

Title (en)

Method for producing a moulded part from high-strength steel

Title (de)

Verfahren zur Herstellung eines Formteiles aus hochfestem oder höchstfestem Stahl

Title (fr)

Procédé de fabrication d'une pièce moulée en acier très résistant ou extrêmement résistant

Publication

EP 2586881 A3 20170510 (DE)

Application

EP 11009503 A 20111201

Priority

DE 102011117265 A 20111028

Abstract (en)

[origin: EP2586881A2] The method comprises heating a circuit board (1) made of hardenable steel to an austenitizing temperature before a forming process, where the heated circuit board is hot-formed in a material-deforming tool and is hardened in the tool or subsequent to a molding process by a rapid cooling so that a ferritic structure of a heated starting material is converted into a martensitic structure, and pressing the circuit board during a transformation so that portions or zones (2, 3, 4) are produced with different material thicknesses. The pretreated circuit board is again heated to the temperature. The method comprises heating a circuit board (1) made of hardenable steel to an austenitizing temperature, before a forming process, where the heated circuit board is hot-formed in a material-deforming tool and is hardened in the tool or subsequent to a molding process by a rapid cooling so that a ferritic structure of a heated starting material is converted into a martensitic structure, and pressing the circuit board during a transformation so that portions or zones (2, 3, 4) are produced with different material thicknesses. The pretreated circuit board is again heated to the austenitizing temperature and is subsequently hot formed in the forming tool. The circuit board is provided, before the forming process, with an aluminum-silicon-coating or a zinc-nickel-coating. An independent claim is included for a hot-formed component made of high-strength or high-fixed steel.

IPC 8 full level

C21D 1/673 (2006.01); **B21C 37/02** (2006.01); **B21D 22/02** (2006.01); **B21D 35/00** (2006.01); **C21D 9/00** (2006.01)

CPC (source: EP)

B21C 37/02 (2013.01); **B21C 37/065** (2013.01); **B21D 22/208** (2013.01); **B21D 35/006** (2013.01); **C21D 1/673** (2013.01); **C21D 9/0068** (2013.01); **C21D 2221/00** (2013.01)

Citation (search report)

- [X] EP 2111937 A1 20091028 - BENTELER AUTOMOBILTECHNIK GMBH [DE]
- [X] AT 509597 A4 20111015 - EBNER IND OFENBAU [AT]
- [X] DE 102007030388 A1 20080221 - DAIMLER AG [DE]
- [X] DE 102009025821 A1 20101202 - THYSSENKRUPP STEEL EUROPE AG [DE]

Cited by

CN109153060A; US10744547B2

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2586881 A2 20130501; **EP 2586881 A3 20170510**; **EP 2586881 B1 20190206**; DE 102011117265 A1 20130502

DOCDB simple family (application)

EP 11009503 A 20111201; DE 102011117265 A 20111028