Title: PLATFORM MODULES AS A PALLET, FLOORING, FORMWORK OR STAND

Abstract: Module (10) for a platform comprises a body (12) having at least one side (14A) for adjoining a side of another module. At least two spaced dovetailed shaped lugs (16A, 16B, 16C) are located at the side (14A) to define a shaped region (18) so that a corresponding lug on another module can be positioned in the region. The module has a central region (28) with a plurality of apertures (30) arranged in a honeycomb pattern. A cover strip can be applied to periphery sides of the platform to improve both the aesthetics and safety. A method of loading goods on a platform is disclosed, and a module with loaded goods can be detached from the platform. The module is produced by plastics injection moulding and recycled plastic such as polyethylene can be employed. A plurality of modules can create a platform, pallet, flooring, formwork or a rainwater tank stand.
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PLATFORM MODULES AS A PALLET, FLOORING, FORMWORK OR STAND

Technical Field

A module for use in forming various platform types is disclosed. The platform can be embodied as a so-called knockdown (or demountable) pallet comprising one or more such modules. Such a pallet can in turn be used to form part of a rainwater tank stand and can be supplied as part of a kit of rainwater tank components. Alternatively, the platform can be embodied as flooring, formwork or like support structure (eg. in a demountable form), especially for use in temporary, non-permanent applications.

Whilst the module will be described in such contexts it should be appreciated that it is not so limited.

Background Art

Domestic rainwater tanks that are assembled on site are becoming increasingly prevalent in countries and in cities that are presently experiencing progressively lower annual rainfall levels. To ease and expedite rainwater tank assembly on site the employment of a knockdown pallet that is supplied as a part of a kit of rainwater tank components has now been proposed as desirable.

Knockdown pallets are known. For example, JP 08-164937 and JP 04-267736 each disclose a knockdown pallet that is formed from a number of smaller modules. However, the configuration and assembly of these particular modules is complex and not ideally suited to domestic (on-site) assembly.

Temporary flooring, formwork and the like is used in construction and in non-permanent structures such as tents, marquees etc. By way of example, floor structures formed from panels interconnected by a tongue and groove-type configuration defined at adjacent panel edges is shown in each of US 4,388,788 and US 6,006,486.

A reference herein to a prior art document is not an admission that the document forms a part of the common general knowledge of a person skilled in the art, either in Australia or elsewhere.

Summary of the Disclosure

In a first aspect there is disclosed a module for a platform, the module comprising a body having at least one side for adjoining a side of another module, and...
at least two spaced lugs located at the at least one side to define a shaped region therebetween, with the shape of the region being such that another lug located at the other module side can be positioned in the region between the two spaced lugs in a manner that enables fastening of the lugs together to thereby join the modules at their respective adjoining sides.

Such a module can provide a very simple and expedient means of erecting a platform at, for example, a given application site. In this regard, assembly of the platform can be achieved through simple interlocking of respective adjacent module lugs.

When the module is configured to form a knockdown pallet it can enable expedient erection of the pallet, for example, at a location for a domestic water tank.

When the module is configured to form flooring, formwork and the like it can enable expedient erection of the flooring etc at, for example, a construction site.

The term "platform" is used herein to denote a structure that provides an area that is raised with respect to a surface (such as the ground). However, it is to be appreciated that the platform need not be raised in its entirety and could in use rest on eg. the ground at its underside (such as when embodied in a pallet).

In one form of the module the fastening together of the lugs can be enabled by the other lug interfering with the two spaced lugs, in other words, a separate fastener may not be required. However, in some applications (eg. when lifting or suspending the platform) additional fasteners (eg. that extend from one module to another) may optionally be employed.

In another form of the module the fastening together of the lugs is actually enabled by a fastener being introduced through the adjacently located other lug and two spaced lugs, for example, by using a simple-to-attach elongate fastener such as a bolt or pin.

In one form the at least two lugs can protrude from a side wall of the module. In this form the other lug can also protrude from a side wall of the other module. These side walls can then be closely spaced from each other when the lugs of the respective adjoining sides are fastened together.

In one form the module can comprise at least three spaced lugs that protrude from the at least one side and respectively define at least two shaped regions therebetween. In this form the other module can then comprise at least two spaced other
lugs protruding from its side, each for positioning in a respective region defined between two of the at least three spaced lugs to enable fastening together of all of the lugs, thereby joining the modules at their respective adjoining sides. In a longer version of the module more than three lugs can be employed as appropriate.

In this one form the at least three spaced lugs can be located along the at least one side such that an end lug is located at each respective end of the side, with one or more lugs then being evenly spaced between those end lugs. Also, when the module is viewed in plan, each of those one or more lugs can be provided with a dovetail shape that widens out moving away from the module side, whereas the end lugs can each have a half dovetail shape and can each in part defined by a leg that protrudes downwardly from the body in use. This dovetail shape is a simple way of providing self-locking functionality to the modules (i.e. to obviate the need for a separate fastener).

In the other module, the or each other lug can function as a key-lug that keys into the shaped region. For example, when the other module is viewed in plan, the or each other lug can also have a dovetail shape that widens out moving away from the other module side. Thus, when each region of the first mentioned module has a corresponding dovetail shape it can receive its respective other lug snugly therein and thereby define a dovetail joint. Again, this configuration represents a simple way of providing a self-locking functionality to adjoining modules.

