

Title (en)
METHOD AND APPARATUS FOR CONTINUOUS CASTING

Title (de)
VERFAHREN UND VORRICHTUNG ZUM STRANGGIESSEN

Title (fr)
PROCEDE ET DISPOSITIF DE COULEE CONTINUE

Publication
EP 1937429 A1 20080702 (DE)

Application
EP 06841185 A 20061228

Priority
• EP 2006012560 W 20061228
• DE 102006001464 A 20060111
• DE 102006056683 A 20061130

Abstract (en)
[origin: DE102006056683A1] The cast strip is cooled in a first section (6) between the continuous casting die (3) and the mechanical deformation stage (5). The heat transfer coefficient lies between 2500 W/m²>K and 20000 W/m²>K. In the next section (7), temperature equalization commences within the metal strip, with or without reduced surface cooling. The result is surface heating to a temperature exceeding Ac3 or Ar3 (temperature arrest points representing transformations). Then in a third section (8), mechanical deformation (5) takes place. The heat transfer coefficient in the first section is 3000 W/m²>K to 10000 W/m²>K. Before cooling, the strip surfaces are cleaned. The first section is divided, for intermittent cooling. In the first subsection (6A) just after the continuous casting die, it is cooled intensively; in the following subsection (6B) cooling is reduced and then becomes more intensive. The mechanical deformation process (5), i.e. rolling or similar, causes straightening. Cooling in the first section is confined to the vertical section. The strand guidance (4) in this section is provided by metal rollers (10) with coolers (11) applying liquid to the strip surface. These can be moved vertically and/or horizontally. They can be oscillated. More fixed coolers are included. All coolers may be encased. The coolant is projected by nozzles. An independent claim IS INCLUDED FOR the corresponding continuous casting plant.

IPC 8 full level
B22D 11/124 (2006.01); **B22D 11/14** (2006.01); **B22D 11/22** (2006.01)

CPC (source: EP KR US)
B22D 11/124 (2013.01 - KR); **B22D 11/141** (2013.01 - EP KR US); **B22D 11/225** (2013.01 - EP KR US)

Citation (search report)
See references of WO 2007087893A1

Cited by
DE102017213842A1; US2017211162A1; US10894994B2; DE102014214374A1; WO2016012131A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
DE 102006056683 A1 20070712; AT E425827 T1 20090415; AU 2006337470 A1 20070809; AU 2006337470 B2 20100204; BR PI0620971 A2 20111129; BR PI0620971 B1 20150721; CA 2635128 A1 20070809; CA 2635128 C 20120717; DE 502006003212 D1 20090430; EG 24892 A 20101213; EP 1937429 A1 20080702; EP 1937429 B1 20090318; ES 2321234 T3 20090603; JP 2009522110 A 20090611; JP 5039712 B2 20121003; KR 101037078 B1 20110526; KR 20080081173 A 20080908; MY 143585 A 20110531; PL 1937429 T3 20090831; RU 2377096 C1 20091227; TW 200732062 A 20070901; TW I382888 B 20130121; US 2009095438 A1 20090416; US 2012111527 A1 20120510; US 8522858 B2 20130903; US 8596335 B2 20131203; WO 2007087893 A1 20070809

DOCDB simple family (application)
DE 102006056683 A 20061130; AT 06841185 T 20061228; AU 2006337470 A 20061228; BR PI0620971 A 20061228; CA 2635128 A 20061228; DE 502006003212 T 20061228; EG 2008071146 A 20080707; EP 06841185 A 20061228; EP 2006012560 W 20061228; ES 06841185 T 20061228; JP 2008548950 A 20061228; KR 20087017402 A 20061228; MY PI20082460 A 20061228; PL 06841185 T 20061228; RU 2008132828 A 20061228; TW 95149753 A 20061229; US 201213353511 A 20120119; US 8730506 A 20061228