

DESCRIPTION

TITLE OF THE INVENTION

BUILDING WALL

5

TECHNICAL FIELD

[0001]

The present disclosure relates to building walls.

10

BACKGROUND OF THE INVENTION

[0002]

Conventionally, a method of constructing a building wall, such as a partition wall or an indoor-facing wall of an exterior wall by attaching a building face member to studs (intermediate posts), is performed by a method of connecting a single face member for construction to the studs erected at intervals in a horizontal direction with piercing-type connecting means, such as fastening members. Here, in a case where a building wall is formed of the single building face member, the single building face member is connected to a flange of a stud formed of, for example, channel steel.

20

[0003]

In contrast to this, in a laminated configuration in which a building wall includes two building face members, for example, a method is performed by which an overlay face member that is a face member for construction is connected to studs by fastening members or the like, an adhesive, such as a vinyl acetate-based adhesive, is applied to a back

30

surface of an overlay face member, and the back surface of the overlay face member is adhered to a surface of the underlay face member. In this adhesion-based connection method, since a certain time is required until the adhesive cures, a method is applied by which the overlay face member is tentatively attached to the underlay face member, and then the overlay face member is tentatively connected to the underlay face member by first piercing the surface of the overlay face member with connecting means, such as a staple. The staples are left in place, so that the underlay face member and the overlay face member are connected to each other by both the adhesive and the staples.

[0004]

The amount of adhesive used on the underlay and overlay face members is generally on the order of 150 g/m² or more, and multiple staples are used to tentatively connect a single overlay face member. For example, Patent Document 1 also proposes a partition wall in which an underlay face member is fixed to studs by self-tapping screws, fastening members, or the like, and an overlying face member is fixed to the underlying face member by an organic adhesive and staples.

[0005]

In order to alleviate the problems relating to, for example, the time and labor required for the connecting of the overlay face member to the underlay face member, and the complexities in construction management, it is conceivable to take measures to reduce the amounts of both the adhesive and staples to be used. However, when the amounts of both the adhesive and the staples to be used are reduced, the underlay face member gets displaced relatively largely

with respect to the overlay face member by heat
produced on a side where there are flames, and
consequently the overlay face member has a tendency to
fall off from the underlay face member due to the
5 relative displacement of both the overlay and underlay
face members.

Related Art Documents

Patent Document

10 [0006]

Patent document 1: Japanese Unexamined Patent
Application Publication No. 2020-169468

SUMMARY OF THE INVENTION

15 Problems to be solved by the Invention

[0007]

The present disclosure provides a building
wall that can substantially prevent an overlay face
member included in an overlay from falling off from an
20 underlay when the underlay and the overlay get
relatively displaced during a fire, even in the case
where the amount of an adhesive or the like used for
connecting the underlay face member and the overlay
face member is reduced.

25

Means for Solving the Problem

[0008]

A building wall according to an aspect of
the present disclosure provided with at least an
30 underlay face member and an overlay face member, the
underlay face member directly or indirectly attached to
a stud, the overlay face member being an indoor-facing
member and connected to the underlay face member,

wherein a plurality of said overlay face members are installed with a first joint therebetween, and wherein a pair of said overlay face members, by which the first joint is interposed, are connected together by a
5 connecting member that straddles the first joint.

Effects of the Invention

[0009]

According to the present disclosure, the
10 overlay face member included in an overlay can be substantially prevented from falling off from the underlay face member when the underlay and the overlay get relatively displaced during a fire, even in a case where the amount of adhesive and the like used for
15 connecting the underlay face member and the overlay face member is reduced.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010]

20 [FIG. 1] is a perspective view illustrating an example of a building wall according to a first embodiment;
[FIG. 2] FIG. 2 is a longitudinal cross-sectional view of a general portion of the building wall, taken along line II-II of FIG. 1;
25 [FIG. 3] FIG. 3 is a longitudinal cross-sectional view taken along the line III-III of FIG. 1, illustrating a portion of the building wall where a steel plate is installed;
[FIG. 4] FIG. 4 is a front view of the building wall,
30 illustrating a state before a hat joiner is installed in a gapped joint that is a first joint of the overlay, and also illustrating a position of where a second

bonding material is applied to the underlay face member;