The (or each) module body can define a generally flat upper surface in use, and adjacent faces of each lug and other lug when inter-engaged can be correspondingly inclined to an imaginary line that extends orthogonally with respect to the body flat upper surface. This corresponding inclination at the adjacent lug inter-engaged faces can provide for a further degree of interlocking and intermeshing between the lugs to further enhance the self-locking functionality of the modules, thereby improving the structural properties of a resultant platform formed from the modules.

In one form of the module the body can comprise two adjacent sides, with each side comprising the at least two spaced lugs that define the shaped region therebetween. Thus, at each adjacent side, an other lug of a respective other module can be positioned in the region between the two spaced lugs to fasten each other module to the module. In this one form the body can comprise at least one other adjacent side that comprises the other lug whereby that other lug can be positioned in a region defined between two spaced lugs of yet another module to fasten those modules together.
For example, the body may comprise four sides, being the two adjacent sides that each comprise the at least two spaced lugs, and being two other adjacent sides that each comprise the other lug, with each side being joinable to a respective other module. Furthermore, each respective module can be a like module, such that multiple units of the one module need only be produced (eg. by plastic moulding each module).

In one form the module body can comprise an upper surface, with a continuation of the upper surface extending beyond (ie. overhanging) a side wall of the at least one other adjacent side (ie. being that side that comprises the other lug) to thereby define a lip that overhangs the other lug. For example, when the body comprises two adjacent other sides the lip can overhang each side wall of those other adjacent sides. The overhanging lip configuration can thus lap over where the lugs of respective adjacent modules are joined and thereby provide continuity to the upper surface to the resultant platform.

The module body can, in plan, have a generally square or rectangular shape, with adjacent sides being at a right angle to each other. Corners of the body can be rounded for functionality and aesthetic reasons.

When used as eg. a pallet, a central region of the module body can have a plurality of apertures that extend therethrough in a manner that defines a grid-like pattern in the central region. This can provide for liquid (eg. water) drainage through the module and reduce the overall module weight. For example, the grid-like pattern can have a honeycomb pattern.

Also, each aperture can comprise a peripheral side wall extending into the body to increase central region stiffness. Further, some of the aperture side walls can extend through to an in-use base of the body to provide for underlying support to the central region in use (eg. when a load is applied to the central region it can be transferred by such walls through to the module base).

In a second aspect there is disclosed a module for a platform, the module comprising a body having at least one side adapted for facing engagement with and joining to a side of another module, wherein a central region of the body has a plurality of recesses that extend thereinto in a manner that defines a grid-like pattern in the central region, with each recess comprising a peripheral side wall extending into the body, and with some of the side walls extending to, and so as to in part define, an in-use base of the body.
As mentioned above, when some of the side walls extend through to an in-use base of the body they provide for underlying support to the central region in use. For example, when a load is applied to the central region it can be transferred by such walls through to the module base.

In the second module aspect the grid-like pattern can be defined as a honeycomb pattern, and each recess can be defined by an aperture that extends right through the body.

The second module aspect may otherwise be as defined in the first aspect.

In a third aspect there is disclosed a platform comprising two or modules, with each module being as defined in the first or second aspect.

Each module may be square or rectangular, whereby the platform may comprise a number of modules connected together in use to define a square or rectangular shape. However, differently sized square or rectangular modules, as well as differently shaped modules, can each be configured for interconnecting with like or unlike modules to achieve various platform shapes.

The platform of the third aspect can define a knockdown pallet, or demountable flooring or formwork.

In a fourth aspect there is disclosed a platform comprising at least two modules that are joined to define the platform, a first module comprising a body having a side arranged for adjoining a side of a second module, with at least three spaced lugs located the first module side and defining at least two respective regions therebetween, and with at least two corresponding lugs located at the second module side, each for positioning in a respective recess defined between two of the three spaced lugs when the first and second modules are joined at their adjoining sides;

wherein two legs are provided at the first module side, with each leg defining one of the three spaced lugs of the first module side.

By configuring the platform such that, in a first module thereof, the legs at the first module side also define the lugs, the formation of the platform (e.g. by moulding or machining etc) can also be simplified.

In the fourth aspect the two legs at the first module side can be located at respective ends of that side and can thereby define a lug at each end. One or more lugs can then be located at the side between the legs.
In the fourth aspect the at least two corresponding lugs at the second module side can each be located adjacent to but inset from a respective leg at the second module side. These respective legs can extend downwardly in use from the second module body and can be located such that, when the first and second module sides are joined, the first module legs may be positioned adjacent to the second module legs. The second module legs can be located adjacent to respective ends of the second module side. This first and second module leg arrangement can provide for an additional combined leg support to the resultant platform.

In the platform of the fourth aspect the first and second modules can comprise like modules. Also, in the platform of the fourth aspect the first and second modules can be as defined in the first and second aspects.

The platform of the fourth aspect can again comprise four modules connected together in use to define a square or rectangular platform. Again, the platform of the fourth aspect can define a knockdown pallet, or demountable flooring or formwork.

In a fifth aspect there is disclosed a platform comprising:

- a plurality of modules that can be joined to define the platform, each module comprising a body having a number of sides, with each side comprising a joining mechanism that enables that side to be joined to a respective side of another module of the platform whereby, in the resultant platform, the joining mechanism of at least one or more of the sides of each module is located at a periphery of the platform; and

- a cover strip that is adapted for connection to the joining mechanism of each module side that is located at the platform periphery.

