

ABSTRACT

80-mm-Thick Low-Cost FH420 Marine Engineering Steel Plate and Manufacturing Method Thereof

The invention relates to an 80-mm-thick low-cost FH420 marine engineering steel plate.

- 5 The 80-mm-thick low-cost FH420 marine engineering steel plate comprises by weight, C: 0.07-0.11%, Si: 0.15-0.40%, Mn: 1.30-1.60%, P: $\leq 0.013\%$, S: $\leq 0.003\%$, Nb: 0.010-0.030%, V: 0.030-0.050%, Ti: 0.005-0.020%, Cr: 0.10-0.20%, Al: 0.0250-0.050%, O: ≤ 18 ppm, N: ≤ 38 ppm, H: ≤ 2.5 ppm, and the balance: Fe and unavoidable impurities. A rolling and cooling control process is adopted, the heating temperature before rolling is 1,150-1,220°C,
- 10 the rough rolling temperature is 980-1,080°C, and the finish rolling starting temperature is 840-870°C; laminar cooling after rolling is carried out, the final cooling temperature is 600-660°C, and the cooling rate is 5-8°C/s; quenching treatment is carried out, the quenching temperature is 890-910°C, the heating rate is 1.4 min/mm, and the heat preservation time is 0-25 min; and tempering treatment is carried out, the tempering
- 15 temperature is 550-650°C, the heating rate is 2.0 min/mm, the heat preservation time is 80-120 min, and the obtained FH420 steel has the characteristics of high strength, high toughness, lamellar tearing resistance and the like.

(Fig. 1)