A TIMBER DECK SYSTEM, AN ASSEMBLY FOR INSTALLING THE TIMBER DECK SYSTEM AND A METHOD FOR ASSEMBLING THE TIMBER DECK

FIELD OF THE INVENTION

The present invention relates generally to timber decks, and more particularly, to a timber deck system, a method for assembling the timber deck and an assembly for installing a timber deck.

BACKGROUND OF THE INVENTION

Installation of timber decks is generally carried out by using wood. The term “timber deck” is used herein to mean a raised floored structure, a platform, storage of wood logs such as freestanding. The conventional timber deck storage system requires a flat surface; therefore wood logs stored thereupon are exposed to the atmospheric conditions such as rain, dust, humidity etc. Further, small pieces of wood block/shim are used to gain/achieve the height of finish deck which leads to blockage of water underneath the deck.

However, usage of wood blocks for providing elevation to the deck has various disadvantages. First, the usage of wood blocks made the elevation unstable. Over the time due to exposure to the atmosphere the wood blocks weaken and the deck collapses due to weaken/rotten wood blocks. Secondly as discussed above, the arrangement of wood blocks/shim leads to blockage of water underneath the whole deck which encourages mosquito breeding, a moist breeding condition for the growth of Fungus/Mold and Termites.

In order to avoid problem of decaying of wood blocks various wood treatment methods were developed. However, treating the wood blocks requires substantial amount of time and is a complex process. Further, it is mandatory to regularly paint the wood blocks which get faded, chipped or peeled off over the time. Various other solutions were provided to counter aforesaid problems related to installation of timber decks.

Therefore, it is desirable to have an alternate system which replaces wood blocks and provides stability to the timber deck. Further, the system must ameliorate the aforesaid problems of conventional timber deck systems.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a timber deck system which overcomes the above-mentioned problems and limitations of conventional art.

Another object of the present invention is to provide a method for assembling a timber deck system.

Yet another object of the present invention is to provide an assembly for installing a timber deck system.

In accordance with one aspect of the present invention, a timber deck system is provided wherein the system comprises of steel rods, a concrete block and timber runner. The steel rods comprises of a first end and a second end. The second end of the steel rod is threaded. The first end of each of the steel rod is inserted into a

plurality of holes drilled onto the concrete block and the second end of the steel rod is in mechanical coupling with the timber runner, to place the timber runner onto the steel rods in removable fashion in order to adjust height of the timber deck with respect to a reference level.

In accordance with one of the preferred embodiment of the invention, the steel rods are stainless steel rods or are galvanized steel rods.

In accordance with one of the preferred embodiments of the present invention, the timber runner is drilled at regular intervals in compliment with a row-wise arrangement of the steel rods on the concrete block.

In accordance with another preferred embodiment of the present invention, each of the steel rod is inserted into each of the plurality of holes with depth of 40mm to 50mm drilled onto the concrete block.

Preferably, each of the plurality of holes is equivalent to the circumference and shape of the threaded rod, so that a length of the rod can be fixed into the hole.

The steel rod may preferably have a diameter ranging from 8mm -14mm.

In yet another preferred embodiment of the present invention, each of the plurality of holes is filled up with Epoxy up to a depth of 20mm from the end of the drilled hole.

In accordance with another aspect of the present invention, a method for assembling a timber deck is provided. The method comprises the steps of drilling plurality of holes onto a concrete block, inserting a first end of steel rod into the drilled holes. Further, second end of the steel rod is threaded and a timber runner is coupled with the steel rods.

Preferably, each of the holes having depth of 40mm to 50mm is drilled at predetermined points on the concrete block. Each of the hole with diameter of 8mm -14mm is drilled at the predetermined points on the concrete block.

In accordance with another preferred embodiment of the present invention, each of the hole is filled with Epoxy up to a depth of 20mm from the end of the drilled hole.

In accordance with yet another aspect of the present invention, the steel rods are inserted into the drilled holes about 20mm to 30mm deep.

