Title (en)

COMPONENT PRODUCED BY FORMING A SHEET STEEL BLANK, AND METHOD FOR THE PRODUCTION OF SAID COMPONENT

Title (de)

BAUTEIL, HERGESTELLT DURCH UMFORMEN EINER STAHLBLECHPLATINE UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)

COMPOSANT RÉALISÉ PAR FORMAGE D'UN LARGET DE TÔLE D'ACIER ET PROCÉDÉ DE RÉALISATION CORRESPONDANT

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Application

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Abstract (en)

[origin: WO2020239905A1] The invention relates to a weight-reduced component which, in the tempered and/or hot-formed state, demonstrates an optimal combination of strength and toughness and meets the highest demands on the mechanical properties or requirements of resilience against abrasive wear. For this purpose, the component is produced by forming from a sheet steel blank and consists of a steel which consists (in percent by mass) of - C: 0.1-0.6%, Mn: 0.1-2%, Al: 0.05-0.2%, Nb: 0.01-0.06%, B: 0.0005-0.005%, Cr: 0.05-0.8%, Si: up to 0.8%, Mo: up to 1.5%, Cu: up to 0.5%, Ni: up to 1.5%, V: up to 0.2%, REM: up to 0.05%, Ti: up to 0.02%, Ca: up to 0.005%, the remainder iron and unavoidable impurities, wherein the impurities include - up to 0.03% P, up to 0.03% S, up to 0.01% N, less than 0.05% Sn, less than 0.05% As and less than 0.05% Co, wherein the ratio formed by the particular Al content (%Al) and the particular N content (%N) is %Al/%N*14/27 > 8, wherein the component has a structure, at least 95% of the area of which consists of martensite and the remainder of other structural components, and in which structure at most 150 ppm of particles are present over the area in a homogeneous distribution over the strip thickness, the average circumferential equivalent particle size of which particles is 0.2-10 µm and which consist of oxide-based Al compounds, of AlN, TiN or conglomerates which are formed on the basis of these particles. The invention also relates to a method for producing a component of this type.

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