

RAISED ACCESS FLOOR ASSEMBLY

BACKGROUND OF THE INVENTION

The present invention generally relates to a structure of an raised access floor assembly, especially to a floor system that can be in use with and accommodate a multiplicity of cable lines or the like, and an raised access floor assembly that can be
5 installed without the assistance of any tools.

In general offices or factories, there would usually be such apparatus as computers, local networks, fax machines, printers, A/V communication systems, or diversified types of operation machines, and a vast amount of cable lines are thus
10 needed to be adopted for use. However, in the past there was usually a lack of the configuration for cable lines or the like in the general offices or factories, such cable lines and the like were directly connected outside. Such built-out cable lines can cause a negative effect on the exterior of the working place, and workers in such a working place can be stumbled by the built-out cable lines, which may hurt the workers or
15 tumble down and damage the machines operated by workers.

For solving the problems caused by the aforesaid built-out cable lines, construction contractors will preserve various kinds of built-in cable lines in the space of buildings. However, the following layout for rooms or disposition of machines will be limited to follow the layout of the preserved cable lines and therefore may not be
20 installed to meet the need of general offices or factories. The flexibility of the aforesaid layout or disposition is confined and if the locations of the preserved cable lines cannot match those of utilities, all that can be done is to adopt extended lines or re-install the cable lines of utilities. Accordingly, the cable lines are still installed in a built-out way, the preserved cable lines cannot be used.

25 If it is not desirable that the cable lines are installed in a built-out way, all that can be done is to damage the surface of the rooms, dig out channels for installing cable lines therein, and then remodel the rooms by covering the cable lines. However, it is not convenient for the construction procedure to damage the surfaces of a building and then install cable lines therein, and it is not a wise policy to make
30 damages again if changes on the layout in a building are desirable in the other days.

For solving the problems caused by the exposure of cable line and the damage on the surfaces of a building, an raised access floor is adopted for use in the business. Please refer to Fig.1, the aforesaid raised access floor 4 includes a support 41 with an adjustable height and a metal plate 42 being fixed thereto. The raised access floor 4 can be applied to construction on the ground, and the space for accommodating the cable lines can be formed by the elevation of the support 41. The height of the support 41 is adjustable to meet the need of various construction site, and the metal plate 42 can be formed in diversified sizes to match the construction. Therefore, cable lines can be installed under the raised access floor 4 to solve the drawbacks caused by the imbedding of cable lines. The procedures for installing the raised access floor 4 are as followings:

1. Smoothing the ground:

For ensuring a level construction plane, it is desirable to plane the obtrusions and fill the depressions of a ground and the level error cannot be too large.

2. Measuring the base line for construction, that is, the disposition location of the support 41.

3. Fixing the support 41:

To make perforations in the predetermined locations using boring tools and fix the support 41 onto the construction base line on the ground using expansion screws.

4. Aligning the heights of all the support 41 to a uniform level by drawing the level base line.

5. Screwing the metal plate 42 onto the support 41.

It makes no efforts to find drawbacks from the construction procedures on the installation of the aforesaid raised access floor:

1. For the metal plate is rectangular and four supporting points is thus needed, an accurate measurement for deciding the construction base line is needed to fix the support and even a minor error on the measurement will have influences on the installation of the following metal plate.

2. Because the metal plate needs four supports, all supports should be on the same level in order to support the metal plate with more stability. Besides that, it's necessary to adjust the heights of supports one by one after the level base line being drawn in order to fix all the supports also onto the same level plane. Therefore, the metal plate can be smoothly installed and then an raised access floor with a better degree of smoothness obtained. It is strictly demanded that the level degree of the ground and the adjustment for the heights of the supports should be undertaken in the highly accurate and prudent way. Even a minor error will cause one side of the metal plate to be lifted up or hanged on in the air.

3. The ground surface will be also damaged due to that it is necessary to drill the ground and screw expansion screws therein in order to fix the supports, which makes it necessary to remove the expansion screws by damaging the ground surface so that a re-modeling or re-installation can be undertaken in case that a latter change on the original layout is desirable.

4. The construction procedures, such as perforation on the ground, fixation of the supports, adjustment for the level of the supports, and installation of the metal plates are in need of various kinds of tools to facilitate the same. Moreover, the installation is so complicated and time-wasting that only workers with professional expertise can install an level raised access floor.

SUMMARY OF THE INVENTION

For resolving the problems caused by the imbedding of cable lines and raised access floor, it is the objective of the present invention to provide an raised access floor assembly using three supporting points as the basic constituent unit. The present invention includes a triangular base plate and a plurality of support post for the base plate to dispose thereupon. Because it is the 3-points support that makes the highest stability, even a minor error on the level of the ground will not cause the base plate that is still firmly fixed onto the support posts to be lifted up or hung on in the air with one side.

It is another object of the present invention to provide an raised access floor assembly that can be fast assembled and firmly supported without any assistant tools. The support posts of the present invention can be directly disposed on the measuring

location without any specified types of fixation and the base plate can be also disposed on the support posts directly, which leads to a non-fixed installation.

It is still another object of the present invention to provide an raised access floor assembly that can be installed in a non-fixed way and without the need to damage the surface of the space, which makes it convenient to dismember or take back the
5 assembly when a latter change or move is desirable.

It will be further described with the accompanied drawings for the full comprehension of structure characteristic and preferred embodiments of the present invention.

10 BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an illustration of general raised access floor;

Fig. 2 is an illustration for the basic constituent unit of the present invention;

Fig. 3 is the layout for the basic constituent unit of the present invention;

Fig. 4 is an illustration for the cross section of the present invention; and

15 Fig. 5 is a preferred embodiment of the present invention.

PREFERRED EMBODIMENTS OF PRESENT INVENTION

According to the raised access floor assembly disclosed in the present invention, by referring to Fig. 2, Fig. 3, and Fig. 4, including a plurality of support post 11 which can be disposed on the ground and a plurality of base plate 12 which can be installed
20 upon the support posts 11.

The support post 11 is a cylinder formed by the plastic ejection and on the top thereof further includes a plurality of depressed slot 111 which are located diametrically and separated equally along the peripheral direction.

The base plate 12 is a zincked plate being cut into a shape of triangle. There is
25 plurality of imbedding sides 121 extending downwardly along the sides of the triangle and to be properly imbedded into the aforesaid slots 111 of the support post 11. The neighboring imbedding sides 121 are separated by a clearance therebetween.

The procedures for assembling an raised access floor assembly are as followings:

1. Measuring the base line for construction:

Measuring the disposition location of the support post 11 according to the layout of the construction site.

5 2. Disposing the support post 11:

Disposing the support posts 11 one by one according to the measured location.

3. Disposing the base plate 12:

10 A basic unit of the raised access floor assembly is formed by one base plate 12 lying on three support post 11 and the imbedding side 121 of the base plate 12 imbedding into the slot 111 of the support post 11. Therefore, a plurality of such a basic unit can be combined together according to the layout of the construction site in order to make a whole assembly of an raised access floor structure.

15 The support post 11 is directly disposed onto the ground without being fixed onto the ground of the construction site (a non-fixed disposition). It is only necessary to place the support posts 11 one by one according to the layout of the construction site and then place the base plate 12 onto the support posts 11 (as is shown in Fig. 5). Because three points support the base plate 12, the ground of the construction site needs only to be smoothed during the preceding process. A minor error on the level
20 degree of the ground will not influence the installation stability of the base plate 12. The height of a support post is made dependent on that of the construction site, which obviates the procedure for aligning the level error. Moreover, it is much simpler and re-usable and without the need to damage the original facilities when a repair on one part of the assembly that is damaged or a re-installation is desired in the other days.

25 Besides that, there is a charge relief being formed in every included angle of the triangular base plate 12.

Additionally, a cable outlet 122 can be set on the base plate 12 in advance when imbedding the outlet for cable lines 20. Moreover, it is feasible that a floor covering
30 such as a knitted rug, a carpet, plastic tiles, or a slip-proof mat can be laid on an

assembly structure of the raised access floor assembly after the assembly procedures being finished. It is certain that a cable outlet 301 being set on the floor covering 30 opposite to the cable outlet 122 of the base plate 12.

Merits of the present invention

5 According to the disclosure of the aforesaid descriptions, the present invention adopts a type of 3-point support to constitute a basic unit for a floor and can effectively resolve the major problem caused by the difficulty on the construction procedures of a general raised access floor. The merits of the present invention is as following:

10 1. The support post can be disposed onto the ground in a non-fixed way without the previous measurement for an accurate construction base line, which facilitates the construction.

 2. Because the 3-point support makes the highest stability, it is unnecessary to align the height and the base plate will not be lifted up or hung on in the air with one
15 side.

 3. The base plate is disposed onto the ground in a non-fixed way, which leads to a possibility for replacing the damaged base plate or a direct exchanging obviating the chances of damaging the ground surface or other decorations when a re-modeling is desired.

20 4. The base plate or the support post can be assembled or dismembered without the assistance from any tools, which leads to a convenient and fast installation.

 5. The charge relief being formed in every included angle of the triangular base plate can reduce the accumulation of electrostatic charges.

25 What described aforementionedly is only the preferred embodiments of the present invention and not for restricting the scope of the present invention. Equivalent alternations and amendments according to the claims of the present invention are all included in the claims of the present invention. What claimed is:

CLAIMS

What is claimed is:

1. An raised access floor assembly, comprising:

a plurality of support post with a plurality of slot on the top thereof; and

5 a plurality of base plate, which are triangular and can be properly disposed on
said slot of said support post;

wherein one said base plate is combined with at least three said support posts to
constitute said assembly.
2. The raised access floor assembly according to claim 1, wherein said support
10 post is in a shape of cylinder.
3. The raised access floor assembly according to claim 1, wherein said slots in said
support post is located diametrically and separated equally along the peripheral
direction thereof.
4. The raised access floor assembly according to claim 1, wherein said support
15 post is disposed onto the ground in a non-fixed way.
5. The raised access floor assembly according to claim 1, wherein said base plate
can be in a shape of equilateral triangle or right triangle.
6. The raised access floor assembly according to claim 1, wherein said base plate
further comprises a plurality of imbedding side extending downwardly from the sides
20 thereof and to be properly imbedded into said slots of said support post.
7. The raised access floor assembly according to claim 1, wherein said imbedding
sides extending from sides of said base plate are separated by a clearance
therebetween.
8. The raised access floor assembly according to claim 1, wherein a cable outlet is
25 previously set on said base plate.
9. The raised access floor assembly according to claim 1, wherein a floor covering



is laid on said assembly.

10. The raised access floor assembly according to claim 9, wherein said floor covering is a knitted rug, a carpet, plastic tiles a slip-proof mat, or the like.

11. The raised access floor assembly according to claim 9, wherein said floor
5 covering further comprises an outlet opposite to said cable outlet of said base plate.

