

Title (en)

Method for thermal treatment of a coated steel sheet body

Title (de)

Verfahren zur thermischen Behandlung eines beschichteten Stahlblechkörpers

Title (fr)

Procédé destiné au traitement thermique d'un corps en tôle d'acier revêtu

Publication

EP 2182081 A1 20100505 (DE)

Application

EP 08105691 A 20081029

Priority

EP 08105691 A 20081029

Abstract (en)

The method for thermal treatment of an aluminum-silicon coated steel sheet body (1) before a hot forming process, comprises fixing the steel sheet body in its position, contacting a first contact plate (2) with a first surface section (6) of the steel sheet body, contacting a second contact plate (3) with a second surface section (7) of the steel sheet body, forming the contact plates flatly or completely corresponding to the contour of the surface sections of the steel sheet body, and arranging the contact plates parallel to each other in the state of contact with the steel sheet body. The method for thermal treatment of an aluminum-silicon coated steel sheet body (1) before a hot forming process, comprises fixing the steel sheet body in its position, contacting a first contact plate (2) with a first surface section (6) of the steel sheet body, contacting a second contact plate (3) with a second surface section (7) of the steel sheet body, forming the contact plates flatly or completely corresponding to the contour of the surface sections of the steel sheet body, and arranging the contact plates parallel to each other in the state of contact with the steel sheet body in a running manner, where one of the contact plates possesses high temperature against the steel sheet body during contacting the steel sheet body. The contact plate with high temperature during contacting has a temperature of 20-250[deg] C above a temperature A c 3. The steel sheet body has a temperature above the temperature A c 3 for a time period of 10-30 seconds. The steel sheet body contacts the both contact plates for a time period of 15-40 seconds. The contact plates are pressed onto the steel sheet body. The temperature in a partial area of the contact plate with high temperature is regulated by a temperature regulating device before and/or during contacting the steel sheet body with the contact plates and/or is controlled by a temperature controlling device. One of the contact plates is removed in a further process step. The steel sheet body is directly shaped in a subsequent working step and the first and second surface sections lie in the or in the vicinity of the area to be shaped. The steel sheet body is contacted with a cooling plate in a subsequent process step after heating, where the cooling plate is cooled and has a temperature of 400-600[deg] C against the steel sheet body. An independent claim is included for a device thermal treatment of an aluminum-silicon coated steel sheet body before a hot forming process.

Abstract (de)

Die Erfindung betrifft ein Verfahren sowie eine Vorrichtung zur thermischen Behandlung mindestens eines beschichteten, insbesondere eines Al-Sibeschichteten, Stahlblechkörpers vor einem Warmumformprozess, wobei der Stahlblechkörper (1) in seiner Lage fixiert wird, mindestens eine erste Kontaktplatte (2) mit mindestens einem ersten Flächenabschnitt (6) des Stahlblechkörpers (1) in Kontakt gebracht wird, mindestens eine zweite Kontaktplatte (3) mit mindestens einem zweiten Flächenabschnitt (7) des Stahlblechkörpers (1) in Kontakt gebracht wird, die Kontaktplatten (2, 3) flächig im wesentlichen oder vollständig entsprechend der Kontur der Flächenabschnitte (6,7) des Stahlblechkörpers (1) ausgebildet sind und im Zustand der Kontaktierung mit dem Stahlblechkörper (1) im wesentlichen parallel zueinander verlaufend angeordnet sind und mindestens eine Kontaktplatte (2, 3) während der Kontaktierung des Stahlblechkörpers (1) eine gegenüber dem Stahlblechkörper (1) höhere Temperatur besitzt.

IPC 8 full level

C21D 9/46 (2006.01); **B21D 37/16** (2006.01); **B21J 1/06** (2006.01); **C21D 1/34** (2006.01)

CPC (source: EP)

B21J 1/06 (2013.01); **C21D 1/34** (2013.01); **C21D 11/00** (2013.01)

Citation (applicant)

- EP 1566462 A1 20050824 - GEN MOTORS CORP [US]
- US 7165435 B1 20070123 - SCHROTH JAMES G [US], et al
- WO 2007013279 A1 20070201 - KIKUCHI CO LTD [JP], et al

Citation (search report)

- [X] EP 1566462 A1 20050824 - GEN MOTORS CORP [US]
- [X] US 7165435 B1 20070123 - SCHROTH JAMES G [US], et al
- [X] WO 2007013279 A1 20070201 - KIKUCHI CO LTD [JP], et al
- [E] EP 2014777 A1 20090114 - NEUE MATERIALIEN BAYREUTH GMBH [DE]

Cited by

EP3276012A1; DE102014101539A1; EP2395116A3; CN102266900A; CN113528940A; EP2730346A1; CN103805761A; EP2730665A1; EP2977472A1; EP2570204A3; CN104894352A; DE102014101539B4; DE102014101539B9; DE102011053672B4; US11131001B2; US9694408B2; WO2015158568A3; WO2017025632A1; WO2016012442A1; US10612108B2; EP2907881A2; EP2497840B1; EP2497840B2

Designated contracting state (EPC)

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

Designated extension state (EPC)

AL BA MK RS

DOCDB simple family (publication)

EP 2182081 A1 20100505; **EP 2182081 B1 20140122**; WO 2010048950 A1 20100506

DOCDB simple family (application)

EP 08105691 A 20081029; DE 2009075063 W 20091028