

Title (en)
Shaped rolled product and method of making the same

Title (de)
Profiliertes Walzgut und Verfahren zu dessen Herstellung

Title (fr)
Laminé profilé et procédé pour sa fabrication

Publication
EP 0849368 B1 20040428 (DE)

Application
EP 97890249 A 19971216

Priority
AT 222296 A 19961219

Abstract (en)
[origin: EP0849368A1] A rolled profile, especially a road or railway rail, consists of an iron alloy which contains C, Si, Mn, optionally Cr, special carbide forming and transformation modifying elements and/or micro-alloying additions, balance Fe and impurities and which has a structure formed by accelerated cooling from the austenitic region. The novelty is that the iron alloy has a Si content of NOTGREATER 0.93 (preferably 0.21-0.69) wt.%, an Al content of NOTGREATER 0.06 (preferably less than 0.03) wt.%, a total Si + Al content of less than 0.99 wt.% and, over at least parts of its cross-section along its length, a structure formed by isothermal transformation of austenite in the lower intermediate phase or lower bainitic region. Preferably, the iron alloy contains (by wt.) 0.41-1.3 (preferably 0.51-0.98) % C, 0.31-2.55 (preferably 0.91-1.95) % Mn and balance Fe, preferably with addition of 0.21-2.45 (preferably 0.38-1.95) % Cr and optionally up to 0.88 (preferably up to 0.49) % Mo, up to 1.69 (preferably up to 0.95) % W, up to 0.39 (preferably up to 0.19) % V, up to 0.28 (preferably up to 0.19) % total of Nb, Ta, Zr, Hf and/or Ti, up to 2.4 (preferably up to 0.95) % Ni and up to 0.006 (preferably up to 0.004) % B. Also claimed is production of the above rolled profile, in which (a) the alloy composition is chosen within narrow limits which determine the transformation behaviour on cooling from the f.c.c. structure or austenitic region; and (b) the rolled profile, produced from the alloy, is cooled to between the martensite point and a temperature NOTGREATER 250 (preferably NOTGREATER 190, especially 5-110) degrees C above the martensite point and then allowed to transform isothermally.

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IPC 8 full level
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