[FIG. 5] FIG. 5 is an enlarged view of a portion V in FIG. 4;

5 [FIG. 6] FIG. 6 is a view taken along line VI-VI of FIG. 5;

[FIG. 7] FIG. 7 is a view illustrating a state in which a hat joiner is installed in a gapped joint illustrated in FIG. 6;

10 [FIG. 8] FIG. 8 is a view illustrating a state in which the hat joiner is installed in the gapped joint in a manner different from that of FIG. 7;

[FIG. 9] FIG. 9 is a longitudinal cross-sectional view illustrating an example of a building wall according to the second embodiment, the view being illustrated so as to correspond to FIG. 2; and

[FIG. 10] FIG. 10 is a longitudinal cross-sectional view illustrating an example of a building wall according to a third embodiment, the view being
20 illustrated so as to correspond to FIG. 2.

DETAILED DESCRIPTION OF THE INVENTION

[0011]

Hereinafter, an example of a building wall
25 according to each embodiment is described with reference to the accompanying drawings. In the specification and drawings, components that are substantially the same are denoted by the same reference numerals, and redundant description thereof
30 is omitted in some cases.

[0012]

[Building Wall According to First Embodiment]

First, an example of a building wall according to a first embodiment is described with reference to FIGS. 1 to 8. FIG. 1 is a perspective view illustrating an example of the building wall according to the first embodiment. FIG. 2 is a longitudinal cross-sectional view of a general portion of the building wall, taken along the line II-II of FIG. 1, and FIG. 3 is a longitudinal cross-sectional view of a portion of the building wall, taken along the line III-III of FIG. 1, where a steel plate is installed.

[0013]

Here, the building wall in the illustrated example is a partition wall having, on both sides of the studs, a layered-face structure having two layers one being an overlay and the other being an underlay, but instead of this, the building wall may be a partition wall having a layered-face structure having three or more face members on both surfaces of the studs. Alternatively, the partition wall may have the double-layer structure or the triple-layer structure on only one side of the studs. Further, the wall may be an indoor-side wall of an exterior wall, instead of the partition wall. As in the illustrated example in the drawings, in the partition wall with the double-layer structure, the underlay is attached directly to the stud. In the case where the configuration is a layered-face structure in which three or more face members are overlaid, a separate face member that is in close contact with the underlay face member illustrated in the figure is attached to the stud, and therefore the underlay face member is attached to the stud indirectly.

[0014]

A partition wall 100 illustrated in FIG. 1 is applied to a steel-framed building, a reinforced concrete (RC) building, a wooden building, or the like, and these buildings include a factory, a warehouse, and the like in addition to typical detached houses multiple dwelling complexes, such as condominiums.

[0015]

The partition wall 100 has multiple studs 40, a lower runner 46 (or a floor runner), and an upper runner 45 (or a ceiling runner) constituting a main framework. The studs 40 extend in the longitudinal direction (vertical direction), and the upper runner 45 and the lower runner 46 extend in the lateral direction (horizontal direction).

[0016]

Both the upper runner 45 and the lower runner 46 are formed of a lightweight steel frame, such as grooved steel, and the upper runner 45 is attached to an upper floor structure 47 with the opening facing downward, and the lower runner 46 is mounted to a lower floor structure 48 in a posture with the opening facing upward.

[0017]

The studs 40 are formed of grooved steel with lips that are lightweight steel frames, but may be formed of groove steel or a square steel pipe.

[0018]

An upper end 43 and a lower end 44 of each stud 40 are fixed to the upper runner 45 and the lower runner 46, respectively, and thus each stud 40 is fixed to the upper runner 45 and the lower runner 46. Here, although not illustrated, multiple stoppers extending

in the horizontal direction may be provided at a predetermined pitch (e.g., 1,200 millimeter (mm) pitch) in the height direction of the studs 40.

