

DECK PLATE

BACKGROUND OF THE INVENTION

1. Field of the invention

The present invention relates to a deck plate used for forming a floor slab or a ceiling slab.

2. Description of Related Art

[0002] In a construction site where a concrete slab is constructed to form the floor, the ceiling, or the like of a building, a flat deck plate is used as a formwork for a concrete structure part. The deck plate is installed to extend between beams, and both end portions of the deck plate are fixed to upper surfaces of the beams. After the deck plate is fixed, concrete is placed onto the deck plate and then the concrete solidifies, so that a floor structural body or a ceiling structural body is formed.

[0003] As the structure of such a deck plate, for example, there is a known configuration where a slab support portion having a flat plate shape is provided between a plurality of ribs arranged in one direction, and a plurality of projecting trapezoidal ribs are formed on the slab support portion along the longitudinal direction to increase bending rigidity (see Patent Literature 1, for example).

Document List

Patent Literature

[0004]

Patent Literature 1: Japanese Patent Application Publication No. 2017-

150132

Summary of Invention

DISCLOSURE

Technical Problem

[0005] In a construction site, when the end portion of a deck plate in the width direction is installed on a beam or is connected to another deck plate by insertion, it is necessary for a portion of the slab support portion located at an end portion in the width direction to be placed on the beam or another deck plate. In this case, there may be a problem that the projecting trapezoidal rib provided to the slab support portion interferes with the beam or the deck plate, thus causing lifting at a portion where the deck plate is installed or connected, so that welding defects or the like may occur between the deck plate and the beam or another deck plate.

[0006] The present invention has been made in view of the above-mentioned problems, and it is an object of the present invention to provide a deck plate having excellent constructability which can achieve smooth installation on a beam and smooth connection to another deck plate at the time of construction.

Technical Solution

[0007] To solve the above-mentioned problems, an aspect of the present invention is directed to a deck plate formed by alternately and continuously forming a surface portion and a rib in a width direction, wherein the surface portion includes a flat portion and a projecting ridge portion which projects along a longitudinal direction from one surface side of the flat portion, and a surface portion located on one end side in the width direction includes no projecting ridge portion or includes fewer projecting ridge portions than another surface portion, and includes a placement portion having a flat shape with a width direction length larger than a width direction length of the flat portion.

[0008] It is also preferable that, in the surface portion located on the one end side, the placement portion be formed to extend toward an end edge side in the width direction from a projecting ridge portion located on an outermost side in the width direction.

[0009] It is also preferable that the placement portion have the width direction length which is 15 to 60% of a width direction length of the surface portion located on the one end side in the width direction.

[0010] It is also preferable that the placement portion have the width direction length which is 20 to 55% of a width direction length of the surface portion located on the one end side in the width direction.

[0011] It is also preferable that the surface portion located on the one end side in the width direction include two or fewer projecting ridge portions.

[0012] It is also preferable that the placement portion have embosses formed on one surface side of the placement portion at intervals in the longitudinal direction.

Effects of Invention

[0013] According to the aspect of the present invention, it is possible to achieve a deck plate which can be installed on a member, such as a beam or another deck plate, in a stable manner in a construction site and which can achieve an excellent connection state and excellent constructability.

BRIEF DESCRIPTION OF DRAWINGS

[0014]

[Fig. 1] A perspective view showing the configuration of a deck plate according to an embodiment of the present invention.

[Fig. 2] Fig. 2(a) is an A-A cross-sectional view of the deck plate shown in Fig. 1; and Fig. 2(b) is a cross-sectional view showing a rib shown in Fig. 2(a) in an enlarged manner.

[Fig. 3] A side view showing a state where a placement portion of the deck plate is placed on a beam.

[Fig. 4] A side view showing a state where the placement portion of the deck plate is connected to an adjacent deck plate.

[Fig. 5] Cross-sectional views of a deck plate used for evaluation of cross-sectional performance, wherein Fig. 5(a) illustrates a cross-sectional view of a deck plate being a comparison target; and Fig. 5(b) illustrates a cross-sectional view of the deck plate (connected body) according to the embodiment of the present invention.

DESCRIPTION OF EMBODIMENTS

[0015] A preferred embodiment of the present invention will be described with reference to drawings. An embodiment described hereinafter merely forms one example, and various modes are conceivable without departing from the scope of the present invention.