In accordance with yet another aspect of the present invention, an assembly for installing a timber deck is provided. The assembly comprises of a concrete block, a timber runner, steel rods comprising a first end and a second end, wherein the second end has threads and adapted to be in an adjustment coupling with the timber runner onto which timber batten is placed, in order to adjust height of the timber deck and the first end is adapted to be in a fixture coupling with the concrete block to fix the steel rod to the concrete block.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will become more readily appreciated and understood from the following detailed description of preferred embodiments of the invention when taken in conjunction with the accompanying drawings, in which:

Fig. 1 is a block diagram illustrating the timber deck system in accordance with one of the preferred embodiment of the present invention.

Fig. 2 is a flow chart illustrating the method for assembling the timber deck in accordance with one of the preferred embodiment of the present invention.

Fig. 3 is a cross-sectional view of the threaded rod system for installing the timber deck in accordance with one of the exemplary implementations of the present invention.

DETAILED DESCRIPTION OF THE DRAWINGS

The present invention is described hereinafter by various embodiments with reference to the accompanying drawings, wherein reference numerals used in the accompanying drawings correspond to the like elements throughout the description. In the following detailed description, numeric values and ranges are provided for various aspects of the implementations described. These values and ranges are to be treated as examples only, and are not intended to limit the scope of the claims. In addition, a number of materials are identified as suitable for various facets of the implementations. These materials are to be treated as exemplary, and are not intended to limit the scope of the claims.

Fig. 1 shows a block diagram of the timber deck system 100. The system comprises of steel rods 102, a concrete block 104 and timber runner 108.

The steel rods 102 comprise of a first end 102” and a second end 102’. The first end 102” is inserted into a plurality of holes drilled onto the concrete block. Second end is threaded. First end of the steel rod 102 is fixed into the concrete block 104 above water-proofing and the other end of the steel rod 102 is further extended to a runner 108. The runner 108 is framework for placing the timbers on the timber deck.

In accordance with one of the preferred embodiment, the steel rods 102 may be made of other materials and the scope of the invention should not be limited by this exemplary illustration.

Preferably, second threaded end 102’ of the steel rods 102 is fastened into the runner 108 and the other end is fixed into the concrete block 104 by using washer(s) and nut(s) 110.

In accordance with another preferred embodiment the threaded steel rods 102 are fastened may be by other known mechanism into the runner 108 and the concrete block 104 instead of washer(s) & nut(s) and the scope of the present invention should not be limited by this exemplary illustration.

Timber battens 106 are placed in rows over the timber runner 108 while supported by the washer(s) and nut(s) 110 in such position. Further, the timber battens 106

are leveled, for example by aid of a spirit leveler (not shown), at a predetermined height by using a wrench (not shown) on nut(s) 110.

In accordance with yet another preferred embodiment, the timber battens 106 may be fastened onto the timber runner 108 by other known mechanism and the scope of the present invention should not be limited by this exemplary illustration.

Fig. 2 is a flow chart illustrating the process 200 of manufacturing the threaded rod system for installing the timber deck.

In step 202, preliminary procedures have been carried out. Firstly, the designated points are marked onto the concrete block 104 on which the timber deck is to be installed. Thereafter, holes are drilled onto the concrete block 104 at the marked points (i.e. predetermined positions) on the concrete block 104 and said holes are filled up with Epoxy.

Preferably, the individual hole is being drilled with diameter of 8-14mm and depth of 40mm to 50mm onto the concrete block 104. Further, Epoxy is filled up in the holes up to 20mm depth in step 204.

In accordance with still another embodiment of the present invention, the drilling of holes has been carried out by simple drilling tools or may be by other known advanced drilling mechanism. Further, aforesaid dimension of each of the individual holes may be varied in accordance with the requirements and as deemed fit by any person skilled in the art without limiting the scope of the present

invention.

In accordance with another embodiment of the present invention, epoxy is a class of reactive preploymers and polymers which contain epoxide groups. They are also known as polyepoxides. They have been implemented in the present invention due to their property to form a thermosetting polymer with high mechanical properties, temperature and chemical resistance. However, any other type of known material may be used to achieve aforesaid properties of thermosetting polymer without deviating from the scope of the present invention.

In step 204, steel rods 102 are inserted into the drilled holes onto the concrete block 104. Further, the second end 102' of steel rods 102 are threaded which provide flexibility to adjust desired height of the timber deck.

