

Title (en)  
ENGINEERING STEEL WITH BAINITIC STRUCTURE, FORGED PART PRODUCED THEREFROM AND METHOD FOR MAKING A FORGED PART

Title (de)  
EDELBAUSTAHL MIT BAINITISCHEM GEFÜGE, DARAUS HERGESTELLTES SCHMIEDETEIL UND VERFAHREN ZUR HERSTELLUNG EINES SCHMIEDETEILS

Title (fr)  
ACIER INOXYDABLE DE CONSTRUCTION COMPRENANT UN JOINT BAINITIQUE, PIÈCE FORGÉE AINSI FABRIQUÉE ET PROCÉDÉ DE FABRICATION D'UNE PIÈCE FORGÉE

Publication  
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Application  
**EP 15194741 A 20151116**

Priority  
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Abstract (en)  
[origin: CA3005378A1] The invention provides a steel, which has a high strength, without complex heat treatment processes having to be performed for this purpose, and at the same time has a low tendency to warp. For this purpose, the high-grade structural steel according to the invention consists of (in % by weight) up to 0.25% C, up to 0.45% Si, 0.20 - 2.00% Mn; up to 4.00% Cr, 0.6 - 3.0% Mo, 0.004 - 0.020% N, up to 0.40% S, 0.001 - 0.035% Al, 0.0005 - 0.0025% B, up to 0.015% Nb, up to 0.01% Ti, up to 0.10% V, up to 1.5% Ni and up to 2.0% Cu, the remainder iron and unavoidable impurities, wherein the Al content %Al, the Nb content %Nb, the Ti content %Ti, the V content %V and the N content %N of the high-grade structural steel respectively meet the following condition:  $\%Al/27 + \%Nb/45 + \%Ti/48 + \%V/25 > \%N/3.75$ . The high-grade structural steel according to the invention has a yield strength of at least 750 MPa, a tensile strength of at least 950 MPa and a microstructure which consists at least 80% by volume of bainite and in total at most 20% by volume of residual austenite, ferrite, pearlite and/or martensite. On account of its combination of properties, the steel according to the invention is suitable in particular for the production of forged parts with great changes in cross section over its length. The invention also discloses a method for producing such forged components.

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Cited by  
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