

SPECIFICATION

Bottom structure for containers, load-carrying platforms or the like

The present invention relates to a bottom structure for containers, load-carrying platforms or the like, comprising a subjacent frame structure having longitudinal side beams and transverse beams extending therebetween, some of which transverse beams are preferably in the form of pockets for lifting forks or the like, and a flooring of sheet material, preferably plywood, resting on the frame structure.

In conventional bottoms for containers, load-carrying platforms or the like the frame structure includes, in addition to said longitudinal and transverse beams, a large number of closely spaced steel profiles the purpose of which is to constitute a support for the flooring which generally consists of plywood. Container floors must be able to resist not only the load of goods placed thereon but also the heavy point loads arising from goods handling trucks.

However, conventional constructions involve several disadvantages. The profiles, which as a rule are Z-profiles, are at both ends welded to the longitudinal beams and the form of the profiles makes the welding work troublesome and also difficult to check. The numerous pockets and steps formed as well as the extended welds caused by the profiles often lead to corrosion which may jeopardize the strength. If a profile is deformed due to careless load handling it is almost impossible to exchange it without removing the flooring of the container since otherwise no welding can take place.

According to the present invention there is provided a bottom structure for containers, load-carrying platforms or the like, comprising a subjacent frame structure having longitudinal side beams and transverse beams extending therebetween, and a flooring of sheet material resting on the frame structure, wherein downwardly curved sheet-metal plates, secured to the transverse beams as well as the longitudinal beams, are arranged between the transverse beams included in the frame structure and wherein a load-distributing rigid filling, which supports the flooring between the transverse beams, is provided in the spaces over said plates up to the level of the upper sides of at least some of said transverse beams and the underside of the flooring.

A preferred embodiment of this invention provides a structure which eliminates the need for transverse profiles, provides a clean underside, reduces the manufacturing cost and is easy to repair.

A preferred embodiment of a bottom structure according to the invention will be described by way of example more fully below with reference to the accompanying drawing, in which:

Fig. 1 is a longitudinal section of such a bottom; and

Fig. 2 is a cross-section on line I—I in Fig. 1.

In the drawing, the two longitudinal beams, which are I-shaped, are designated by 1. Arranged between these beams and at the ends thereof are transverse beams 2 and also arranged between the longitudinal beams are four so-called lift-fork pockets 3 consisting of square tubes and also serving as transverse beams. These pockets are designated to receive the forks of fork lift trucks and like load handling implements.

In a container bottom of conventional design three to four Z-profiles would be welded in the interspaces between transverse beams and square tubes in order to constitute a support for the flooring.

Interposed between the transverse beams or like members are, according to the invention, downwardly curved sheet-metal plates 4 which are secured to said beams along their edges. Provided in the spaces above these plates up to the level of the upper side of the fork pockets 3 is a load-distributing filling 5.

Such a filling consists of a comparatively light, pressure-resistant material, for instance glued chip material of the type included in chip boards.

A flooring 6 consisting of plywood or other sheet material is placed on top of the filling 5 which suitably has been applied in pre-formed pieces.

Due to the influence of the load-distributing filling compressive stresses on the floor will be distributed over a large area of the respective plate which, like a diaphragm, is subjected to tensile stress which is transferred to the transverse beams via the welds 7 along the plate edges.

The construction described above results in a substantial reduction of weight and it will thus facilitate and cheapen the manufacture.

It will be easier to repair damages by welding which with normal care can be carried out with the filling and floor left in unchanged position.

The invention should not be considered limited to that described above and shown in the drawing but it can be modified in various ways within the scope of the appended claims.

CLAIMS

1. A bottom structure for containers, load-carrying platforms or the like, comprising a subjacent frame structure having longitudinal side beams and transverse beams extending therebetween, and a flooring of sheet material resting on the frame structure, wherein downwardly curved sheet-metal plates, secured to the transverse beams as well as the longitudinal beams, are arranged between the transverse beams included in the frame structure and wherein a load-distributing rigid filling, which supports the flooring between the transverse beams, is provided in the space over said plates up to the level of the upper sides of at least some of said transverse beams and the underside of the flooring.

2. A bottom structure as claimed in claim 1, wherein some of said transverse beams are in the form of pockets for receiving lifting forks or the



* C L M S *

SPECIFICATION

Bottom structure for containers, load-carrying platforms or the like

The present invention relates to a bottom structure for containers, load-carrying platforms or the like, comprising a subjacent frame structure having longitudinal side beams and transverse beams extending therebetween, some of which transverse beams are preferably in the form of pockets for lifting forks or the like, and a flooring of sheet material, preferably plywood, resting on the frame structure.

