

Title (en)
CONTINUOUS CASTING MOLD AND METHOD FOR CONTINUOUS CASTING OF STEEL

Title (de)
STRANGGUSSFORM UND VERFAHREN ZUM STRANGGIESSEN VON STAHL

Title (fr)
MOULE DE COULÉE CONTINUE ET PROCÉDÉ DE COULÉE CONTINUE D'ACIER

Publication
EP 3488946 A4 20190703 (EN)

Application
EP 17830623 A 20170116

Priority
• JP 2016143909 A 20160722
• JP 2015144535 A 20150722
• JP 2017001146 W 20170116

Abstract (en)
[origin: EP3488946A1] A surface crack due to the inhomogeneous cooling of a solidified shell in the early solidification stage and a surface crack due to a variation in the thickness of a solidified shell caused by transformation from δ iron to γ iron in medium-carbon steel are inhibited. A continuous casting mold includes portions filled with a metal of low thermal conductivity formed by filling a plurality of concave grooves with the metal of low thermal conductivity in a region, on an inner wall surface of a mold copper plate which is made of a copper alloy and constitutes a water-cooled continuous casting mold, from a position located above a meniscus to a position located below the meniscus, in which a ratio of a thermal conductivity $\lambda(W/(m \times K))$ of the metal of low thermal conductivity to a thermal conductivity $\lambda(W/(m \times K))$ of the mold copper plate is 80% or less, and in which a thermal resistance ratio R defined by expression (1) below is 5% or more. Here, R denotes a thermal resistance ratio (%) of the portions filled with the metal of low thermal conductivity to the mold copper plate, T denotes a distance (mm) from a bottom surface of a slit of the mold copper plate, which is used as a flow channel of mold-cooling water, to a surface of the mold copper plate, and H denotes a filling thickness (mm) of the metal of low thermal conductivity.

IPC 8 full level
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CPC (source: EP KR)
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B22D 11/20 (2013.01 - KR)

Citation (search report)
• [X1] JP 2015107522 A 20150611 - JFE STEEL CORP
• [X1] EP 2839901 A1 20150225 - JFE STEEL CORP [JP]
• [X1] JP 2015051443 A 20150319 - JFE STEEL CORP
• See references of WO 2018016101A1

Cited by
EP3488947A4

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AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

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EP 3488946 A1 20190529; **EP 3488946 A4 20190703**; CN 109475930 A 20190315; CN 109475930 B 20210713; EP 3795274 A1 20210324; EP 3795274 B1 20220803; KR 102245013 B1 20210426; KR 20190017978 A 20190220; TW 201803664 A 20180201; TW I630962 B 20180801; WO 2018016101 A1 20180125

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