

Title (en)
STEEL PLATE EXCELLENT IN RESISTANCE OF DUCTILE CRACK INITIATION FROM WELDED HEAT-AFFECTED ZONE AND BASE MATERIAL AND MANUFACTURING METHOD THEREFOR

Title (de)
STAHLPLATTE MIT HERVORRAGENDEM WIDERSTAND GEGEN DUKTILE RISSBILDUNG IN DER SCHWEISS-WÄRMEEINFLUSSZONE UND AUSGANGSMATERIAL UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)
PLAQUE D'ACIER PRESENTANT D'EXCELLENTE RESISTANCE CONTRE LA FORMATION DE FISSURES DUCTILES DANS UNE ZONE AFFECTEE PAR LA CHALEUR DE SOUDURE, MATERIAU DE BASE ET PROCEDE DE FABRICATION ASSOCIES

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Application
EP 09835126 A 20091225

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• JP 2008333205 A 20081226

Abstract (en)
This invention relates to steel materials suitable for use in welded structures, such as pipelines, bridges, and architectural structures, requiring structural safety and a method for manufacturing the same and particularly relates to improvement of resistance of ductile crack initiation from welded heat affected zone and a base material. Specifically, a steel material has a composition of C: 0.02 to 0.2%, Si: 0.01 to 0.5%, Mn: 0.5 to 2.5%, P: 0.05% or lower, S: 0.05% or lower, Al: 0.1% or lower, and N: 0.01% or lower and, as required, one or two or more elements selected from Cu: 0.01 to 2%, Ni: 0.01 to 5%, Cr: 0.01 to 3%, Mo: 0.01 to 2%, Nb: 0.1% or lower, V: 0.1% or lower, Ti: 0.1% or lower, B: 0.01% or lower, Ca: 0.01% or lower, and REM: 0.1 % or lower in terms of % by mass, and the balance Fe with inevitable impurities, in which the microstructure at the 1/4 position of the plate thickness contains ferrite and a hard phase, the area fraction of the hard phase is 50 to 90%, and the average aspect ratio of the ferrite is 1.5 or more.

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Cited by
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