

Description

This invention relates to integrated panel systems and insulated panel units.

Particularly, the panels of this invention are suitable for use as wall panels although it will become apparent on a reading of the specification that the panels may be used in other applications. Hereafter, reference to the invention will be described by reference to wall panels only. However, it is to be understood that the invention is not so limited.

The building industry is often confronted with a need to provide premises which can be relatively quickly and inexpensively erected. In the past, it has been proposed and practiced to substitute conventional external cladding materials such as bricks and timber with insulated metal panels which can be simply affixed to the metal superstructure or frame of a building being constructed. Many buildings have been constructed using such panels and they are particularly suitable for use as the external cladding of factories, warehouses and public buildings. Although, of course, use of the insulated wall panel is not limited to these applications.

US-A-4360553 discloses, as prior art thereto, a sandwich panel comprising two sheets with an insulating material, eg. foam, sandwiched therebetween and provided with a double tongue and groove on two opposite sides so that a row of panels can be assembled with one another. US-A-4360553 discloses an improved sandwich panel of this type in which double tongues are provided on each of two adjacent edges and double grooves are formed along the remaining two adjacent edges permitting the panels to be assembled in columns as well as rows. The arms of the double tongues are cranked at the panel corner where the tongues meet to accommodate the arms of the double tongues of an adjoining panel. The double groove of said prior art panels is formed by a profile of plastics material clamped at its ends in folded over edges of the outer sheets.

The present invention relates to building panels of substantially quadrilateral shape defined by four edge surfaces wherein two edge surfaces include tongue members thereon and two edge surfaces include grooves therein; said tongue members on one panel being engageable in said grooves on corresponding panels so that two or more of said panels may be engaged either horizontally or vertically by means of said tongue members of one panel being inserted into the grooves in corresponding panels.

The tongue members and grooves of the panel are shaped such that similar wall panels of the invention can be engaged, the tongue member of one panel being adapted to fit within a complementary groove of another panel. Preferably, the grooves are on two adjacent edge surfaces of the panel; the tongue members being on the other two adjacent edge surfaces.

However, whether the panel be configured with tongues and grooves on adjacent edge surfaces or tongues and grooves on alternate edge surfaces it is possible to join the panels in either a vertical or horizontal mode as each edge surface is provided with an engaging tongue member or groove.

A weather seal is provided by inserting a sealing member at the end of the respective tongue member when two panels are assembled together. Preferably, the sealing member is made of a compressible foam.

The wall panels of the present invention are constructed of a core material which is laminated on both sides. Usually, the laminate material covers the core material throughout its exposed surface except at the top of the tongues and the base of the grooves whereby upon assembly of a number of panels to form a structure, the said structure comprises continuously separated inner and outer laminated skins. The laminating material may be any suitable polymeric or metallic layer. Most preferably, it is metallic. A metallic laminate may be chosen from a number of different materials already known in the art. For instance, aluminium, stainless steel or COLORBOND STEEL (a registered trademark) may be selected. The choice of material is dependent greatly on the situation in which the panel is to be used. Preferably, the core material is an insulating material. A number of insulating materials are suitable and are known in the art. Most preferably, an extruded polystyrene foam is selected. The core materials may be of variable thickness enabling thermal and structural properties to be varied as is required in any building specification.

Once assembled, a wall constructed of laminated panel units will have a continuously separated inner and outer laminated skin. In a fire, such separation allows molten foam to flow to the bottom of the structure. This is a safety feature which has not existed in the prior art.

The laminate extends beyond the core material at the tongue edges of the panel in order to provide a slot at the end of the tongue member. This slot firmly retains a sealing member, preferably made of a compressible foam.

