

Title (en)
SEMI-CONTINUOUS STRAND CASTING OF A STEEL BAR

Title (de)
SEMI-KONTINUIERLICHES STRANGGIESSEN EINES STAHLSTRANGS

Title (fr)
COULÉE SEMI-CONTINUE D'UNE BARRE D'ACIER

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Abstract (en)
[origin: WO2015079071A2] The present invention relates to a method for the semi-continuous casting of a strand (1) of steel in a continuous casting machine and the continuous casting machine itself. The aim of the invention is to devise a method for the semi-continuous casting of a strand (1) of steel, the strand having little segregation of the center and porosity, yet being castable rapidly. For this purpose, the following method steps are used: - casting start of the continuous casting machine, liquid steel being poured into the open-ended mold (2) which is closed by a cold strand (6) and the liquid steel forming, together with the cold strand, a completely solidified strand start (1a) and subsequently a semi-solidified strand (1b); - extraction of the semi-solidified strand (1b) from the open-ended mold (2); - support and guidance of the semi-solidified strand (1b) in the strand guide (3), the semi-solidified strand (1b) being cooled by secondary cooling (4); - casting end of the continuous casting machine, the pouring of liquid steel into the open-ended mold (2) being ended and a strand end (1c) being formed; - extraction of the strand end (1c) from the open-ended mold (2); - end of the extraction such that the strand end (1c) lies outside the open-ended mold (2); - end of secondary cooling (4); - controlled or regulated cooling of the semi-solidified strand (1b) until complete solidification of the strand (1) in the tertiary cooling zone (5) of the continuous casting machine is obtained, the cooling effect being stronger at the strand start (1a) and decreasing towards the strand end (1c); and - discharge of the strand (1) from the continuous casting machine.

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Citation (examination)
• DE 3542518 A1 19870604 - MANNESMANN AG [DE]
• DE 3621234 A1 19880121 - THYSSEN EDELSTAHLWERKE AG [DE]
• US 4658882 A 19870421 - OBA HANJI [JP], et al

Cited by
EP3885060A1; EP4101560A1

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