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⑤④ **BUILDING BLOCK.**

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Description

The invention relates to a building block of the kind which is intended to form part of a vertical wall, a vertical facade or like building structure, and which is bonded to neighbouring building blocks by means of horizontal bed joints and vertical heading joints, and which building block has a channel-like recess, open at both ends thereof, formed in at least one end surface thereof bordering a heading joint. Such a block is known from, for example, FR—A—1 330 861.

When building a masonry wall or like structure from building blocks and mortar, the mortar is normally applied manually with the aid of a trowel to that end surface, or header face, of the block which borders a heading joint, and the block is then positioned on the mortar in the bed joint and pushed into position against the end surface of a previously laid block. A satisfactory heading joint is normally obtained, provided that the mortar has been correctly applied. The task of applying mortar, however, is relatively time consuming and therewith expensive. For the purpose of increasing the rate at which the blocks are laid, it has been proposed to pipe mortar or some equivalent jointing material under pressure onto the relevant surfaces of the blocks and onto respective cavities therebetween through a piping nozzle intended herefor, and it has been found in conjunction herewith that the bed joints can be applied readily with the aid of such a piping nozzle. Certain difficulties are encountered, however, in the case of heading joints, and voids readily occur in such joints, giving rise to the migration of moisture, which may result, for example, in water being conducted into rearwardly lying insulation. Attempts made to avoid such voids often result in excessive amounts of mortar on the outside of a facade, therewith dirtying the outer surface thereof, at the same time as mortar is liable to run down the rear surfaces of the building blocks and, for example, block the drainage holes of the wall structure of masonry.

A prime object of the invention is therefore to provide a building block of the aforesaid kind which will enable the use of a pipeable jointing material, hereinafter referred to as mortar, and which eliminates totally, or at least substantially, the risk of excessively large quantities of mortar exiting from the rear side of, for example, a building facade.

This object is achieved fully by means of the invention as defined in the following claims and described hereinafter with reference to the accompanying drawing, in which

Figure 1 illustrates a conventional building block bonded to a further conventional building block by means of a heading joint;

Figure 2 is a sectional view taken on the line II-II in Figure 1;

Figure 3 illustrates a building block according to the invention and the heading joint formed with an adjacent block;

Figure 4 illustrates a modified building block according to the invention, seen in the direction of the heading joint; and

Figure 5 is a view taken on the line V-V in Figure 4.

Figure 1 illustrates a conventional building block 1 made, for example, of burned clay, and a further, identical building block 2. Each of the conventional building blocks has on one end-surface thereof a channel shaped recess 6, which is open at both ends and which is intended to extend vertically. Although not shown, it is also possible to provide both mutually facing end-surfaces, or header faces, of the blocks adjoining the heading joint with such recesses 6, it will be assumed in the following that each block is provided with a recess 6 on solely one end-surface. When building a facade or like structure with building blocks and mortar, the blocks 1 and 2 are placed in spaced relationship to form visible joints and then pressed into the mortar of a bed joint 8 provided on underlying blocks 7 (Figure 2). As the blocks 1 and 2 are pressed into the mortar bed, mortar will be forced up into the recess 6, as illustrated in Figure 2, and when mortar under pressure is piped down into the recess, which is completely symmetrical in section between the surface 10 of the facade and the rear side 11 of the masonry, mortar will be forced from the recess to form strings or beads of mortar 4 and 5, of which the string 5 is scraped away. The bottom edge 5' of the string 5 will reach the mortar in the bed joint 8 earlier than central part 12 of the piped mortar, which also applies to the rear side, where the bottom edge 4' of the string 4 reaches the bed joint 8 more quickly than does the central part 12. The main reason for this is because the frictional resistance experienced by the inflowing mortar, which is applied substantially centrally of the recesses 6 located between the blocks 1 and 2 resting on the bed joint 8, is substantially equally as great towards the rear side 11 as towards the facade side 10, and because the readily flowable mortar is deflected downwards at the edge parts 6' of respective recesses. This results in an air-inclusion 9, which can only be removed by injecting a large surplus of mortar, with the associated disadvantages mentioned in the introduction and, naturally, causing excessive mortar losses.

