

Title (en)  
STEEL PLATE FOR LINE PIPE, AND LINE PIPE

Title (de)  
STAHLPLATTE FÜR EIN LEITUNGSROHR UND LEITUNGSROHR

Title (fr)  
TÔLE D'ACIER POUR TUBE DE CANALISATION ET TUBE DE CANALISATION

Publication  
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Application  
**EP 14829550 A 20140723**

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• JP 2014069471 W 20140723

Abstract (en)  
[origin: EP3026140A1] A steel plate for a line pipe, the steel plate having a plate thickness of 25 mm or more comprising in terms of mass%: 0.040 to 0.080% of C, 0.05 to 0.40% of Si, 1.60 to 2.00% of Mn, 0.020% or less of P, 0.0025% or less of S, 0.05 to 0.20% of Mo, 0.0011 to 0.0050% of Ca, 0.060% or less of Al, 0.010 to 0.030% of Nb, 0.008 to 0.020% of Ti, 0.0015 to 0.0060% of N, and 0.0040% or less of O, a remainder consisting of Fe and unavoidable impurities, wherein a content ratio of Ca to S [Ca/S] is from 0.90 to 2.70, and a content ratio of Ti to N [Ti/N] is 2.20 or higher" wherein Ceq, which is defined by the following Formula (1), is from 0.380 to 0.480:  $Ceq = C + Mn/6 + (Ni + Cu)/15 + (Cr + Mo + V)/5$ ; and wherein: at a position of 1/4 of the plate thickness, a ferrite fraction (F1) is from 20 to 60% and a remainder is a structure of bainite; at a position of 1/2 of the plate thickness, a ferrite fraction (F2) is from 5 to 60% and a remainder is a structure of bainite or a structure of bainite and martensite; a ratio (F1/F2) of the ferrite fraction (F1) to the ferrite fraction (F2) is from 1.00 to 5.00; at a position of 1/4 of the plate thickness an average grain diameter of ferrite is from 2.0 to 15.0  $\mu m$ , and at a position of 1/2 of the plate thickness the average grain diameter of ferrite is from 5.0 to 20.0  $\mu m$ ; and the hardness at a position of 1/2 of the plate thickness is 400 Hv or less, and the length of MnS at a position of 1/2 of the plate thickness is 1.00 mm or less.

IPC 8 full level  
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