

Title (en)
METHOD FOR PRODUCING STEEL PIPE

Title (de)
VERFAHREN ZUR HERSTELLUNG EINES STAHLROHRS

Title (fr)
PROCÉDÉ DE FABRICATION D'UN TUBE D'ACIER

Publication
EP 3006133 B1 20170816 (EN)

Application
EP 13885377 A 20130524

Priority
JP 2013064525 W 20130524

Abstract (en)
[origin: EP3006133A1] A method for manufacturing a steel pipe includes forming a steel plate into a cylindrical shape by a bending press method that presses down the steel plate with a punch having, at a leading edge thereof, an outer circumferential surface with a circular arcuate section so that edges in a width direction of the steel plate face each other; butting and welding together the edges in the width direction of the steel plate; and expanding the steel pipe from the inside using a pipe expanding machine in which a plurality of pipe expanding dies having an outer circumferential surface with a circular arcuate section are circumferentially arranged, wherein a pipe expanding R ratio that is a ratio of a curvature radius of the outer circumferential surface of each of the pipe expanding dies to a target radius of an inner surface of the steel pipe and a punch R ratio that is a ratio of a curvature radius of an outer circumferential surface of a leading end of the punch to the target radius of the inner surface of the steel pipe are both less than 1, and the pipe expanding R ratio and the punch R ratio satisfy a predetermined conditional expression. As a result, a steel pipe with high roundness can be manufactured without cracking a pipe expanding die.

IPC 8 full level
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JP 2012170977 A 20120910 - JFE STEEL CORP

Citation (opposition)
Opponent : SMS group GmbH
• JP 2012170977 A 20120910 - JFE STEEL CORP
• JP S59183943 A 19841019 - SUMITOMO METAL IND
• JP 2001113316 A 20010424 - KAWASAKI STEEL CO, et al
• M.D. HERYNK, S. KYRIAKIDES, A. ONOUFRIOU, H.D. YUN: "Effects of the UOE/UOC pipe manufacturing processes on pipe collapse pressure", INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES, vol. 49, no. 5, 1 May 2007 (2007-05-01), pages 533 - 553, XP055496653
• JAI DEV CHANDEL, NAND LAL SINGH: "Formation of X-120 M Line Pipe through J-C-O-E Technique", ENGINEERING, vol. 3, 1 January 2011 (2011-01-01), pages 400 - 410, XP055496657
• GERHARD OEHLER: "Schnitt-, Stanz- und Ziehwerkzeuge", 1973, SPRINGER VERLAG, pages: 1pp, 222 - 224, XP055496660
• KURT LANGE: "Handbook of metal forming", 1985, MCGRAW-HILL, INC., pages: 1pp, v, 19.8 - 19.9, XP055496663

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