[0016]

<Configuration of deck plate>

The configuration of a deck plate according to the present embodiment will be described with reference to Fig. 1 and Fig. 2. A deck plate 1 is used as a formwork for concrete to be placed in forming a floor structure (or a ceiling structure) of a building structure. The deck plate 1 is installed to extend between a plurality of beams, for example.

[0017] The deck plate 1 is formed of a steel plate which has a thin plate shape and on which plating treatment, such as galvanizing treatment, is performed.

The deck plate 1 is manufactured by roll-forming a steel plate having a flat plate shape, for example, with a roll forming machine. Bending processing is performed on the deck plate 1 at a plurality of places by the roll forming machine. It is preferable that the plate thickness of the deck plate 1 be from 0.6 to 1.6 mm. In the present embodiment, the plate thickness of the deck plate 1 is set to 0.8 mm. [0018] As shown in Fig. 1, the deck plate 1 includes ribs 10, surface portions 20, a locking portion 30, and end closed portions 40. Hereinafter, respective components will be described in detail.

[0019]

(Rib)

As shown in Fig. 1 and Fig. 2, the ribs 10 are formed by performing bending processing on a steel plate. Each rib 10 includes a curved portion 11, a straight line portion 12, a folded-back portion 13, a straight line portion 14, and a curved portion 15. The curved portion 11 is bent on one surface side of the steel plate. The straight line portion 12 is continuously formed with the curved portion 11 and the surface direction of the straight line portion 12 extends in the direction orthogonal to the surface portion 20. The folded-back portion 13 is continuously formed with the straight line portion 12 and is formed by bending a plurality of number of times, thus being folded back. The straight line portion 14 is continuously formed with the folded-back portion 13 and the surface direction of the straight line portion 14 extends along the straight line portion 12. The curved portion 15 is continuously formed with the straight line portion 14 and is bent toward the surface portion 20.

Each of the curved portion 11 and the curved portion 15 is formed to have a bend radius R of approximately 6 mm. With such a configuration, bending processing can be relatively easily performed by roll-forming, and it is

possible to prevent the waste of concrete caused when a recess formed between the curved portions 11, 15 has a size larger than necessary.

The straight line portion 12 and the straight line portion 14 are formed such that the surface of the straight line portion 12 and the surface the straight line portion 14 are in contact with each other, and are coupled with each other by caulking processing or the like. With such a configuration, the straight line portion 12 and the straight line portion 14 are prevented from being separated from each other.

The folded-back portion 13 is formed into a substantially triangular shape in cross section. The folded-back portion 13 is folded back such that a starting point and an end point are disposed adjacent to each other so as to allow the straight line portion 12 and the straight line portion 14 to be in contact with each other.

[0020] As shown in Fig. 2, the rib 10 on one end side (a side opposite to a side where the locking portion 30 is formed) includes an inclined portion 16 and a straight line portion 17 in addition to the above-mentioned components. The inclined portion 16 is continuously formed with the straight line portion 14, and is inclined toward the surface portion 20 in an oblique direction separating from the straight line portion 12. The straight line portion 17 is continuously formed with the inclined portion 16, and the surface direction of the straight line portion 17 extends along the straight line portion 12.

[0021] In the above-mentioned rib 10 on the one end side, each of the curved portion 11 and the curved portion 15 is formed to have a bend radius R of approximately 6 mm. The reason is as follows. Bending processing can be relatively easily performed by roll-forming, and it is possible to prevent the waste of concrete caused when a recess formed between the curved portions 11, 15 has a size larger than necessary.

The straight line portion 12 and the straight line portion 14 are formed such that the surface of the straight line portion 12 and the surface the straight line portion 14 are in contact with each other, and are coupled with each other by caulking processing or the like. With such a configuration, the straight line portion 12 and the straight line portion 14 are prevented from being separated from each other.

The folded-back portion 13 is formed into a substantially triangular shape in cross section. The folded-back portion 13 is folded back such that a starting point and an end point are disposed adjacent to each other so as to allow the straight line portion 12 and the straight line portion 14 to be in contact with each other.

The inclined portion 16 is provided for forming a gap between the straight line portion 12 and the straight line portion 17. Due to the presence of the inclined portion 16, the gap formed between the straight line portion 12 and the straight line portion 17 can form a receiving portion 18 for the locking portion 30 and can accept the insertion of the locking portion 30 of another deck plate 3 as will be described later.

