

Title (en)

METHOD FOR HOT-DIP COATING A FLAT STEEL PRODUCT CONTAINING 2-35 WT% MN AND FLAT STEEL PRODUCT

Title (de)

VERFAHREN ZUM SCHMELZTAUCHBESCHICHTEN EINES 2-35 GEW.-% MN ENTHALTENDEN STAHLFLACHPRODUKTS UND STAHLFLACHPRODUKT

Title (fr)

PROCÉDÉ DE REVÊTEMENT PAR IMMERSION À CHAUD D'UN PRODUIT PLAT EN ACIER CONTENANT DE 2 À 35 % EN MASSE DE MN, AINSI QUE PRODUIT PLAT EN ACIER

Publication

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Application

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Priority

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Abstract (en)

[origin: CA2759369A1] The present invention relates to a method by means of which flat steel products containing 2 - 35 wt% Mn can be provided with a well adhering Zn coating. For this purpose, the method according to the invention provides that the particular flat steel product is annealed at an annealing temperature T_g of 600 - 1100 °C over an annealing duration of 10 - 240 s under an annealing atmosphere that is reductive in relation to FeO present on the flat steel product and oxidative in relation to the Mn contained in the steel substrate, which annealing atmosphere contains 0.01 - 85 vol% H₂, H₂O, and as the rest N₂ and technically unavoidable impurities and has a dew point between -70 °C and +60 °C, wherein the following applies to the H₂O/H₂ ratio of the atmosphere: $8 \times 10^{-15} T_g^{3.529} < H_2O/H_2 = 0.957$. In this way, an Mn mixed oxide layer providing coverage at least in some sections is produced on the flat steel product. The annealed flat steel product is subsequently cooled to a bath entrance temperature, at which the flat steel product is then guided within a dip time of 0.1 - 10 s through an iron-saturated, 420 - 520 °C Zn melt bath, which in addition to the main component zinc and unavoidable impurities contains 0.05 - 8 wt% Al and/or up to 8 wt% Mg and optionally Si < 2%, Pb < 0.1%, Ti < 0.2%, Ni < 1%, Cu < 1%, Co < 0.3%, Mn < 0.5%, Cr < 0.2%, Sr < 0.5%, Fe < 3%, B < 0.1%, Bi < 0.1%, Cd < 0.1%.

IPC 8 full level

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Citation (opposition)

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