

Title (en)

TREATMENT PROCESS FOR OBTAINING GRADED PERFORMANCE AND MEMBER THEREOF

Title (de)

BEHANDLUNGSVERFAHREN ZUM ERHALT EINER ABGESTUFTEN LEISTUNG UND ELEMENT DAFÜR

Title (fr)

PROCÉDÉ DE TRAITEMENT PERMETTANT D'OBTENIR DES PERFORMANCES PROGRESSIVES ET ÉLÉMENT ASSOCIÉ

Publication

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Application

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Abstract (en)

[origin: EP3473735A1] The present invention relates to a treatment process for obtaining gradient properties, comprising the steps of: A. preparing a blank, dividing the blank into a region to be formed as a hard zone, and a region to be formed as a soft zone; B. heating the region to be formed as a hard zone to 720 °C or more, such that its microstructure is transformed into austenite; C. stamping the entire blank and cooling it by any cooling method after the stamping; D. subjecting the hard zone of a component obtained after the stamping to carbon partitioning treatment to diffuse carbon from martensite to austenite; keeping a temperature of the region to be formed as the soft zone lower than 720 °C in step B, or adding a step E after the step D, wherein the region forming the soft zone is heated to 600 to 720 °C and soaked for 0.5 to 60 minutes. The invention also relates to a formed component made by the above-described treatment process. The treatment process of the invention has a simple die and good process reliability, and can realize a tensile strength of 900-1500 MPa of the soft zone and an elongation of more than 15%, which is far superior to the prior art.

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