[0019]

5 The upper runner 45, the lower runner 46, and the studs 40 are, for example, lightweight steel frame members having a thickness of 0.4 mm or more, and steel runners and steel studs specified in Japanese Industrial Standards (JIS) A 6517 ("building steel base
10 material"), or equivalent, compliant, or compatible materials may be used. In the partition wall 100, the multiple studs 40 are built between the lower runner 46 and the upper runner 45 at intervals of 606 mm or less (for example, intervals of 606 mm or 455 mm) in the
15 width direction of the wall (longitudinal direction of the lower runner 46 and the like in FIG. 1).

[0020]

 In the partition wall 100, back surfaces 32 of underlay face members 30A arranged laterally are
20 abutted against a pair of mounting surfaces 41 and 42 of the stud 40, and are connected to the mounting surfaces 41 and 42 on both sides of the stud 40 by fastening members 51, such as screws or the like from a front surface 31 side thereof. An underlay 30 is
25 formed by multiple underlay face members 30A connected to the studs 40.

[0021]

 In contrast to this, a back surface 22 of an overlay face member 20A that is disposed vertically
30 is adhered to the underlay 30 by an adhesive 53, and is connected to the underlay 30 by staples 52 driven in from an indoor-side surface 21 in front of the overlay

face member 20A. The overlay 20 is formed by multiple overlay face members 20A connected to the underlay 30.
[0022]

Thus, on both sides of the stud 40, a
5 multi-layer structure 10 is formed of the underlay 30 and the overlay 20. Here, in addition to the illustrated example, a configuration in which the underlay face member 30A is vertically disposed and the overlay face member 20A is horizontally disposed may be
10 adopted.
[0023]

As the underlay face member 30A that is a face member for construction, a gypsum plate, a gypsum board, a calcium silicate board, a particle board, a
15 hardboard, plywood, structural plywood, or the like can be applied, and among them, the gypsum plate or gypsum board can be suitably used.
[0024]

In contrast to this, as the overlay face
20 member 20A that is a face member for construction, a gypsum plate, a gypsum board, a calcium silicate board, or the like can be used, and among them, the gypsum plate or the gypsum board can be suitably used.
[0025]

25 Here, in addition to a general gypsum board, the gypsum board includes a reinforced gypsum board, an ordinary hard gypsum board, a sheathing hard gypsum board, a moisture absorptive and desorptive reinforced gypsum board, a moisture absorptive and
30 desorptive ordinary gypsum board, a moisture absorptive and desorptive sheathing hard gypsum board, a gypsum plate with a glass fiber nonwoven fabric, a glass mat gypsum board, and the like.

[0026]

For example, in a case where the gypsum board is adopted, the dimensions of the short side, the long side, and the thickness thereof are 910 mm × 1,820 mm × 9.5 mm for quasi-non-combustible material or are 910 mm × 1,820 mm (2,420 mm or 2730 mm) × 12.5 mm (15 mm, 21 mm or 25 mm) for non-combustible material or the like. The width of the gypsum board may 606 mm, 1,000 mm, 1,220 mm, or the like, instead of 910 mm.

10 [0027]

Further, for example, a vinyl acetate-based adhesive is used as the adhesive 53 for connecting the overlay face member 20A to the underlay 30.

[0028]

15 In the underlay 30, second vertical joints 35 (an example of second joints), that are butt joints, and second horizontal joints 36 (another example of second joints) that are also butt joints, are provided between the multiple underlay face members 30A that are adjacent to each other in the vertical and horizontal directions.

[0029]

In contrast to this, in the overlay 20, multiple first vertical joints 25 (an example of first joints) that are gapped joints, and first horizontal joints 26 (another example of first joints) that are also gapped joints, are provided between the multiple overlay face members 20A adjacent to each other in the vertical and horizontal directions.

25 [0030]

The widths of the gapped joints 25 and 26 are set to be approximately 1 mm to 10 mm.

[0031]

As illustrated in FIGS. 1 to 3, a hat joiner 60 is attached to both the first vertical joint 25 and the first horizontal joint 26. Here, the "hat joiner" includes a T-shaped joiner in addition to a perfectly hat-shaped joiner. Further, a flat-shaped joiner may be used instead of the hat joiner.