[0022]

(Surface portion)

The surface portions 20 are mainly portions of the deck plate 1 where the ribs 10 are not formed, that is, portions of the deck plate 1 which receive a load of concrete to be placed. A plurality of surface portions 20 are arranged in a width direction W of the deck plate 1 (hereinafter, simply referred to as "width direction W") via the ribs 10. That is, the rib 10 and the surface portion 20 are alternately formed in the width direction W of the deck plate 1. The respective surface portions 20 are formed into a substantially rectangular shape and are arranged on the same plane.

In the deck plate 1 according to the present embodiment, three ribs 10 and three surface portions 20 are formed. As described above, it is preferable to form the ribs 10 and the surface portions 20 in the same number. Particularly, it is preferable that one deck plate 1 include one to three ribs 10 and one to three surface portions 20.

[0023] Each surface portion 20 includes a plurality of projecting ridge portions 21 formed along a longitudinal direction L of the deck plate 1 (hereinafter, simply referred to as "longitudinal direction L"). The projecting ridge portions 21 are formed by performing bending processing on a steel plate. The projecting ridge portions 21 are formed on the surface portion 20 to project in a direction along which the ribs 10 are formed. Therefore, the surface portion 20 has a configuration where the projecting ridge portion 21 and a flat portion 22 are alternately formed as shown in Fig. 2.

[0024] Three projecting ridge portions 21 are formed on a surface portion 20A located between the plurality of ribs 10. In contrast, two projecting ridge portions 21 are formed on a surface portion 20B located on one end side in the width direction W. As described above, the surface portion 20B located on the one end side includes fewer projecting ridge portions 21 than another surface portion (a surface portion located between the plurality of ribs 10) 20A. In the present embodiment, a configuration with fewer projecting ridge portions 21 also includes a configuration where the surface portion 20B located on the one end side includes no projecting ridge portion 21. Accordingly, for example, in the case where another surface portion 20A includes three projecting ridge portions 21, the surface portion 20B located on the one end side includes two or fewer projecting ridge portions 21 or includes no projecting ridge portion 21.

[0025] The surface portion 20B located on the one end side also includes a placement portion 23 on an end edge side in the width direction W. As shown

in Fig. 2, in the surface portion 20B, the placement portion 23 is formed to extend toward the end edge side from the projecting ridge portion 21 located on the outermost side (the side farthest from the rib 10) in the width direction W. The placement portion 23 has a flat shape and is formed on the substantially same plane as the flat portion 22. As will be described later, the placement portion 23 is placed on a beam 2 or the end portion of another deck plate 3, for example, with the locking portion 30 being removed by cutting.

The placement portion 23 is formed to have a width direction length larger than the width direction length of the flat portion 22. In the configuration of the present embodiment, the width direction length of the placement portion 23 corresponds to a width direction length obtained by summing the width direction lengths of two flat portions 22 and the width direction length of one projecting ridge portion 21 of another surface portion 20A. That is, the placement portion 23 corresponds to a configuration obtained by flattening the projecting ridge portion 21, disposed between the two flat portions 22 of another surface portion 20A, on the same plane as the flat portions 22.

[0026] It is preferable that a width direction length W2 of the placement portion 23 be 15 to 60% of a width direction length W1 of the surface portion 20B located on the one end side in the width direction W, and it is more preferable that the width direction length W2 be 20 to 55% of the width direction length W1. By setting the width direction length of the placement portion 23 to 15% or more of the width direction length of the surface portion 20B located on the one end side in the width direction W, it is possible to prevent the projecting ridge portion 21 from interfering with the beam 2 or the deck plate 3 in placing the end portion of the deck plate 1 on the beam 2 or the end portion of another deck plate 3. Further, by setting the width direction length of the placement portion 23 to 60% or less of the width direction length of the surface portion 20B located on the one

end side in the width direction W, it is possible to assure sufficient cross-sectional performance of the deck plate.

[0027] The placement portion 23 has embosses 23a having a substantially elliptical shape and formed on one surface side of the placement portion at intervals in the longitudinal direction. The embosses 23a are formed by embossing a steel plate. The embosses 23a are formed for the purpose of assuring the strength of the placement portion 23 including no projecting ridge portion 21 or for the purpose of relieving distortion generated at the end portion of the deck plate 1 at the time of manufacture. Each emboss 23a has a height of 2 mm, for example. The emboss 23a is not limited to the above-mentioned shape, and may adopt any of various shapes. It is not always necessary to form the embosses 23a, and it is possible to adopt a configuration where the placement portion 23 has no emboss.

