

Title (en)

METHOD FOR PRODUCING A COATABLE AND/OR JOINABLE SHEET METAL PART WITH A CORROSION PROTECTION COATING

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES BESCHICHT- UND/ODER FÜGBAREN BLECHFORMTEILS MIT EINER KORROSIONSSCHUTZBESCHICHTUNG

Title (fr)

PROCÉDÉ DE FABRICATION D'UNE PIÈCE DE FORMAGE EN TÔLE POUVANT ÊTRE REVÊTUE ET/OU SOUPLE DOTÉE D'UN REVÊTEMENT ANTICORROSION

Publication

**EP 2233598 A2 20100929 (DE)**

Application

**EP 10002911 A 20100319**

Priority

DE 102009015160 A 20090326

Abstract (en)

The method comprises providing a plate made of curable steel sheet material (10) with a corrosion protection coating (12) applied on single side, forming the plate to a sheet metal part, carrying out a press hardening process in order to induce hardening the steel sheet material, where a temporary oxide layer (13) forms on the corrosion protection coating during the hardening process, and partially removing the oxide layer from the sheet metal part using cleaning jets (22) with an abrasive blasting material and/or by mechanical cleaning. The method comprises providing a plate made of curable steel sheet material (10) with a corrosion protection coating (12) applied on single side, forming the plate to a sheet metal part, carrying out a press hardening process in order to induce hardening the steel sheet material, where a temporary oxide layer (13) forms on the corrosion protection coating during the hardening process, and partially removing the oxide layer from the sheet metal part using cleaning jets (22) with an abrasive blasting material and/or by mechanical cleaning. The removal of the temporary oxide layer is carried out by pressure-cleaning jets or slingshot cleaning jet. The process parameter such as beam pressure is adjusted so that an interference of the corrosion protection coating and/or the dimensional accuracy of the sheet metal part are barred. Angular steel granulates are used as abrasive beam material. The sheet metal part is simultaneously exposed from both sides of a cleaning beam with abrasive beam materials. The removal of the oxide layer is automatically carried out. The steel sheet material is 22MnB5-steel material or is based on steel material. The corrosion protection coating consists of zinc and has a layer thickness of 400 g/m<sup>2</sup> >. The mechanical cleaning is carried out by brushes and/or cleaning loop. The quality of the corrosion protective coating cleaned from oxide layer is detected. The quantitative detection of the quality is carried out through an electric resistance measurement. An independent claim is included for a method for removing a temporary protective layer from a sheet metal part.

Abstract (de)

Die Erfindung betrifft ein Verfahren zur Herstellung eines beschicht- und/oder fügbaren Blechformteils mit einer Korrosionsschutzbeschichtung (12) umfassend die folgenden Schritte: - Bereitstellen einer Platine aus einem härtbaren Stahlblechmaterial (10), mit einer wenigstens einseitig aufgetragenen Korrosionsschutzbeschichtung (12); - Umformen dieser Platine zu einem Blechformteil; - Ausführen eines Härtevorgangs, um eine Härtung des Stahlblechmaterials (10) herbeizuführen, wobei sich während des Härtevorgangs definiert und zumindest bereichsweise eine temporäre Schutzschicht (13) auf der Korrosionsschutzbeschichtung (12) ausbildet; und - zumindest teilweises Entfernen dieser temporären Schutzschicht (13) vom Blechformteil durch Reinigungsstrahlen mit einem abrasiven Strahlmittel und/oder durch mechanisches Reinigen, wobei die Korrosionsschutzbeschichtung (12) im Wesentlichen erhalten bleibt. Die Erfindung betrifft ferner ein Verfahren zum Entfernen einer temporären Schutzschicht von einer solchen Korrosionsschutzbeschichtung.

IPC 8 full level

**B24C 1/08** (2006.01); **C21D 1/673** (2006.01); **C21D 1/68** (2006.01); **C23C 2/02** (2006.01); **C23C 2/26** (2006.01)

CPC (source: EP US)

**B24C 1/08** (2013.01 - EP); **C21D 1/673** (2013.01 - EP); **C21D 1/68** (2013.01 - EP); **C23C 2/26** (2013.01 - EP US)

Citation (applicant)

- DE 202004021264 U1 20070531 - VOESTALPINE STAHL GMBH [AT]
- DE 102007022174 B3 20080918 - VOESTALPINE STAHL GMBH [AT]
- EP 1630244 A1 20060301 - SUMITOMO METAL IND [JP], et al

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CN105113432A; EP2998055A4; CN106737213A; WO2024002507A1; EP2606161A1

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