The invention is characterised in that the laminate on the groove edges is shaped around the ends of the edges and back down the grooves so that it covers the internal walls of the grooves and further is shaped at the bottom of the groove to hook back on both sides thus providing protrusions which are directed back out of the groove on both sides. In such an embodiment, if an adjacent panel includes a tongue edge with a compressible foam sealing member as aforesaid then when the tongue member is inserted into the groove, the foam material is restrained from extending to the end of the groove. The compressible foam sealing member is thus more securely retained in the groove by these extending protrusions. In such an assembly, the compressible foam seal has been found to be very

effective in providing a capillary break thus substantially preventing water penetration by capillary action. Such a sealing method avoids the need for builders to use caulking materials which have necessarily been required when weather seals have been previously provided in known wall cladding systems of this type.

Preferably, the protrusion is curved or bent back at the ends to prevent damage to the sealing member. It will be appreciated that the protrusions also act as hooks to more securely retain the engaging panel. When two panels are assembled in the manner described above, the hook formed by the laminate secures the end of the laminate which extends beyond the core material at the tongue edge of the other panel.

This provides a further benefit in that the hook ensures that the laminates of the two panels are firmly locked together. This is particularly advantageous in the case of fire as it substantially prevents buckling of the panels.

It has been additionally discovered by the applicant that the water seal between the panels can be improved even further if a small gap is provided between the panels to allow water run off.

Thus, in a further preferred embodiment of the invention, a run off gap is provided at the joints when the panel units are assembled. This may be provided by shaping the grooves so that at the edge of the panel, the groove is dimensioned wider than the engaging tongue member of the adjacent panel. The groove is also provided with a narrow portion so that the width of the groove towards its base is substantially the same width as the engaging tongue member. To ensure that a run off gap is provided, the tongue panel is made of sufficient length so that when the panels are engaged and the tongue is fully inserted into the grooves the outside edges of the respective panels are not in contact. Most preferably, the laminated edge leading up to the tongue on the edge of the adjacent panel is downwardly sloped to ensure that driven rain quickly and easily runs off the joint. In the manufacture of panels made in accordance with this invention, the groove can be either provided by machining the edge surface to the desired shape or by inserting an extruded or molded section of the desired shape into a slot provided along the edge surfaces of the panel. Such a section could be made of metal or plastics material.

It will be appreciated that any number of panels made in accordance with this invention can be assembled together in a vertical or horizontal direction. Preferably, the corners of the panel are shaped to allow easy assembly of a plurality of panels. Thus, a building made in accordance with the invention may in a preferred form be provided wherein at each of the respective corners of the said panel to which the tongue members extend the said tongue members include an interlocking portion proximate the said respective cor-

ners, said interlocking portions on each of the respective tongue members being shaped such that upon assembly of a number of said panels the interlocking portions mutually cooperate at the points of common connection so to enable the respective panels to engage with each other at the said points of common connection. Preferably, at corners where four panels meet when assembled, the edges are dovetailed for a clean and tight joint. In other words, it is desirable for the corners of the edges to be pressed differently so that they cooperate. In such an embodiment the laminate on the corner of one tongue may be inset, the laminate on the corner of another tongue may be set out of the plane and the remaining laminate may remain in the same plane throughout. In such a configuration when four edges meet, the laminate at each corner will overlap to ensure tight connection and a close tolerance fit.

The panels of this invention may be affixed to the superstructure or frame of a building in a number of different ways. Such methods would be recognized by any person skilled in the art.

Preferably, a fixing bracket is used which is adapted to be bolted or otherwise affixed to a superstructure and which is adapted to be secured to the side or edge of the panel. Alternatively, a hook fastener can be used which comprises a fixing bracket and lug. Such a bracket can be affixed by bolts or other means to the frame of the building or structure with the lug affixed to a panel. Preferably, the lug is inserted into the ramp leading up to the tongue on one of the tongue edges of the panel or into the side of the panel. To facilitate more reliable connection it may be appropriate to strengthen the tongue member by the inclusion of a pressed metal tongue stiffener during the manufacture of the panels. Such hook fasteners allow easy, quick fixing of panels on site without close tolerance problems encountered by the prior art. It will also be apparent to those skilled in the art that the joining system used in the panels of this invention can be adopted in the sides of windows or door jambs. This enables simple and reliable construction of a building utilizing panels and other fixtures using the one universal jointing system.