The cover strip of the fifth aspect can be employed to improve both the aesthetics and the safety of an assembled platform, in this regard, the cover strip can cover the joining mechanism to provide eg. a flat external periphery of the platform, which can have better visual appeal (eg. where the platform is used in a domestic context) and also provide an external (exposed) surface in which sharp or protruding parts of the joining mechanism are covered.

In one form a cover strip can be provided for connection at and for the full length of each side of the resultant platform at its periphery. In this regard, a single cover strip could be provided that extends for the full length of two or more platform modules joined side-by-side.
In another form a cover strip can be provided for connection at each side of a single module, whereby that single module can then be used as the platform.

Each of the modules of the fifth aspect may be as defined in the first aspect. When these modules are employed the joining mechanism can comprise the spaced lugs at each module side. Then, each cover strip can comprise one or more respective lugs protruding from an inside face thereof that can each be positioned in a region between two of the spaced lugs in a manner that enables fastening of the cover strip lugs to the module lugs to thereby join the cover strip to the module. In other words, the cover strip can make use of the same mechanism used for joining one module to another.

In this regard, the or each cover strip lug can be defined as a key-lug that keys into the shaped region defined between the spaced lugs at each module side. Also, when the module is viewed in plan, the or each key-lug can have a dovetail shape that widens out moving away from the cover strip inside face, with each region having a corresponding dovetail shape to receive its respective key-lug snugly therein and thereby define a dovetail joint. Furthermore, when each module comprises a generally flat upper surface in use, adjacent faces of each cover strip lug and module lug when inter-engaged can be correspondingly inclined to an imaginary line that extends orthogonally with respect to the module flat upper surface, thereby better facilitating fastening of each cover strip to the platform.

The platform of the third to fifth aspects can be used for general transportation of goods. In addition, each of the modules making up the platform may individually be lifted out of the multi-module configuration (eg. by a forklift). In this regard, a separate goods load may be prepared for and positioned on each module so that, when unloading, each module is lifted separately.

Thus, in a sixth aspect there is disclosed a method of loading goods onto a platform that comprises two or modules, with each module adapted for being detachably joined to at least one adjacent module to form the platform, the method comprising the step of loading the platform with the goods whereby at least one of the modules and respective goods loaded thereon can be detached from a remainder of the platform.

In one form of the sixth aspect, a separate goods load may be prepared for and loaded on each module so that each module and its respective goods loaded thereon can be detached from a remainder of the platform.
For example, the goods load may be loaded on each module in a manner whereby each module can be detached without moving and/or disturbing the other respective goods of the other module(s).

Usually in the method of the sixth aspect each module is as defined in the first or second aspects (above).

In a seventh aspect there is disclosed a platform that is loaded in accordance with the method of the sixth aspect.

In an eighth aspect there is disclosed a rainwater tank stand that comprises a platform as defined in the third, fourth or fifth aspects.

In a ninth aspect there is disclosed a rainwater tank stand that comprises a platform, the platform comprising a plurality of modules that can be assembled to define the tank stand platform.

Each module of the ninth aspect may be as defined in the first or second aspects.

With the tank stand of the ninth aspect the stand (including the platform.) may be assembled on site and the rainwater tank then fabricated on the platform. Alternatively, the rainwater tank may initially be located on the platform at a fabrication site or may even be fabricated on the platform and then the whole unit transported to an installation site, hi this latter case the unit as a whole can then be unloaded from a transport vehicle and then taken to a desired position for immediate connection with eg. inlet and outlet tubes, and to other tank ancillaries such as pumps filters etc.

**Brief Description of the Drawings**

Notwithstanding any other forms that may be embraced by the module and platform as disclosed in the Summary, specific embodiments of a module and platform will now be described, by way of example only, with reference to the accompanying drawings in which:

Figures 1A to 1D respectively show plan, front, isometric and side views of a first module embodiment;

Figures 2A to 2C respectively show plan, front and side views of a second module embodiment;
Figure 3 shows an isometric view of two modules of the second embodiment of Figure 2 when assembled for a knockdown pallet;

Figures 4A to 4C respectively show a first isometric detail, a second isometric detail and a third underside isometric detail of the assembled modules of Figure 3;

Figures 5A and 5B respectively show isometric and underside isometric views of a third module embodiment; and

Figures 6A and 6B respectively show isometric and underside isometric views of four such modules of the third embodiment when in an assembled platform.

**Detailed Description of Specific Embodiments**

In the following description of the Figures 1 to 4 reference will be made to the module and platform when embodied in a pallet. However, it is to be appreciated that the text is equally relevant to when the module and platform are embodied as flooring, formwork etc.

Referring firstly to Figure 1, a module is shown in the form of a first pallet tile 10 that can form a basic unit for constructing a knockdown (demountable) pallet that is easily transported and stored.

The tile 10 defines a first embodiment of a pallet module and comprises a generally square body portion 12 having four sides 14A-14D, with each side being adapted for close facing engagement (or joining) with a side of another pallet tile (usually a like tile). The tile body has, in plan, a generally square shape, with adjacent sides 14A-14B, 14B-14C etc being at a right angle (90°) to each other. However, for functional and aesthetic reasons, corners 15 of the body portion 12 can be rounded.