Preferably, the steel rods are inserted into the drilled holes about 20mm to 30mm (represented by distance "x") deep. However, said depth may be varied in accordance with the requirements and as deemed fit by any person skilled in the art without limiting the scope of the present invention.

In step 206, 1st pair of washer(s) and nut(s) 110 is fixed underneath the runner 108. Further, pre-drilled timber battens 106 are placed over timber runners 108, onto the rows of the steel rods 102 while resting onto the 1st pair of washer(s) and nut(s) 110.

Preferably, the timber battens are pre-drilled at designated intervals as desired by

the person skilled in the art and in accordance with the structure requirements.

In step 208, the height of the timber battens 106 is adjusted by using a wrench on the nut(s) 110 and upon reaching desired height the 2nd pair of washer(s) & nut(s) 110 is fastened against the timber battens 106.

Preferably, a spirit leveler is used to adjust the height of the timber battens 106. However, any other method of adjusting the level may use in accordance with the requirements and as deemed fit by any person skilled in the art without deviating from the scope of the present invention.

In step 210, once the 2nd pair of washer(s) and nut(s) 110 is fastened to the timber battens 106, the pre-drilled timber batten holes are filled up with the cement upto a depth of 15 to 30 mm (represented by z). The cement is filled to provide rigidity to the fixture and durability during operation.

After completing aforesaid steps the threaded rod system is manufactured and the timber deck may be installed on the same.

In order to further vividly describe the present invention and make it comprehensible for a person skilled in the art, Fig. 3 shows a cross-sectional view of the threaded rod system 100 for installing the timber deck in accordance with one of the exemplary implementations of the present invention.

The steel rods 102 are inserted into the concrete block 104 via the holes drilled

onto the concrete blocks 104. Further, as shown in Fig. 3, the holes drilled onto the concrete block 104 are deep upto 50 mm, wherein the threaded steel rods 102 are inserted into the concrete block upto 30 mm (distance represented by y) deep and the holes are filled up with epoxy upto 20mm (distance represented by x) deep.

First pair of washer(s) and nut(s) 110 is fixed underneath the runner 108, wherein the said first pair of washer(s) and nut(s) is of Galvanised/S304/S316 type and dimensions of the runner 108 are 42mm X 70mm. Thereafter timber battens 106 are placed onto timber runner 108, placed on the rows of the steel rods 102 while supported by the washer(s) and nut(s) 110.

Once the aforesaid system is placed as shown in Fig. 3, the process disclosed under fig. 2 is being carried out to install the timber deck on threaded rod system. The process is not discussed here for sake of brevity.

Further, recommended specifications of various components of the disclosed threaded rod system 100 in fig. 1 have been given below in Table 1, Table 2 and Table 3.

Standard Timber Batten Sizes (+/- 5mm)	**Recommended threaded rod spacing on battens**
2” (width) x 2” (thickness)	300- 500mm
2” (width) x 3” (thickness)	300 – 700mm

Table 1

Diameter of threaded rod used	Recommended height limit from concrete screed level
8mm	50mm - 250mm
10mm	50mm – 350mm
12mm	50mm – 450mm

Table 2

Diameter of threaded rod used	Recommended load on each rod
8mm – 10mm	270 kg & below
12mm	500 kg & below

Table 3

The above-mentioned novel threaded rod system besides providing flexibility to adjust the desired height of timber deck has reduced the use of timber shim/block greatly. Further, one of the important advantages of present invention is that it also prolongs the overall lifespan of the deck for another 3-4 years.

As mentioned earlier, majority of the deck failure are caused by rotten timber battles/joist, the system disclosed in the instant invention replaces the use of timber shims and provides better evaporation underneath by not making any direct contact with the timber battens to the ground.

The exemplary implementation described above is illustrated with specific shapes, dimensions, and other characteristics, but the scope of the invention includes various other shapes, dimensions, and characteristics. For example, the particular shape of threaded rods could be different, and could be of appropriate sizes for

any particular combination of timber battens and concrete block. Also, the runner could provided as platform to connect threaded rods and placing timber battens may different in a variety of ways, and could provide flat, slant, desired elevated platform any of various values or slope that varies as a function of position. Furthermore, rather than being epoxy, the drilled holes may be filled up by any other polymeric material. Also, the components as described above could be manufactured in various other ways and could include various other materials, including various other plastics and also various metals. Similarly, timber battens could be replaced with other similar products.