The invention will now be described by way of example with reference to the accompanying drawings in which:

Figure 1 is a perspective view of the end portions of four panel units made in accordance with the present invention.

Figure 2 is a cross-sectional view of two panels made in accordance with the present invention in an assembled form.

Figure 3 is a perspective view of a fixing bracket which may be used in attaching panels made in accordance with the invention.

Figure 4 is a cross-sectional view of two assembled wall panels made in accordance with the inven-

tion secured to a frame by a fixing bracket illustrated in Figure 3.

Figure 5 is a perspective view of a fixing bracket and lug which may be used in attaching panels made in accordance with the invention.

Figure 6 is a cross-sectional view of two assembled wall panels made in accordance with the invention secured to a frame by the fixing bracket illustrated in Figure 5.

Figure 7 is a perspective view of an alternative fixing bracket.

Figure 8 is a cross-sectional view of a wall panel made in accordance with the invention secured to a masonry wall by the fixing bracket illustrated in Figure 7.

Figure 9 is a perspective view of an alternative fixing bracket.

Figure 10 is a cross-sectional view of two assembled wall panels made in accordance with the invention secured to a frame by the fixing bracket illustrated in Figure 9.

Figure 11 is a perspective view of an alternative fixing bracket.

Figure 12 is a cross-sectional view of two assembled wall panels made in accordance with the invention secured to a masonry wall by the fixing bracket illustrated in Figure 11.

Figure 13 is a perspective view of an alternative fixing bracket.

Figure 14 is a cross-sectional view of two assembled wall panels made in accordance with the invention secured to a steel cleat by the fixing bracket illustrated in Figure 13.

Figure 15 is a cross-sectional view of a wall panel made in accordance with the invention assembled with a fitting to insert a window jamb.

Figure 16 is a cross-sectional view of a wall panel made in accordance with the invention assembled with a cooperative fitting to facilitate insertion of a door jamb.

In Figure 1 there is a disclosed detail of each corner of a wall panel constructed in accordance with the preferred embodiment of this invention. For the purposes of more easily understanding how two or more of the panels of the invention cooperate, Figure 1 illustrates the four different corners of a preferred embodiment of the invention as they would meet at the point of common connection between four of the said panels. The wall panels are not shown as complete units but are each substantially quadrilateral in shape. Two edge surfaces of each of the panels are provided with grooves 2 and 3. The other edge surfaces are provided with tongue members 4 and 5. As can be seen in Figure 1, the tongue members 4 and 5 and grooves 2 and 3 of the wall panel unit are shaped to cooperate with the respective grooves 2 and 3 and tongue members 4 and 5 of other wall panel units made in accordance with the invention. The wall panel

is provided with grooves 2 and 3 along adjacent edges as is illustrated on corner 1.

The other two adjacent edges of the wall panel are provided with tongue members 4 and 5 as illustrated in corner 6.

The panel unit is laminated with a metallic material 7 and has an extruded polystyrene foam core 8. The laminate 7 extends beyond the extruded polystyrene foam core 8 along the tongue members 4 and 5 of the panel to provide a slot 9. Within slot 9 a compressible foam seal 10 is inserted. This material acts as a weather seal when the tongue 4 or 5 is inserted into a groove 2 or 3. The laminate 7 on the grooves 2 and 3 is shaped around the ends of the edges and back down the grooves 2 and 3 so that it covers the internal walls 11 of the grooves 2 and 3. As can be seen in Figure 2, at the bottom of the grooves 2 or 3 the laminate 7 is hooked back on both sides to form protrusions 12. These protrusions 12 are rounded at the ends 13 so that when the tongue members 4 or 5 and compressible foam seal material 10 of an adjacent wall panel unit are inserted into groove 2 or 3 the protrusions 12 will not damage the compressible foam seal 10. Furthermore, the protrusions 12 restrain the compressible foam seal 10 from being pushed right to the end of the groove 2 or 3 when the tongue member 4 or 5 is inserted. This causes the compressible foam seal 10 to be more securely compressed within slot 9 in the tongue member 4 or 5. As the tongue members 4 or 5 are inserted into the grooves 2 or 3 the extending portion of the laminate 14 fits within the hook formed by protrusion 12. This ensures that the laminates of the two panels are firmly locked together when the tongue members 4 or 5 are engaged in the grooves 2 or 3.