The tile 10 further comprises three spaced lugs 16A-16C protruding from the sides 14A and 14B, with an adjacent two of the three spaced lugs defining a series of dovetail shaped areas 18 therebetween. Each shaped area 18 is adapted such that another dovetail shaped lug 20 protruding from another tile side (usually of a like tile) can be positioned (usually snugly) in the area 18 to thereby fasten the lugs 16 and 20 together and thereby join the tiles at their respective facing sides in a locking arrangement. The resultant dovetail joint is strong and secure and provides a simple self-locking functionality to the tiles, obviating the need for a separate fastener. The resultant dovetail joint is yet easily disassembled if needs be (eg. by lifting one tile away from another).
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The same tile 10 can further comprise two spaced dovetail shaped lugs 2OA and 2OB that each protrude from the sides 14C and 14D. In the first pallet tile 10 the sides 14C and 14D are each recessed with respect to a respective overhanging lip portion 22A and 22B, with each lip portion being defined by a continuation (integral projection) of the body portion 12. Lugs 2OA and 2OB also define a dovetail shaped area 26 therebetween. Each shaped area 26 is also adapted such that one of the central dovetail shaped lugs 16B of another tile can be positioned (usually snugly) in the area 26 to thereby fasten the lugs 16 and 20 together and thereby join the tiles at those respective facing sides in a locking arrangement.

It will be seen that the end lugs 16A and 16C at each side 14A and 14B each have a half dovetail shape and, as best shown in Figure 1C, are each defined by and at an upper part of a respective leg 24A or 24C that is mounted or formed to protrude downwardly from the body portion as shown. The legs 24A each also define one such leg for the sides 14C and 14D, but in this case they do not form or define part of the lugs 2OA and 2OB. A fourth remote leg 24D is mounted or formed at the corner of the adjoining sides 14C and 14D to protrude downwardly from the body portion as shown, thereby proving four respective legs adjacent to the corners 15.

The body portion upper surface 27 is usually flat and can face upwardly in use. As best shown in Figures 3 and 4A the overhanging lip portions 22A and 22B of each tile each lap over where the lugs of that tile are joined to an adjacent like tile to thereby provide a continuing upper surface to the resultant pallet.

A central region 28 of the body portion 12 is provided with a plurality of apertures 30 that extend therethrough in a manner that defines a grid-like (ie. honeycomb) pattern in the central region. This can provide for liquid (eg. water) drainage through the tile and reduce the overall weight of the tile.

To provide for modularity, the form of the first pallet tile 10 can be repeated in each tile of a given pallet assembly, namely, whereby the two adjacent sides 14A and B each comprise the three spaced lugs 16A-C that define the two shaped areas 18 therebetween, and whereby the other adjacent sides 14C and D each comprise the other spaced lugs 2OA and B that define the shaped area 22 therebetween. This allows the two shaped areas 18 at each of the sides 14A and B of the first pallet tile 10 to receive the lugs 2OA and B of two other separate yet identical pallet tiles 10, to fasten those tiles together. It also allows the lugs 2OA and B at each of the sides 14A and B of the
first pallet tile 10 to be positioned in two shaped areas 18 along each of sides 14A and B of two further separate yet identical pallet tiles 10, to fasten those tiles together.

This repetition of form of the first pallet tile 10 allows for multiple units of the one tile only to be produced, such as by the plastics injection moulding of each tile in eg. a single mould. In this regard, and to keep costs to a minimum, a recycled plastic such as a polyethylene can be employed to mould each tile.

The first pallet tile 10 thus provides a very simple and expedient means of erecting a pallet via the simple interlocking of respective adjacent tile lugs.

Referring now to Figure 2, where like reference numerals to Figure 1 are employed to denote similar or like parts, but with the addition of 100 thereto, a pallet module is shown in the form of a second pallet tile 110 that can again form a basic unit for constructing a knockdown and easily transportable pallet.

The pallet tile 110 defines a second embodiment of a module that comprises a generally rectangular body portion 112 having four sides 114A-114D, with each side being adapted for close facing engagement (or joining) with a side of another like rectangular pallet tile (see Figures 3 and 4).

Hi the second pallet tile embodiment the tile 110 again comprises three spaced lugs 116A-C that protrude from side 114A, however, now comprises four spaced lugs 116A-D that protrude from side 114B. The three spaced lugs 116A-C respectively define two shaped regions 118 therebetween and the four spaced lugs 116A-D respectively define three shaped regions 118 therebetween.

In the second pallet tile embodiment the tile 110 again comprises two spaced dovetail shaped lugs 120A and 120B that protrude from the side 114C, however, now comprises three spaced dovetail shaped lugs 120A to 120C that protrude from the side 114D. Again, the sides 114C and 114D are each recessed with respect to respective overhanging lip portions 122A and 122B, with each lip portion again being defined by a continuation (integral projection) of the body portion 112. Lugs 120A and 120B again define a dovetail shaped area 126 therebetween and lugs 120A to 120C define two dovetail shaped areas 126 therebetween.

Also, as specifically depicted in Figure 2, but as also employed with the lugs of tile 10, when the lugs 116 or 120 lug of a first tile are inter-engaged with corresponding lugs of other like tiles, the lug surfaces that inter-engage can each be provided with corresponding inclinations (eg. of 32.8°) to an imaginary line L (Figure
2) that extends orthogonally with respect to the upper surface 127. This corresponding inclination at the adjacent lug inter-engaged faces provides a further degree of interlocking and for a greater degree of intermeshing between the lugs to further enhance the self-locking functionality of the tiles, thereby improving the structural properties of a resultant pallet formed from the tiles. It also means that a given tile can be joined/detached to another only by manoeuvring it in a particular manner (eg. by lifting it up and away from the other tile).

