

Steel for Marine Engineering Having Corrosion Resistance to Highly Humid and Hot Atmosphere and Manufacturing Method Therefor

Abstract

The disclosure is directed to steel for marine engineering, comprising the following chemical elements by mass percentage: C: 0.01-0.05%, Si: 0.05-0.60%, Mn: 0.50-1.30%, Cr: 0.6-1.20%, Ni: 2.0-3.0%, Al: 0.01-0.06%, Ti: 0.005-0.012%, and Mg: 0.0005-0.0015%; $0 < \text{Ca} \leq 0.0045\%$, $0 < \text{Cu} \leq 0.5\%$, and $0 < \text{Mo} \leq 0.40\%$; and the remainder of Fe and inevitable impurities. The disclosure further discloses a manufacturing method for the steel for marine engineering, comprising the following steps: (1) smelting and continuous casting; (2) heating; (3) controlled rolling, the original austenite grain size after rolling being 20-25 μm ; (4) air cooling; and (5) quenching and tempering, the austenite grain size after quenching being 20-25 μm . The steel for marine engineering according to the present disclosure may be applied to boats and marine engineering structures, and is especially suitable for highly humid and hot sea regions.