

Title (en)
THICK HIGH-STRENGTH STEEL PLATE AND PROCESS FOR PRODUCING THE SAME

Title (de)
DICKE HOCHFESTE STAHLPLATTE UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)
PLAQUE D'ACIER ÉPAISSE DE HAUTE RÉSISTANCE ET SON PROCÉDÉ DE FABRICATION

Publication
EP 2119803 A1 20091118 (EN)

Application
EP 08721186 A 20080303

Priority
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Abstract (en)
A high-strength thick steel plate having a composition of Ni-containing steel and bainite-dominated structure, wherein a pearlite fraction is not greater than 5%, fraction of coarse ferrite having a circle equivalent diameter of larger than 25 μm is not greater than 10% in front and back surface portions each having a depth of 5% of the plate thickness, mean circle equivalent diameter of cementite is not greater than 0.5 μm , and mean circle equivalent diameter of iso-crack propagation resisting domains is not greater than $d(\mu\text{m}) = (7.1 \times [\text{Ni}] + 11) \times (1.2 - t/300)$ (μm), where each of the iso-crack propagation resisting domains is defined such that inner portion excluding the surface portions in a section perpendicular to the rolling direction of the steel plate is partitioned to iso-orientation domains, the measuring line of cutting method is drawn along T direction in parallel to the plate thickness, the plural iso-orientation domains continuously aligned and adjacent to each other are identified excluding iso-orientation domains having a circle equivalent diameter of smaller than 8 μm , the angle between <001> axes close to the T direction of each pair of the identified iso-orientation domains is measured, and the continuously aligned iso-orientation domains satisfying the angle of not greater than 20° are regarded to constitute one iso-crack propagation resisting domain.

IPC 8 full level
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Cited by
EP3239330A4; EP3239332A4; EP3239331A4; EP2860276A4; EP2698442A4; CN107406951A; EP3279351A4; US10544478B2; US10640841B2; US10883159B2; US9719151B2; US10822671B2

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