Figure 2A also illustrates the angle (ie. 60°) subtended by each dovetail lug side face and its respective side.

As shown in Figure 4B, each aperture can further comprise a peripheral side wall 132 that extends downwardly from an underside of the body portion upper surface 127. This wall functions to increase the stiffness/strength of the central region 128.

Also, as best shown in Figure 4B, some of the aperture side walls 132' can extend right through to, to in part define, an in-use base of the tile, thereby providing an underlying structural support to the central region 128 in use (eg. when a load is applied to the central region it can be transferred to and by such walls through to the tile base and to an underlying support).

Of course for longer sided rectangular tiles more than four lugs 116A-D or more than three lugs 120A-C can be employed as appropriate.

The operation of the second pallet tile embodiment 110 is otherwise as described for the first pallet tile embodiment 10 and hence will not be redescribed.

For a pallet formed from the pallet tiles 10 or 110 (eg. a knockdown pallet) and from Figures 3, 4A and 4C, it will be seen that the legs are defined on each tile such that, when two or more tile sides are joined, the first tile's legs are positioned adjacent to the second tile's legs. This leg arrangement provides for an additional combined leg support to the resultant pallet.

Also, a pallet formed from the pallet tiles 10 or 110 usually comprises four such tiles that are connected together in use to define a square or rectangular pallet respectively. However, other pallet shapes comprising two or more like or dislike tiles can be easily assembled.

In the pallet tile of each of the embodiments of Figures 1 to 4, the fastening together (ie. in a locking arrangement) of the lugs is enabled by the lugs of adjacent tiles interfering with each other. In other words, a separate fastener is not required.
However, as described below in the embodiment of Figures 5 and 6, the fastening together of the lugs can be enabled by a fastener being introduced through the adjacentlty located lugs. Nevertheless, even in the embodiment of Figures 5 and 6, the fastening still makes use of a simple-to-attach and expedient elongate fastener such as a bolt or pin.

With each of the pallets formed from tiles 10 and 110 a series of cover strips can be provided that are each adapted for connection to a tile side that is located at the pallet periphery after pallet assembly. Each cover strip can improve both the aesthetics and the safety of an assembled pallet. The tile 210, being joinable only at two sides, does not require such a cover strip.

The cover strip can cover the exposed lugs at each exposed pallet side to provide eg. a flat external periphery to the pallet. This can have better visual appeal (eg. where the pallet is used in a domestic context) and can also provide an external (exposed) surface in which sharp or protruding parts are covered.

A cover strip can be provided for connection at and for the full length of each peripheral side of the pallet. In this regard, a single cover strip can be provided that extends for the full length of two or more pallet tiles joined side-by-side.

Each cover strip can comprise one or more respective lugs protruding from an inside face thereof that can each be positioned in a region between two of the spaced tile lugs in a manner that enables fastening of the cover strip lugs to the module lugs to thereby join the cover strip to the tile. In other words, the cover strip can make use of the same mechanism used for joining one tile to another.

In this regard, each cover strip lug can have a dovetail shape that widens out moving away from the cover strip inside face, for easy location in, and to define a dovetail joint at, each corresponding region at the tile side. At the cover strip and tile lug inter-engaged faces the corresponding inclination, as described above, can again be employed.

Referring now to Figures 5 and 6, a module is shown in the form of a third tile 210 that can again form a basic unit for erecting eg. a knockdown or demountable platform 200 (shown in Figures 6A and 6B) that is easily stored and transported.

The tile 210 defines a third embodiment of a module that comprises, less specifically, a square body portion 212 having four sides 214, 215, 216 and 217. In this embodiment only two of the sides 214, 215 are adapted for close facing engagement (or
joining) with a side of another like tile (in Figures 6A and 6B the joined tiles are shown as tiles 210A-210D). The adjacent sides 214-215, 215-216 etc are again disposed at a right angle (90°) to each other. However, in tile 210 only one tile corner 218 is, in this case, bevelled, again for functional and aesthetic reasons.

The tile side 214 comprises two spaced lugs 219 and 220 protruding therefrom, and the tile side 217 comprises two spaced lugs 221 and 222 protruding therefrom. A smaller rectangular shaped area 224 is defined between the lugs 219 and 220 and a larger rectangular shaped area 226 is defined between the lugs 221 and 222. The area 224 is adapted such that a lug 222 protruding from another side of a like tile (eg. tile 210B) can be positioned snugly in the area 224. Similarly, the area 226 is adapted such that a lug 220 protruding from another side of a like tile (eg. tile 210D) can be positioned snugly in the area 226.

The lugs 219, 221 and 222 are defined by an open box-like configuration, and have a depth that provides an additional function to the lug, namely, that of a corner-located foot for the tile 210. On the other hand, the lug 220 is defined by an integral continuation of the tile body portion 212.

The two other feet of tile 210 are defined by integrally formed box-like structures 228 and 230 located at opposite ends of tile side 216. Box-like structure 230 is also truncated to define the tile corner 218.

The lug configuration allows for subsequent fastening together of adjacent tiles. In this regard, and as depicted in Figure 6A, at the side 214A of tile 210A, the lugs 219A and 220A can be fastened to the lug 222D projecting from the side 217D of tile 210D. Further, at the side 217A of tile 210A, the lugs 221A and 222A can be fastened to the lugs 219B and 220B projecting from the side 214B of tile 210B, and so on.

