Title (en)

METHOD FOR PRODUCING A LEAN DUPLEX STAINLESS STEEL

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES LEAN DUPLEX EDELSTAHLS

Title (fr)

PROCÉDÉ DE PRODUCTION D'UN ACIER INOXYDABLE LEAN DUPLEX

Publication

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Application

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Abstract (en)

[origin: EP3239344A1] The present invention relates to lean duplex stainless steel having a dual-phase structure of an austenite phase and a ferrite phase, and a method for producing the lean duplex stainless steel, the lean duplex stainless steel according to one embodiment of the present invention, as a ferrite-austenite stainless steel, having the preferred stacking fault energy (SFE) value of the austenite phase, expressed by the formula 2 below, of 19-37 and critical strain value range, within which the strain-induced martensite phases occurs, of 0.1-0.25. SFE = 25.7 + 1.59 × Ni / K Ni ## K Ni × V ³ + V ³ + 0.795 × Cu / K Cu ## K Cu × V ³ + V ³ ## 0.85 × Cr / K Cr ## K Cr × V ³ + V ³ + 0.001 × Cr / K Cr ## K Cr + V ³ + V ³ 2 + 38.2 × N / K N ## K N × V ³ + V ³ 0.5 ## 2.8 × Si / K Si ## K Si × V ³ + V ³ ## 1.34 × Mn / K Mn ## K Mn + V ³ + V ³ + 0.06 × Mn / K Mn ## K Mn × V ³ + V ³ 2 where Ni, Cu, Cr, N, Si and Mn indicate the overall content (wt.%) of the respective constituent element, and K(x) is the distribution index of respective constituent element (x) and is expressed by the formula 3 below, and V(³) is the component ratio of austenite (in the 0.45-0.75 range). K x = amount of element x in ferrite phase / amount of element x in austenite phase

IPC 8 full level

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