

Title (en)

STEEL RAIL FOR HIGH SPEED AND QUASI-HIGH SPEED RAILWAYS AND MANUFACTURING METHOD THEREOF

Title (de)

STAHLSCIENE FÜR HOCHGESCHWINDIGKEITS- UND QUASI-HOCHGESCHWINDIGKEITSZÜGE UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

RAIL D'ACIER POUR VOIES FERRÉES À GRANDE VITESSE ET À QUASI GRANDE VITESSE ET SON PROCÉDÉ DE FABRICATION

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Abstract (en)

The present discloses a steel rail for high speed and quasi-high speed railways and a manufacturing method thereof. The steel rail having a superior rolling contact fatigue property can be obtained by reducing content of carbon in conjunction with controlled cooling after rolling. The steel rail includes 0.40-0.64% by weight of C, 0.10-1.00% by weight of Si, 0.30-1.50% by weight of Mn, less than or equal to 0.025% by weight of P, less than or equal to 0.025% by weight of S, less than or equal to 0.005% by weight of Al, more than 0 and less than or equal to 0.05% by weight of a rare earth element, more than 0 and less than or equal to 0.20% by weight of at least one of V, Cr, and Ti, and a remainder of Fe and inevitable impurities. The steel rail manufactured according to the method of the present invention maintains the strength and hardness of the existing steel rail for the high speed railways, while enhancing the toughness, plasticity and yield strength, and an energy value required for initiating and expanding microcracks formed at the surface of the steel rail due to fatigue is increased, and thus under the same conditions, the rolling contact fatigue property of the steel rail can be improved, thereby finally improving the service lifetime and the transportation safety of the steel rail.

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