

Title (en)
Hot strip manufacturing process

Title (de)
Verfahren zum Herstellen von Warmband

Title (fr)
Procédé pour la fabrication d'une bande à chaud

Publication
EP 1319725 A2 20030618 (DE)

Application
EP 02025150 A 20021109

Priority
DE 10161465 A 20011213

Abstract (en)
Production of a hot strip having a tensile strength of at least 800 N/mm² comprises casting a steel into a pre-material, such as thin slabs or cast strip; hot rolling the pre-material at a final temperature lying above the Ar₃ temperature to form a hot strip; cooling in a first cooling step at a cooling speed of at least 150 K/s to 500-700 degrees C; and cooling in a second cooling step after a 3-10 seconds cooling pause to a coiling temperature. The coiling temperature is more than 580 degrees C for hot strips having a yield point of more than 690 MPa and a tensile strength of less than 900 MPa. The coiling temperature is 580 degrees C or less for hot strips having a yield point of not more than 690 MPa and a tensile strength of less than 900 MPa. The coiling temperature is not more than 250 degrees C for hot strips having a tensile strength of less than 900 MPa. <??>The steel contains (in wt.%): 0.03-0.10 C, not more than 0.8 Si, 1.2-2.0 Mn, 0.02-0.06 Al, not more than 0.5 Cr, not more than 0.2 Ti, not more than 0.08 Nb, less than 0.005 Ca, less than 0.05 Cu, less than 0.05 Ni, less than 0.02 P, less than 0.005 S, less than 0.01 N and a balance of Fe. <??>Preferred Features: The steel contains 0.05-0.07 wt.% C and 0.3-0.8 wt.% Si.

Abstract (de)
Das erfindungsgemäße Verfahren ermöglicht auf kostengünstig durchführbare Weise, die Eigenschaften von hochfestem, gut verformbarem Warmband auf den jeweiligen Verwendungszweck hin gezielt zu optimieren. Dabei wird ein Stahl verarbeitet, der niedrige, unterperitektische Gehalte an Kohlenstoff besitzt. Dieser Stahl wird zu Dünnbrammen oder Band vergossen, mit einer mindestens 150 K betragenden Abkühlgeschwindigkeit auf eine zwischen 500 °C und 700 °C liegenden Zwischentemperatur abgekühlt und gehaspelt. Durch die Wahl der Haspeltemperatur lassen sich dann die Eigenschaften des erhaltenen Warmbands gezielt einstellen.

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IPC 8 full level
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CPC (source: EP)
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