

Title (en)  
METHOD FOR IMPROVING THE ADHERENCE

Title (de)  
VERFAHREN ZUR VERBESSERUNG DER HAFTFÄHIGKEIT

Title (fr)  
PROCÉDÉ D'AMÉLIORATION DE L'ADHÉRENCE

Publication  
**EP 3019639 A1 20160518 (DE)**

Application  
**EP 14744292 A 20140711**

Priority  
• EP 13176397 A 20130712  
• EP 2014064987 W 20140711  
• EP 14744292 A 20140711

Abstract (en)  
[origin: WO2015004284A1] The invention relates to a method for improving adherence to a protectively coated steel sheet (2), wherein in a continuous method a protective coating based on Zn-Al-Mg is applied to the steel sheet (2) and, in a further step, is subjected to a surface treatment (6), wherein an aqueous composition (7) is applied in order to modify the natural oxide layer (9) having Al<sub>2</sub>O<sub>3</sub> and MgO without pickling the natural oxide layer. In order to significantly increase adherence to the protectively coated steel sheet, it is proposed that the protectively coated steel sheet (2) is skin-pass rolled and then the natural oxide layer (9) is reacted with an aqueous fluoride-containing composition (7), the MgO content of the natural oxide layer thereby being reduced, in order to thus modify the natural oxide layer (9).

IPC 8 full level  
**C23C 22/83** (2006.01); **C23C 2/26** (2006.01); **C23C 2/40** (2006.01); **C23C 22/34** (2006.01); **C23C 22/68** (2006.01); **C23C 22/73** (2006.01); **C23G 1/10** (2006.01); **C23G 1/24** (2006.01)

CPC (source: EP US)  
**C23C 2/26** (2013.01 - EP US); **C23C 2/40** (2013.01 - EP US); **C23C 22/34** (2013.01 - EP US); **C23C 22/68** (2013.01 - EP US); **C23C 22/73** (2013.01 - EP US); **C23C 22/83** (2013.01 - EP US); **C23G 1/10** (2013.01 - EP US); **C23G 1/24** (2013.01 - EP US)

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE 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

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 2824213 A1 20150114**; CN 105492646 A 20160413; CN 105492646 B 20180130; EP 3019639 A1 20160518; EP 3019639 B1 20190227; ES 2727870 T3 20191021; MX 2016000256 A 20160428; US 2016160357 A1 20160609; US 9920430 B2 20180320; WO 2015004284 A1 20150115; ZA 201600018 B 20170426

DOCDB simple family (application)  
**EP 13176397 A 20130712**; CN 201480039729 A 20140711; EP 14744292 A 20140711; EP 2014064987 W 20140711; ES 14744292 T 20140711; MX 2016000256 A 20140711; US 201414904618 A 20140711; ZA 201600018 A 20160104