

ABSTRACT OF THE DISCLOSURE

FLUX CORED WIRE FOR GAS-SHIELDED ARC WELDING OF HIGH TENSILE STEEL

The flux cored wire for gas-shielded arc welding of high tensile steel contains C : 0.04 to 0.11 mass%, Si : 0.40 to 0.75 mass%, Mn : 1.30 to 2.50 mass%, Ni : 0.10 to 2.50 mass%, Cr : 0.10 to 1.00 mass%, Mo : 0.10 to 1.00 mass%, Ti : 0.06 to 0.30 mass%, Fe : no less than 90 mass%, and N : not more than 0.0150 mass%. The content of these elements satisfies the formula below:

$$F(x) = -576.9[C] + 34.1[Si] + 80.1[Mn] + 1.5[Ni] - 22.8[Cr] - 6.8[Mo] - 83.1[Ti] \geq 100$$

The flux cored wire with a proof stress higher than 620 MPa gives weld metal good cracking resistance and good low-temperature toughness at very low temperatures of about -60°C, and it also excels in welding operability.

Figure 1