

Title (en)
METHOD FOR PRODUCING HIGH-STRENGTH SEAMLESS STEEL PIPES

Publication
EP 0370588 B1 19930526 (DE)

Application
EP 89250030 A 19890907

Priority
DE 3832014 A 19880916

Abstract (en)
[origin: US5019180A] A method of manufacturing high-strength seamless steel tubes by hot-rolling followed by accelerated cooling in which feed ingots of a steel annealed with aluminum and/or silicon of the following composition in weight per cent: -0.08-0.13% C -1.40-1.90% Mn -0.20-0.50% Cr - 0-0.50% Mo - 0-0.70% Ni - 0-0.40% Cu -0.04-0.13% V -max. 0.020% P -max. 0.010% S - and wherein the balance comprises iron and ordinary impurities, the sum of the contents of Cr and Mo is within the range of about 0.20 to about 0.70% and the Cu/Ni quantity ratio in case of the presence of both elements is limited to at most 1, are heated to a temperature of about 1150 DEG to about 1280 DEG C. and hot-rolled into tubes in multiple stages and, after leaving the last hot-rolling stage, the tubes which have a temperature above Ar3 are quenched directly from the rolling heating in about 5 to about 50 seconds, substantially avoiding formation of ferrite, down to a temperature range of about 340 DEG -560 DEG C. and thereafter the tubes are further cooled in air.

IPC 1-7
C21D 1/20; C21D 8/10

IPC 8 full level
C21D 1/20 (2006.01); **C21D 8/10** (2006.01); **C21D 9/08** (2006.01); **C22C 38/00** (2006.01); **C22C 38/46** (2006.01); **C22C 38/48** (2006.01)

CPC (source: EP US)
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Cited by
EP0526330A1; FR2679924A1

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US 5019180 A 19910528; AT E89869 T1 19930615; DE 3832014 A1 19900322; DE 3832014 C2 19941124; DE 58904493 D1 19930701; EP 0370588 A1 19900530; EP 0370588 B1 19930526; JP H02115318 A 19900427

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