

Title (en)

Stainless steel, method for manufacturing of stress cracking free workpieces and product made thereof

Title (de)

Nichtrostender Stahl, Verfahren zum Herstellen von spannungsrisssfreien Formteilen und Formteil

Title (fr)

Acier inoxydable, procédé de fabrication de pièces sans fissuration de tension et pièce obtenue

Publication

**EP 1352982 B1 20051005 (DE)**

Application

**EP 03008317 A 20030410**

Priority

DE 10215598 A 20020410

Abstract (en)

[origin: EP1352982A2] Stainless steel having a structure with at least 15 vol.% ferrite and a balance of austenite contains alloying additions of chromium and manganese, and optionally nickel, silicon, molybdenum, aluminum and copper. Stainless steel having a structure with at least 15 vol.% ferrite and a balance of austenite comprises (in wt.%): 0.02-0.08 carbon (C), 0.1-0.5 nitrogen (N), 16.0-20.0 chromium (Cr), 6.0-12.0 manganese (Mn), at most 9.05 nickel (Ni), at most 3.0 silicon (Si), at most 3.0 molybdenum (Mo), at most 2.0 aluminum (Al), at most 3.0 copper (Cu) and a balance of iron (Fe) and impurities (where  $1.3 < t < 1.8$  and  $t = (\%Cr + 2\%Mo + 1.5\%Si + 3\%Al - 5) / (0.3\%Mn + \%Ni + 0.5\%Cu + 15(\%C + \%N) + 2)$ ). Md30 temperature of the austenitic phase is not more than -55degrees C (where Md30 (degrees C) =  $413 - 462(\%C + \%N) - 9.2\%Si - 8.1\%Mn - 13.7\%Cr - 9.5(\%Ni + \%Cu) - 18.5\%Mo$ ). An Independent claim is also included for a process for the production of crack-free molded parts made from the above stainless steel. Preferred Features: The stainless steel structure comprises not more than 40 vol.% ferrite.

IPC 1-7

**C22C 38/38**; **C21D 8/00**

IPC 8 full level

**C21D 8/02** (2006.01); **C22C 38/00** (2006.01); **C22C 38/22** (2006.01); **C22C 38/34** (2006.01); **C22C 38/38** (2006.01); **C22C 38/44** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP)

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Cited by

DE102015005742A1; EP2163659A1; JP2012502186A; US2007163679A1; US8562758B2; KR101460279B1; CN105229177A; EP2566994A4; WO2012143610A1; WO2014135441A1; WO2010029012A1; WO2008099336A1; WO2006125412A1; US8608873B2; WO2011138503A1; US10161024B2; WO2011135170A1; US11286546B2; KR101375600B1

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DOCDB simple family (application)

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