

ABSTRACT

LOW-HYDROGEN COATED ELECTRODE

To provide a coated electrode which can obtain a weld metal with excellent cracking resistance and low-temperature toughness in welding of a high-tensile steel with a yield strength of 690 MPa class or more, and which ensures good weldability in all position welding. A coating ratio of a coating flux is 25 to 45 % by mass. A steel core wire contains 0.06 % by mass or less of C relative to the total mass of the steel core wire. The coating flux contains, relative to the total mass of the coating flux, 14.7 to 22.4 % by mass of metal carbonate (in terms of CO_2), 13.1 to 24.8 % by mass of CaF_2 , 0 to 8 % by mass of TiO_2 , 0 to 8 % by mass of ZrO_2 , 1.1 to 3.0 % by mass of SiO_2 , 0 to 0.8 % by mass of Al_2O_3 , 0.01 to 0.05 % by mass of C, 2.5 to 6.0 % by mass of Si, 2.2 to 8.0 % by mass of Mn, 1.8 to 7.0 % by mass of Ni, and 0.2 to 3.7 % by mass of Cr + Mo, and the balance including Fe, alkali metal fluoride, alkali metal oxide, alkali-earth metal fluoride (except for CaF_2), alkali-earth metal oxide, B, Al, and Mg, and inevitable impurities (P, S, V, Nb, Sn). The following formula is satisfied: $D=8.42-0.18\times\text{CO}_2+0.05\times\text{CaF}_2+0.50\times\text{TiO}_2-1.36\times\text{SiO}_2-4.36\times\text{Al}_2\text{O}_3+0.71\times\text{ZrO}_2 \leq 3.8$.