

Title (en)

Process and device for surface treatment of hot rolled metal sheets or strips

Title (de)

Verfahren und Anlage zur Oberflächenbehandlung von warmgewalzten Bändern oder Blechen aus Metall

Title (fr)

Procédé et dispositif pour le traitement de surface de tôles ou bandes métalliques laminées à chaud

Publication

**EP 1134296 A3 20040128 (DE)**

Application

**EP 01106505 A 20010315**

Priority

DE 10012801 A 20000316

Abstract (en)

[origin: EP1134296A2] Process for surface treating hot rolled metal sheets or strips (6) comprises homogeneously cooling the rolled material over its width and length directly after the last deformation step in the mill train to a temperature at which scale formation is reduced or suppressed, and annealing the weakly scaled rolling material under reducing conditions to completely descale its surface and to adjust the required mechanical properties. Preferred Features: The rolling material is fed through a continuous annealing oven (8) having heating (13), holding (14) and cooling zones (15) to heat the material to 500-800 degrees C, hold the material at this temperature and cool it to 100-700 degrees C.

IPC 1-7

**C21D 8/02; C21D 1/74; B21B 45/06**

IPC 8 full level

**B21B 45/00** (2006.01); **B21B 45/06** (2006.01); **C21D 8/02** (2006.01); **C21D 9/46** (2006.01); **C21D 9/56** (2006.01); **B21B 1/22** (2006.01);  
B21B 1/38 (2006.01); B21B 1/46 (2006.01); B21B 15/00 (2006.01); B21B 45/02 (2006.01); B21B 45/08 (2006.01); **C21D 1/74** (2006.01);  
**C21D 1/82** (2006.01)

CPC (source: EP)

**C21D 8/0263** (2013.01); **C21D 8/0278** (2013.01); **B21B 1/46** (2013.01); **B21B 45/0218** (2013.01); **B21B 45/06** (2013.01); **B21B 45/08** (2013.01);  
B21B 2001/228 (2013.01); **B21B 2001/383** (2013.01); **B21B 2015/0071** (2013.01); **B21B 2045/006** (2013.01); **C21D 1/74** (2013.01);  
**C21D 1/82** (2013.01)

Citation (search report)

- [XA] EP 0931847 A1 19990728 - KAWASAKI STEEL CO [JP]
- [A] WO 0003815 A1 20000127 - LOCKHEED MARTIN ENERGY RES COR [US]
- [A] US 5816311 A 19981006 - OSADA SHIRO [JP], et al
- [XA] PATENT ABSTRACTS OF JAPAN vol. 018, no. 401 (C - 1231) 27 July 1994 (1994-07-27)
- [XA] PATENT ABSTRACTS OF JAPAN vol. 017, no. 589 (C - 1124) 27 October 1993 (1993-10-27)
- [A] PATENT ABSTRACTS OF JAPAN vol. 018, no. 468 (C - 1244) 31 August 1994 (1994-08-31)
- [A] PATENT ABSTRACTS OF JAPAN vol. 1995, no. 01 28 February 1995 (1995-02-28)
- [A] DEGNER M: "EINIGE AKTUELLE ENTWICKLUNGEN BEIM KONVENTIONELLEN WARMWALZEN VONBREITBAND UND GROBBLECH", STAHL UND EISEN, VERLAG STAHLLEISEN GMBH. DUSSELDORF, DE, vol. 118, no. 5, 18 May 1998 (1998-05-18), pages 81 - 82, XP000791541, ISSN: 0340-4803
- [A] PATENT ABSTRACTS OF JAPAN vol. 007, no. 137 (M - 222) 15 June 1983 (1983-06-15)

Cited by

WO2010121763A1; CN104014997A

Designated contracting state (EPC)

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

DOCDB simple family (publication)

**EP 1134296 A2 20010919; EP 1134296 A3 20040128**; DE 10012801 A1 20010920; JP 2001314912 A 20011113

DOCDB simple family (application)

**EP 01106505 A 20010315**; DE 10012801 A 20000316; JP 2001074282 A 20010315