A gap 15 is provided between the assembled panels to improve water run off. As illustrated in Figure 2, gap 15 is provided due to the length of tongue 4 or 5 additional to the depth of groove 2 or 3. This gap continues up the side 16 of the assembled panels due to greater width of groove 2 or 3 at its commencement compared with its width where indicated at 17. Ledge 18 is angled slightly downwards to ensure proper and good run off. It will be appreciated that when the panels are assembled as illustrated in Figure 2, the compressible foam seal 10 forms a substantially water tight seal whilst the gap 15 enables any moisture and water which enters the joint, say as a result of driven rain, to simply run off the joint.

The edges of the laminate shown in Figure 1 are offset relative one to the other so that a close fitting can be obtained when four panels of the invention are assembled together. The laminate in this preferred embodiment is pressed out at 19, pressed in at 20 and is left in the same plane at 21. As the various panels are joined together, these laminates overlap enabling a close and secure joint.

Turning to Figures 3 to 14, there is illustrated a

number of different fixing brackets which can be used to affix a panel or panels of the present invention to different structures. These are by way of example only and are not intended to limit the scope of the present invention.

Where fixing brackets are used as illustrated in Figures 3, 5, 9, 11 and 13, it is desirable to strengthen the tongue members 4 and 5 with a pressed metal tongue stiffener 22. The fixing brackets used are preferably made of galvanized steel.

In Figure 15 there is illustrated a window jamb 23 shaped in cooperation with groove 2 or 3. The window jamb 23 being attached in this example via a specially shaped extrusion 26 to a piece of aluminium trimming 25. Aluminium trimming 25 in turn is attached to a piece of fixing angle 24. The extrusion 26 which is preferably made of aluminium allows the window to resemble a panel unit in that it can fit adjacent to and in the same plane as other panel units. In Figure 16 there is illustrated a door head 27 shaped to cooperate with groove 2 or 3 again via shaped extrusion 26.

Finally, it is to be understood that the foregoing description refers merely to preferred embodiments of the present invention and that variations and modifications are possible without departing from the scope of the invention as defined in the appended claims.

Claims

1. A building panel of substantially quadrilateral shape defined by four edge surfaces in which two edge surfaces include tongue members (4, 5) thereon and two edge surfaces include grooves (2, 3) therein, said tongue members (4, 5) on one panel being engageable in said grooves (2, 3) on corresponding panels so that two or more of said panels may be engaged either horizontally or vertically by means of said tongue members (4, 5) of one panel being inserted into the grooves (2, 3) in corresponding panels, said panel being constructed of a core material (8) which is laminated (7) on both sides and wherein the laminate (7) extends (14) beyond the core material (8) to provide a slot at the end of the respective tongue member (4, 5) to receive a sealing member (10), characterised in that:

the laminate (7) is shaped round the ends of the edges and back down the grooves (2, 3) to cover the internal walls (11) of the grooves (2, 3) and wherein protrusions (12) are formed by shaping laminate (7) at the bottom of the grooves (2, 3) to hook back on both sides so to restrain the said sealing member (10) against the top of the tongue member (4, 5) of the engaging panel when the respective panels are connected.

2. A building panel as claimed in Claim 1, wherein the laminate material (7) covers the core material (8) throughout its exposed surface except at the top of the

tongue members (4, 5) and the base of the grooves (2, 3) such that upon assembly of a number of building panels to form a structure, the said structure will comprise continuously separated inner and outer laminated skins.

