

- 1 -

9

ABSTRACT

The present invention relates to a method of reducing an amount of welding deformation in the case where steel plates to be welded are butted and subjected to tack-welding and then the tack-welded portion is subjected to one side welding for joining the plates.

In the present invention, not less than 3 welding electrodes are used and a welding condition is determined so that the parameter P shown by the expression of

$$P = \frac{1}{H} \sum \frac{Q_i}{L_i + k}$$

can be a predetermined value. In this case, Q_i is the heat input of each electrode determined by a current, voltage and speed, and L_i is a distance from the first electrode to each electrode, and H is the maximum value of the height of a tack-welded bead, wherein the height H is made to be a value not more than half of the wall thickness of the steel plates to be welded. In the case where tack-welding is conducted using a tab, the parameter P is set to be not more than a predetermined value, and the height H_t of the tack-welded bead of the tab is made to be not more than a half of the wall thickness of the steel plates to be welded, and a welding condition of one side welding for joining the plates is determined so that the parameter P_{tab} obtained from these values can be not less than a predetermined value.

(Figure 2)

