

Title (en)

METHOD FOR PRODUCING COLD-ROLLED STEEL SHEET, COLD-ROLLED STEEL SHEET, AND VEHICLE MEMBER

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES KALTGEWALZTEN STAHLBLECHS, KALTGEWALZTES STAHLBLECH UND FAHRZEUGTEIL

Title (fr)

PROCÉDÉ DE PRODUCTION D'UNE TÔLE D'ACIER LAMINÉE À FROID, TÔLE D'ACIER LAMINÉE À FROID, ET ÉLÉMENT DE VÉHICULE

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Application

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Abstract (en)

[origin: EP2612957A1] This invention provides a method of producing a cold-rolled steel sheet being excellent in not only the phosphate treatability but also the corrosion resistance after coating under severe corrosion environment such as hot salt water immersion test or composite cycle corrosion test, wherein a continuously annealed steel sheet after cold rolling preferably comprising 0.5-3.0 mass% of Si is pickled to remove a Si-containing oxide layer on a surface layer of the steel sheet and further repickled so that a surface covering ratio of an iron-based oxide on the surface of the steel sheet is not more than 40% and preferably a maximum thickness of the iron-based oxide is not more than 150 nm, as well as a cold-rolled steel sheet produced by this method and a member for automobile using the cold-rolled steel sheet.

IPC 8 full level

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Citation (search report)

- [XY] JP 2005314725 A 20051110 - SUMITOMO METAL IND, et al
- [X] JP 2006322028 A 20061130 - NIPPON STEEL CORP
- [X] US 5759307 A 19980602 - BERGER HEINZ DIPL ING [DE], et al
- [X] WO 02081777 A1 20021017 - AK PROPERTIES INC [US]
- [Y] JP 2009221586 A 20091001 - JFE STEEL CORP
- [E] EP 2692902 A1 20140205 - JFE STEEL CORP [JP]
- See references of WO 2012029632A1

Cited by

EP2821515A4; EP3272892A4; EP3418417A4; EP2612956A4; EP3115482A4; US10174430B2; US11008635B2; US11248277B2

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