Title (en)

METHOD FOR PRODUCING A HOT-FORMED AND HEAT-TREATED STEEL COMPONENT THAT IS COATED WITH A METAL ANTI-CORROSION COATING FROM A SHEET STEEL PRODUCT

Title (de)

VERFAHREN ZUM HERSTELLEN EINES WARMGEFORMTEN UND GEHÄRTETEN, MIT EINER METALLISCHEN KORROSIONSSCHUTZBESCHICHTUNG ÜBERZOGENEN STAHLBAUTEILS AUS EINEM STAHLFLACHPRODUKT

Title (fr)

PROCÉDÉ DE FABRICATION D'UN ÉLÉMENT EN ACIER THERMOFORMÉ ET DURCI, RECOUVERT D'UN REVÊTEMENT MÉTALLIQUE ANTICORROSION, À PARTIR D'UN PRODUIT PLAT EN ACIER

Publication

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Application

EP 11724650 A 20110614

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Abstract (en)

[origin: WO2011157690A1] The invention relates to a method for producing a steel component that is coated with a metal protective coating from a sheet steel product comprising at least 0.4 wt % Mn. In order to economically generate a high-strength steel component, while minimizing the risk of the development of metal-induced cracks, according to the invention the sheet steel product is annealed in a continuous furnace under an annealing atmosphere containing up to 25% by volume H2, 0.1 - 10% by volume NH3, H2O, the remainder being N2 as well as process-related inevitable impurities, at a dew point ranging between -50ºC and -5ºC and at a holding temperature of 400 - 1100ºC for a holding period of 5 - 600 s. The annealed sheet steel product has a nitride layer (N) 5 - 200 pm thick, the particle size of which is finer than the particle size of the interior core layer (K) of the sheet steel product. After it has been coated with a metal protective layer, a blank is separated from the annealed sheet steel product and is soaked to an austenitizing temperature of 780 - 950ºC subsequent to an optional preforming step, hot-formed to form the steel component and cooled so quickly that a tempered martensitic structure forms in the sheet steel product.

IPC 8 full level

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CPC (source: EP KR US)

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Citation (search report)

See references of WO 2011157690A1

Citation (examination)

EP 2009128 A1 20081231 - ARCELORMITTAL FRANCE [FR]

Citation (third parties)

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EP 2496722 A1 20120912 - SALZGITTER FLACHSTAHL GMBH [DE]

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