In conventional bottoms for containers, load-carrying platforms or the like the frame structure includes, in addition to said longitudinal and transverse beams, a large number of closely spaced steel profiles the purpose of which is to constitute a support for the flooring which generally consists of plywood. Container floors must be able to resist not only the load of goods placed thereon but also the heavy point loads arising from goods handling trucks.

However, conventional constructions involve several disadvantages. The profiles, which as a rule are Z-profiles, are at both ends welded to the longitudinal beams and the form of the profiles makes the welding work troublesome and also difficult to check. The numerous pockets and steps formed as well as the extended welds caused by the profiles often lead to corrosion which may jeopardize the strength. If a profile is deformed due to careless load handling it is almost impossible to exchange it without removing the flooring of the container since otherwise no welding can take place.

According to the present invention there is provided a bottom structure for containers, load-carrying platforms or the like, comprising a subjacent frame structure having longitudinal side beams and transverse beams extending therebetween, and a flooring of sheet material resting on the frame structure, wherein downwardly curved sheet-metal plates, secured to the transverse beams as well as the longitudinal beams, are arranged between the transverse beams included in the frame structure and wherein a load-distributing rigid filling, which supports the flooring between the transverse beams, is provided in the spaces over said plates up to the level of the upper sides of at least some of said transverse beams and the underside of the flooring.

A preferred embodiment of this invention provides a structure which eliminates the need for transverse profiles, provides a clean underside, reduces the manufacturing cost and is easy to repair.

A preferred embodiment of a bottom structure according to the invention will be described by way of example more fully below with reference to the accompanying drawing, in which:

Fig. 1 is a longitudinal section of such a bottom; and

Fig. 2 is a cross-section on line I—I in Fig. 1.

In the drawing, the two longitudinal beams, which are I-shaped, are designated by 1. Arranged between these beams and at the ends thereof are transverse beams 2 and also arranged between the longitudinal beams are four so-called lift-fork pockets 3 consisting of square tubes and also serving as transverse beams. These pockets are designated to receive the forks of fork lift trucks and like load handling implements.

In a container bottom of conventional design three to four Z-profiles would be welded in the interspaces between transverse beams and square tubes in order to constitute a support for the flooring.

Interposed between the transverse beams or like members are, according to the invention, downwardly curved sheet-metal plates 4 which are secured to said beams along their edges. Provided in the spaces above these plates up to the level of the upper side of the fork pockets 3 is a load-distributing filling 5.

Such a filling consists of a comparatively light, pressure-resistant material, for instance glued chip material of the type included in chip boards.

A flooring 6 consisting of plywood or other sheet material is placed on top of the filling 5 which suitably has been applied in pre-formed pieces.

Due to the influence of the load-distributing filling compressive stresses on the floor will be distributed over a large area of the respective plate which, like a diaphragm, is subjected to tensile stress which is transferred to the transverse beams via the welds 7 along the plate edges.

The construction described above results in a substantial reduction of weight and it will thus facilitate and cheapen the manufacture.

It will be easier to repair damages by welding which with normal care can be carried out with the filling and floor left in unchanged position.

The invention should not be considered limited to that described above and shown in the drawing but it can be modified in various ways within the scope of the appended claims.

CLAIMS

1. A bottom structure for containers, load-carrying platforms or the like, comprising a subjacent frame structure having longitudinal side beams and transverse beams extending therebetween, and a flooring of sheet material resting on the frame structure, wherein downwardly curved sheet-metal plates, secured to the transverse beams as well as the longitudinal beams, are arranged between the transverse beams included in the frame structure and wherein a load-distributing rigid filling, which supports the flooring between the transverse beams, is provided in the space over said plates up to the level of the upper sides of at least some of said transverse beams and the underside of the flooring.

2. A bottom structure as claimed in claim 1, wherein some of said transverse beams are in the form of pockets for receiving lifting forks or the

like.

3. A bottom structure as claimed in claim 1 or 2, wherein said flooring is of plywood.

5 4. A bottom structure as claimed in any preceding claim, wherein the plates are curved in the longitudinal direction of the frame structure.

5. A bottom structure as claimed in any

preceding claim, wherein the load-distributing filling consists of glued chipped wood material.

10 6. A bottom structure for containers, load-carrying platforms or the like, substantially as hereinbefore described with reference to the accompanying drawing.

Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1983. Published by the Patent Office
25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.



* C L M S *