With the building block constructed in accordance with the invention, as illustrated in Figures 3—5, the wall surface of the recess 6 is formed so that the frictional resistance is much greater in a direction towards the rear side 11 than towards the facade side or the front side 10, therewith ensuring that the heading joint is completely filled with mortar in a direction towards the front side 10 before the joint gap towards the rear side 11 is filled and mortar begins to exude, or in all events such that only a negligible amount of mortar exudes on the rear side subsequent to visually establishing that the joint is completely filled on the facade side. This high frictional-resistance towards the rear side results in a large pressure drop and the mortar is thereby guided towards

the facade side, where the pressure drop is low, and completely fills the heading joint, i.e. there is obtained a highly dense joint on the facade side of the structure, this side being exposed to rain and snow etc., therewith preventing water from penetrating to the rear side of the structure and entering the insulation present. It is possible by suitably adapting the viscosity of the mortar to prevent totally mortar from escaping on the rear side of the structure and, moreover, a gap 15 can be obtained on the rear surface of the heading joint 16 (Figure 3).

Such a gap 15 forms a barrier which is effective to prevent water penetrating through rearwardly lying insulation. In Figure 3 there is illustrated an embodiment of a recess 17, the wall of which is smoothly curved and presents a wall portion 18 of a smaller radius of curvature than the remaining wall portion 19 connecting with or terminating at the front side 10 of the structure. In order to increase the pressure drop within the wall portion 18 facing the rear side 11 still further, the respective rear side-surfaces 20 and 21 of the illustrated blocks 13 and 14 can be made slightly longer than the respective front side-surfaces 22 and 23, wherewith the free joint gaps on the rear side 11 of the structure will be narrower than the joint gaps on the front side thereof, or in extreme cases will be totally eliminated.

Figures 4 and 5 illustrate a modified recess of which the rear part 24 which produces a high degree of friction is provided with vertical cams or ridges 25, 26, 27 while the wall part 29 which faces the front side of the structure is smooth and creates but small friction, i.e. a low pressure drop. In this case, the two portions 24, 28 of the recess wall may have mutually the same radius of curvature, although the radius of the wall portion 24 is preferably smaller than that of the wall portion 28.

The aforescribed two embodiments of the recesses according to the invention are not limiting in any way and can be modified within the scope of the claims. It is an easy matter for one skilled in the art to arrive at all possible recess configurations capable of guiding the flow of mortar under pressure in a manner such that mortar will flow more readily to one side of a building block, the aforesaid facade side of the block, than to the other. One such modification may entail a recess which when seen in cross-section has the shape of a triangle, with the base thereof turned to face the rear side 11 of the block. One such recess having the shape of a right-angled triangle is indicated in broken lines on the left-hand end of the block 14 in Figure 3.

Claims

1. A building block (13) which is intended to form part of a vertical wall, a vertical facade or like structure and which is bonded to neighbouring building blocks by means of horizontal bed joints (8) and vertical heading joints (16), and which building block (13) is provided with a channel-like

recess (17), open at both ends, on at least one end-surface of the block bordering a heading joint (16), characterized in that a first wall portion (18; 24) of the recess connecting with a first external side-surface (20; 21) of the building block and extending along the heading joint is arranged to create a higher drop in pressure in the injectable jointing material forced down under pressure into the recess than that created by a second wall portion (19; 28) of the recess connecting with a second side-surface (22; 23) of the block located opposite said first side-surface (20; 21) and extending parallel therewith.

2. A building block according to Claim 1, characterized in that said first wall portion (18; 24) has a smaller radius of curvature than said second wall portion (19; 28).

3. A building block according to Claim 1 or Claim 2, characterized in that said first wall portion (18; 24) is provided with cams (25-27) which extend in the direction of the heading joint.

4. A building block according to Claim 1, characterized in that the recess has a substantially triangular cross-sectional shape, and in that the base of the triangle faces towards said first outer side-surface (20; 21).

5. A building block according to any of Claims 1 — 4, characterized in that said first outer side surface (20; 21) is longer than the second side-surface (22; 23) extending parallel therewith.