[0032]

The hat joiner 60 includes two hat parts 61 (an example of a first component) and a protrusion 62 (an example of a second component) that connects the hat parts 61 together.

[0033]

The two hat parts 61 straddle a gapped joint 25, extend over the indoor-side surface 21 of an overlay face member 20A on both sides, and are connected to the indoor-side surfaces 21 via an adhesive 71 (an example of a first bonding material).

[0034]

In contrast to this, a protrusion 62 fitted into the gapped joint 25 is connected to the front surface 31 of the underlay face member 30A via a sealing agent 72 (an example of a second bonding material).

[0035]

Here, as the adhesive that is the first bonding material 71, a vinyl acetate resin-based adhesive, an acrylic resin-based adhesive, a urethane resin-based adhesive, an epoxy resin-based adhesive, a polyamide-based adhesive, a polysulfide-based adhesive, a silicone-based adhesive, or a synthetic rubber adhesive, for example, can be used.

[0036]

In addition, in a case where the sealing agent is used as the first bonding material 71, a polyurethane-based sealing agent, an acrylic-based sealing agent, an acrylic urethane-based sealing agent, a polysulfide-based sealing agent, a polyisobutylene-based sealing agent, and a silicone-based or modified silicone-based sealing agent, for example, can be used.
[0037]

Further, in a case where a putty material is used as the first bonding material 71, a gypsum-based putty material, a calcium carbonate-based putty material, or a resin-based putty material, such as epoxy resin, can be used.
[0038]

Any of the above-described sealing agents can be used as the sealing agent that is the second bonding material 72, and any of the above-described adhesives and putty materials can be used in the case where the adhesive or putty material is used as the second bonding material 72.
[0039]

As described above, various adhesives, sealants, and putty materials can be used as the first bonding material 71 and the second bonding material 72, and in addition to those mentioned, adhesive tape, a screw, a nail, a fastening member, staple, or the like may be used as the first bonding material 71 and the second bonding material 72.
[0040]

In this way, the multiple overlay face members 20A are connected to each other via the hat joiner 60 that is a connecting member provided in the gapped joints 25 and 26, and thus the integrity of the

overlay 20 formed of the multiple overlay face members 20A is enhanced. Here, instead of the hat joiner 60, tape or the like may be used as the connecting member to connect the multiple overlay face members 20A while
5 also covering the gapped joints 25 and 26 with the tape or the like. Alternatively, multiple overlay face members 20A may be connected together by using a sealing member as the connecting member, and this can be achieved by filling or coating the gapped joints 25
10 and 26 with a sealing member.

[0041]

In the example illustrated in FIGS. 1 to 3, although the hat joiner 60 connects a pair of overlay face members 20A, by which the gapped joint 25 is
15 interposed, by straddling the gapped joint 25, in the present specification, the expression "connects by straddling the first joint" may be a form other than a form in which the joiner, the tape, or the like is, in the literal sense, installed so as to straddle the
20 first joint thereby connecting the pair of overlay face members 20A. For example, a form in which the pair of overlay face members 20A are connected by filling or coating the first gapped joint with a sealing member or the like is also included in the meaning of the
25 expression "connects by straddling the first joint".

[0042]

As illustrated in FIGS. 1 and 3, in the building wall 100, multiple pieces of steel plates 80 are disposed between the overlay 20 and the underlay
30 30.

[0043]

As illustrated in FIG. 1, the multiple steel plates 80 are installed at a predetermined

interval in the lateral direction (for example,
horizontally) at a level that is a predetermined height
t1 from the floor surface. Here, the steel plate 80
may be a single strip extending in the lateral
5 direction, instead of the pieces illustrated in the
drawings.

[0044]

The steel plate 80 is bonded to the front
surface 31 of the underlay 30 via an adhesive 91, and
10 is connected to the overlay 20 by a fastening member 92
driven in from the indoor-side surface 21 of the
overlay 20. Here, a vinyl acetate resin-based adhesive
or the like is used as the adhesive 91.

