

Title (en)
COLD-ROLLED FLAT STEEL PRODUCT ANNEALED IN A BELL-TYPE FURNACE, AND METHOD FOR THE PRODUCTION OF SAID PRODUCT

Title (de)
KALTGEWALZTES, HAUBENGEGLÜHTES STAHLFLACHPRODUKT UND VERFAHREN ZU DESSEN HERSTELLUNG

Title (fr)
PRODUIT PLAT EN ACIER LAMINÉ À FROID, RECUIT SUR BASE, ET PROCÉDÉ DE FABRICATION S'Y RAPPORTANT

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Application
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Abstract (en)
[origin: WO2018188766A1] The invention relates to a cold-rolled flat steel product which consists of a steel belonging to the high-manganese steels and, after annealing in a bell-type furnace, has a combination of properties which makes it suitable for use in particular in manufacturing car bodies. The cold-rolled flat steel product annealed in a bell-type furnace according to the invention has for this purpose an elastic limit $R_{p0.2} > 350$ MPa, an elongation at break $A_{80} \geq 35\%$ and a tensile strength R_m of ≥ 800 MPa, a stacking fault energy of 7-15 mJ/m² and a structure which has a grain size of \geq ASTM 13 and a carbide density per unit area of ≤ 250 carbide particles per 1000 μm^2 and consists of a steel containing (in wt%) C: 0.1-0.8%, Mn: 10-25%, Al: 0.3-2%, one or more elements from the group "V, Nb, Ti" with the proviso that the sum of "V, Nb, Ti" is 0.01-0.5%, Si: up to 0.5%, Cr: $< 1.5\%$, S: $< 0.03\%$, P: $< 0.08\%$, N: $< 0.1\%$, Mo: $< 2\%$, Co: $\leq 0.5\%$, B: $< 0.01\%$, Ni: $< 8\%$, Cu: $< 5\%$, Ca: $\leq 0.015\%$, Mg: $\leq 0.0015\%$, Sb: $\leq 0.2\%$, Sn: up to 0.2%, one or more elements from the group "Zr, Ta, W" with the proviso that the sum of the contents of Zr, Ta and W is $\leq 2\%$, rare earth metals: $\leq 0.2\%$, remainder iron and unavoidable impurities. The invention also relates to a method for producing such a cold-rolled flat steel product.

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