

Claims

- [Claim 1] A wall joint comprising
a pair of walls, each wall comprises a first surface and at least one stud protruding from the
first surface, wherein the first surfaces face each other with a gap in between;
5 a mechanical connector having at least one pair of slots, wherein the at least one pair of
slots are engaged with the at least one stud of each wall; and
cured grout in the gap.
- [Claim 2] The wall joint according to claim 1, wherein the at least one pair of slots
10 physically and directly contact the at least one stud of each wall in the engagement.
- [Claim 3] The wall joint according to any one of claims 1 to 2, wherein a groove is
arranged on the first surface of each wall, and the at least one stud protrudes from the
groove.
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- [Claim 4] The wall joint according to any one of claims 1 to 3 further comprising a
support structure in each wall, wherein a first end of the at least one stud is attached to the
support structure and a second opposing end of the at least one stud is a head.
- 20 [Claim 5] The wall joint according to claim 4, wherein the support structure includes at
least a rod or a plate.
- [Claim 6] The wall joint according to any one of claims 1 to 5, wherein each slot is
25 linear or bent.
- [Claim 7] The wall joint according to any one of claims 1 to 6, wherein the mechanical
connector comprises a pair of vertical plates attached together by a connecting element,
each vertical plate having at least one slot to form the at least one pair of slots.
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- [Claim 8] The wall joint according to claim 7, wherein at least one edge of each slot
forms an angle with a vertical edge of one of the vertical plates.
- 35 [Claim 9] The wall joint according to claim 7 or claim 8, wherein the connecting
element is any one selected from the group consisting of a connecting plate, a bolt and nut
system, and a cable system.
- [Claim 10] The wall joint according to any one of claims 7 to 9, wherein the connecting
40 element is attached to the pair of vertical plates at the middle of each vertical plate, an edge
of the pair of plates, or opposites edges of the pair of plates.

[Claim 11] The wall joint according to any one of claims 7 to 10, wherein a length of each vertical plate is substantially the same as a height of the first surface.

5 [Claim 12] The wall joint according to any one of claims 7 to 11, wherein the mechanical connector comprises a first plate attached substantially perpendicularly to the pair of vertical plates, the first plate having a pair of slits, each slit is configured to receive a rod extending out of a top surface of one of the walls.

10 [Claim 13] The wall joint according to any one of claims 1 to 12, further comprises at least one gap rod in the gap.

15 [Claim 14] The wall joint according to any one of claims 1 to 13, wherein the first surfaces are front faces and the wall joint joins the pair of walls to form a composite structural wall.

[Claim 15] The wall joint according to any one of claims 1 to 13, wherein one of the first surfaces is a front face and the other of the first surfaces is an end face.

20 [Claim 16] The wall joint according to any one of claims 1 to 13, wherein the first surfaces are end faces.

25 [Claim 17] The wall joint according to any one of claims 1 to 16, wherein each wall is part of a prefabricated construction module.

[Claim 18] A building structure comprises at least one wall joint according to any one of claims 1 to 17.

30 [Claim 19] A method of assembling a wall joint, the method comprises providing a pair of walls, each wall comprises a first surface and at least one stud protruding from the first surface;
arranging the first surfaces to face each other with a gap in between;
inserting a mechanical connector into the gap, the mechanical connector comprises at least one pair of slots;
35 engaging the studs with the at least one pair of slots;
dispensing grout into the gap; and
curing the grout to join the walls to form the wall joint.

40 [Claim 20] The method according to claim 19, wherein at least one edge of each slot forms an angle with a vertical axis of the walls, and engaging the studs with the at least one pair of slots comprises aligning the opening of the slots to the studs and receiving the studs into the slots.

- [Claim 21] The method according to any one of claims 19 to 20, wherein the mechanical connector comprises a pair of vertical plates attached together by a connecting element, each vertical plate having at least one slot to form the at least one pair of slots.
- 5 [Claim 22] A wall comprises a first surface and at least one stud protruding from the first surface, wherein the at least one stud is configured to engage with at least one slot of a mechanical connector to form a wall joint with an opposing wall.
- 10 [Claim 23] The wall according to claim 22, wherein a groove is arranged on the first surface and the at least one stud protrudes from the groove.
- [Claim 24] The wall according to any one of claims 22 to 23 further comprises a support structure in the wall, wherein a first end of the stud is attached to the support structure and
- 15 a second end of the stud is a head.
- [Claim 25] The wall according to any one of claims 22 to 24, wherein the wall is part of a prefabricated construction module.
- 20 [Claim 26] A mechanical connector for securing a pair of walls arranged with a gap therebetween, each wall comprises a first surface and at least one stud protruding from the first surface, the mechanical connector comprises at least one pair of slots configured to engage with the at least one stud of the pair of walls.
- 25 [Claim 27] The mechanical connector according to claim 26 further comprises a pair of vertical plates attached together by a connecting element, each vertical plate having at least one slot to form the at least one pair of slots.
- [Claim 28] The mechanical connector according to claim 27, wherein the connecting
- 30 element is any one selected from the group consisting of a connecting plate, a bolt and nut system, and a cable system.
- [Claim 29] The mechanical connector according to claim 28, wherein the connecting element is attached to the pair of vertical plates at the middle of each vertical plate, an edge
- 35 of the pair of plates, or opposite edges of the pair of vertical plates.
- [Claim 30] The mechanical connector according to any one of claims 26 to 29 further comprises a first plate attached perpendicularly to the pair of vertical plates, the first plate having a pair of slits, each slit is configured to receive a rod extending out of a top surface
- 40 of one of the walls.