[0045]

15 The multiple steel plates 80 also function
as a support base that supports, in a cantilever
manner, a retrofit-type member (not illustrated) that
is retrofitted to an indoor side that is located more
inwardly than the overlay 20. For example, one end of
20 a rod-shaped support member (not illustrated) is fixed
to the steel plate 80, the other end of the support
member protrudes into the room, and thus a retrofit-
type member, such as a handrail, a wall hanger, a
backrest, or an armrest, is fixed to the other end of
25 the multiple support members.

[0046]

As described above, the steel plate 80 is a
rigid plate member, and thus is suitable as a member
having a function as a support base that supports a
30 retrofit-type member. Further, since the steel plate
80 is a relatively thin flat-shaped plate member, it is
suitable as a member sandwiched between the underlay 30
and the overlay 20. Since it is desirable that the

steel plate 80 has the minimum rigidity capable of supporting the retrofit-type member that is as thin as possible, the thickness of the steel plate 80 is preferably in the range of 0.4 mm to 1.2 mm.

5 [0047]

In a case where the steel plate 80 is rectangular in plan view, the minimum dimensions are preferably 10 mm × 10 mm or more. However, the steel plate 80 is set to maximum dimensions that are 40 percent(%) or less of the total area of the laminated body 10, and preferably 22% or less.

[0048]

Further, since the multiple steel plates 80 are used as a support base for supporting the retrofit-type member, it is preferable that the steel plates 80 are connected to both the underlay 30 and the overlay 20 via multiple connecting means, such as the adhesive 91 and the fastening member 92 as in the illustrated example. However, in a case where the steel plate 80 is fixed to the extent that the steel plate 80 can sufficiently exhibit the function as the support base for supporting the retrofit-type member only by the connection to the underlay 30 by the adhesive 91, connection by the fastening member 92 may be omitted.

25 [0049]

The installation height t1 of the steel plate 80 from the floor surface is set in accordance with the planned installation level of the retrofit-type member, but quantitatively, it is preferably set in a range of about the 1,200 mm from the floor surface, and it is desirably set in range of 400 mm to 1,200 mm. The total height of the multi-layer

structure 10 is set to, for example, approximately
3,000 mm.

[0050]

While the steel plate 80 acts as a support
5 base for the retrofit-type members, the steel plate 80
may become deformed due to the heat in the event of a
fire, and this could adversely affect the integrity of
the overlay 10. Since heat from the upper side
(ceiling side) of the room increases, the height range
10 can be defined as a range that satisfies: both a level
as close to the floor surface as possible that is
unlikely to have a high temperature; and a planned
installation level of the retrofit-type member.

[0051]

15 The numerical range of the maximum
dimensions of the steel plate 80 of "40% or less" is
defined from the viewpoint of diminishing the influence
that deformation during a fire outbreak has on the
integrity of the overlay 10 and from the viewpoint of
20 the installation height range. Further, the effect of
diminishing the influence on the integrity is further
enhanced by setting the numerical range of the maximum
size to "22% or less".

[0052]

25 Next, with reference to FIGS. 4 to 8, an
application position of the second bonding material 72
in the underlay 30, a method of installing the hat
joiner in the gapped joint, and the like are described.
FIG. 4 is a front view of the building wall,
30 illustrating a state before the hat joiner is installed
in the gapped joint that is the first joint of the
overlay, and also illustrating the application position
of the second bonding material in the underlay face

member. Further, FIG. 5 is an enlarged view of a portion V in FIG. 4. FIG. 6 is a view taken along the line VI-VI of FIG. 5, and FIG. 7 is a view illustrating a state in which a hat joiner is installed in the gapped joint illustrated in FIG. 6.

[0053]

The second bonding material 72, such as a sealing agent, may be applied to any position of the joint bottom of the gapped joints 25 and 26 that are the first joints, but as illustrated in FIGS. 4 and 5, it is preferable to apply the second bonding material 72 to a joint intersection position N that is a position corresponding to the second joints 36 and 35 exposed to the gapped joints 25 and 26 that are the first joints.

[0054]

In this way, by limiting the application position of the second bonding material 72 to the joint intersection position N with the second joints 36 and 35 exposed to the gapped joints 25 and 26 that are the first joints, the sealing performance of the second joints 36 and 35 can be enhanced while reducing the amount of the second bonding material 72 used as much as possible, and also the fire resistance of the multi-layer structure 10 can be improved.

