

Title (en)
Method for passivating strip black iron plate

Title (de)
Verfahren zur Passivierung von bandförmigem Schwarzblech

Title (fr)
Procédé de passivation de tôle noire en forme de bande

Publication
EP 2826569 B1 20170621 (DE)

Application
EP 14175621 A 20140703

Priority
DE 102013107506 A 20130716

Abstract (en)
[origin: CA2855673A1] The invention concerns a process for passivation of strip steel plate, having the following steps: - electrochemical treatment of the black plate by passing the black plate through an electrolyte to form an inert steel surface, - rinsing the black plate, - application of an aqueous chromium-free treatment solution to at least one surface of the black plate to form a conversion layer that protects against corrosion and an adhesion layer for paints and organic coating materials. The black plate treated in accordance with the invention is characterized by high corrosion resistance and has good bonding capacity for paints and organic coatings and therefore is very suitable as a substitute for tin-free steel (TFS or ECCS) and tinplate for the production of packagings, in particular cans. In contrast to the traditional manufacturing and passivation processes for tin-free steel and tinplate, no chromium VI, which is environmentally hazardous and hazardous to health, is used in the process in accordance with the invention.

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• DE 102005045033 B3 20070118 - RASSELSTEIN GMBH [DE]
• DE 4416416 A1 19951116 - RASSELSTEIN AG [DE]
• "Metals Handbook", 1 January 1985, AMERICAN SOCIETY FOR METALS, Ohio, ISBN: 978-0-87170-188-6, article "Metals Handbook", pages: IN13, XP055219111

Cited by
EP3434807A1; EP3719169A4; EP3133187A1; DE102015113878A1; RU2702667C2; US11473176B2; WO2021116320A1

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