[0028]

(Locking portion)

The locking portion 30 is formed at one end of the deck plate 1 in the width direction W. The locking portion 30 is the end portion of a steel material bent from the placement portion 23 at a substantially right angle, and is formed to extend along the height direction of the rib 10. A height h of the locking portion 30 is 10 to 25 mm, for example. In connecting another deck plate 3 which will be described later, the locking portion 30 is inserted into the receiving portion 18 formed on another deck plate 3.

It is not always necessary to form the locking portion 30. For example, provided that leakage of placed concrete is prevented, deck plates may be coupled with each other by causing surface portions to overlap with each other, by joining surface portions by welding, or by using fastening jigs, such as screws, without forming the locking portion 30.

[0029]

(End closed portion)

As shown in Fig. 1, the end closed portions 40 are formed at both end portions of the deck plate 1 in the longitudinal direction L. The end closed portions 40 are formed by compressing both end portions of the ribs 10 perpendicularly to the surface of the deck plate 1. With the formation of the end closed portions 40, the end closed portions 40 of the rib 10 at both end portions are formed to have a compressed cross section, and other portions of the rib 10 sandwiched between the end closed portions 40 is formed into a substantially triangular shape in cross section. With such a configuration, both end portions of each rib 10 are formed into a flat shape, thus being capable of being placed on the upper surface of a flange portion of a beam. The end closed portion 40 is formed such that a length of the end closed portion 40 along the extending direction of the rib 10 is larger than the length of the end closed portion 40 placed on the upper surface of the flange portion of the beam.

[0030]

<Construction example of deck plate>

The construction example of the deck plate according to the present embodiment will be described with reference to Fig. 3 and Fig. 4. Hereinafter, the description will be made for a construction example where the end portion of the deck plate 1 is placed on the beam 2 and for a construction example where the deck plate 1 is placed on the end portion of another deck plate 3.

[0031] In placing the end portion of the deck plate 1 on the beam 2 as shown in Fig. 3, the locking portion 30 provided to the end portion of the deck plate 1 is removed by cutting. In a state where the locking portion 30 is removed by cutting, the placement portion 23 of the deck plate 1 is placed on the upper surface of the beam 2, and the beam 2 and the end portion of the deck plate 1 are connected

with each other by welding or the like. As described above, only the placement portion 23 including no projecting ridge portion 21 and having a flat shape is placed on the beam 2. Therefore, there is no possibility of lifting of the end portion of the deck plate 1 caused by the interference from the projecting ridge portion 21 and hence, the beam 2 and the end portion of the deck plate 1 are connected with each other in a stable manner.

[0032] In placing one deck plate 1 on the end portion of another deck plate 3 as shown in Fig. 4, the placement portion 23 of the one deck plate 1 is placed on the end portion of another deck plate 3 and the locking portion 30 of the one deck plate 1 is inserted into the receiving portion 18 of another deck plate 3. Specifically, the locking portion 30 of the one deck plate 1 is inserted into a gap (the receiving portion 18) formed between the straight line portion 12 and the straight line portion 17 forming the rib 10. At this point of operation, the tip end side of the placement portion of the one deck plate 1 is placed on the flat portion of another deck plate 3 on the end portion side, so that the one deck plate 1 and another deck plate 3 are disposed on substantially the same plane. By performing welding or the like on a connection portion between two deck plates in such a state, the two deck plates 1, 3 are connected with each other. As described above, the locking portion 30 of the one deck plate 1 is inserted into the receiving portion 18 of another deck plate 3, and only the placement portion 23 including no projecting ridge portion 21 and having a flat shape is placed on the end portion of another deck plate 3. Therefore, there is no possibility of lifting of the end portion of the deck plate 1 caused by the interference from the projecting ridge portion 21 and hence, the two deck plates 1, 3 are connected with each other in a stable manner.

