

Title (en)
METHOD FOR HEAT TREATING LONGER-LENGTH PRODUCT, METHOD FOR MANUFACTURING LONGER-LENGTH PRODUCT, AND HEAT TREATMENT FURNACE USED FOR SAID METHOD

Title (de)
WÄRMEBEHANDLUNGSVERFAHREN FÜR EIN LÄNGLICHES MATERIAL, HERSTELLUNGSVERFAHREN FÜR DAS LÄNGLICHE MATERIAL UND IN DIESEN VERFAHREN VERWENDETER WÄRMEBEHANDLUNGSOFEN

Title (fr)
PROCÉDÉ DE TRAITEMENT THERMIQUE D'UN LONG MATÉRIAU, PROCÉDÉ DE FABRICATION D'UN LONG MATÉRIAU ET FOUR DE TRAITEMENT THERMIQUE UTILISÉ DANS LES PROCÉDÉS SUSMENTIONNÉS

Publication
EP 2551361 B1 20190227 (EN)

Application
EP 11759011 A 20110323

Priority
• JP 2010069981 A 20100325
• JP 2011001684 W 20110323

Abstract (en)
[origin: EP2551361A1] Provided is a method for heat treating longer-length products, in which a cylindrical batch-type heat treatment furnace with opposite ends thereof being enclosed and with the inner space thereof being divided into a plurality of heating zones along a longitudinal direction is used, and a longer-length product to be heat treated is heat treated, wherein the heat treatment furnace is configured so that, endmost heating zones each is divided into a plurality of divisions each having a length shorter than that of each of heating zones other than the endmost heating zones; and a heat source is disposed in each of divisions and other heating zones, and the heat treating method includes a series of steps of: (Step 1) in advance, determining the heating output pattern of each heat source in each division of endmost heating zones based on the measurement result of actual temperature in the end portion of the product to be heat treated at the time of heating and (Step 2) controlling the heating output of individual heat source, at the time of heat treatment for the product to be heat treated, based on the heating output pattern of each heat source determined in step 1 and further the measurement result of in-furnace temperatures of each division of endmost heating zones and each of other heating zones. By using this heat treating method, even in the heat treatment furnace having no heat source on both end walls thereof, the product to be heat treated can be heated uniformly throughout the overall length of the product to be heat treated with high accuracy.

IPC 8 full level
C21D 9/08 (2006.01); **C21D 1/34** (2006.01); **C21D 9/00** (2006.01); **F27D 11/02** (2006.01); **F27D 19/00** (2006.01)

CPC (source: EP KR)
C21D 1/34 (2013.01 - EP KR); **C21D 9/0043** (2013.01 - EP); **C21D 9/08** (2013.01 - EP KR); **C21D 9/28** (2013.01 - EP); **C21D 11/00** (2013.01 - EP); **F27B 5/06** (2013.01 - EP); **F27B 17/0016** (2013.01 - EP); **F27D 11/02** (2013.01 - EP KR); **F27D 19/00** (2013.01 - KR); **F27D 99/0006** (2013.01 - EP); **F27B 2005/143** (2013.01 - EP); **F27D 2099/0008** (2013.01 - EP)

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 2551361 A1 20130130; **EP 2551361 A4 20170503**; **EP 2551361 B1 20190227**; CA 2790579 A1 20110929; CA 2790579 C 20151124; CN 102822358 A 20121212; CN 102822358 B 20140312; JP 4868091 B2 20120201; JP WO2011118201 A1 20130704; KR 101380456 B1 20140401; KR 20120130269 A 20121129; WO 2011118201 A1 20110929

DOCDB simple family (application)
EP 11759011 A 20110323; CA 2790579 A 20110323; CN 201180015842 A 20110323; JP 2011001684 W 20110323; JP 2011513797 A 20110323; KR 20127027374 A 20110323