

ABSTRACT

LOW-HYDROGEN COATED ELECTRODE

In a low-hydrogen coated electrode of the invention, a steel core wire contains more than 0.05 % by mass but not more than 0.10 % by mass of C, 0.010 % by mass or less of P, 0.010 % by mass or less of S, and 0.005 % by mass or less of N, whose contents are defined above. The coating flux contains 15 to 28 % by mass of a metal carbonate in terms of CO_2 , 4 to 9 % by mass of a metal fluoride in terms of F, 4.0 to 9.0 % by mass of SiO_2 , 0.5 to 5.0 % by mass of TiO_2 , 0.5 to 3.0 % by mass of Mg in terms of Mg as a single metal or an alloy, 1.0 to 7.0 % by mass of Si, 0.5 to 5.0 % by mass of Mn, 2.0 to 10.0 % by mass of Ni, 0.3 to 3.0 % by mass of Ti, 0.05 to 0.20 % by mass of B, 5.0 to 20.0 % by mass of Fe, 2.0 % by mass or less of Al_2O_3 , 0.1 % by mass or less of Mo, and 0.1 % by mass or less of Cr, whose contents are defined above. A coating ratio of the coating flux is 25 to 45 %. With this arrangement, the low-hydrogen coated electrode has a higher CTOD value at low temperature, and thus is suitable for welding a high-tensile steel having a tensile strength of 590 MPa class by a direct current power source.