To secure the lugs that are so-nested together, an elongate fastener (eg. a bolt or pin) can be simply and rapidly inserted through each of the aligned series of holes 230 (see Figure 6A) to thereby join the tiles at their respective facing sides in a locking arrangement. The resulting joint is strong and secure and provides for a simple locking functionality to the tiles. The resulting joint is also easy to disassemble as needs be.

Referring again to Figures 5A and 5B, it will be seen that the body portion 212 has a tray-like structure that is supported (suspended) on the box-like corner structures of tile 210. In this regard, a series of parallel channels 232, 234, 236 and 238 extend out from a central region 240 of the body portion 212, to the respective tile sides 214, 215,
216 and 217. This configuration improves the strength and rigidity of the tray-like structure, whilst allowing for the use of a relatively thin gauge of material (again, typically an injection moulded plastic). In this regard, to keep costs to a minimum, a recycled plastic such as polyethylene can be employed.

The central region 240 is provided with a plurality of recesses 242 that extend therethrough in a manner that defines a grid-like pattern in the central region, again to provide strength and rigidity and to reduce the overall weight of the tile. One or more drainage holes can be defined at the base of each recess to provide for liquid (e.g. water) drainage through the tile.

The peripheral side walls of some of the recesses may extend right through to an in-use base of the tile, thereby providing an underlying structural support to the central region in use (e.g. when a load is applied to the central region it can be transferred to and by such walls through to the tile base and to an underlying support).

The repeating form of the tile 210 provides for modularity when assembling a platform 200 as shown in Figure 6. Thus, only one tile type need be produced (e.g. by plastics injection moulding each tile in a single mould).

The third tile 210 again provides a very simple and expedient means of constructing a platform via the simple interlocking of respective adjacent tile lugs. As mentioned above, the use of a separate fastener that is introduced through the adjacent located lugs still provides for a simple-to-construct and expedient to assemble platform.

One specific application of the pallet of Figures 1 to 4 and platform of Figures 5 and 6 is to provide a support for domestic rainwater tanks. However, it should be appreciated that the pallet/platform can be employed in any application in which a modular, demountable and/or transportable platform is required. For example, the platform can be used with trucking or warehousing of any goods, and can be deconstructed and stored after use. It can also be used in simple construction applications to provide a low cost flooring.

When used for the general transportation of goods, each of the modules making up the platform may be individually lifted out of the multi-module configuration (e.g. by a forklift). In this regard, a separate goods load may be prepared for and positioned on each module so that, when unloading, each module is lifted separately. The goods load may be loaded on each module in a manner whereby each
module can be detached (ie. by lifting up and away) without moving and/or disturbing the goods of the other modules.

The tile dimensions and tile shapes employed can of course vary, but in both pallet and flooring/formwork applications square tiles of 600x600mm and 900x900mm, and rectangular tiles of 600x900mm, have been employed. These dimensions enable square and rectangular tiles to be joined together.

Whilst a number of module and platform embodiments have been described, it should be appreciated that the module and platform can be embodied in many other forms. For example, when the module is to be used for demountable or temporary flooring, formwork and the like, it may comprise a different (eg. thinner) profile. In addition, it may not require the grid-like (honeycomb) configuration in the central region.

In the claims which follow and in the preceding description, except where the context requires otherwise due to express language or necessary implication, the word "comprise" or variations such as "comprises" or "comprising" is used in an inclusive sense, i.e. to specify the presence of the stated features but not to preclude the presence or addition of further features.
1. A module for a platform, the module comprising a body having at least one side for adjoining a side of another module, and at least two spaced lugs located at the at least one side to define a shaped region therebetween, with the shape of the region being such that another lug located at the other module side can be positioned in the region between the two spaced lugs in a manner that enables fastening of the lugs together to thereby join the modules at their respective adjoining sides.

2. A module as claimed in claim 1 wherein the fastening of the lugs together is enabled by the other lug interfering with the two spaced lugs, or by a fastener being introduced through the adjacentlly located other lug and two spaced lugs.

3. A module as claimed in claim 1 or 2 wherein the at least two lugs protrude from a side wall of the module, and wherein the other lug protrudes from a side wall of the other module, with the side walls being closely spaced from each other when the lugs of the respective adjoining sides are fastened together.

4. A module as claimed in claim 3 comprising at least three spaced lugs that protrude from the at least one side and respectively define at least two shaped regions therebetween, and wherein the other module comprises at least two spaced other lugs that protrude from its side, each for positioning in a respective region defined between two of the at least three spaced lugs to enable fastening together of all of the lugs, thereby joining the modules at their respective adjoining sides.

5. A module as claimed in claim 4 wherein the at least three spaced lugs are located along the at least one side such that an end lug is located at each respective end of the side, with one or more lugs being evenly spaced between those end lugs.

6. A module as claimed in claim 5 wherein, when the module is viewed in plan, each of the one or more lugs has a dovetail shape that widens out moving away from the module side, whereas the end lugs each have a half dovetail shape and are each in part defined by a leg that protrudes downwardly from the body in use.

7. A module as claimed in claim 6 wherein, when the other module is viewed in plan, the or each other lug has a dovetail shape that widens out moving away from the other module side, with each region having a corresponding dovetail shape to receive a respective other lug snugly therein and thereby define a dovetail joint.

8. A module as claimed in claim 7 wherein the body defines a generally flat upper surface in use, and adjacent faces of each lug and other lug when inter-engaged
are correspondingly inclined to an imaginary line that extends orthogonally with respect to the body flat upper surface.

