

Title (en)

THERMAL METHOD AND DEVICE FOR LOCALIZED STRENGTHENING OF THE EDGE LAYER ON A THICK-WALLED COMPONENT

Title (de)

THERMISCHES VERFAHREN UND VORRICHTUNG ZUR LOKALEN FESTIGKEITSSTEIGERUNG DER RANDSCHICHT BEI EINEM DICKWANDIGEN BAUTEIL

Title (fr)

PROCÉDÉ THERMIQUE ET DISPOSITIF POUR AUGMENTER LOCALEMENT LA SOLIDITÉ DE LA COUCHE MARGINALE D'UN ÉLÉMENT STRUCTURAL À PAROI ÉPAISSE

Publication

EP 3060688 A1 20160831 (DE)

Application

EP 14789199 A 20141010

Priority

- DE 102013221397 A 20131022
- EP 2014071760 W 20141010

Abstract (en)

[origin: WO2015058977A1] The invention relates to a thermal method and a device for localized strengthening of the edge layer (P1) of a continuous internal geometry (2) that is exposed to high pressure, of a thick-walled component (1) consisting of a martensitic temperable steel material, characterized by the following method steps: - Heating the entire component (1) to a temperature of between 820 to 1050 °C, - Localized quenching in the region of the internal geometry (2) of the component to a temperature of between 150 and 450 °, - Slow cooling of the component (1) from the region of the internal geometry (2) to the outer casing region (P2) at a temperature gradient of 1 to 100 °C per second until a temperature equilibrium is reached, - Final quenching of the component (1) to ambient temperature.

IPC 8 full level

C21D 9/00 (2006.01); **C21D 9/14** (2006.01); **C21D 11/00** (2006.01)

CPC (source: EP)

C21D 9/0068 (2013.01); **C21D 9/14** (2013.01); **C21D 11/005** (2013.01); **C21D 1/18** (2013.01); **C21D 1/19** (2013.01); **C21D 1/667** (2013.01); **C21D 9/08** (2013.01); **C21D 2221/10** (2013.01)

Citation (search report)

See references of WO 2015058977A1

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)

DE 102013221397 A1 20150423; CN 105658823 A 20160608; CN 105658823 B 20181009; EP 3060688 A1 20160831; WO 2015058977 A1 20150430

DOCDB simple family (application)

DE 102013221397 A 20131022; CN 201480057831 A 20141010; EP 14789199 A 20141010; EP 2014071760 W 20141010