[0055]

As illustrated in FIGS. 5 and 6, the second bonding material 72 is applied to the joint intersection position N of the underlay 30, and the first bonding material 71 is applied along the gapped joint 25 and the like on the indoor-side surface 21 of the overlay face member 20A on both sides of the gapped joint 25 and the like.

[0056]

Next, as illustrated in FIG. 7, by
attaching the hat joiner 60 to the gapped joint 25 or
the like, the hat part 61 is connected to the indoor-
5 side surface 21 of the overlay face member 20A member
via the first bonding material 71, and the protrusion
62 is connected to the front surface 31 of the underlay
face member 30A via the second bonding material 72.
Here, FIG. 7 illustrates a state in which the front
10 surface 31 of the underlay 30 and the back surface 22
of the overlay 20 are connected to each other via the
adhesive 53, yet the front surface 31 and the back
surface 22 are illustrated as being separated from each
other due to the relationship of the adhesive 53
15 illustrated in the figure. However, in actuality, the
front surface 31 and the back surface 22 are close
contact with each other.

[0057]

FIG. 8 illustrates another installation
20 configuration of the hat joiner in the gapped joint.
Here, FIG. 8 is a view illustrating a state in which
the hat joiner is installed in the gapped joint in a
manner different from that of FIG. 7.

[0058]

25 In the illustrated example, the hat joiner
60 is installed in such a manner that the two hat parts
61 of the hat joiner 60 are sandwiched between the
underlay 30 and the overlay 20 and the protrusion 62
protrudes toward the indoor side. Here, FIG. 8
30 illustrates a state in which the front surface 31 of
the underlay 30 and the back surface 22 of the overlay
20 are connected to each other via the adhesive 53, yet
the front surface 31 and the back surface 22 are

illustrated as being separated from each other due to the relationship of the adhesive 53 illustrated in the figure. However, in actuality, the front surface 31 and the back surface 22 are in close contact with each other.
5 [0059]

One surface of the hat part 61 is connected to the back surface 22 of the overlay 20 via the first bonding material 71, and the other surface of the hat
10 part 61 is connected to the front surface 31 of the underlay 30 via the second bonding material 72.
[0060]

Even in the embodiment of the illustrated example, the multiple overlay face members 20A are
15 connected to each other via the hat joiner 60 that is the connecting member, and thus the integrity of the overlay 20 formed of the multiple overlay face members 20A is enhanced.
[0061]

20 In both of the embodiments illustrated in FIGS. 7 and 8, the integrity of the overlay 20 formed of the multiple overlay face members 20A is enhanced. The enhanced integrity of the overlay 20 can substantially prevent the overlay face member 20A of
25 the overlay 20 from falling off from the underlay 30 even if the underlay 30 and the overlay 20 get relatively displaced due to heat produced from a side where flames are during the fire, in the case where the amounts of the adhesive 53 and the staples 52 used to
30 connect the underlay 30 and the overlay 20 are reduced. As for the relative displacement, the ceiling side of the room becomes high in temperature at an early stage, and thus the relative displacement may occur between

the underlay 30 and the overlay 20 on the ceiling side. Since the integrity of the overlay 20 is enhanced as described above, even if the adhesive 53 or the staple 52 connecting the overlay 20 to the underlay 30 becomes detached due to such relative displacement, the overlay face member 20A included in the overlay 20 is substantially prevented from falling off from the underlay 30.

[0062]

Therefore, reduction in the time and labor required, the complexities in construction management owing to a reduction in the amounts of both the adhesive 53 and the staples 52, and the like; and virtual prevention (improvement in fire resistance) of the overlay 20 from falling off from the underlay 30 due to relative displacement of the underlay 30 and the overlay 20 can both be realized.

[0063]

In the building wall 100, in addition to the enhancement of the integrity of the overlay 20, since the protrusion 62 is connected to the underlay face member 30A, the integrity of the entire multi-layer structure 10 including the overlay 20 and the underlay 30 via the hat joiner 60, is also enhanced. Thus, the effect of substantially preventing the falling off of the overlay 20 from the underlay 30 during a fire is greatly enhanced.

