

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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