Patentansprüche

1. Baublock (13) für die Herstellung eines vertikalen Wandteiles, einer vertikalen Fassade oder ähnlicher Bauwerke, der mit den benachbarten Baublöcken durch horizontale Bettungsfugen (8) und vertikale Stirnverbindungsfugen (16) verbunden ist, wobei der Baublock (13) mit einer kanalartigen Aussparung (17) versehen ist, die an beiden Enden offen ist und an mindestens einer Endoberfläche des Blocks (13) an eine Stirnverbindungsfuge (16) angrenzt,

dadurch gekennzeichnet, daß ein erster Wandabschnitt (18; 24) der Aussparung, der sich an eine erste äußere Seitenoberfläche des Baublocks anschließt und sich entlang der Stirnverbindungsfuge (16) erstreckt, derart ausgebildet ist, daß er in dem unter Druck in die Aussparung eingepreßten, einspritzbaren Verbindungsmaterial einen höheren Druckabfall erzeugt, als von einem zweiten Wandabschnitt (19, 28) der Aussparung erzeugt wird, der sich an eine zweite Seitenoberfläche (22; 23) des Blockes anschließt, die der genannten ersten Seitenoberfläche (20; 21) gegenüberliegt und sich parallel zu dieser erstreckt.

2. Baublock nach Anspruch 1, dadurch gekennzeichnet, daß der erste Wandabschnitt (18; 24) einen kleineren Krümmungsradius hat als der zweite Wandabschnitt (19; 28).

3. Baublock nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß der erste Wandabschnitt (18; 24) mit Nocken (25 bis 27) versehen ist, die sich in Richtung der Stirnverbindungsfugen (16) erstrecken.

4. Baublock nach Anspruch 1, dadurch gekennzeichnet, daß die Aussparung eine im wesentlichen dreieckige Querschnittsform hat und daß die Basis des Dreieckes der äußeren Seitenoberfläche (20; 21) zugeordnet ist.

5. Baublock nach einem der Ansprüche 1 bis 4, dadurch gekennzeichnet, daß die äußere Seitenoberfläche (20; 21) länger ist als die zweite Seitenoberfläche (22; 23), welche sich parallel zu dieser erstreckt.

Revendications

1. Bloc de construction (13) qui est destiné à former un élément d'une paroi verticale, d'une façade verticale ou d'une structure semblable et qui est relié aux blocs de construction voisins au moyen de joints horizontaux (8) et de joints verticaux (16), et lequel bloc de construction (13) comporte un évidement en forme de rainure (17), ouvert aux deux extrémités, sur au moins une surface d'extrémité du bloc bordant un joint vertical (16), caractérisé en ce qu'une première partie de paroi (18; 24) de l'évidement qui est relié à une première surface de face extérieure (20; 21) du bloc de construction et s'étend le long du joint vertical, soit agencée pour créer une baisse de pression plus grande dans le matériau de jointoiement injectable forcé en descendant sous pression dans l'évidement que la baisse de pression créée par une seconde partie de paroi (19; 28) de l'évidement relié à une seconde surface de côté (22; 23) du bloc disposé face à ladite première surface de face (20; 21) et orienté parallèlement à cette dernière.

2. Bloc de construction selon la revendication 1, caractérisé en ce que ladite première partie de paroi (18; 24) possède un rayon de courbure inférieur à celui de ladite seconde partie de paroi (19; 28).

3. Bloc de construction selon la revendication 1 ou la revendication 2, caractérisé en ce que ladite première partie de paroi (8; 24) est équipée de cames (25; 27) qui sont orientés dans la direction du joint vertical.

4. Bloc de construction selon la revendication 1, caractérisé en ce que l'évidement a une forme de sa section droite sensiblement triangulaire et en ce que la base du triangle est tournée vers ladite première surface de face extérieure (20; 21).

5. Bloc de construction selon l'une quelconque des revendications 1 à 4, caractérisé en ce que ladite première surface latérale extérieure (20; 21) est plus longue que la seconde surface latérale (22; 23) parallèle à la première.

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