Title (en)

Twin roll continuous casting of strips of carbon steel

Title (de)

Verfahren zur Herstellung von Bändern aus Kohlenstoffstahl durch Stranggiessen mittels Doppelwalzen

Title (fr)

Procédé de fabrication de bandes en acier au carbone par coulée continue entre deux cylindres

Publication

EP 1038612 B1 20030716 (FR)

Application

EP 00400573 A 20000303

Priority

FR 9903778 A 19990326

Abstract (en)

[origin: EP1038612A1] Carbon steel strips (7) of thickness not more than 10 mm are produced by continuous casting of molten steel (4) containing Mn and Si between the lateral copper or copper alloy surfaces (3) of two internally cooled and rotating horizontal rolls (1, 1'), in an atmosphere of 40-100 % nitrogen, the remainder being an inert gas insoluble in the molten steel, at the meniscus (8, 8'). The molten steel contains (in weight %): C ≤ 0.5%, Mn 0.2-2%, Si ≤ 0.2%, the ratio Mn/Si being 3-16, optionally Al+Ti+Zr ≤ 0.10%, O 100 ppm, preferably 30-700 ppm, and iron and unavoidable impurities the remainder. The lateral surfaces (3, 3') of the rolls (1, 1') have contacting pits (2) providing the surfaces with roughness Rz 40-200 microns and roughness Ra 10-40 microns . The inert gas insoluble in the molten steel can be a mixture of such gases. The cast strip is subjected to in-line hot rolling after casting. Independent claims are given for: (a) a carbon steel strip of thickness not greater than 10 mm and produced by the above process; and (b) the rolls, as above, used for the continuous casting of thin metal strips.

IPC 1-7

B22D 11/06; C22C 38/00

IPC 8 full level

B22D 11/00 (2006.01); **B22D 11/06** (2006.01); **B22D 11/12** (2006.01); **B22D 11/128** (2006.01); **C22C 38/00** (2006.01); **C22C 38/50** (2006.01)

CPC (source: EP US)

B22D 11/0622 (2013.01 - EP US); **B22D 11/0651** (2013.01 - EP US)

Cited by

CN116393529A; US7108047B2; WO02053312A1; WO03057391A1; WO2008034502A1

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

EP 1038612 A1 20000927; **EP 1038612 B1 20030716**; AT E245066 T1 20030815; AU 2064900 A 20000928; AU 755008 B2 20021128; BR 0001288 A 20001017; CA 2299674 A1 20000926; CA 2299674 C 20090512; DE 60003861 D1 20030821; DE 60003861 T2 20040826; FR 2791286 A1 20000929; FR 2791286 B1 20010504; JP 2000301295 A 20001031; US 2003029599 A1 20030213; US 6491089 B1 20021210; US 6679313 B2 20040120

DOCDB simple family (application)

EP 00400573 A 20000303; AT 00400573 T 20000303; AU 2064900 A 20000303; BR 0001288 A 20000313; CA 2299674 A 20000306; DE 60003861 T 20000303; FR 9903778 A 19990326; JP 2000086339 A 20000327; US 26675002 A 20021009; US 53145500 A 20000320