

Title (en)
METHOD FOR PRODUCING HOT-ROLLED HOLLOW PROFILED ELEMENTS HAVING A RECTANGULAR CROSS-SECTION AND SMALL EDGE RADII

Title (de)
VERFAHREN ZUR HERSTELLUNG WARMGEWALZTER HOHLPROFILE MIT RECHTECKIGEM QUERSCHNITT UND MIT KLEINEN KANTENRADIEN

Title (fr)
PROCÉDÉ DE FABRICATION DE PROFILÉS CREUX À PETITS RAYONS D'ARÊTES PAR LAMINAGE À CHAUD

Publication
EP 2470315 B1 20170802 (DE)

Application
EP 10752278 A 20100812

Priority
• DE 102009039710 A 20090828
• DE 2010000974 W 20100812

Abstract (en)
[origin: WO2011023167A2] The invention relates to a method for producing hot-rolled hollow profiled elements made of steel having a rectangular or square cross-section, wherein a substantially round pipe blank produced seamlessly by hot rolling or cold-rolled and welded and having a defined nominal outside diameter is first produced and then is formed into a hollow profiled element having the required cross-section at a forming temperature and the visible edges C1 and C2 of the hollow profiled elements have a value $= 1.5 \times t$ (t = wall thickness). For a specified profiled element cross-section, the pipe blank to be inserted into the profile rolling mill has a nominal outside diameter that is determined from a reduction ratio of the pipe blank to be achieved and the hollow profiled element dimensions to be achieved, wherein the reduction ratio lies in a range from -2% to -13% and is determined according to the following formula: reduction ratio R [%] = $[(2 \times (H + W)) - p \times D] \times 100 \% [2 \times (H + W)]$.

IPC 8 full level
B21D 47/01 (2006.01); **B21D 3/14** (2006.01); **E04C 3/32** (2006.01)

CPC (source: EP KR US)
B21C 37/15 (2013.01 - KR US); **B21D 3/14** (2013.01 - EP KR US); **B21D 3/16** (2013.01 - KR); **B21D 47/01** (2013.01 - EP KR US); **B66C 23/286** (2013.01 - EP KR US); **B66C 23/62** (2013.01 - EP KR US); **E04C 3/32** (2013.01 - KR); **Y10T 428/12292** (2015.01 - EP US)

Citation (examination)
• DE 843834 C 19520714 - DEUTSCHE EDELSTAHLWERKE AG
• EP 0405065 A2 19910102 - HOESCH AG [DE]
• US 1019968 A 19120312 - KOENIG ROBERT [US]

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 SE SI SK SM TR

DOCDB simple family (publication)
WO 2011023167 A2 20110303; WO 2011023167 A3 20110428; BR 112012004309 A2 20160315; BR 112012004309 B1 20201027; CN 102574191 A 20120711; CN 102574191 B 20151014; DE 102009039710 A1 20110331; DE 102009039710 B4 20140320; EP 2470315 A2 20120704; EP 2470315 B1 20170802; ES 2645756 T3 20171207; KR 101766692 B1 20170809; KR 20120089639 A 20120813; PL 2470315 T3 20171229; US 2012244372 A1 20120927; US 9056344 B2 20150616

DOCDB simple family (application)
DE 2010000974 W 20100812; BR 112012004309 A 20100812; CN 201080038616 A 20100812; DE 102009039710 A 20090828; EP 10752278 A 20100812; ES 10752278 T 20100812; KR 20127005250 A 20100812; PL 10752278 T 20100812; US 201013393030 A 20100812