[0033]

<Evaluation of cross-sectional performance of deck plate>

Hereinafter, evaluation of the cross-sectional performance of the deck plate according to the present embodiment will be described. In the description made hereinafter, (i) an evaluation example (evaluation example 1) and (ii) an evaluation example (evaluation example 2) will be described. In (i) evaluation example (evaluation example 1), the cross-sectional performance of a deck plate connected body obtained by connecting a deck plate including a placement portion to another deck plate is compared with the cross-sectional performance of a deck plate, being a comparison target, which has a width direction length substantially equal to the width direction length of the connected body but which includes no connection portion. In (ii) evaluation example (evaluation example 2), the cross-sectional performance of a deck plate connected body obtained by connecting a deck plate including a placement portion to another deck plate is compared with the cross-sectional performance of a deck plate connected body obtained by connecting a deck plate including no placement portion to another deck plate.

[0034]

(Evaluation example 1)

The evaluation of the cross-sectional performance of the deck plate according to the present evaluation example will be described with reference to Fig. 5. In the description made hereinafter, the cross-sectional performance of the deck plate connected body obtained by connecting the deck plate including the placement portion to another deck plate is compared with the cross-sectional performance of the deck plate, being a comparison target, which has a width direction length substantially equal to the width direction length of the connected body but which includes no connection portion.

[0035] First, the description will be made for the configuration of the deck plate connected body according to the present embodiment obtained by

connecting the deck plate including the placement portion to another deck plate. As shown in Fig. 5(b), the deck plate connected body has a configuration where the locking portion 30 is provided to the end edge side of the placement portion 23 of the deck plate 1 in the width direction, and is inserted into the receiving portion 18 of another deck plate 3 so as to connect the deck plate 1 to another deck plate 3. In this connected body, each of the surface portions 20A, 20B is 210 mm in width direction length W1 and is 0.8 mm in thickness, and each projecting ridge portion 21 is 25 mm in width direction length (width) and is 4 mm in depth. Two projecting ridge portions 21 are formed on the surface portion 20B located on the one end side of the deck plate 1, and three projecting ridge portions 21 are formed on another surface portion 20A.

Next, the configuration of a deck plate 4, being a comparison target, which includes no connection portion will be described. As shown in Fig. 5(a), the deck plate 4 is configured to have a width direction length which is substantially equal to the width direction length of the above-mentioned deck plate connected body, and is formed as an integral body without including the connection portion. In this connected body, the surface portion 20 is 210 mm in width direction length W1 and is 0.8 mm in thickness, and each projecting ridge portion 21 is 25 mm in width direction length (width) and is 4 mm in depth. Three projecting ridge portions 21 are formed on each surface portion 20.

[0036] For the cross-sectional performance of each deck plate having the above-mentioned configuration, a second moment of area and a section modulus were evaluated. As a result, when the cross-sectional performance of the deck plate connected body, where the two deck plates 1, 3 are connected with each other, was compared with the cross-sectional performance of the deck plate 4 including no connection portion, a difference between both deck plates in second moment of area was 1.5 cm^4 and a difference between both deck plates in section

modulus was 0.1 cm^3 . That is, a difference in second moment of area was less than 1% and a difference in section modulus was less than 1%.

The deck plate connected body differs from the deck plate 4, being a comparison target, with respect to a point that the number (two) of projecting ridge portions 21 on the surface portion 20B of the deck plate 3 is smaller than the number (three) of projecting ridge portions 21 on the surface portion 20 of the deck plate 4. With such a configuration, the effective width of the deck plate connected body (the sum of the effective width of the deck plate 1 and the effective width of the deck plate 3) is smaller than the effective width of the deck plate 4, being a comparison target. In general, there is a tendency for cross-sectional performance to reduce as an effective width is reduced. However, as described above, in the deck plate connected body, although the effective width of the deck plate connected body was smaller than the effective width of the deck plate 4 due to the surface portion 20B provided with the placement portion 23 including no projecting ridge portion 21, the cross-sectional performance of the deck plate connected body was substantially equal to the cross-sectional performance of the deck plate 4. One of the factors considered for this is the improvement of cross-sectional performance at the connection portion brought about by the insertion of the locking portion 30 of the one deck plate 1 into the receiving portion 18 of another deck plate 3 for connection.

[0037]

(Evaluation example 2)

In the description of the present evaluation example, the cross-sectional performance of a deck plate connected body obtained by connecting a deck plate including the placement portion to another deck plate is compared with the cross-sectional performance of a deck plate connected body obtained by connecting a deck plate including no placement portion to another deck plate.

