

Title (en)

METHOD FOR HOT-DIP COATING A FLAT STEEL PRODUCT

Title (de)

VERFAHREN ZUM SCHMELZTAUCHBESCHICHTEN EINES STAHLFLACHPRODUKTS

Title (fr)

PROCÉDÉ DE REVÊTEMENT PAR IMMERSION À CHAUD D'UN PRODUIT PLAT EN ACIER

Publication

EP 2611946 A1 20130710 (DE)

Application

EP 11745783 A 20110818

Priority

- DE 102010037254 A 20100831
- EP 2011064222 W 20110818

Abstract (en)

[origin: WO2012028465A1] The aim of the invention is the hot-dip coating of a flat steel product that consists of a stainless steel comprising more than 5 wt.% Cr with a protective metal overlay that is anti-corrosive. According to the invention, this is achieved by carrying out the following work steps: - the flat steel product is heated to 100 - 600 °C within a time span of 1 - 30 seconds in an oxygen-free heating atmosphere that eliminates an oxidation of the surface of the flat steel product; - the heating is continued to a holding temperature of 750 - 950 °C, said heating being carried out to a temperature window of 550 - 800 °C in an inert or reducing heating atmosphere, in an oxidizing pre-oxidation atmosphere within said temperature window for 1 to 15 seconds, and again in an inert or reducing atmosphere after leaving said temperature window until the holding temperature is reached; - the flat steel product that is pre-oxidized in this manner is held at the holding temperature for 10 - 120 seconds in a reducing holding atmosphere; and - the flat steel product is ran through a nozzle zone into a melt bath in which the flat steel product is hot-dip coated with the metal overlay, wherein the product is held in an inert or reducing nozzle atmosphere until entering the melt bath in the nozzle zone, and the temperature of the flat steel product is 430 - 780 °C while passing through the nozzle zone.

IPC 8 full level

C23C 2/02 (2006.01)

CPC (source: EP US)

C23C 2/004 (2022.08 - EP US); **C23C 2/0222** (2022.08 - EP US); **C23C 2/0224** (2022.08 - EP US); **C23C 2/06** (2013.01 - EP US); **C23C 2/12** (2013.01 - EP US); **C23C 2/40** (2013.01 - EP US)

Citation (search report)

See references of WO 2012028465A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ 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

DOCDB simple family (publication)

DE 102010037254 A1 20120301; **DE 102010037254 B4 20120524**; CN 103080363 A 20130501; CN 103080363 B 20151125; EP 2611946 A1 20130710; EP 2611946 B1 20181003; ES 2701756 T3 20190225; US 2014144550 A1 20140529; US 9279175 B2 20160308; WO 2012028465 A1 20120308

DOCDB simple family (application)

DE 102010037254 A 20100831; CN 201180041913 A 20110818; EP 11745783 A 20110818; EP 2011064222 W 20110818; ES 11745783 T 20110818; US 201113819481 A 20110818