

Title (en)

Low-alloy heat-resistant steel, process for producing the same, and turbine rotor

Title (de)

Niedrig legierter und hitzebeständiger Stahl, Verfahren zur Wärmebehandlung und Turbinenrotor

Title (fr)

Acier faiblement allié et résistant aux températures élevées, procédé de traitement thermique et rotor de turbine

Publication

EP 1275745 A1 20030115 (EN)

Application

EP 02017458 A 20000929

Priority

- EP 00308591 A 20000929
- JP 28355199 A 19991004

Abstract (en)

In the field of CrMoV heat-resistant alloys for use in turbine rotors, in order to provide a low-alloy steel which has a toughness at the same level as conventional materials and has excellent high-temperature strength properties, particularly inhibition of creep embrittlement, and in order to provide a process for producing such a low-alloy steel and a turbine rotor in which such a low-alloy steel is used, trace impurities of phosphorus, sulfur, copper, aluminium, arsenic, tin, and antimony in a CrMoV heat-resistant alloy are reduced to specific levels or lower. In addition, trace impurities such as cobalt, niobium, tantalum, nitrogen, and boron are added to increase the creep strength according to a test using an unnotched test piece. In addition, according to the production process, quenching is carried out after heating to 1000 DEG C or higher so as to inhibit precipitation of pro-eutectoid ferrite phase.

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CPC (source: EP)

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Citation (search report)

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