[0038] The deck plate connected body obtained by connecting the deck plate including the placement portion according to the present embodiment to another deck plate has a configuration equal to the configuration of the deck plate connected body shown in the above-mentioned evaluation example 1 (see Fig. 5(b)).

Next, the description will be made for the configuration of the deck plate connected body, being a comparison target, which is obtained by connecting the deck plate including no placement portion to another deck plate. This connected body has a configuration where, in one deck plate, a surface portion located on one end side includes three projecting ridge portions in the same manner as another surface portion. Further, in this connected body, one deck plate is placed on and connected to another deck plate in a posture where some of the projecting ridge portions of the one deck plate interfere with another deck plate 3 in a state where the locking portion 30 provided to the end edge side of the one deck plate in the width direction is inserted into the receiving portion 18 of another deck plate 3.

[0039] For the cross-sectional performance of each deck plate having the above-mentioned configuration, a second moment of area and a section modulus were evaluated. As a result, in the deck plate connected body obtained by connecting the deck plate including the placement portion to another deck plate, a second moment of area was 121.6 cm^4 and a section modulus was 23.7 cm^3 . In contrast, in the deck plate connected body obtained by connecting the deck plate including no placement portion to another deck plate, a second moment of area was 124.9 cm^4 and a section modulus was 23.9 cm^3 .

As described above, the cross-sectional performance of the deck plate connected body which adopts the deck plate provided with the placement portion according to the present embodiment was lower than the cross-sectional

performance of the deck plate connected body which adopts the deck plate including no placement portion. However, a difference in second moment of area was approximately 3% and a difference in section modulus was approximately 1%.

[0040] For each deck plate having the above-mentioned configuration, the allowable span with respect to slab thickness was also evaluated. As a result, between the deck plate connected body obtained by connecting the deck plate including the placement portion to another deck plate and the deck plate connected body obtained by connecting the deck plate including no placement portion to another deck plate, there was a slight difference, that is approximately 10 to 20 mm, in allowable span for a predetermined slab thickness (120 to 300 mm).

[0041] The connection states of two deck plate connected bodies are compared. In the deck plate connected body obtained by connecting the deck plate including the placement portion to another deck plate, at the connection portion, there was no interference from the projecting ridge portion or the like, so that one deck plate was placed on the end portion of another deck plate without forming any gap and hence, a stable connection state was obtained. In contrast, in the deck plate connected body obtained by connecting the deck plate including no placement portion to another deck plate, at the connection portion, the projecting ridge portion of one deck plate interfered with the end portion of another deck plate, so that the one deck plate was placed on and connected to the end portion of another deck plate with the end portion of the one deck plate causing lifting.

[0042] In the deck plate 1 according to the above-mentioned embodiment, the surface portion 20B located on the one end side of the deck plate 1 includes fewer projecting ridge portions 21 than another surface portion 20A, and includes the

placement portion having a flat shape with a width direction length larger than the width direction length of the flat portion 22. With such a configuration, the end portion of the deck plate 1 can ensure the placement portion 23 provided to place the deck plate 1 on the beam 2 or another deck plate 3 in a stable manner. Therefore, when the deck plate 1 is placed on the beam 2 or on the end portion of another deck plate 3, the deck plate 1 can be connected to the beam 2 or another deck plate 3 in a stable manner without interference from the projecting ridge portion 21 and it is possible to achieve excellent constructability. In this configuration, due to the formation of the placement portion 23, the number of projecting ridge portions 21 on the surface portion 20B is smaller than the number of projecting ridge portions 21 on another surface portion 20A, thus causing this configuration to have reduced cross-sectional performance. However, the effect of the reduction in cross-sectional performance is extremely small, and this configuration exhibits cross-sectional performance substantially equal to the cross-sectional performance of a configuration which includes no placement portion 23.

In the deck plate 1 according to the above-mentioned embodiment, in the surface portion located on the one end side, the placement portion 23 is formed to extend toward the end edge side in the width direction from the projecting ridge portion 21 located on the outermost side in the width direction. Accordingly, it is possible to place the end portion of the deck plate 1 in the width direction on the beam 2 or another deck plate 3 in a stable manner.