3. A building panel as claimed in either of the preceding claims, wherein, at each of the respective corners (1, 6) of the said panel to which the tongue members (4, 5) extend, the said tongue members (4, 5) include an interlocking portion proximate the said respective corners (1, 6), said interlocking portions on each of the respective tongue members being shaped such that, upon assembly of a number of said panels, the interlocking portions mutually cooperate at the points of common connection so to enable the respective panels to engage with each other at the said points of common connection.

4. A building panel as claimed in any of the preceding claims, wherein the said core material (8) is a thermal insulating material.

5. A building panel as claimed in Claim 4, wherein the core material is polystyrene foam.

6. A building panel as claimed in any one of the preceding claims, wherein two adjacent edge surfaces include tongue members (4, 5) thereon and two adjacent edge surfaces include grooves (2, 3) therein.

7. A building panel as claimed in Claim 6, wherein the laminate (7) on one said tongue member (5) at one corner (20) of the panel is inset, the laminate (7) on the tongue member (5) at another corner (19) of the panel is set out of the plane of the tongue member, and on the remaining corner (21) of the panel which comprises a tongue member (4) the laminate (7) remains in the same place throughout the length of the tongue member such that upon assembly of a number of said panels the laminate portions (19, 20, 21) at the said corners mutually cooperate and dovetail at the points of common connection so to enable the respective panel to engage with each other at the said points of common connection.

8. A building panel as claimed in any one of the preceding claims, wherein the said grooves (2, 3) are provided with an entry portion (16) and an engagement portion (17), the said entry portion (16), being shaped as to not engage the tongue member (4, 5) of a corresponding panel and said engagement portion (17) being shaped so that it is adapted to accept and restrain the said tongue member (4, 5) and wherein the depth of the said grooves (2, 3) is less than the length of the engaging tongue members (4, 5) so to provide a water run off section (15) between engaged building panels.

9. A building panel as claimed in any one of the preceding claims, wherein the panel is essentially rectangular.

number of different fixing brackets which can be used to affix a panel or panels of the present invention to different structures. These are by way of example only and are not intended to limit the scope of the present invention.

Where fixing brackets are used as illustrated in Figures 3, 5, 9, 11 and 13, it is desirable to strengthen the tongue members 4 and 5 with a pressed metal tongue stiffener 22. The fixing brackets used are preferably made of galvanized steel.

In Figure 15 there is illustrated a window jamb 23 shaped in cooperation with groove 2 or 3. The window jamb 23 being attached in this example via a specially shaped extrusion 26 to a piece of aluminium trimming 25. Aluminium trimming 25 in turn is attached to a piece of fixing angle 24. The extrusion 26 which is preferably made of aluminium allows the window to resemble a panel unit in that it can fit adjacent to and in the same plane as other panel units. In Figure 16 there is illustrated a door head 27 shaped to cooperate with groove 2 or 3 again via shaped extrusion 26.

Finally, it is to be understood that the foregoing description refers merely to preferred embodiments of the present invention and that variations and modifications are possible without departing from the scope of the invention as defined in the appended claims.

Claims

1. A building panel of substantially quadrilateral shape defined by four edge surfaces in which two edge surfaces include tongue members (4, 5) thereon and two edge surfaces include grooves (2, 3) therein, said tongue members (4, 5) on one panel being engageable in said grooves (2, 3) on corresponding panels so that two or more of said panels may be engaged either horizontally or vertically by means of said tongue members (4, 5) of one panel being inserted into the grooves (2, 3) in corresponding panels, said panel being constructed of a core material (8) which is laminated (7) on both sides and wherein the laminate (7) extends (14) beyond the core material (8) to provide a slot at the end of the respective tongue member (4, 5) to receive a sealing member (10), characterised in that:

the laminate (7) is shaped round the ends of the edges and back down the grooves (2, 3) to cover the internal walls (11) of the grooves (2, 3) and wherein protrusions (12) are formed by shaping laminate (7) at the bottom of the grooves (2, 3) to hook back on both sides so to restrain the said sealing member (10) against the top of the tongue member (4, 5) of the engaging panel when the respective panels are connected.