9. A module as claimed in any one of claims 3 to 8 wherein the body comprises two adjacent sides that each comprise the at least two spaced lugs that define the shaped region therebetween whereby, at each adjacent side, an other lug of a respective other module can be positioned in the region between the two spaced lugs to fasten each other module to the module.

10. A module as claimed in claim 9 wherein the body comprises at least one other adjacent side that comprises the other lug whereby that other lug can be positioned in a region defined between two spaced lugs of yet another module to fasten those modules together.

11. A module as claimed in claim 10 wherein the body comprises four sides, being the two adjacent sides that each comprise the at least two spaced lugs, and being two other adjacent sides that each comprise the other lug, with each side being joinable to a respective other module.

12. A module as claimed in claim 11 wherein each respective module is a like module.

13. A module as claimed in any one of claims 10 to 12 wherein the body comprises an upper surface, with a continuation of the upper surface extending beyond a side wall of the at least one other adjacent side to thereby define a lip that overhangs the other lug.

14. A module as claimed in claim 13 wherein the body comprises two adjacent other sides and the lip overhangs each side wall of those adjacent other sides.

15. A module as claimed in any one of the preceding claims wherein, in plan, the body is generally square or rectangular, with adjacent sides being at a right angle to each other.

16. A module as claimed in any one of the preceding claims wherein a central region of the body has a plurality of apertures that extend therethrough in a manner that defines a grid-like pattern in the central region.

17. A module as claimed in claim 16 wherein the grid-like pattern is a honeycomb pattern.
18. A module as claimed in claim 16 or 17 wherein each aperture comprises a peripheral side wall extending into the body, with some of the aperture side walls extending through to an in-use base of the body.

19. A module for a platform, the module comprising a body having at least one side adapted for facing engagement with and joining to a side of another module, wherein a central region of the body has a plurality of recesses that extend thereinto in a manner that defines a grid-like pattern in the central region, with each recess comprising a peripheral side wall extending into the body, and with some of the side walls extending to, and so as to in part define, an in-use base of the body.

20. A module as claimed in claim 19 wherein the grid-like pattern defines a honeycomb pattern.

21. A module as claimed in claim 19 or 20 wherein each recess is defined by an aperture that extends right through the body.

22. A module as claimed in any one of claims 19 to 21 that is otherwise as defined in any one of claims 1 to 15.

23. A platform comprising two or modules, with each module being as defined in any one of claims 1 to 21.

24. A platform as claimed in claim 24 wherein each module is square or rectangular, whereby the platform comprises a number of modules connected together in use to define a square or rectangular shape.

25. A platform as claimed in claim 23 or 24 that defines a pallet, flooring or formwork.

26. A platform comprising at least two modules that are joined to define the platform, a first module comprising a body having a side arranged for adjoining a side of a second module, with at least three spaced lugs located the first module side and defining at least two respective regions therebetween, and with at least two corresponding lugs located at the second module side, each for positioning in a respective recess defined between two of the three spaced lugs when the first and second modules are joined at their adjoining sides;

wherein two legs are provided at the first module side, with each leg defining one of the three spaced lugs of the first module side.
27. A platform as claimed in claim 26 wherein the two legs at the first module side are located at respective ends of that side and thereby define a lug at each end, with one or more lugs then being located at the side between the legs.

28. A platform as claimed in claim 26 or 27 wherein the at least two corresponding lugs at the second module side are each located adjacent to but inset from a respective leg at the second module side, with these respective legs extending downwardly in use from the second module body and being located such that, when the first and second module sides are joined, the first module legs are positioned adjacent to the second module legs.

29. A platform as claimed in claim 28 wherein the second module legs are located adjacent to respective ends of the second module side.

30. A platform as claimed in any one of claims 26 to 29 wherein the first and second modules are like modules.

31. A platform as claimed in claim 30 wherein the first and second modules are as defined in any one of claims 1 to 23.

32. A platform as claimed in claim 30 or 31 that comprises four modules connected together in use to define a square or rectangular pallet.

33. A platform comprising:

- a plurality of modules that can be joined to define the platform, each module comprising a body having a number of sides, with each side comprising a joining mechanism that enables that side to be joined to a respective side of another module of the platform whereby, in the resultant platform, the joining mechanism of at least one or more of the sides of each module is located at a periphery of the platform; and

- a cover strip that is adapted for connection to the joining mechanism of each module side that is located at the platform periphery.

34. A platform as claimed in claim 33 wherein a cover strip is provided for connection at and for the full length of each side of the resultant platform at its periphery.

35. A platform as claimed in claim 33 or 34 wherein each module is as defined in any one of claims 1 to 18.

36. A platform as claimed in claim 35 wherein the joining mechanism comprises the spaced lugs at each module side, and wherein each cover strip comprises one or more respective lugs protruding from an inside face thereof that can each be
positioned in a region between two of the spaced lugs in a manner that enables fastening of the cover strip lugs to the module lugs to thereby join the cover strip to the module.

37. A platform as claimed in claim 36 wherein the or each cover strip lug is defined as a key-lug that keys into the shaped region defined between the spaced lugs at each module side.

38. A platform as claimed in claim 37 wherein, when the module is viewed in plan, the or each key-lug has a dovetail shape that widens out moving away from the cover strip inside face, with each region having a corresponding dovetail shape to receive its respective key-lug snugly therein and thereby define a dovetail joint.

