The term “pair of walls” refers to two walls which may be or may not be symmetrical or identical.

Preferably, the at least one pair of slots physically and directly contact the at least one stud of each wall in the engagement.

Preferably, a groove is arranged on the first surface of each wall, and the at least one stud protrudes from the groove.

Preferably, the wall joint further comprises 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. For example, the support structure includes a rod or a steel plate.

Preferably, the slot is linear or bent.

Preferably, 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. The vertical plates preferably abut respective first surface of the walls when the studs are engaged in the slots. In other words, the vertical plates are juxtaposed between the walls and may be in contact with the walls.

Preferably at least one edge of each slot forms an angle with a vertical edge of one of the vertical plates.

Preferably, the connecting element is any one selected from the group consisting of a connecting plate, a bolt and nut system, and a cable system.

Preferably, the connecting element is attached to the pair of vertical plates at the middle of each vertical plate, an edge of the vertical plate, or opposites edges of the pair of plates. This provides the mechanical connector with a H-shaped cross-section, a U-shaped cross-section and a hollow core cross-section respectively.

Preferably, a length of each plate in the pair of plates is substantially the same as a height of the first surface.

Preferably, 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.

Preferably, the wall joint further comprises at least one gap rod in the gap.

slots 56. The slits 70 may be positioned, shaped and dimensioned such that a position of the rod 35 along the slit 70 corresponds to a position of studs 10 along the slots 56. For example, when the rod 35 is positioned at the entry or opening of the slit 70, the studs 10 are positioned at the entry of the slot 56; when the rod 35 is positioned at the end of the slit 70, the studs 10 are positioned at the end of the slots 56 which may be the engaged position. Advantageously, this may allow an operator to ascertain the relative position of the studs 10 and slots 56 by visual inspection of the relative position of the rod 35 and the slits 70.

The connecting plate 75 attach to non-edge portions of the vertical plates 55, for example middle portion, near (or proximal) to the slots 56 or near to at the end of the slots 56. In Figure 6, each vertical plate 55 provides two slots 56 to provide a total of two pairs of slots 56 in the mechanical connector 50 to engage with the two pairs of studs 10 of the pair of walls 5.

Each slot 56 is a space which may be cut out of the vertical plate 55 or forged with dies to provide the requisite shape as shown in Figure 6. It will be apparent that the slot 56 needs to be suitably sized to receive the shaft 17 into the slot 56 and to interlock with the head 15 to prevent the head 15 from passing through the slot 56. Each slot 56 comprises an end surface, an upper surface, a lower surface and a slot opening 60 as may be seen in the perspective view in Figure 6, and correspondingly a side view of the slot 56 having an end edge 57, an upper edge 58, a lower edge 59 and the slot opening 60 as most clearly seen in Figure 8. The slots 56 may be angled to a vertical axis of the vertical plate 55 which is parallel to the vertical axis of the wall 5. In other words, slot 56 is not parallel to the vertical axis of the vertical plate 55 or wall 5. Angles 61, 62 of the slots 56 may be measured at the opening 60 of the slots 56 relative to the vertical axis as shown in Figure 8 (or vertical direction of the vertical plate 55).The angle 61 or 62 of the slot 56 may be measured between the upper edge 58 or lower edge 59 relative to a vertical edge of the vertical plate 55 where the opening 60 is placed. The vertical axis may be defined as being generally perpendicular to the ground upon assembly of the wall joint 100 and is a relative directional term. In particular, the slots 56 may be angled between 30° to 60°, inclusive of the end points. The angled slots 56 allow the slots 56 to engage more readily with the studs 10. Advantageously, the angled slots 56 allow the studs 10 to slide in (i.e. downwards angular movement), when the mechanical connector 50 is supportably arranged on the studs 10, by utilising gravity to aid the engagement between the studs 10 and slots 56 rather than utilising a pure or substantially horizontal motion.

In an example, both the upper angle (first angle) 61 and lower angle (second angle) 62 of the slot 56 may be the same, such that the slot 56 has a parallelogram cross section profile when the mechanical connector 50 is viewed from the side as in Figure 8. In an example, the slots 56 may be tapered, i.e. angles 61, 62 are different. Advantageously, this makes sliding the studs 10 into the slots 56 easier. Thus, the width of the slots 56 is not constant, but reduces from the opening 60 of the slot 56 to the end edge 57 such that the slot 56 has

In Figure 31a, each wall 205 is provided with three grooves 220 on the first surface 225 and studs 210 (as described above) protruding from each groove 220. A support structure, for example the rod 35 or steel plate 102 described above, for each groove may be embedded within the wall 205. The stud 210, at an end opposite to its head 215, may be attached to the support structure. A reinforcement structure may be provided within the wall 5, for example a network of horizontal rods 104 and vertical rods 106 may be used.

In Figure 31b, two modules 200 are arranged side by side with the walls 205, in particular their first surfaces 225, facing each other with a gap 245 in between. The mechanical connector 250 used in Figures 31a to 31d is that shown in Figure 22. From the enlarged inset of Figure 31b it may be seen that the mechanical connector 250 includes two vertical plates 255 or a pair of vertical plates 255, attached by a connecting element which is a connecting plate 275 in this example, and a plurality of pairs of slots 256 formed in the vertical plates 255, each vertical plate 255 having a slot 256 corresponding to another slot on the other vertical plate 255 to form the pair of slots 256. The connecting plate 275 may be attached to the vertical plates 255 at one or both of the edges. The other connecting elements as described above may also be used in place of the connecting plate 275, for example the bolt and nut system, and the cable system. The mechanical connector 250 may have a horizontal plate 265 (similar to horizontal plate 65 in Figures 6 & 7) which may have slits, each to accommodate a rod 235 which protrudes from the top surface 207 of the wall 205.

Each slot 256 may be similar to slot 56 and/or its examples as described above. Each slot 256 comprises an end surface, an upper surface, a lower surface and a slot opening 260.

In Figure 31b, the mechanical connector 250 is lowered (or inserted downwards) into the gap 245. When the openings of the slots 256 align with the studs 210, the mechanical connector 250 may be moved laterally and downwards (i.e. diagonally) to allow the studs to move within the slots 256 thereby allowing engagement therebetween. In examples where the grooves 220 are provided in the gap 245, and the studs 210 protrude from the grooves 220, the mechanical connector 250 is lowered into the gap 245, and the grooves 220 should be large enough to accommodate the lowered mechanical connector 250 being and subsequent horizontal or lateral movements of the mechanical connector 50 to allow the studs 210 to move in the slots 256. With the dog-leg shaped slot, there is a further downward movement of the mechanical connector 250 in order to move the studs 210 completely into and engage with the slots 256. Advantageously, this uses gravity to aid the engagement and makes the joining of the walls easier.

When the studs 210 are fully within the slots 256, the vertical plates 255 of the mechanical connector 250 may contact the first surface 225 along substantially or entirely the height of