Similarly, the exemplary implementations described above include specific examples of threaded rod, timber battens, washer & nuts, dimensions of holes etc. but any appropriate threaded rod, timber battens, washer & nuts, dimensions of holes etc could be employed. Further, the above exemplary implementations describes specific sequence of process for manufacturing threaded rod system, but a wide variety of other such sequences of process could be used within the scope of the invention, including additional steps, omitting some steps, or performing process in a different order.

Various modifications to these embodiments are apparent to those skilled in the art from the description and the accompanying drawings. The principles associated with the various embodiments described herein may be applied to other embodiments. Therefore, the description is not intended to be limited to the embodiments shown along with the accompanying drawings but is to be provided broadest scope of consistent with the principles and the novel and inventive

features disclosed or suggested herein. Accordingly, the invention is anticipated to hold on to all other such alternatives, modifications, and variations that fall within the spirit and scope of the present invention and appended claims.

Claims:

1. A timber deck system 100, the system comprising:

steel rods 102, wherein the steel rods 102 comprises of a first end 102” and a second end 102’,

a concrete block 104,

a timber runner 108,

timber batten 106 wherein holes are pre-drilled,

wherein the first end of the steel rods 102 is inserted into a plurality of holes drilled onto the concrete block 104,

wherein the second end 102’ of the steel rods 102 is threaded and is in mechanical coupling with the timber runner 108 to place the timber batten 106 onto timber runner 108 placed onto the steel rods 102 in removable fashion in order to adjust height of the timber deck with respect to a reference level,

wherein the pre-drilled timber batten holes of timber batten 106 are filled up with cement up to a depth of 15 to 30 mm from upper surface of timber runner 108

extending downwards through the timber runner 108, after washer(s) and nut(s) 110 is fastened to the timber batten 106.

2. The timber deck system 100 according to claim 1, wherein the timber runner 108 is drilled at regular intervals in compliment with a row-wise arrangement of the steel rods 102 on the concrete block.

3. The timber deck system 100 according to claim 1, wherein each of the steel rods 102 is inserted into each of the plurality of holes with depth of 40mm to 50mm drilled onto the concrete block 104.

4. The timber deck system 100 according to claim 1, wherein the each of the plurality of holes drilled on the concrete block 104 has diameter of 8 - 14mm.

5. The timber deck system 100 according to claim 1, wherein each of the plurality of holes drilled on the concrete block 104 is filled up with Epoxy up to a depth of 20mm from the end of the drilled hole.

6. The timber deck system 100 according to claim 1, wherein the steel rod is stainless steel rod or is galvanized steel rod.

7. A method for assembling a timber deck, the method comprising the steps of:

drilling plurality of holes onto a concrete block 104;

inserting a first end 102” of steel rods 102 into the drilled holes;

threading a second end 102’ of the steel rods 102

coupling a timber runner 108 with the steel rods;

placing timber batten 106 with pre-drilled timber batten holes over timber runner 108 coupled with nuts and washer 110;

fill up the pre-drilled timber batten holes of timber batten 106 with cement up to a depth of 15 to 30 mm from upper surface of timber runner 108 extending downwards through the timber runner 108, after washer(s) and nut(s) 110 is

fastened to the timber batten 106.

8. The method for assembling the timber deck according to claim 7, wherein the drilling of plurality of holes further comprises drilling each of the holes having depth of 40mm to 50mm at the predetermined points on the concrete block 104.

9. The method for assembling the timber deck according to claim 8, wherein the step of drilling each of the holes comprises of drilling each of the holes with diameter of 10mm at the predetermined points on the concrete block 104.

10. The method for assembling the timber deck according to claim 8, further comprises filling each of the holes drilled on the concrete block 104 with Epoxy up to a depth of 20mm from the end of the drilled hole.

11. The method for developing the timber deck according to any of the claims 7 to 10, wherein the steel rods are inserted into the drilled holes drilled on the concrete block 104 about 20mm to 30mm deep.

