

Title (en)

METHOD FOR HEAT-TREATING STRUCTURAL MATERIAL AND HEAT-TREATED STRUCTURAL MATERIAL

Title (de)

VERFAHREN ZUR WÄRMEBEHANDLUNG EINES STRUKTURMATERIALS UND WÄRMEBEHANDELTES STRUKTURMATERIAL

Title (fr)

PROCÉDÉ POUR LE TRAITEMENT THERMIQUE D'UN MATÉRIAU DE STRUCTURE ET MATÉRIAU DE STRUCTURE TRAITÉ THERMIQUEMENT

Publication

**EP 2610355 B1 20211110 (EN)**

Application

**EP 11820051 A 20110826**

Priority

- JP 2010190741 A 20100827
- JP 2011069324 W 20110826

Abstract (en)

[origin: EP2610355A1] A heat treatment method of a structural material which includes a bent portion that extends in one direction of the structural material and has a bend in a direction perpendicular to the one direction, includes: determining an effective width of the bent portion e; in a case where an area which includes the bent portion and of which a distance in the direction perpendicular to the one direction from the bent portion is within the effective width e is defined as an effective width area and a ratio of an area in the effective width area which is hardened by a heat treatment is defined as a hardening ratio f M , determining a range of the hardening ratio f M on the basis of a rate of change in a yield stress  $\Delta Y$  with respect to the hardening ratio f M ; and performing the heat treatment on the effective width area of the structural material to satisfy the range of the hardening ratio f M .

IPC 8 full level

**C21D 9/00** (2006.01); **C21D 1/02** (2006.01); **C21D 1/09** (2006.01); **C21D 1/18** (2006.01); **C22C 38/00** (2006.01); **C22C 38/04** (2006.01)

CPC (source: EP)

**C21D 1/02** (2013.01); **C21D 1/09** (2013.01); **C21D 1/18** (2013.01); **C21D 9/00** (2013.01); **C22C 38/00** (2013.01)

Cited by

EP4371859A3; US11548561B2; WO2020079027A1

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

DOCDB simple family (publication)

**EP 2610355 A1 20130703**; **EP 2610355 A4 20170830**; **EP 2610355 B1 20211110**; CN 103069021 A 20130424; CN 103069021 B 20140604; JP 5130498 B2 20130130; JP WO2012026591 A1 20131028; TW 201220110 A 20120516; TW I498765 B 20150901; WO 2012026591 A1 20120301

DOCDB simple family (application)

**EP 11820051 A 20110826**; CN 201180041017 A 20110826; JP 2011069324 W 20110826; JP 2012513793 A 20110826; TW 100130741 A 20110826