

Title (en)

Cold rolled ULC - steel sheet and method of producing the same

Title (de)

Kaltband aus ULC - Stahl und Verfahren zu seiner Herstellung

Title (fr)

Tôle en acier à très faible teneur en carbone, laminée à froid, et procédé de fabrication

Publication

**EP 1380663 A1 20040114 (DE)**

Application

**EP 02014692 A 20020703**

Priority

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Abstract (en)

Cold strip contains specified amounts of carbon, niobium, titanium, silicon, manganese, phosphorus, sulfur, aluminum, nitrogen, chromium, copper, nickel, molybdenum, tin, boron, and a balance of iron and impurities. The strip has a bake hardening property of BH0 15 N/mm squared and BH2 20 N/mm squared, good deforming properties, a yield point of 170-230 N/mm squared and an n-value of at least 0.18. Cold strip contains (in wt. %) at most 0.003 carbon, at least 0.005 niobium, 0.005 titanium, at most 0.1 silicon, at most 0.2 manganese, at most 0.015 phosphorus, at most 0.015 sulfur, 0.005-0.05 aluminum, at most 0.004 nitrogen, at most 0.05 chromium, at most 0.05 copper, at most 0.05 nickel, 0.02 molybdenum, 0.02 tin, 0.004 boron, and a balance of iron and impurities. The strip has a bake hardening property of BH0 15 N/mm squared and BH2 20 N/mm squared, good deforming properties, a yield point of 170-230 N/mm squared and an n-value of at least 0.18. An Independent claim is also included for a process for the production of the cold strip.

Abstract (de)

Die vorliegende Erfindung betrifft ein Kaltband und ein Verfahren, das mit Bake-Hardening-Eigenschaften von BH0 > 15 N/mm<sup>2</sup> und BH2 > 20 N/mm<sup>2</sup>, gute Verformungseigenschaften, eine Streckgrenze von 170 N/mm<sup>2</sup> bis 230 N/mm<sup>2</sup> sowie einen n-Wert  $\geq 0,18$  aufweist, enthaltend (in Gew.-%) C:  $\leq 0,0030\%$ , Nb:  $\geq 0,005\%$  mit der Maßgabe, daß der Gehalt an Nb  $< (93/12) \cdot \%C$  beträgt, mit  $\%C = C\text{-Gehalt in Gew.-%}$ , Ti:  $< 0,0050\%$ , wahlweise eines oder mehrere der folgenden Legierungselemente Si:  $\leq 0,10\%$ , Mn:  $\leq 0,20\%$ , P:  $\leq 0,015\%$ , S:  $\leq 0,015\%$ , Al:  $0,005 - 0,05\%$ , N:  $\leq 0,0040\%$ , Cr:  $\leq 0,05\%$ , Cu:  $\leq 0,05\%$ , Ni:  $\leq 0,05\%$ , Mo:  $< 0,020\%$ , Sn:  $< 0,020\%$ , B:  $< 0,0004$ , und als Rest Eisen sowie übliche Verunreinigungen.

IPC 1-7

**C22C 38/00**; **C22C 38/12**

IPC 8 full level

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CPC (source: EP)

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Citation (search report)

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- [X] PATENT ABSTRACTS OF JAPAN vol. 005, no. 012 (C - 040) 24 January 1981 (1981-01-24)

Citation (examination)

BAKER L.C.; DANIEL S.R.; PARKER J.D.: "Metallurgy and processing of ultralow carbon bake hardening steels", MATERIAL SCIENCE AND TECHNOLOGY, vol. 18, April 2002 (2002-04-01), pages 355 - 368

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