[0064]

[Building Wall According to Second Embodiment]

Next, an example of a building wall according to the second embodiment is described with reference to FIG. 9. Here, FIG. 9 is a longitudinal

cross-sectional view illustrating an example of the building wall according to the second embodiment, the view being illustrated so as to correspond to FIG. 2.

[0065]

5 A building wall 100A differs from the building wall 100 in that the overlay 20 has a butt joint 25A instead of the gapped joint. Although not illustrated, in the overlay 20, there is a first horizontal joint that is a butt joint, in addition to a
10 first vertical joint 25A that is a butt joint.

[0066]

 In the butt joint 25A, a connecting member 60A formed of tape (another example of the first component) is installed so as to straddle the indoor-
15 side surfaces 21 of both of the overlay face surfaces 20A in a state where header surfaces of the overlay face members 20A are butted against each other. That is, the multiple overlay face members 20A on both sides of the butt joint 25A are connected to each other by
20 the tape 60A.

[0067]

 Here, as the tape, paper tape, glass tape, butyl rubber tape, acrylic tape, or the like can be used.

25 [0068]

 According to the building wall 100A, the multiple overlay face materials 20A are connected to each other via the tape 60A that is the connecting member, and thus the integrity of the overlay 20 formed
30 of the multiple overlay face members 20A is enhanced. The enhanced integrity of the overlay 20 can substantially prevent the overlay face member 20A of the overlay 20 from falling off from the underlay 30

even if the underlay 30 and the overlay 20 get relatively displaced due to heat produced from a side where the flames are during a fire, in the case where the amounts of the adhesive 53 and the staples 52 used to connect the underlay 30 and the overlay 20 are reduced. Here, a configuration may be adopted in which a flat-shaped joiner is used as the connecting member instead of the tape 60A, and the joiner is installed so as to span the joint 25A. Further, the sealing member may be used as the connecting member, and the butt joint 25A may be filled or coated with the sealing member.

[0069]

[Building Wall According to Third Embodiment]

Next, an example of a building wall according to the third embodiment is described with reference to FIG. 10. Here, FIG. 10 is a longitudinal cross-sectional view illustrating an example of the building wall according to the third embodiment, the view being illustrated so as to correspond to FIG. 2.

[0070]

Although a building wall 100B has a configuration in which the overlay 20 has a butt joint 25A as does the building wall 100A, the building wall 100B differs from the building wall 100A with respect to the manner in which multiple overlay face members 20A are connected.

[0071]

In the building wall 100B, a connecting member 60B formed of a steel plate (another example of the first component) is installed so as to straddle the back surfaces 22 of both of the overlay face members

20A in a state where the header surfaces of the overlay face members 20A are butted against each other. That is, the multiple overlay face members 20A, by which the butt joint 25A is interposed, are connected to each other by the steel plate 60B.

[0072]

Here, as described above, the steel plate 80 having a function as a support base for supporting the retrofit-type member may be provided in addition to the steel plate 60B. Alternatively, the steel plate 60B may have both the function of connecting the multiple overlay face members 20A and the function as the support base for supporting the retrofit-type member.

[0073]

According to the building wall 100B, the plurality of overlay face members 20A are connected to each other via the steel plate 60B that is the connecting member, and thus the integrity of overlay 20 formed of the multiple overlay face members 20A is enhanced. The enhanced integrity of the overlay 20 can substantially prevent the overlay face member 20A of the overlay 20 from falling off from the underlay 30 even if the underlay 30 and the overlay 20 get relatively displaced due to heat produced from a side where the flames are during a fire, in the case where the amounts of the adhesive 53 and the staples 52 used to connect the underlay 30 and the overlay 20 are reduced.

[0074]

Note that other embodiments, such as those in which other elements are combined with the above configurations, may be used, and the present disclosure

is not limited to the configurations illustrated here.
The configurations of the present disclosure may be
changed without departing from the purpose of the
present disclosure, and the configurations can be
5 appropriately determined according to the usage form.
[0075]

The present international application is
based upon and claims priority to Japanese Patent
Application No. 2022-015764 filed on February 3, 2022,
10 the entire contents of which are incorporated herein by
reference.

