

Title (en)

LOW DENSITY STEEL WITH GOOD STAMPING CAPABILITY

Title (de)

STAHL VON GERINGER DICHTHE MIT GUTEN PRÄGEEIGENSCHAFTEN

Title (fr)

ACIER A FAIBLE DENSITE PRESENTANT UNE BONNE APTITUDE A L'EMBOUTISSAGE

Publication

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Application

EP 08805524 A 20080429

Priority

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Abstract (en)

[origin: EP1995336A1] Ferritic stainless steel sheet composition comprises: carbon (C) (0.001-0.15 wt.%); manganese (Mn) (= 1 wt.%); silicon (= 1.5 wt.%); aluminum (Al) (6-10 wt.%); titanium (0.020-0.5 wt.%); sulfur (= 0.050 wt.%); and phosphorus (= 0.1 wt.%); and optionally one or more elements comprising chromium (= 1 wt.%); molybdenum (= 1 wt.%); nickel (= 1 wt.%); niobium (= 0.1 wt.%); vanadium (= 0.2 wt.%); and boron (= 0.010 wt.%), where the rest of the composition is constituted of iron and unavoidable impurities resulting from elaboration. Independent claims are included for: (1) a manufacturing process of hot-rolled steel, comprising: supplying the steel composition; flowing the steel in the form of semi-finished product; carrying semi-finished product at temperature of ≥ 1150 [deg] C; hot-rolling the semi-finished product to obtain a sheet, by at least two rolling steps carried out at temperature greater than 1050[deg] C, where the reduction rate of each of two steps are $\geq 30\%$, and the time passes between each of two rolling steps and following rolling step is ≥ 10 seconds; rolling at a temperature (T(FL)) of ≥ 900 [deg] C; cooling the sheet, the time interval between time (t p) passes between 850-700[deg] C is greater than 3 seconds, to obtain a precipitation of precipitates (K); and spooling the sheet at a temperature (T b o b) of 500-700[deg] C; and (2) a manufacturing process of cold rolled and annealed steel sheet, comprising: supplying the hot-rolled steel sheet; cold rolling the sheet with a reduction rate of 30-90% to obtain a cold rolled sheet; heating the cold rolled sheet at a temperature (T') with a speed (V c) of greater than 3[deg] C/s; cooling the sheet at a speed (V(R)) of 100[deg] C/s; and the temperature (T') and the speed is obtained by a complete recrystallization, a linear fraction (f) of intergranular precipitates (K) of less than 30% and a carbon content in solid solution of less than 0.005 wt.%.

IPC 8 full level

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CPC (source: EP KR US)

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