A TIMBER DECK SYSTEM, AN ASSEMBLY FOR INSTALLING THE TIMBER DECK SYSTEM AND A METHOD FOR ASSEMBLING THE TIMBER DECK

FIELD OF THE INVENTION

The present invention relates generally to timber decks, and more particularly, to a timber deck system, a method for assembling the timber deck and an assembly for installing a timber deck.

BACKGROUND OF THE INVENTION

Installation of timber decks is generally carried out by using wood. The term “timber deck” is used herein to mean a raised floored structure, a platform, storage of wood logs such as freestanding. The conventional timber deck storage system requires a flat surface; therefore wood logs stored thereupon are exposed to the atmospheric conditions such as rain, dust, humidity etc. Further, small pieces of wood block/shim are used to gain/achieve the height of finish deck which leads to blockage of water underneath the deck.

However, usage of wood blocks for providing elevation to the deck has various disadvantages. First, the usage of wood blocks made the elevation unstable. Over the time due to exposure to the atmosphere the wood blocks weaken and the deck collapses due to weaken/rotten wood blocks. Secondly as discussed above, the arrangement of wood blocks/shim leads to blockage of water underneath the whole deck which encourages mosquito breeding, a moist breeding condition for the growth of Fungus/Mold and Termites.

In order to avoid problem of decaying of wood blocks various wood treatment methods were developed. However, treating the wood blocks requires substantial amount of time and is a complex process. Further, it is mandatory to regularly paint the wood blocks which get faded, chipped or peeled off over the time. Various other solutions were provided to counter aforesaid problems related to installation of timber decks.

Therefore, it is desirable to have an alternate system which replaces wood blocks and provides stability to the timber deck. Further, the system must ameliorate the aforesaid problems of conventional timber deck systems.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a timber deck system which overcomes the above-mentioned problems and limitations of conventional art.

Another object of the present invention is to provide a method for assembling a timber deck system.

Yet another object of the present invention is to provide an assembly for installing a timber deck system.

In accordance with one aspect of the present invention, a timber deck system is provided wherein the system comprises of steel rods, a concrete block and timber runner. The steel rods comprises of a first end and a second end. The second end of the steel rod is threaded. The first end of each of the steel rod is inserted into a

plurality of holes drilled onto the concrete block and the second end of the steel rod is in mechanical coupling with the timber runner, to place the timber runner onto the steel rods in removable fashion in order to adjust height of the timber deck with respect to a reference level.

In accordance with one of the preferred embodiment of the invention, the steel rods are stainless steel rods or are galvanized steel rods.

In accordance with one of the preferred embodiments of the present invention, the timber runner is drilled at regular intervals in compliment with a row-wise arrangement of the steel rods on the concrete block.

In accordance with another preferred embodiment of the present invention, each of the steel rod is inserted into each of the plurality of holes with depth of 40mm to 50mm drilled onto the concrete block.

Preferably, each of the plurality of holes is equivalent to the circumference and shape of the threaded rod, so that a length of the rod can be fixed into the hole.

The steel rod may preferably have a diameter ranging from 8mm -14mm.

In yet another preferred embodiment of the present invention, each of the plurality of holes is filled up with Epoxy up to a depth of 20mm from the end of the drilled hole.

In accordance with another aspect of the present invention, a method for assembling a timber deck is provided. The method comprises the steps of drilling plurality of holes onto a concrete block, inserting a first end of steel rod into the drilled holes. Further, second end of the steel rod is threaded and a timber runner is coupled with the steel rods.

Preferably, each of the holes having depth of 40mm to 50mm is drilled at predetermined points on the concrete block. Each of the hole with diameter of 8mm -14mm is drilled at the predetermined points on the concrete block.

In accordance with another preferred embodiment of the present invention, each of the hole is filled with Epoxy up to a depth of 20mm from the end of the drilled hole.

In accordance with yet another aspect of the present invention, the steel rods are inserted into the drilled holes about 20mm to 30mm deep.

