

Title (en)
HADFIELD TYPE MANGANESE STEEL AND PROCESS FOR THE MANUFACTURE THEREOF

Publication
EP 0141804 B1 19880427 (DE)

Application
EP 84890187 A 19841011

Priority
CA 439018 A 19831014

Abstract (en)
[origin: EP0141804A1] 1. Process for the manufacture of a strain-hardening austenitic manganese steel known per se, with a break elongation between 10 % and 80 % measured according to L = 5 d to L = 10 d with a content in % by weight of carbon 0.7 to 1.7, manganese 5.0 to 18.0 chromium 0 to 3.0, nickel 0 to 4.0, molybdenum 0 to 2.5, silicon 0.1 to 0.9, possibly zirkonium 0.01 to 0.05 phosphorus max. 0.1, possibly to 0.05 % aluminium, provided that the carbon manganese ration is between 1 : 4 and : 14 and the content of micro-alloy elements in % by weight titanium more than 0.05 to 0.09, vanadium 0 to 0.5, the rest iron and melt-dependent contaminants ; whereby in an electric furnace a charge is melted, after which calcareous slag-forming additives are added to the liquid melt, the desired composition is adjusted and brought to a tapping temperature of 1450 to 1600 degrees C, de-oxidised with an element having an affinity for oxygen and tapped into the pouring ladle, and in the pouring ladle the content of micro-alloy elements is adjusted, whereby the melt is poured at a temperature between 1420 and 1520 degrees C, characterized in that the addition of manganese or of manganese alloy takes place in two steps whereby the second addition of 5 to 25 % by weight of the total addition of manganese or manganese alloy takes place at a temperature of the melt below 1520 degrees C, and the melting temperature s kept below this temperature up to pouring.

IPC 1-7
C22C 38/04; **C21D 6/00**

IPC 8 full level
B22D 1/00 (2006.01); **C22C 38/00** (2006.01); **C22C 38/04** (2006.01)

CPC (source: EP KR)
C22C 38/04 (2013.01 - EP); **C22C 38/50** (2013.01 - KR)

Citation (examination)
EP 0143873 A1 19850612 - KOS BERND

Cited by
CN103540855A; EP1337679A4; CN113088809A; CN113444985A; FR2795754A1; TWI450973B

Designated contracting state (EPC)
BE FR GB IT

DOCDB simple family (publication)
EP 0141804 A1 19850515; **EP 0141804 B1 19880427**; AU 3306084 A 19850418; AU 575344 B2 19880728; CA 1221560 A 19870512; ES 536710 A0 19850701; ES 8506361 A1 19850701; JP S6096750 A 19850530; KR 850003907 A 19850629; NO 163289 B 19900122; NO 163289 C 19900502; NO 844007 L 19850415; PH 21553 A 19871211; ZA 847371 B 19850529

DOCDB simple family (application)
EP 84890187 A 19841011; AU 3306084 A 19840914; CA 439018 A 19831014; ES 536710 A 19841011; JP 21275584 A 19841012; KR 840005850 A 19840924; NO 844007 A 19841005; PH 31331 A 19841012; ZA 847371 A 19840919