

ABSTRACT

NARROW-GROOVE GAS-SHIELDED ARC WELDING METHOD

A welding method is provided, which is a multi-electrode narrow-groove gas-shielded arc welding method that can enable a high welding operation efficiency and can inhibit hot cracking.

A narrow-groove gas-shielded arc welding method includes joining steel plates together by narrow-groove multi-layer welding, the steel plates having a thickness t of 22 mm or greater, the narrow-groove multi-layer welding using a groove angle θ of 25° or less and a groove root gap G_0 of 7 mm to 18 mm, the narrow-groove gas-shielded arc welding method being a method adapted to be used for second and optionally additional layers associated with the multi-layer welding. In the method, the multi-layer welding uses three electrodes; a current value I_1 of a first electrode and a current value I_2 of a second electrode are each within a range of 260 A to 360 A; and, regarding an i th layer, a current value I_3^i [A] of a third electrode is within a range that satisfies inequality (1), shown below.

$$I_3^i \leq 30 \times G_{i-1} - 10 \quad (1)$$

In the inequality, I_3^i is the current value [A] of the third electrode regarding the i th layer, G_{i-1} is a width [mm] of a weld bead formed by welding for forming a layer

immediately preceding the i th layer ($i-1$ th layer), and i is a positive integer equal to or greater than 2.

[FIG. 1]