In accordance with yet another aspect of the present invention, an assembly for installing a timber deck is provided. The assembly comprises of a concrete block, a timber runner, steel rods comprising a first end and a second end, wherein the second end has threads and adapted to be in an adjustment coupling with the timber runner onto which timber batten is placed, in order to adjust height of the timber deck and the first end is adapted to be in a fixture coupling with the concrete block to fix the steel rod to the concrete block.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will become more readily appreciated and understood from the following detailed description of preferred embodiments of the invention when taken in conjunction with the accompanying drawings, in which:

Fig. 1 is a block diagram illustrating the timber deck system in accordance with one of the preferred embodiment of the present invention.

Fig. 2 is a flow chart illustrating the method for assembling the timber deck in accordance with one of the preferred embodiment of the present invention.

Fig. 3 is a cross-sectional view of the threaded rod system for installing the timber deck in accordance with one of the exemplary implementations of the present invention.

DETAILED DESCRIPTION OF THE DRAWINGS

The present invention is described hereinafter by various embodiments with reference to the accompanying drawings, wherein reference numerals used in the accompanying drawings correspond to the like elements throughout the description. In the following detailed description, numeric values and ranges are provided for various aspects of the implementations described. These values and ranges are to be treated as examples only, and are not intended to limit the scope of the claims. In addition, a number of materials are identified as suitable for various facets of the implementations. These materials are to be treated as exemplary, and are not intended to limit the scope of the claims.

Fig. 1 shows a block diagram of the timber deck system 100. The system comprises of steel rods 102, a concrete block 104 and timber runner 108.

The steel rods 102 comprise of a first end 102''' and a second end 102''. The first end 102''' is inserted into a plurality of holes drilled onto the concrete block. Second end is threaded. First end of the steel rod 102 is fixed into the concrete block 104 above water-proofing and the other end of the steel rod 102 is further extended to a runner 108. The runner 108 is framework for placing the timbers on the timber deck.

In accordance with one of the preferred embodiment, the steel rods 102 may be made of other materials and the scope of the invention should not be limited by this exemplary illustration.

Preferably, second threaded end 102'' of the steel rods 102 is fastened into the runner 108 and the other end is fixed into the concrete block 104 by using washer(s) and nut(s) 110.

In accordance with another preferred embodiment the threaded steel rods 102 are fastened may be by other known mechanism into the runner 108 and the concrete block 104 instead of washer(s) & nut(s) and the scope of the present invention should not be limited by this exemplary illustration.

Timber battens 106 are placed in rows over the timber runner 108 while supported by the washer(s) and nut(s) 110 in such position. Further, the timber battens 106

are leveled, for example by aid of a spirit leveler (not shown), at a predetermined height by using a wrench (not shown) on nut(s) 110.

In accordance with yet another preferred embodiment, the timber battens 106 may be fastened onto the timber runner 108 by other known mechanism and the scope of the present invention should not be limited by this exemplary illustration.

Fig. 2 is a flow chart illustrating the process 200 of manufacturing the threaded rod system for installing the timber deck.

In step 202, preliminary procedures have been carried out. Firstly, the designated points are marked onto the concrete block 104 on which the timber deck is to be installed. Thereafter, holes are drilled onto the concrete block 104 at the marked points (i.e. predetermined positions) on the concrete block 104 and said holes are filled up with Epoxy.

Preferably, the individual hole is being drilled with diameter of 8-14mm and depth of 40mm to 50mm onto the concrete block 104. Further, Epoxy is filled up in the holes up to 20mm depth in step 204.

In accordance with still another embodiment of the present invention, the drilling of holes has been carried out by simple drilling tools or may be by other known advanced drilling mechanism. Further, aforesaid dimension of each of the individual holes may be varied in accordance with the requirements and as deemed fit by any person skilled in the art without limiting the scope of the present

invention.

In accordance with another embodiment of the present invention, epoxy is a class of reactive preploymers and polymers which contain epoxide groups. They are also known as polyepoxides. They have been implemented in the present invention due to their property to form a thermosetting polymer with high mechanical properties, temperature and chemical resistance. However, any other type of known material may be used to achieve aforesaid properties of thermosetting polymer without deviating from the scope of the present invention.

In step 204, steel rods 102 are inserted into the drilled holes onto the concrete block 104. Further, the second end 102" of steel rods 102 are threaded which provide flexibility to adjust desired height of the timber deck.

