

Title (en)
METHOD FOR MANUFACTURING A METAL COATED AND HOT-FORMED STEEL COMPONENT AND A METAL COATED STEEL STRIP PRODUCT

Title (de)
VERFAHREN ZUM HERSTELLEN EINES METALLBESCHICHTETEN UND HEISSGEFORMTEN STAHLBAUTEILS UND EINES METALLBESCHICHTETEN STAHLBANDPRODUKTS

Title (fr)
PROCÉDÉ POUR LA FABRICATION D'UN COMPOSANT EN ACIER MÉTALLISÉ ET FORMÉ À CHAUD ET PRODUIT DE TYPE BANDE D'ACIER MÉTALLISÉ

Publication
EP 2959030 A4 20160817 (EN)

Application
EP 14754753 A 20140221

Priority
• FI 20135173 A 20130222
• IB 2014059153 W 20140221

Abstract (en)
[origin: WO2014128656A1] The present invention relates to a method for manufacturing a metal coated and hot-formed steel component by direct hot-forming techniques and to a metal coated steel strip product for direct hot-forming. Improvements in mechanical properties of the metal coated and hot-formed steel component are difficult to be obtained without weakening the weldability. According to the invention, the grain structure of a metal coated steel strip made of hardenable steel alloy is deformed comprising non-recrystallized grains and a yield ratio (YS/TS) of said steel strip is higher than 0.75. Recrystallization of said grain structure is at least retarded or even totally avoided or leaved out prior to and during applying metal coating on the surface of the steel strip. This kind of material cannot be used in indirect press hardening, but fits excellently to direct hot press forming and provides possibility to affect mechanical properties without weakening weldability.

IPC 8 full level
C23C 2/02 (2006.01); **C21D 1/673** (2006.01); **C21D 6/00** (2006.01); **C21D 7/13** (2006.01); **C21D 8/02** (2006.01); **C21D 8/04** (2006.01); **C21D 9/52** (2006.01); **C23C 2/06** (2006.01); **C23C 2/26** (2006.01); **C23C 2/28** (2006.01); **C23C 2/40** (2006.01); **C25D 5/36** (2006.01); **C25D 5/50** (2006.01); **C25D 7/06** (2006.01); **C21D 9/48** (2006.01)

CPC (source: EP FI US)
C21D 1/673 (2013.01 - EP); **C21D 6/005** (2013.01 - EP); **C21D 7/13** (2013.01 - EP FI); **C21D 8/0205** (2013.01 - FI); **C21D 8/0473** (2013.01 - EP); **C21D 8/0478** (2013.01 - EP); **C21D 9/46** (2013.01 - FI); **C21D 9/52** (2013.01 - FI); **C23C 2/02** (2013.01 - EP FI US); **C23C 2/022** (2022.08 - EP FI US); **C23C 2/0224** (2022.08 - EP FI US); **C23C 2/04** (2013.01 - FI); **C23C 2/06** (2013.01 - EP); **C23C 2/26** (2013.01 - EP FI US); **C23C 2/28** (2013.01 - EP FI US); **C23C 2/29** (2022.08 - EP FI US); **C23C 2/40** (2013.01 - EP FI); **C25D 5/36** (2013.01 - EP); **C25D 5/50** (2013.01 - EP); **C25D 7/0614** (2013.01 - EP); **C21D 9/48** (2013.01 - EP); **C21D 2211/001** (2013.01 - EP); **C21D 2211/005** (2013.01 - EP); **C21D 2211/008** (2013.01 - EP)

Citation (search report)
• [XYI] CA 2814630 A1 20120426 - NIPPON STEEL & SUMITOMO METAL CORP [JP]
• [XAYI] JP 2008156680 A 20080710 - NIPPON STEEL CORP & DATABASE WPI Week 200850, Derwent World Patents Index; AN 2008-H87811
• [Y] US 5069981 A 19911203 - OISHI HIROSHI [JP], et al
• [Y] JP H01127622 A 19890519 - KAWASAKI STEEL CO & DATABASE WPI Week 198926, Derwent World Patents Index; AN 1989-188859
• [A] JP 2006274378 A 20061012 - NIPPON STEEL CORP & DATABASE WPI Week 200678, Derwent World Patents Index; AN 2006-760650
• [A] WO 2012028224 A1 20120308 - TATA STEEL IJMUIDEN BV [NL], et al
• See references of WO 2014128656A1

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)
WO 2014128656 A1 20140828; CN 105143493 A 20151209; EP 2959030 A1 20151230; EP 2959030 A4 20160817; FI 124825 B 20150213; FI 20135173 A 20140823

DOCDB simple family (application)
IB 2014059153 W 20140221; CN 201480022812 A 20140221; EP 14754753 A 20140221; FI 20135173 A 20130222