increases at that part.

[0011]

When the frictional resistance on an inner peripheral surface becomes greater than that on an outer peripheral surface in the steel sheet pile 11, a behavior occurs in which the steel sheet pile is warped toward the ~~outside~~ inside of the steel sheet pile where resistance is ~~smaller~~ larger. This degrades the straight advancing property. When driving the steel sheet piles, a preceding steel sheet pile is driven, and then a succeeding steel sheet pile is driven while being fitted to the preceding steel sheet pile with joints. Thus, when the preceding steel sheet pile is driven in a warped state, resistance in a joints fitting portion of the succeeding steel sheet pile increases. Thus, the installation becomes difficult.

[0012]

Since the major cause of degrading the straight advancing property of the steel sheet pile is closing of the inside the lower end portion of the steel sheet pile due to soil, the straight advancing property can be maintained by preventing this closing. As a method of preventing the closing of the inside of the lower end portion of the steel sheet pile, friction on a steel sheet pile surface at the lower end portion of the steel sheet pile is reduced. This can prevent the soil from filling the inside of the corners

[Fig. 30A] Fig. 30A is an explanatory view explaining a problem to be solved by the present invention (No. 1).

[Fig. 30B] Fig. 30B is an explanatory view explaining the problem to be solved by the present invention (No. 2).

[Fig. 31] Fig. 31 is an explanatory view explaining the problem to be solved by the present invention (No. 3).

[Fig. 32] Fig. 32 is a graph for evaluating the difference in the effect of reducing the friction affected by a steel sheet pile length.

Description of Embodiments

[0019]

In a U-shaped steel sheet pile 1 according to an embodiment of the present invention, friction reducing treatment is applied at least on an inner peripheral surface side of a steel sheet pile surface by a length equal to or more than a steel sheet pile sectional width and equal to or less than a third of a steel sheet pile entire length from a position of the steel sheet pile that is a lower end of the steel sheet pile 1 when the steel sheet pile 1 is driven into the ground.

The U-shaped steel sheet pile 1 according to the present embodiment is described in detail below.

[0020]

As illustrated in Fig. 1A, the U-shaped steel sheet pile 1 has a substantially U-shaped section and includes a

web portion 1a, flange portions 1b provided on both sides of the web portion 1a, and joint portions 1c provided at ends of the flange portions 1b.

As illustrated in Fig. 1B, the steel sheet pile length and the steel sheet pile sectional width of the U-shaped steel sheet pile 1 are respectively indicated by L and B.

[0021]

The lower end portion of the U-shaped steel sheet pile 1 is provided with a friction reducing material 3, and to which the friction reducing treatment is applied. The friction reducing treatment is applied in any of the following forms.

[0022] <Form of the Friction Reducing Treatment>

The friction reducing treatment may be in the form of, for example, applying a related-art friction reducing material such as a resinous material, asphalt, or paint, in the form of a method such as applying a chemical treatment to the surface of the steel sheet pile or adjusting chemical composition of the steel sheet pile, or in the form of attaching a plate-shaped member or the like capable of reducing friction to the steel sheet pile surface.

In the case of applying the friction reducing material, a coating film needs to be sufficiently hard so that the coating film is not removed by driving the steel sheet pile.

[0023] <A Range of Application of the Friction Reducing Treatment>

surface side of the steel sheet pile surface. In the present embodiment, as illustrated in Fig. 2, an example is described in which the friction reducing material 3 is applied to both the inner peripheral surface side and an outer peripheral surface side of the steel sheet pile 1. The application of the friction reducing material 3 may be application of the friction reducing material or the attachment of the friction reducing member described above as the form of the friction reducing treatment.

preparation time for installation at an installation site can be reduced by applying the friction reducing material 3 in advance at the factory or the like.

[0025]

According to the present embodiment, the friction reducing material 3 is applied at least on the inner peripheral surface side of the steel sheet pile surface by a length equal to or more than the steel sheet pile sectional width B and equal to or less than a third of the steel sheet pile entire length L from the lower end position of the steel sheet pile 1. Thus, penetration resistance generated when the steel sheet pile 1 is driven can be reduced and the straight advancing property of the steel sheet pile can be improved. As a result, warp, fall, and the like of the steel sheet pile 1 during installation of the steel sheet pile can be suppressed.