EXPLANATION OF REFERENCE NUMERALS

[0076]

15	10	Multi-layer structure
	20	Overlay
	20A	Overlay face member
	21	Indoor-side surface
	22	Back surface
20	25	First joint (First vertical joint; gapped joint)
	25A	First joint (First vertical joint; butt joint)
	26	First joint (First horizontal joint; gapped joint)
	30	Underlay
25	30A	Underlay face member
	31	Front surface
	32	Back surface
	35	Second joint (Second vertical joint; butt joint)
	36	Second joint (Second horizontal joint; butt 30 joint)
	40	Stud
	45	Upper runner
	46	Lower runner

	47, 48	Floor structure
	51	Fastening member
	52	Staple
	53	Adhesive
5	60	Hat joiner (Connecting member)
	61	Hat part (First component)
	62	Protrusion (Second component)
	60A	Tape (Connecting member)
	60B	Steel plate (Connecting member)
10	71	First bonding material (Adhesive)
	72	Second bonding material (Sealing agent)
	80	Steel plate
	91	Adhesive
	92, 93	Fastening member
15	100, 100A, 100B	Partition wall (Building wall)
	N	Joint intersection position

CLAIMS

[Claim 1]

5 A building wall provided with at least an underlay face member and an overlay face member, the underlay face member directly or indirectly attached to a stud, the overlay face member being an indoor-facing member and connected to the underlay face member,

10 wherein a plurality of said overlay face members are installed with a first joint therebetween, and

wherein a pair of said overlay face members, by which the first joint is interposed, are connected together by a connecting member that straddles the first joint.

15

[Claim 2]

20 The building wall according to claim 1, wherein the connecting member has a first component straddling the first joint on an indoor-side surface of the overlay face member, and the first component is connected to an indoor-side surface of the overlay face member via a first bonding material.

25

30 [Claim 3]

The building wall according to claim 1, wherein the connecting member includes a first component that straddles the first joint on a back

surface of the overlay face member opposite to an indoor side of the overlay face member, and the first component is connected to the back surface via a first bonding material.

5

[Claim 4]

10 The building wall according to claim 2, wherein the first joint is a gapped joint, and the connecting member further includes a second component fitted in the first joint, and the second component is connected to the underlay face member via a second
15 bonding material.

20 [Claim 5]

 The building wall according to claim 4, wherein a plurality of said underlay face members are installed with a second joint therebetween, and the second bonding material is provided at a position
25 corresponding to the second joint exposed to the gapped joint.

30

[Claim 6]

 The building wall according to claim 4 or claim 5, wherein the connecting member is formed of a

hat joiner that is provided with two hat parts and a protrusion connecting the two hat parts together, the two hat parts are the first component, and the protrusion is the second component.

5

[Claim 7]

10 The building wall according to any one of claims 1 to 6, further comprising a steel plate disposed between the overlay face member and the underlay face member, wherein the steel plate functions as a support base that supports, in a cantilever
15 manner, a retrofit-type member that is retrofitted to an indoor-side that is located more inwardly than the overlay face member.

20

[Claim 8]

 The building wall according to claim 7 depending from claim 3, wherein the first component is
25 the steel plate, and the steel plate has both a function of connecting the pair of said overlay face members and a function of serving as the support base.

30

[Claim 9]

The building wall according to claim 8,
wherein an area of the steel plate is 40% or less a
total area of the building wall.

5

[Claim 10]

The building wall according to any one of
10 claims 1 to 9, wherein the building wall is a partition
wall, and a face member unit is installed on one or
both surfaces of the stud, the face member unit
including at least the plurality of said overlay face
members and the underlay face member.

15

[Claim 11]

The building wall according to any one of
20 claims 1 to 9, wherein the building wall is an indoor-
side wall of an exterior wall, and a face member unit
is installed on one surface of the stud, the face
member unit including at least the plurality of said
25 overlay face members and the underlay face member.