2. A building panel as claimed in Claim 1, wherein the laminate material (7) covers the core material (8) throughout its exposed surface except at the top of the

tongue members (4, 5) and the base of the grooves (2, 3) such that upon assembly of a number of building panels to form a structure, the said structure will comprise continuously separated inner and outer laminated skins.

3. A building panel as claimed in either of the preceding claims, wherein, at each of the respective corners (1, 6) of the said panel to which the tongue members (4, 5) extend, the said tongue members (4, 5) include an interlocking portion proximate the said respective corners (1, 6), said interlocking portions on each of the respective tongue members being shaped such that, upon assembly of a number of said panels, the interlocking portions mutually cooperate at the points of common connection so to enable the respective panels to engage with each other at the said points of common connection.

4. A building panel as claimed in any of the preceding claims, wherein the said core material (8) is a thermal insulating material.

5. A building panel as claimed in Claim 4, wherein the core material is polystyrene foam.

6. A building panel as claimed in any one of the preceding claims, wherein two adjacent edge surfaces include tongue members (4, 5) thereon and two adjacent edge surfaces include grooves (2, 3) therein.

7. A building panel as claimed in Claim 6, wherein the laminate (7) on one said tongue member (5) at one corner (20) of the panel is inset, the laminate (7) on the tongue member (5) at another corner (19) of the panel is set out of the plane of the tongue member, and on the remaining corner (21) of the panel which comprises a tongue member (4) the laminate (7) remains in the same place throughout the length of the tongue member such that upon assembly of a number of said panels the laminate portions (19, 20, 21) at the said corners mutually cooperate and dovetail at the points of common connection so to enable the respective panel to engage with each other at the said points of common connection.

8. A building panel as claimed in any one of the preceding claims, wherein the said grooves (2, 3) are provided with an entry portion (16) and an engagement portion (17), the said entry portion (16), being shaped as to not engage the tongue member (4, 5) of a corresponding panel and said engagement portion (17) being shaped so that it is adapted to accept and restrain the said tongue member (4, 5) and wherein the depth of the said grooves (2, 3) is less than the length of the engaging tongue members (4, 5) so to provide a water run off section (15) between engaged building panels.

9. A building panel as claimed in any one of the preceding claims, wherein the panel is essentially rectangular.



Patentansprüche

1. Gebäudeplatte mit im wesentlichen viereckiger durch vier Seitenflächen gebildeter Form, bei der zwei Seitenflächen Zungenelemente (4, 5) und zwei Seitenflächen Nuten (2, 3) aufweisen, die Zungenelemente (4, 5) einer Platte mit den Nuten (2, 3) einer entsprechenden Platte in Eingriff treten können, so daß zwei oder mehr Platten durch Einfügen der Zungenelemente (4, 5) einer Platte in die Nuten (2, 3) in entsprechenden Platten horizontal oder vertikal in Verbindung gebracht werden können, die Platte aus Kernmaterial (8) mit auf beiden Seiten aufgebrachtem Laminat (7) hergestellt ist und bei der das Laminat (7) über das Kernmaterial (8) herausstehende Vorsprünge (14) aufweist, um am Ende des entsprechenden Zungenelementes (4, 5) einen Schlitz zur Aufnahme eines Dichtungselementes (10) zu bilden, dadurch gekennzeichnet, daß

das Laminat (7) um die Enden der Ränder und zurück zu den Nuten (2, 3) hinunter so geformt ist, daß die Innenwände (11) der Nuten (2, 3) abgedeckt sind, und daß durch Formung des Laminats (7) am Boden der Nuten (2, 3) durch beiderseitiges hakenförmiges Zurückbiegen Ansätze (12) ausgebildet sind, so daß das Dichtungselement (10) gegen die Oberseite des Zungenelementes (4, 5) der eingreifenden Platte zurückgehalten wird, wenn die entsprechenden Platten miteinander verbunden werden.

