

Title (en)  
PRODUCTION METHOD FOR A HIGH-STRENGTH THICK STEEL PLATE FOR CONSTRUCTION HAVING EXCELLENT CHARACTERISTICS FOR PREVENTING DIFFUSION OF BRITTLE CRACKS,

Title (de)  
HERSTELLUNGSVERFAHREN FÜR EINE HOCHFESTE DICKE STAHLPLATTE ZUR KONSTRUKTION MIT HERVORRAGENDEN MAGNETISCHEN EIGENSCHAFTEN ZUR VERHINDERUNG DER DIFFUSION VON SPRÖDEN RISSEN

Title (fr)  
PROCÉDÉ DE FABRICATION D'UNE PLAQUE D'ACIER ÉPAISSE DE HAUTE RÉSISTANCE MÉCANIQUE POUR STRUCTURE DOTÉE D'EXCELLENTE PROPRIÉTÉS D'ARRÊT DE PROPAGATION DE FISSURES CASSANTES

Publication  
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Application  
**EP 12863408 A 20120518**

Priority  
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Abstract (en)  
[origin: EP2799584A1] Provided is a high-strength thick steel plate for structural use having a thickness of 50 mm or more and excellent brittle crack arrestability which can be preferably used for ships and a method for manufacturing the steel plate. The steel plate with excellent brittle crack arrestability has a metallographic structure mainly including a bainite phase, a texture in which the integration degree I of the RD//{110} plane in a central portion in the thickness direction is 1.5 or more, and a Charpy fracture appearance transition temperature  $vTrs$  in a surface portion and the central portion in the thickness direction of  $-40^{\circ}C$  or lower. Further, the steel plate preferably has the Charpy fracture appearance transition temperature and the integration degree I of the RD//{110} plane in the central portion in the thickness direction satisfying the relational expression (1) below:  $vTrs \cdot 1/2 \cdot \sqrt{I} \cdot RD // \{110\} \cdot 1/2 \cdot \sqrt{I} \cdot t \cdot \pi - 70$  where  $vTrs$  (1/2t) : fracture appearance transition temperature ( $^{\circ}C$ ) in the central portion in the thickness direction and I RD//{110} [1/2t] : integration degree of the RD//{110} plane in the central portion in the thickness direction.

IPC 8 full level  
**C21D 8/02** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/08** (2006.01); **C22C 38/12** (2006.01); **C22C 38/14** (2006.01); **C22C 38/16** (2006.01); **C22C 38/18** (2006.01); **C22C 38/58** (2006.01)

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SERAJZADEH S ET AL: "Prediction of temperature distribution in the hot rolling of slabs; Prediction of temperature distribution", MODELLING AND SIMULATION IN MATERIALS SCIENCE AND ENGINEERING, IOP PUBLISHING, BRISTOL, GB, vol. 10, no. 2, 1 March 2002 (2002-03-01), pages 185 - 203, XP020072682, ISSN: 0965-0393, DOI: 10.1088/0965-0393/10/2/306

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