Preferably, the steel rods are inserted into the drilled holes about 20mm to 30mm (represented by distance “x”) deep. However, said depth may be varied in accordance with the requirements and as deemed fit by any person skilled in the art without limiting the scope of the present invention.

In step 206, 1st pair of washer(s) and nut(s) 110 is fixed underneath the runner 108. Further, pre-drilled timber battens 106 are placed over timber runners 108, onto the rows of the steel rods 102 while resting onto the 1st pair of washer(s) and nut(s) 110.

Preferably, the timber battens are pre-drilled at designated intervals as desired by

the person skilled in the art and in accordance with the structure requirements.

In step 208, the height of the timber battens 106 is adjusted by using a wrench on the nut(s) 110 and upon reaching desired height the 2nd pair of washer(s) & nut(s) 110 is fastened against the timber battens 106.

Preferably, a spirit leveler is used to adjust the height of the timber battens 106. However, any other method of adjusting the level may use in accordance with the requirements and as deemed fit by any person skilled in the art without deviating from the scope of the present invention.

In step 210, once the 2nd pair of washer(s) and nut(s) 110 is fastened to the timber battens 106, the pre-drilled timber batten holes are filled up with the cement upto a depth of 15 to 30 mm (represented by z). The cement is filled to provide rigidity to the fixture and durability during operation.

After completing aforesaid steps the threaded rod system is manufactured and the timber deck may be installed on the same.

In order to further vividly describe the present invention and make it comprehensible for a person skilled in the art, Fig. 3 shows a cross-sectional view of the threaded rod system 100 for installing the timber deck in accordance with one of the exemplary implementations of the present invention.

The steel rods 102 are inserted into the concrete block 104 via the holes drilled

onto the concrete blocks 104. Further, as shown in Fig. 3, the holes drilled onto the concrete block 104 are deep upto 50 mm, wherein the threaded steel rods 102 are inserted into the concrete block upto 30 mm (distance represented by y) deep and the holes are filled up with epoxy upto 20mm (distance represented by x) deep.

First pair of washer(s) and nut(s) 110 is fixed underneath the runner 108, wherein the said first pair of washer(s) and nut(s) is of Galvanised/S304/S316 type and dimensions of the runner 108 are 42mm X 70mm. Thereafter timber battens 106 are placed onto timber runner 108, placed on the rows of the steel rods 102 while supported by the washer(s) and nut(s) 110.

Once the aforesaid system is placed as shown in Fig. 3, the process disclosed under fig. 2 is being carried out to install the timber deck on threaded rod system. The process is not discussed here for sake of brevity.

Further, recommended specifications of various components of the disclosed threaded rod system 100 in fig. 1 have been given below in Table 1, Table 2 and Table 3.

Standard Timber Batten Sizes (+/- 5mm)	**Recommended threaded rod spacing on battens**
2” (width) x 2” (thickness)	300- 500mm
2” (width) x 3” (thickness)	300 – 700mm

Table 1

Diameter of threaded rod used	Recommended height limit from concrete screed level
8mm	50mm - 250mm
10mm	50mm – 350mm
12mm	50mm – 450mm

Table 2

Diameter of threaded rod used	Recommended load on each rod
8mm – 10mm	270 kg & below
12mm	500 kg & below

Table 3

The above-mentioned novel threaded rod system besides providing flexibility to adjust the desired height of timber deck has reduced the use of timber shim/block greatly. Further, one of the important advantages of present invention is that it also prolongs the overall lifespan of the deck for another 3-4 years.

As mentioned earlier, majority of the deck failure are caused by rotten timber battles/joist, the system disclosed in the instant invention replaces the use of timber shims and provides better evaporation underneath by not making any direct contact with the timber battens to the ground.

The exemplary implementation described above is illustrated with specific shapes, dimensions, and other characteristics, but the scope of the invention includes various other shapes, dimensions, and characteristics. For example, the particular shape of threaded rods could be different, and could be of appropriate sizes for

any particular combination of timber battens and concrete block. Also, the runner could provided as platform to connect threaded rods and placing timber battens may different in a variety of ways, and could provide flat, slant, desired elevated platform any of various values or slope that varies as a function of position. Furthermore, rather than being epoxy, the drilled holes may be filled up by any other polymeric material. Also, the components as described above could be manufactured in various other ways and could include various other materials, including various other plastics and also various metals. Similarly, timber battens could be replaced with other similar products.