In the deck plate 1 according to the above-mentioned embodiment, the placement portion 23 has the width direction length $W2$ which is 15 to 60% of the width direction length $W1$ of the surface portion 20B located on the one end side in the width direction. Accordingly, in placing the end portion of the deck plate 1 on the beam 2 or the end portion of another deck plate 3, it is possible to prevent

the projecting ridge portion 21 from interfering with the beam 2 or the deck plate 3 and it is also possible to assure sufficient cross-sectional performance of the deck plate.

In the deck plate 1 according to the above-mentioned embodiment, the placement portion 23 has the width direction length W2 which is 20 to 55% of the width direction length W1 of the surface portion 20B located on the one end side in the width direction. Accordingly, the above-mentioned advantageous effects can be further improved.

In the deck plate 1 according to the above-mentioned embodiment, the surface portion located on the one end side in the width direction includes two or fewer projecting ridge portions. Accordingly, the placement portion 23 having a sufficient width direction length can be ensured and hence, it is possible to place the end portion of the deck plate 1 in the width direction on the beam 2 or another deck plate 3 in a more stable manner.

In the deck plate 1 according to the above-mentioned embodiment, the placement portion 23 has the embosses formed on one surface side of the placement portion 23 at intervals in the longitudinal direction. Accordingly, it is possible to assure the strength of the placement portion 23 and it is also possible to relieve (alleviate) distortion or the like which may be generated at the time of manufacture of the deck plate 1.

[0043] The present invention is not limited to the configuration according to the above-mentioned embodiment. The above-mentioned embodiment shows the configuration where the surface portion 20B at the end portion on one end side of the deck plate 1 includes two projecting ridge portions 21. However, the present invention is also applicable to a configuration where the surface portion 20B includes one projecting ridge portion 21 or to a configuration where the surface portion 20B includes no projecting ridge portion.

The above-mentioned embodiment shows the configuration where the locking portion 30 of the one deck plate 1 is inserted into the receiving portion 18 of another deck plate 3 in placing the deck plate 1 on another deck plate 3. However, the configuration is not limited to such a configuration. For example, the present invention is also applicable to a configuration where the placement portion 23 of the one deck plate 1 is placed on the end portion of another deck plate 3 with the locking portion 30 of the one deck plate 1 being removed by cutting.

The above-mentioned embodiment describes the configuration where the deck plate 1 is placed on the beam 2 or another deck plate 3. However, the present invention is also applicable to a configuration where the deck plate 1 is placed on another member in a construction site.

The above-mentioned embodiment shows examples of dimensions of the respective components of the deck plate 1. However, the dimensions of the respective components are not limited to such dimensions, and it is possible to adopt a deck plate having any of various sizes.

List of Reference Signs

[0044]

1 deck plate

10 rib

11 curved portion

12 straight line portion

13 folded-back portion

14 straight line portion

15 curved portion

16 inclined portion

- 17 straight line portion
- 18 receiving portion
- 20 surface portion
- 21 projecting ridge portion
- 22 flat portion
- 23 placement portion
- 23a emboss
- 30 locking portion
- 40 end closed portion
- 2 beam
- 3 deck plate
- 4 deck plate

WE CLAIM

1. A deck plate formed by alternately and continuously forming a surface portion and a rib in a width direction, the deck plate being characterized in that

the surface portion includes a flat portion and a projecting ridge portion which projects along a longitudinal direction from one surface side of the flat portion, and

a surface portion located on one end side in the width direction includes no projecting ridge portion or includes fewer projecting ridge portions than another surface portion, and includes a placement portion having a flat shape with a width direction length larger than a width direction length of the flat portion.

2. The deck plate according to claim 1, characterized in that, in the surface portion located on the one end side, the placement portion is formed to extend toward an end edge side in the width direction from a projecting ridge portion located on an outermost side in the width direction.

3. The deck plate according to claim 1 or claim 2, characterized in that the placement portion has the width direction length which is 15 to 60% of a width direction length of the surface portion located on the one end side in the width direction.

4. The deck plate according to claim 1 or claim 2, characterized in that the placement portion has the width direction length which is 20 to 55% of a

width direction length of the surface portion located on the one end side in the width direction.

5. The deck plate according to any one of claims 1 to 4, characterized in that the surface portion located on the one end side in the width direction includes two or fewer projecting ridge portions.

6. The deck plate according to any one of claims 1 to 5, characterized in that the placement portion has embosses formed on one surface side of the placement portion at intervals in the longitudinal direction.