

Title (en)

Method for removing an excess coating on the band edge of galvanised metal coated steel strips

Title (de)

Verfahren zur Entfernung einer überschüssigen Beschichtung an der Bandkante von galvanisch mit einer Metallbeschichtung beschichteten Stahlbändern

Title (fr)

Procédé de suppression d'un revêtement en excès sur le rebord de bandes d'acier galvanisées revêtues d'un revêtement métallique

Publication

EP 2028286 A1 20090225 (DE)

Application

EP 08160535 A 20080716

Priority

DE 102007034115 A 20070721

Abstract (en)

The method for removing an excess coating (3) of coated steel strips galvanically coated with a metal coating, comprises completely melting the already hardened excess coating through heat treatment and subsequently blowing the melted coating in molten condition through a fluid flow (5) or a particle flow on the surface of the steel strip. The melting of the excess coating is carried out by heating of the excess coating at a temperature above the melting temperature of the metal coating through a flow or hot air flow, laser radiation or inductors. The method for removing an excess coating (3) of coated steel strips galvanically coated with a metal coating, comprises completely melting the already hardened excess coating through heat treatment and subsequently blowing the melted coating in molten condition through a fluid flow (5) or a particle flow on the surface of the steel strip. The melting of the excess coating is carried out by heating of the excess coating at a temperature above the melting temperature of the metal coating through a flow or hot air flow, laser radiation or inductors. A maximum temperature is held during melting of the excess coating at temperature over the melting temperature of the metal coating to minimize an alloy formation between the material and the metal coating and the iron of the steel strip. The coated steel strip is galvanically tinned steel sheet strip. The hot air flow is blown with an electric hot air device on the surface of the coated steel strip. A hot air device is arranged in an interval of up to 20 mm for the surface. The metallic coating of the steel strip melts in the area of the strip edge (4) with the inductor or laser radiation and is blown with a gas flow of the surface. The molten metal of the excess coating is blown from the steel strip surface towards outer path and for reusing in a collector container arranged next to the steel strip. The fluid or particle flow is blown transversely on the surface of the coated steel strip and from the middle of the steel band towards outside on the excess coating. The gas flow is blown with a pressure of more than 1 bar on the surface of the coated steel strip. An independent claim is included for a device for removing an excess coating of coated steel strips galvanically coated with a metal coating.

Abstract (de)

Die Erfindung betrifft ein Verfahren zur Entfernung einer überschüssigen Beschichtung (3) von galvanisch mit einer Metallbeschichtung (2) beschichteten Stahlbändern (1). Gemäß der Erfindung erfolgt eine effiziente Entfernung der überschüssigen Beschichtung ohne eine Verschlechterung der Beschichtungs Oberfläche entweder unmittelbar nach den Beschichtungsvorgang, indem der überschüssige Anteil der noch nicht verfestigten Beschichtung durch einen Gasstrom von der Oberfläche des Stahlbands abgeblasen wird, oder nach dem Beschichtungsvorgang, indem die bereits erkaltete und verfestigte Beschichtung zunächst durch eine Wärmebehandlung wieder aufgeschmolzen und anschließend durch einen Gasstrom von der Oberfläche des Stahlbands abgeblasen wird. Die Erfindung betrifft ferner eine Vorrichtung zur Durchführung dieses Verfahrens.

IPC 8 full level

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CPC (source: EP)

B24C 1/003 (2013.01); **B24C 1/086** (2013.01); **C25D 5/48** (2013.01); **C25D 5/50** (2013.01); **C25D 5/505** (2013.01); **C25D 7/0614** (2013.01)

Citation (search report)

- [X] WO 2005010229 A1 20050203 - THYSSENKRUPP STAHL AG [DE], et al
- [X] DE 1796324 A1 19721019 - NISSHIN STEEL CO LTD, et al
- [X] JP S6021368 A 19850202 - NISSHIN STEEL CO LTD, et al
- [X] US 4594272 A 19860610 - HAASER ROBERT [FR]
- [X] WO 2006070995 A1 20060706 - POSCO [KR], et al
- [X] JP H03120348 A 19910522 - NIPPON KOKAN KK
- [X] JP H05140721 A 19930608 - MITSUBISHI HEAVY IND LTD
- [A] DE 10243035 A1 20040325 - DAIMLER CHRYSLER AG [DE]

Citation (examination)

- JP 2005325431 A 20051124 - MITANI SHINDO CO LTD
- DE 1167149 B 19640402 - STAHL UND WALZWERKE

Designated contracting state (EPC)

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

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