

Title (en)

Method and device for the controlled cooling of sheets.

Title (de)

Verfahren und Vorrichtung zum gesteuerten Abkühlen von Blech.

Title (fr)

Procédé et installation pour effectuer le refroidissement contrôlé de tôles.

Publication

EP 0080932 A1 19830608 (FR)

Application

EP 82402134 A 19821123

Priority

FR 8122142 A 19811126

Abstract (en)

1. A process for controlling the cooling of a metal sheet for the purpose of imparting thereto a predetermined crystalline structure, wherein the sheet to be cooled is passed through a case containing a mass of cooling fluid which is regularly renewed, the flow of the cooling fluid being controlled and its temperature measured, characterized in that, according to the thickness of the sheet to be cooled and the desired cooling rate, a theoretical thermal flux is determined, which should be exchanged between the metal sheet and the cooling fluid ; a theoretical flow speed of the fluid on the metal sheet is calculated as a function of the inlet temperature of the cooling fluid and of the theoretical thermal flux ; the flow rate of the cooling fluid is controlled as a function of the calculated flow speed ; a theoretical temperature of the cooling fluid is determined as a function of the theoretical thermal flux ; said theoretical temperature to the measured temperature and the inlet temperature of the cooling fluid is regulated as a function of said theoretical temperature.

Abstract (fr)

Procédé pour contrôler le refroidissement d'une tôle en vue de lui conférer une structure cristalline prédéterminée, suivant lequel on fait passer la tôle à refroidir à travers une enceinte contenant une masse de fluide de refroidissement régulièrement renouvelée, caractérisé en ce que l'on commande le débit du fluide de refroidissement en fonction de la température d'arrivée de ce fluide, suivant l'épaisseur de la tôle à refroidir et la vitesse de refroidissement désirée.

IPC 1-7

B21B 45/02; **C21D 1/62**

IPC 8 full level

C21D 9/52 (2006.01); **B21B 37/76** (2006.01); **B21B 45/02** (2006.01); **C21D 1/62** (2006.01); **C21D 9/573** (2006.01); **C21D 11/00** (2006.01)

CPC (source: EP)

B21B 45/0218 (2013.01); **C21D 1/62** (2013.01)

Citation (search report)

- [YD] FR 2223096 A1 19741025 - USINOR [FR]
- [Y] DE 2151210 A1 19730419 - SCHLOEMANN AG
- [Y] FR 1603214 A 19710322
- [A] FR 2209086 A1 19740628 - KAWASAKI HEAVY IND LTD [JP]
- [A] FR 2412360 A1 19790720 - ARBED [LU]

Cited by

CN114147077A; CZ305469B6; EP0395191A1; US7294215B2; US5167137A; EP4001447A4; WO03026813A1

Designated contracting state (EPC)

DE GB IT

DOCDB simple family (publication)

EP 0080932 A1 19830608; **EP 0080932 B1 19850424**; DE 3263303 D1 19850530; FR 2517039 A1 19830527; FR 2517039 B1 19841214; JP H0471968 B2 19921117; JP S58126933 A 19830728; SU 1131461 A3 19841223

DOCDB simple family (application)

EP 82402134 A 19821123; DE 3263303 T 19821123; FR 8122142 A 19811126; JP 20745782 A 19821126; SU 3518768 A 19821125