

ABSTRACT

FLUX-CORED WIRE FOR GAS-SHIELDED ARC WELDING

A flux-cored wire is intended to produce a weld metal having a 0.2% proof stress ($\sigma_{0.2}$) of 620 MPa or above and a Charpy impact value vE_{-60} at -60°C of 50 J or above for gas-shielded arc welding. The flux-cored wire contains 0.02 to 0.15% by mass C, 0.3 to 1.4% by mass Si, 1.2 to 3.5% by mass Mn, 0.2 to 3.4% by mass Ni, 0.02 to 2.0% by mass Cr, 2.0 to 6.0% by mass Ti, 0.1 to 2.2% by mass Mo and 0.01 to 1.0% by mass Mg. A flux included in the flux-cored wire contains TiO_2 and MgO so as to meet an inequality: $(\text{TiO}_2)/(\text{MgO}) \geq 4.7$, where (TiO_2) and (MgO) are the TiO_2 content and the MgO content of the flux-cored wire corresponding to the respective ratios in mass of TiO_2 and MgO contained in the flux to the flux-cored wire.