

Title (en)
LEAN DUPLEX STAINLESS STEEL AND METHOD FOR PRODUCING SAME

Title (de)
DÜNNER DUPLEX-EDELSTAHL UND VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)
ACIER INOXYDABLE DUPLEX PAUVRE ET SON PROCÉDÉ DE PRODUCTION

Publication
EP 3239344 A4 20180530 (EN)

Application
EP 15873672 A 20151224

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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. $SFE = 25.7 + 1.59 \times Ni / K Ni \## K Ni \times V^3 + V^3 + 0.795 \times Cu / K Cu \## K Cu \times V^3 + V^3 \## 0.85 \times Cr / K Cr \## K Cr \times V^3 + V^3 + 0.001 \times Cr / K Cr \## K Cr + V^3 + V^3 \times 2 + 38.2 \times N / K N \## K N \times V^3 + V^3 \times 0.5 \## 2.8 \times Si / K Si \## K Si \times V^3 + V^3 \## 1.34 \times Mn / K Mn \## K Mn + V^3 + V^3 + 0.06 \times Mn / K Mn \## K Mn \times V^3 + V^3 \times 2$ 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). $K x = \text{amount of element x in ferrite phase} / \text{amount of element x in austenite phase}$

IPC 8 full level
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