

Title (en)

METHOD AND DEVICE FOR HEAT TREATING RAILS

Title (de)

VERFAHREN UND VORRICHTUNG ZUR WÄRMEBEHANDLUNG VON SCHIENEN

Title (fr)

PROCÉDÉ ET DISPOSITIF DE TRAITEMENT THERMIQUE DE RAILS

Publication

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Application

EP 11839429 A 20111021

Priority

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Abstract (en)

[origin: WO2012064223A1] The invention relates to the iron and steel industry, more specifically to methods and devices for heat treating railway rails. The technical result is a universal method and device which can be used to heat treat rails made from non-alloyed carbon steels as well as rails made from alloyed steels. The method makes it possible to cool rails at cooling rates within a range of 2-20 °C/s, smoothly adjust the cooling rates during the heat treatment process, produce a uniform fine pearlite structure (tempered sorbite) to a depth of more than 22 mm from the surface and produce a running surface hardness of up to HB401. The cooling capacity of a gaseous medium is regulated according to a programmed regime by means of the pulsed, quasi-continuous and/or the continuous injection of water into a stream of air. Depending on the chemical composition of the rail steel and the initial temperature of the rail not lower than the austenitizing temperature, the consumption of gaseous medium is regulated from 20 to 60 m³/min per linear metre of rail, while the consumption of injected water is up to 12 l/min per linear metre of rail. Furthermore, the amount of water in the gaseous medium is up to 0.2 litres of water per cubic metre of air. The pressure of the gaseous medium is regulated within a range of 0.005 to 0.1 MPa.

IPC 8 full level

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Citation (search report)

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