2. Gebäudeplatte nach Anspruch 1, bei der das Laminatmaterial (7) das Kernmaterial (8) auf der freiliegenden Oberfläche mit Ausnahme der Oberseite der Zungenelemente (4, 5) und der Basis der Nuten (2, 3) abdeckt, so daß beim Zusammensetzen einer Anzahl von Gebäudeplatten eine Struktur gebildet wird, welche kontinuierlich getrennte innere und äußere laminierte Hälften umfaßt.

3. Gebäudeplatte nach den vorhergehenden Ansprüchen, bei der an den entsprechenden Ecken (1, 6) der Platte, zu der die Zungenelemente (4, 5) verlaufen, diese Zungenelemente (4, 5) nahe den entsprechenden Ecken (1, 6) ein Verbindungsteil vorgesehen ist und Verbindungsteile auf den entsprechenden Zungenelementen so geformt sind, daß sie beim Zusammensetzen einer Anzahl von Platten an gemeinsamen Verbindungsstellen wechselseitig derart zusammenwirken, daß die entsprechenden Platten an den gemeinsamen Verbindungsstellen miteinander in Eingriff treten können.

4. Gebäudeplatte nach den vorhergehenden Ansprüchen, bei der das Kernmaterial (8) thermisch isolierendes Material ist.

5. Gebäudeplatte nach Anspruch 4, bei der das Kernmaterial Polystyrolschaum ist.

6. Gebäudeplatte nach den vorhergehenden Ansprüchen, bei der zwei benachbarte Seitenflächen Zungenelemente (4, 5) und zwei benachbarte Seitenflächen Nuten (2, 3) aufweisen.

7. Gebäudeplatte nach den vorhergehenden Ansprüchen, bei der das Laminat auf einem der Zungenelemente (5) an einer Ecke (20) der Platte rückgesetzt, das Laminat (7) auf dem Zungenelement (5) an einer weiteren Ecke (19) der Platte aus der Ebene des Zungenelementes herausgesetzt ist und auf der verbleibenden Ecke (21) der Platte, welche ein Zungenelement (4) umfaßt, über die Länge des Zungenelementes in der gleichen Ebene bleibt, so daß die Laminatteile (19, 20, 21) an den Ecken beim Zusammensetzen einer Anzahl von Platten wechselseitig zusammenwirken und an gemeinsamen Verbindungsstellen so ineinander passen, daß die entsprechende Platte mit jeder weiteren Platte an den gemeinsamen Verbindungsstellen in Eingriff treten kann.

8. Gebäudeplatte nach den vorhergehenden Ansprüchen, bei der die Nuten (2, 3) ein Eintrittsteil (16) und ein Eingriffsteil (17) aufweisen, das Eintrittsteil (16) so geformt ist, daß es mit dem Zungenelement (4, 5) einer entsprechenden Platte nicht in Eingriff tritt und das Eingriffsteil (17) so geformt ist, daß es das Zungenelement (4, 5) aufnimmt und hält, und bei der die Tiefe der Nuten (2, 3) kleiner als die Länge der eingreifenden Zungenelemente (4, 5) ist, so daß zwischen miteinander in Verbindung stehenden Gebäudeplatten ein Wasserablaufabschnitt (15) entsteht.

9. Gebäudeplatte nach den vorhergehenden Ansprüchen, die im wesentlichen rechteckförmig ausgebildet ist.

Revendications

1. Panneau de construction de forme sensiblement quadrilatérale défini par quatre surfaces de tranche dont deux de ces surfaces de tranche comprennent des languettes (4, 5) formées sur ces dernières et dont deux de ces surfaces de tranche comprennent des rainures (2, 3) formées dans ces dernières, lesdites languettes (4, 5) sur un des panneaux pouvant être engagées dans lesdites rainures (2, 3) sur les panneaux correspondants de telle sorte que deux ou plus de deux desdits panneaux puissent être assemblés soit horizontalement soit verticalement au moyen desdites languettes (4, 5) d'un des panneaux qui sont insérés dans les rainures (2, 3) des panneaux correspondants, le panneau précité étant constitué d'une âme (8) qui est revêtue (7) sur ses deux faces et dans lequel la feuille de revêtement (7) s'étend (14) au-delà de l'âme (8) de manière à constituer une fente à l'extrémité de la languette respective (4, 5) pour recevoir un élément d'étanchéité (10), caractérisé en ce que :

