

Coarsening particle of Nb(CN) in Nb-HSLA steel after deformation at 900 °C in austenite phase during thermomechanical treatment

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Abstrak

Nb (CN) particle in Nb-HSKA steels plays important role to retard recrystallisation process and to strengthen the mechanical properties by precipitation hardening. The behavior of NB (CN) particle growth after deformation needs to be evaluated in order to optimize the production process. HSLA steel containing 0.03% Nb is used and the thermomechanical treatment including reheating, air cooling, finishing and relaxation is applied to the test steels. The results obtained in this way show that the kinetics of coarsening of NB (CN) particle after deformation at 900°C is considerably accelerated compared with when the coarsening is controlled by a bulk diffusion process.