Similarly, the exemplary implementations described above include specific examples of threaded rod, timber battens, washer & nuts, dimensions of holes etc. but any appropriate threaded rod, timber battens, washer & nuts, dimensions of holes etc could be employed. Further, the above exemplary implementations describes specific sequence of process for manufacturing threaded rod system, but a wide variety of other such sequences of process could be used within the scope of the invention, including additional steps, omitting some steps, or performing process in a different order.

Various modifications to these embodiments are apparent to those skilled in the art from the description and the accompanying drawings. The principles associated with the various embodiments described herein may be applied to other embodiments. Therefore, the description is not intended to be limited to the embodiments shown along with the accompanying drawings but is to be provided broadest scope of consistent with the principles and the novel and inventive

features disclosed or suggested herein. Accordingly, the invention is anticipated to hold on to all other such alternatives, modifications, and variations that fall within the spirit and scope of the present invention and appended claims.

Claims:

1. A timber deck system 100, the system comprising:

steel rods 102, wherein the steel rods 102 comprises of a first end 102''' and a second end 102''',

a concrete block 104,

a timber runner 108,

timber batten 106 wherein holes are pre-drilled,

wherein the first end of the steel rods 102 is inserted into a plurality of holes drilled onto the concrete block 104,

wherein the second end 102''' of the steel rods 102 is threaded and is in mechanical coupling with the timber runner 108 to place the timber batten 106 onto timber runner 108 placed onto the steel rods 102 in removable fashion in order to adjust height of the timber deck with respect to a reference level,

wherein the pre-drilled timber batten holes of timber batten 106 are filled up with cement up to a depth of 15 to 30 mm from upper surface of timber runner 108

extending downwards through the timber runner 108, after washer(s) and nut(s) 110 is fastened to the timber batten 106.

2. The timber deck system 100 according to claim 1, wherein the timber runner 108 is drilled at regular intervals in compliment with a row-wise arrangement of the steel rods 102 on the concrete block.

3. The timber deck system 100 according to claim 1, wherein each of the steel rods 102 is inserted into each of the plurality of holes with depth of 40mm to 50mm drilled onto the concrete block 104.

4. The timber deck system 100 according to claim 1, wherein the each of the plurality of holes drilled on the concrete block 104 has diameter of 8 - 14mm.

5. The timber deck system 100 according to claim 1, wherein each of the plurality of holes drilled on the concrete block 104 is filled up with Epoxy up to a depth of 20mm from the end of the drilled hole.

6. The timber deck system 100 according to claim 1, wherein the steel rod is stainless steel rod or is galvanized steel rod.

7. A method for assembling a timber deck, the method comprising the steps of:

drilling plurality of holes onto a concrete block 104;

inserting a first end 102''' of steel rods 102 into the drilled holes;

threading a second end 102''' of the steel rods 102

coupling a timber runner 108 with the steel rods;

placing timber batten 106 with pre-drilled timber batten holes over timber runner 108 coupled with nuts and washer 110;

fill up the pre-drilled timber batten holes of timber batten 106 with cement up to a depth of 15 to 30 mm from upper surface of timber runner 108 extending downwards through the timber runner 108, after washer(s) and nut(s) 110 is

fastened to the timber batten 106.

8. The method for assembling the timber deck according to claim 7, wherein the drilling of plurality of holes further comprises drilling each of the holes having depth of 40mm to 50mm at the predetermined points on the concrete block 104.

9. The method for assembling the timber deck according to claim 8, wherein the step of drilling each of the holes comprises of drilling each of the holes with diameter of 10mm at the predetermined points on the concrete block 104.

10. The method for assembling the timber deck according to claim 8, further comprises filling each of the holes drilled on the concrete block 104 with Epoxy up to a depth of 20mm from the end of the drilled hole.

11. The method for developing the timber deck according to any of the claims 7 to 10, wherein the steel rods are inserted into the drilled holes drilled on the concrete block 104 about 20mm to 30mm deep.