la feuille de revêtement (7) est conformée autour des arêtes des tranches et rabattue dans les rainures (2, 3) de manière à recouvrir les parois inter-



nes (11) des rainures (2, 3) et des saillies (12) sont formées par conformation de la feuille de revêtement (7) au fond des rainures (2, 3) de manière à effectuer un accrochage sur les deux côtés afin de retenir l'élément d'étanchéité (10) contre le sommet de la languette (4, 5) du panneau engagé quand les panneaux respectifs sont assemblés.

2. Panneau de construction selon la revendication 1, dans lequel la feuille de revêtement (7) recouvre l'âme (8) sur la totalité de sa surface nue à l'exception du sommet de languettes (4, 5) et de la base des rainures (2, 3) de telle sorte que lors de l'assemblage de plusieurs panneaux de construction pour former une structure, ladite structure comprenne des revêtements intérieur et extérieur séparés d'une façon continue.

3. Panneau de construction selon l'une quelconque des revendications précédentes, dans lequel, à chacun des angles respectifs (1, 6) dudit panneau jusqu'auxquels s'étend la languette (4, 5), ladite languette (4, 5) comprend une partie d'encenchement au voisinage desdits angles respectifs (1, 6), lesdites parties d'encenchement sur chacune des languettes respectives étant conformées de telle sorte que, lors de l'assemblage de plusieurs desdits panneaux, ces parties d'encenchement coopèrent mutuellement aux points d'assemblage commun de manière à permettre aux panneaux respectifs d'être solidaires les uns des autres auxdits points d'assemblage commun.

4. Panneau de construction selon l'une quelconque des revendications précédentes, dans lequel le matériau de l'âme (8) est un matériau thermo-isolant.

5. Panneau de construction selon la revendication 4, dans lequel le matériau de l'âme est une mousse de polystyrène.

6. Panneau de construction selon l'une quelconque des revendications précédentes, dans lequel deux surfaces de tranche adjacentes comprennent les languettes (4, 5) formées sur ces surfaces et deux surfaces de tranche adjacentes comprennent des rainures (2, 3) formées dans ces surfaces.

7. Panneau de construction selon la revendication 6, dans lequel la feuille de revêtement (7) sur une languette (5) à un angle (20) du panneau est déportée vers l'intérieur, la feuille de revêtement (7) sur la languette (5) à un autre angle (19) du panneau est déportée vers l'extérieur du plan de la languette, et sur l'angle restant (21) du panneau qui comprend une languette (4), la feuille de revêtement (7) reste au même endroit sur la totalité de la longueur de la languette de telle sorte que lors de l'assemblage de plusieurs desdits panneaux, les parties (19, 20, 21) de feuille de revêtement auxdits angles coopèrent mutuellement et se raccordent aux points d'assemblage commun de manière à permettre aux panneaux respectifs de se solidariser les uns les autres auxdits points d'assemblage commun.

8. Panneau de construction selon l'une quelcon-

que des revendications précédentes, dans lequel les rainures (2, 3) comportent une partie d'entrée (16) et une partie de solidarisation (17), ladite partie d'entrée (16) étant conformée de manière à ne pas être en contact avec la languette (4, 5) d'un panneau correspondant et ladite partie de solidarisation (17) étant conformée de manière à être adaptée pour accueillir et retenir ladite languette (4, 5) et dans lequel la profondeur des rainures (2, 3) est inférieure à la longueur des languettes de solidarisation (4, 5) afin de former une section (15) d'évacuation d'eau entre les panneaux de construction assemblés.

9. Panneau de construction selon l'une quelconque des revendications précédentes, dans lequel le panneau est essentiellement rectangulaire.

