Title (en)

STEEL STRIP MADE OF A HIGH-STRENGTH MULTIPHASE STEEL AND PROCESS FOR PRODUCING SUCH A STEEL STRIP

Title (de)

STAHLBAND AUS EINEM HOCHFESTEN MEHRPHASENSTAHL UND VERFAHREN ZUR HERSTELLUNG EINES DERARTIGEN STAHLBANDES

Title (fr)

BANDE D'ACIER CONSTITUÉE D'UN ACIER MULTIPHASE À HAUTE RÉSISTANCE ET PROCÉDÉ DE PRODUCTION D'UNE TELLE BANDE D'ACIER

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Application

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Abstract (en)

[origin: WO2022207913A1] The invention relates to a steel strip made of a high-strength multiphase steel which has a tensile strength of at least 780 MPa in the longitudinal direction, the multiphase steel consisting of the following elements in % by weight: C ≥ 0.08 to ≤ 0.23, Mn ≥ 1.5 to ≤ 3.5, Si + Al ≥ 0.25 to ≤ 2, N ≥ 0.0020 to ≤ 0.0160, P < 0.05, S < 0.01, Cu < 0.20, optionally one or more of the following elements: Ca ≥ 0.0005 to ≤ 0.0060, Cr ≥ 0.05 to ≤ 1.0, Mo ≥ 0.05 to ≤ 1.0, Ni ≥ 0.05 to ≤ 0.50, Nb ≥ 0.005 to ≤ 0.15, Ti ≥ 0.005 to ≤ 0.15, V ≥ 0.001 to ≤ 0.30 and B ≥ 0.0005 to ≤ 0.0050, balance: iron, including customary steel-accompanying impurities resulting from melting, and having a carbon equivalent CEV which is greater than 0.49 and smaller than 0.9, preferably greater than 0.49 and smaller than 0.75, wherein the carbon equivalent CEV results from the contents of the corresponding elements in % by weight according to the following formula: CEV = C + Mn/6 + (Cu + Ni)/15 + (Cr + Mo + V)/5 and wherein the ratio of the carbon equivalent CEV and the sum of the contents of Si and Al in % by weight is less than 2.3, wherein the multiphase steel has a microstructure where the sum of the volume fractions of the microstructure constituents martensite, tempered martensite, residual austenite, upper bainite and/or lower bainite is at least 30% by volume, and the residual microstructure consists of ferrite and perlite. The invention further relates to a process for producing such a steel strip.

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