

Title (en)
FLAT STEEL PRODUCT AND METHOD FOR THE PRODUCTION THEREOF

Title (de)
STAHLFLACHPRODUKT UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)
PRODUIT PLAT EN ACIER ET PROCÉDÉ DE FABRICATION

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Application
EP 19731909 A 20190612

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Abstract (en)
[origin: WO2019238741A1] The present invention relates to a flat steel product which has good deep-drawing ability, low edge-crack sensitivity and good bending behaviour. To this end, the flat steel product contains a steel which consists of (in wt%) 0.1-0.5% C, 1.0-3.0% Mn, 0.9-1.5% Si, up to 1.5% Al, up to 0.008% N, up to 0.020% P, up to 0.005% S, 0.01-1% Cr and optionally one or more of the following elements: up to 0.2% Mo, up to 0.01% B, up to 0.5% Cu, up to 0.5% Ni and optionally a total of 0.005-0.2% microalloying elements, the remainder being iron and unavoidable impurities, wherein $75 < (\text{Mn} + 55 \cdot \text{Cr}) / \text{Cr} < 3000$ where Mn is the Mn content of the steel in wt% and Cr is the Cr content of the steel in wt%. The steel has a structure which consists of at least 80 area % martensite, of which at least 75 area % is tempered martensite and at most 25 area % is non-tempered martensite, at least 5 volume % residual austenite, 0.5 to 10 area % ferrite and at most 5 area % bainite, wherein in the region of the phase boundary between tempered martensite and residual austenite there is a low-Mn ferrite seam which has a width of at least 4 nm and at most 12 nm and the Mn content of which is at most 50% of the average Mn content of the flat steel product. The flat steel product contains carbides with a length of less than or equal to 250 nm. The invention also relates to a method for producing a flat steel product according to the invention, in which method the structural characteristics of the flat steel product according to the invention are set by suitable heat treatment.

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