

Title (en)

Method for as-cast production of ausferritic ductile iron

Title (de)

Verfahren zur Herstellung von ausferritischem Gusseisen mit Kugelgraphit

Title (fr)

Procédé de production de coulée de fonte ductile ausferritique

Publication

EP 2749658 A1 20140702 (EN)

Application

EP 12382541 A 20121227

Priority

EP 12382541 A 20121227

Abstract (en)

The present invention discloses a method for the manufacturing of ausferritic ductile iron alloy which comprises the following steps: (i) casting a melt of a ductile iron alloy in a mould; (ii) solidification of the casting in the mould and subsequent cooling until the casting temperature is between 800°C and 950°C; (iii) shaking out the casting at said temperature between 800°C and 950°C; (iv) cooling the casting until the temperature of the casting reaches a value between 275°C to 450°C with a high enough cooling rate in order to avoid the pearlitic nose; (v) introducing the casting in an insulating material and leaving the casting inside for a period of time until a completely ausferritic microstructure is obtained. The invention also discloses the ausferritic ductile iron alloy produced by the present method.

IPC 8 full level

C21D 5/00 (2006.01); **C21D 1/20** (2006.01); **C21D 1/68** (2006.01); **C21D 1/70** (2006.01); **C22C 37/04** (2006.01)

CPC (source: EP)

C21D 1/20 (2013.01); **C21D 1/68** (2013.01); **C21D 1/70** (2013.01); **C21D 5/00** (2013.01); **C22C 37/04** (2013.01)

Citation (applicant)

- NT.J.CAST METALS RES., vol. 11, 1999, pages 483 - 488
- ALI REZA KIANI-RASHID ET AL., INTERNATIONAL FOUNDRY RESEARCH, vol. 63, no. 1, 2011

Citation (search report)

- [X] US 5139579 A 19920818 - KOVACS BELA V [US], et al
- [A] US 4504527 A 19850312 - HARA SADA O [JP], et al
- [A] US 5753055 A 19980519 - LIU XIAOJUN [US]
- [A] US 2004071584 A1 20040415 - MOLINARI ALBERTO [IT], et al
- [A] US 5878897 A 19990309 - LAZZARO FRANK [US], et al
- [X] JANOWAK J F ET AL: "APPROACHING AUSTEMPERED DUCTILE IRON PROPERTIES BY CONTROLLED COOLING IN THE FOUNDRY", INTERNATIONAL CONFERENCE ON AUSTEMPERED DUCTILE IRON, XX, XX, 2 April 1984 (1984-04-02), pages 63 - 69, XP001182603
- [A] "Austempered ductile-iron castings - advantages, production, properties and specifications", MATERIALS AND DESIGN, LONDON, GB, vol. 13, no. 5, 1 January 1992 (1992-01-01), pages 285 - 297, XP024153210, ISSN: 0261-3069, [retrieved on 19920101], DOI: 10.1016/0261-3069(92)90191-J

Cited by

EP3026128A1; PL423974A1; CN110184426A; EP3088537A1; PL423973A1; CN110295265A; US9945003B2

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 2749658 A1 20140702

DOCDB simple family (application)

EP 12382541 A 20121227