39. A platform as claimed in claim 37 or 38 wherein each module comprises a generally flat upper surface in use, and adjacent faces of each cover strip lug and module lug when inter-engaged are correspondingly inclined to an imaginary line that extends orthogonally with respect to the module flat upper surface.

40. A method of loading goods onto a platform that comprises two or modules, with each module adapted for being detachably joined to at least one adjacent module to form the platform, the method comprising the step of loading the platform with the goods whereby at least one of the modules and respective goods loaded thereon can be detached from a remainder of the platform.

42. A method as claimed in claim 41 wherein a separate goods load is prepared for and loaded on each module of the platform so that each module and its respective goods loaded thereon can be detached from a remainder of the platform.

43. A method as claimed in claim 41 or 42 wherein each module is as defined in any one of claims 1 to 23.

44. A platform that is loaded in accordance with the method of any one of claims 41 to 43.

45. A rainwater tank stand that comprises a platform as defined in any one of claims 24 to 40.

46. A rainwater tank stand that comprises a platform, the platform comprising a plurality of modules that can be assembled to define the tank stand platform.

47. A rainwater tank stand as claimed in claim 46 wherein each module is as defined in any one of claims 1 to 23.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
Int Cl. B65D 19/22 (2006.01)  B65D 19/32 (2006.01)  B65D 19/38 (2006.01)
E02D 27/38 (2006.01)  E04F 15/022 (2006.01)
According to International Patent Classification (IPC) or to both national classification and IPC

B. MINIMUM DOCUMENTATION SEARCHED

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
DWPI IPC B65D 19/- and/or keywords: PALLET, PLATFORM, STAND, FLOOR, MODULE, TDL, JOIN, DOVETAIL, PROJECTION, LUG, EDGE, SIDE, PERIPHERY, TANK, WATER, RAIN and similar terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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[X] Further documents are listed in the continuation of Box C  [X] See patent family annex

* Special categories of cited documents:
'A' document defining the general state of the art which is not considered to be of particular relevance
'E' earlier application or patent but published on or after the international filing date
'L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
'O' document referred to in an oral disclosure, use, or other means
'P' document published prior to the international filing date but later than the priority date claimed
'T' later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
'X' document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
'Y' document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
'&' document member of the same patent family

Date of the actual completion of the international search 20 November 2007

Date of mailing of the international search report 29 NOV 2007

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. □ Claims Nos.:
   because they relate to subject matter not required to be searched by this Authority, namely:

2. □ Claims Nos.:
   because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. □ Claims Nos.:
   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See Supplemental Sheet

1. X As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. □ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. □ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. □ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

□ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

□ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

X No protest accompanied the payment of additional search fees.
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Form PCT/ISA/210 (continuation of second sheet) (April 2007)
Supplemental Box
(To be used when the space in any of Boxes I to VIII is not sufficient)

Continuation of Box No III:

This International Application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept.

In assessing whether there is more than one invention claimed, consideration is given to those features which can be considered to potentially distinguish the claimed combination of features from the prior art. Where different claims have different distinguishing features they define different inventions.

This International Searching Authority has found that there are different inventions as follows:

- Claims 1, 26 and their dependent claims are directed to modules and platforms comprising modules wherein sides of the modules adjoin the sides of another module, the sides comprising lugs and shaped regions therebetween to interlock adjacent modules. This combination of features comprises a first distinguishing feature.

- Claim 19 and its dependent claims are directed to a module with a body, at least one side adapted for facing engagement with the side of another module wherein a central region is provided with plurality of recesses and grid like pattern and an arrangement which defines an in-use base of the body. This combination of features comprises a second distinguishing feature.

- Claim 33 and its dependent claims are directed to a platform comprising a plurality of modules and each module comprising a body with a joining mechanism to connect the sides of the modules, one or more sides of each module located at the periphery of the platform and a cover strip adapted for connection to the joining mechanism of each module side that is located at the platform periphery. This combination of features comprises a third distinguishing feature.

- Claim 40 and its dependent claims are directed to a method of loading goods on to a platform comprising two or more modules that are detachably joined, the method comprising the step of loading the platform with the goods whereby at least one of the modules and respective goods loaded thereon can be detached from the remainder of the platform. This combination of features comprises a fourth distinguishing feature.

- Claim 46 and its dependent claims are directed to a rainwater tank stand that comprises a platform comprising a plurality of modules that can be assembled to define the tank stand platform. This combination of features comprises a fifth distinguishing feature.

PCT Rule 13.2, first sentence, states that unity of invention is only fulfilled when there is a technical relationship among the claimed inventions involving one or more of the same or corresponding special technical features. PCT Rule 13.2, second sentence, defines a special technical feature as a feature which makes a contribution over the prior art.

The only feature common to all of the claims is a platform comprising modules wherein the modules are adapted to be connected together. However this concept is known in the light of the information contained in any one of the following documents:

- US 5860369 A (JOHN et al) 19 January 1999
- US 5105476 A (REYNOLDS) 21 April 1992
- US 5094175 A (CHRISTIE) 10 March 1992

This means that the common feature can not constitute a special technical feature within the meaning of PCT Rule 13.2, second sentence, since it makes no contribution over the prior art.

Because the common feature does not satisfy the requirement for being a special technical feature it follows that it cannot provide the necessary technical relationship between the identified inventions. Therefore the claims do not satisfy the requirement of unity of invention a posteriori.

NOTE: There is no claim no. 41 in this International Application.
This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX