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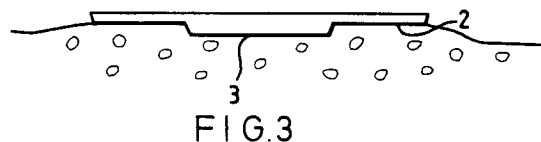
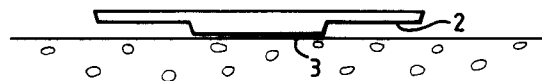
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GB-London WC2A 3LS (GB)**(54) **A base plate for a plate compactor.**

(57) A base plate (1) for a plate compactor has a first surface (2) for use in initial compaction of material and a second surface (3) depending therefrom for final compaction of the material. The projected area of the second surface (3) is not more than substantially half of the projected area of the first surface (2).

**FIG.3****FIG.4****EP 0 557 108 A1**

The present invention relates to a base plate for a plate compactor and a compactor provided with such a base plate.

Known plate compactors have a flat base plate, which is usually curved in an upwards direction at both ends to allow the compactor to ride over small obstacles such as stones.

The heavier the plate compactor, the more likely it is to become buried when compacting soft ground. This tends to occur when the compactor is driven by a heavy diesel engine. In order to overcome this problem it is known to increase the area of the base plate. However, this reduces the static weight of the plate compactor per unit area of the plate, and therefore the dynamic force per unit area, thus reducing the degree of compaction.

An object of the present invention is to provide a base plate for a plate compactor by means of which the static and dynamic force per unit area can be increased without the base plate sinking into softer ground.

The invention provides a base plate for a plate compactor having a first surface for use in initial compaction of material and a second surface depending therefrom for final compaction of the material, characterised in that the projected area of the second surface is not more than substantially half of the projected area of the first surface.

Preferably, the projected area of the second surface is not more than substantially one third of the projected area of the first surface.

The second surface may be stepped downwardly relative to the first surface. Alternatively, the first surface may be inclined and/or curved upwardly from the second surface.

Thus, when performing initial compaction on softer ground both the first and second surfaces are used, thereby minimizing the risk of sinking of the compactor. During final compaction, only the second surface is used, thus providing an increased static and dynamic force per unit area. In this way, it is possible to achieve a static weight per unit area of the compactor of 1400 - 1800 kg/m² without necessitating the use of small plates which bog down or very heavy compactors which are difficult to manoeuvre and control. Furthermore, it is possible to define with mathematical precision the applied static and dynamic forces per unit area which was hitherto difficult to achieve.

Embodiments of the invention will now be described with reference to the accompanying drawings, wherein:

Figure 1 is a side view of a base plate having a stepped second surface,

Figure 2 is an underneath view of the base plate of Figure 1,

Figure 3 shows diagrammatically in side view the base plate of Figure 1 during initial compac-

tion,

Figure 4 shows in side view the base plate of Figure 1 during final compaction,

Figures 5 and 6 show in side view alternative base plates,

Figure 7 shows diagrammatically in side view the base plate of Figure 5 during initial compaction, and

Figure 8 shows in side view the base plate of Figure 6 during final compaction.

Figures 9A and 9B show in side view alternative base plates in which the second surface is divided.

In Figures 1 to 4 a compactor base plate 1 has a first surface 2 and a second surface 3 depending therefrom via a step 4. The area of the second surface 3 is approximately one third of the area of the first surface 2 which, for the avoidance of doubt, includes the area of the second surface 3. The area of the second surface 3 could however be as much as substantially one half of the area of the first surface 2. The area of the second surface 3 is such that, when the entire weight of the compactor is supported thereon, the static weight per unit area is at least 1400 kg/m².

In Figure 3 the base plate is shown during initial compaction of soft ground in which both the first surface 2 and the second surface 3 take part in compaction. As the compacted ground becomes harder, the first surface 2 becomes less and less effective until compaction is performed solely by the second surface 3 providing an increased static and dynamic force per unit area than for the surfaces 2 and 3 together.

As shown in Figure 2, the second surface 3 extends laterally up to one side 5 of the base plate 1 so that the base plate can be used to provide final compaction up to an edge, e.g. to a kerb. If desired, the second surface 3 can be extended laterally up to the opposite edge 5' of the base plate 1 so that compaction can be performed up to opposite kerbs without turning the compactor round.

Figure 5 shows an alternative base plate in which the first surface 2 is curved downwardly to meet the second surface 3, and Figure 6 shows an alternative base plate in which the first surface 2 is inclined downwardly towards the base plate 1.

Figure 7 shows the base plate of Figure 5 during initial compaction and Figure 8 shows the base plate of Figure 6 during final compaction.

The second surface 3 need not necessarily be a single continuous surface. It could, for example, be formed as two or more separated surface portions 3', 3'', as shown in Figures 9A and 9B.

Claims

1. A base plate for a plate compactor having a first surface (2) for use in initial compaction of material and a second surface (3) depending therefrom for final compaction of the material, characterised in that the projected area of the second surface (3) is not more than substantially half of the projected area of the first surface (2). 5 10
2. A base plate as claimed in claim 1, wherein the projected area of the second surface (3) is not more than substantially one third of the projected area of the first surface (2). 15
3. A base plate as claimed in claim 1 or 2, wherein the second surface (3) is stepped downwardly relative to the first surface (2). 20
4. A base plate as claimed in claim 1 or 2, wherein the first surface (2) is inclined and/or curved upwardly from the second surface (3). 25
5. A base plate as claimed in any one of the preceding claims, wherein the second surface (3) extends up to one side (5) of the first surface (2) to enable final compaction up to an edge. 30
6. A base plate as claimed in claim 5, wherein the second surface (3) extends up to opposite sides (5, 5') of the first surface (2) to enable final compaction up to an edge from both sides of the base plate (1). 35
7. A base plate as claimed in any one of the preceding claims, wherein the second surface (3) is divided into two or more spaced surface portions (3', 3'') . 40
8. A plate compactor having a base plate (1) as claimed in any one of the preceding claims.

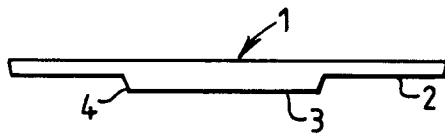


FIG. 1

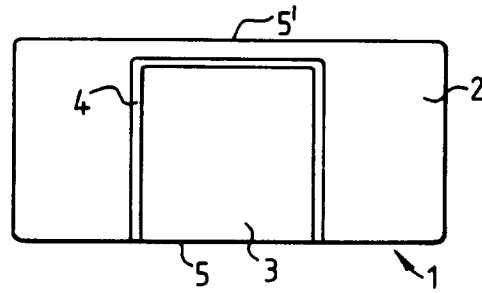


FIG. 2

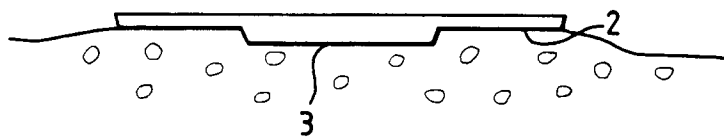


FIG. 3

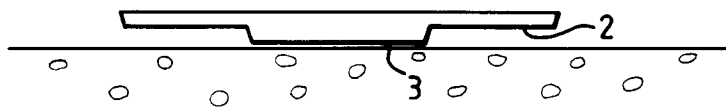


FIG. 4

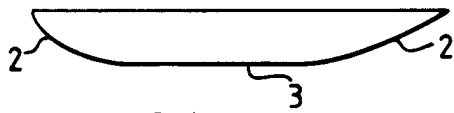


FIG. 5

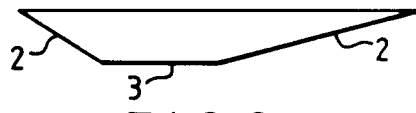


FIG. 6

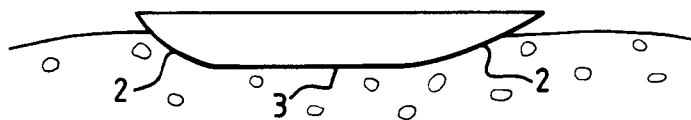


FIG. 7

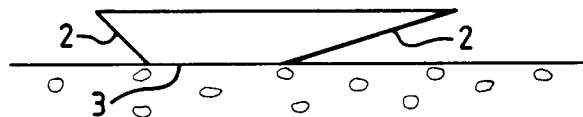


FIG. 8

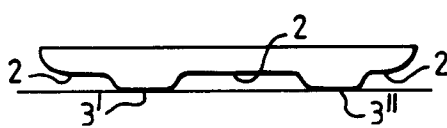


FIG. 9A



FIG. 9B



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EUROPEAN SEARCH REPORT

Application Number

EP 93 30 1218

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	US-A-3 327 598 (WAYER)	1,2,8	E02D3/046
Y	* column 2, line 69 - column 3, line 9 *	4,7	
A	* column 5, line 43 - line 69; figures 1,2,8,9 *	6	

Y	US-A-3 759 624 (HUNDEY)	4	
A	* column 2, line 6 - line 11; figures 1-3 *	6	

Y	EP-A-0 142 198 (BALLAST-NEDAM)	7	
	* page 6, line 11 - line 26; figures 8-10 *		

The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			E02D E01C
Place of search THE HAGUE		Date of completion of the search 22 APRIL 1993	Examiner TELLEFSEN J.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document	