

Title (en)

METHOD FOR MANUFACTURING PLATED STEEL SHEET HAVING EXCELLENT CLARITY OF IMAGE AFTER COATING

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES PLATTIERTEN STAHLBLECHS MIT HERVORRAGENDER KLARHEIT EINES BILDES NACH DER BESCHICHTUNG

Title (fr)

PROCÉDÉ DE FABRICATION D'UNE TÔLE D'ACIER PLAQUÉ AYANT UNE EXCELLENTE NETTETÉ D'IMAGE APRÈS REVÊTEMENT

Publication

EP 3354359 B1 20201216 (EN)

Application

EP 16848998 A 20160923

Priority

- KR 20150134772 A 20150923
- KR 2016010672 W 20160923

Abstract (en)

[origin: EP3354359A1] The present invention relates to a plated steel sheet used as an automobile outer panel, etc., and more specifically, to a method for manufacturing a plated steel sheet having excellent clarity of image after coating, and a plated steel sheet manufactured thereby.

IPC 8 full level

B21B 1/22 (2006.01); **B21B 27/02** (2006.01); **C23C 2/06** (2006.01); **C23C 2/12** (2006.01); **C25D 3/22** (2006.01)

CPC (source: EP US)

B21B 1/22 (2013.01 - EP US); **B21B 27/02** (2013.01 - US); **C23C 2/06** (2013.01 - EP US); **C23C 2/12** (2013.01 - EP US); **C25D 3/22** (2013.01 - EP US); **B21B 2001/228** (2013.01 - EP US); **B21B 2261/00** (2013.01 - EP US); **B21B 2267/00** (2013.01 - EP US)

Citation (examination)

BASJAN BERKHOUT: "PREMIUM PAINT APPEARANCE: SERICA , THE HOT-DIP GALVANISED SURFACE FINISH FOR EXPOSED AUTOMOTIVE PANELS", INTERNATIONAL PAINT&COATING MAGAZINE, no. 34, 31 August 2015 (2015-08-31), pages 92 - 96, XP055471246

Citation (opposition)

Opponent : ArcelorMittal

- EP 0739253 A1 19961030 - SIDMAR NV [BE]
- JP 2008214681 A 20080918 - NIPPON STEEL CORP
- US 2015209848 A1 20150730 - KOPPLIN KARL-HEINZ [DE], et al
- WO 2014135999 A1 20140912 - ARCELORMITTAL INVESTIGACION Y DESARROLLO SL [ES]
- WO 2015114405 A1 20150806 - ARCELORMITTAL [LU]
- ANONYMOUS: "SEP 1941:2012-05 :Messung des Welligkeitskennwertes Wsa (1-5) an kaltgewalzten Flacherzeugnissen", STAHL-EISEN-PRÜFBLÄTTER (SEP) DES STAHLINSTITUTS VDEH, May 2012 (2012-05-01), pages 20120501, XP009195399
- ANONYMOUS: "Tata Steel adds 100th new product to its portfolio", PRESS RELEASE, 3 February 2015 (2015-02-03), pages 1 - 4, XP055848491, Retrieved from the Internet <URL:https://www.tatasteel.com/media/newsroom/press-releases/india/2015/tata-steel-adds-100th-new-product-to-its-portfolio/>
- ANONYMOUS: "Serica™ tightly controlled low surface waviness", TATA STEEL, 2014, pages 1 - 2, XP055848531
- ANONYMOUS: "Serica® tightly controlled low surface waviness", TATA STEEL, 2016, pages 1 - 2, XP055848534
- ANONYMOUS: "Premium paint appearance Serica®: the hot dip galvanised surface finish for exposed automotive panels", TATA STEEL, 2015, pages 1 - 4, XP055848537
- ANONYMOUS: "Premium paint appearance Serica®: the hot dip galvanised surface finish for exposed automotive panels", TATA STEEL, 2017, pages 1 - 4, XP055848539
- BASJAN BERKHOUT: "PREMIUM PAINT APPEARANCE: SERICA®, THE HOT-DIP GALVANISED SURFACE FINISH FOR EXPOSED AUTOMOTIVE PANELS", INTERNATIONAL PAINT&COATING MAGAZINE, no. 34, 31 August 2015 (2015-08-31), pages 92 - 96, XP055471246
- CYRUS P MISTRY: "108th Annual Report 2014-2015", TATA STEEL, 20 May 2015 (2015-05-20), pages 1, 3, 20, XP055848550
- J. SIMAO, D.K. ASPINWALL: "Hard chromium plating of EDT mill work rolls", JOURNAL OF MATERIALS PROCESSING TECHNOLOGY, vol. 92-93, 30 August 1999 (1999-08-30), pages 281 - 287, XP055848555
- HARTMUT HOFFMANN, REIMUND NEUGEBAUER, GÜNTHER SPUR: "HANDBUCH UMFORMEN Edition | Handbuch der Fertigungstechnik", 2012, CARL HANSER VERLAG, München, pages: 124, 125, 129, 153 - 163, XP055848560
- DEUTSCHER O: "Characterising the surface waviness of hot dip galvanised steel sheets for optical high-quality paintability (Carsteel)", 2009, pages 1 - 133, XP002717503

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

DOCDB simple family (publication)

EP 3354359 A1 20180801; **EP 3354359 A4 20180822**; **EP 3354359 B1 20201216**; CN 108136455 A 20180608; KR 101746944 B1 20170614; KR 20170036187 A 20170403; US 2018257121 A1 20180913; WO 2017052273 A1 20170330; WO 2017052273 A8 20170526

DOCDB simple family (application)

EP 16848998 A 20160923; CN 201680055356 A 20160923; KR 20150134772 A 20150923; KR 2016010672 W 20160923; US 201615761250 A 20160923