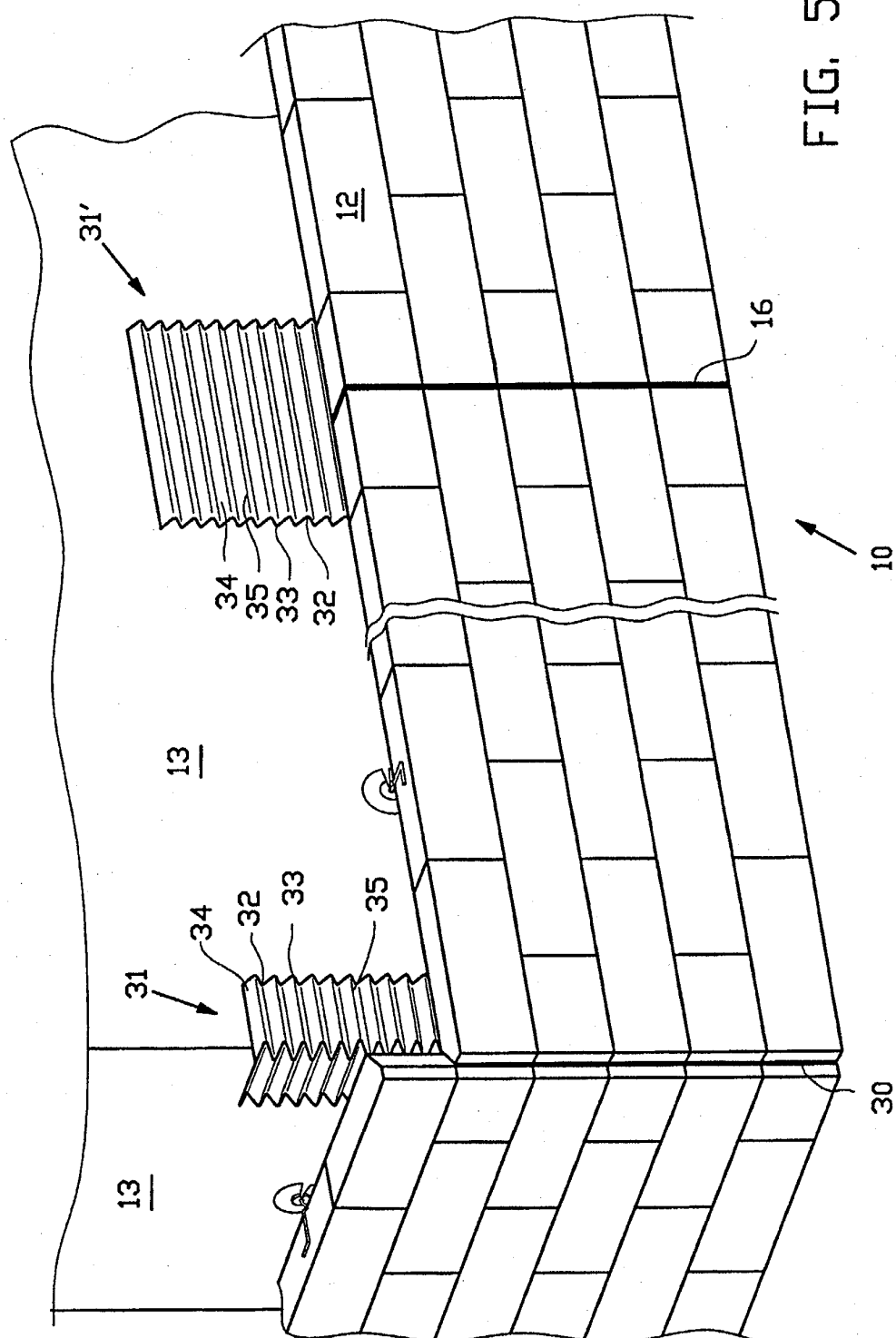


FIG. 5