

ABSTRACT

NARROW-GROOVE GAS-SHIELDED ARC WELDING METHOD

Provided is a narrow-groove gas-shielded arc welding method that can provide a high welding operation efficiency and can ensure a sufficiently high strength of a weld metal.

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 of 7 mm to 18 mm. In the method, the multi-layer welding is multi-electrode welding using three or more electrodes; welding wires have respective equivalent carbon contents (C_{eq}), and an average value of the equivalent carbon contents is 0.400 mass% or greater, where the equivalent carbon contents are each defined by equation (1) below, and where the average value is determined by dividing a sum of the equivalent carbon contents by the number of electrodes; the electrodes have respective amounts of heat input, and a ratio of a maximum to a minimum of the amounts of heat input is 1.40 or less, and a sum of the amounts of heat input of the electrodes is 10 kJ/cm to 60 kJ/cm. $C_{eq} = [C] + [Si]/24 + [Mn]/6 + [Ni]/40 + [Cr]/5 + [Mo]/4 + [V]/14$ (1)

[FIG. 1]