

Title (en)

MECHANICAL STRUCTURE STEEL FOR COLD-WORKING AND MANUFACTURING METHOD THEREFOR

Title (de)

STAHL FÜR MECHANISCHE STRUKTUREN ZUR KALTBEARBEITUNG UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

ACIER POUR STRUCTURE MÉCANIQUE POUR TRAVAIL À FROID ET SON PROCÉDÉ DE FABRICATION

Publication

EP 3342892 A4 20190116 (EN)

Application

EP 16839120 A 20160812

Priority

- JP 2015166030 A 20150825
- JP 2016124959 A 20160623
- JP 2016073769 W 20160812

Abstract (en)

[origin: EP3342892A1] To provide a mechanical structure steel for cold-working that enables the achievement of the spheroidization equal to or better than that in a prior steel and can also be more softened than the prior steel, even when the time for the spheroidizing annealing is shorter than a usual spheroidizing annealing time; and a method for manufacturing the mechanical structure steel. The present disclosure relates to a mechanical structure steel for cold-working that includes C, Si, Mn, P, S, Al, and N and has a metal microstructure including proeutectoid ferrite and pearlite, in which a total area ratio of the proeutectoid ferrite and the pearlite with respect to the entire microstructure is 90% or more, while an area ratio A_f of the proeutectoid ferrite with respect to the entire microstructure satisfies a relationship of $A_f \geq A$ where an A value is represented by formula (1) below, an average circle equivalent diameter of a bcc-Fe crystal grain is in a range of 15 to 30 μm , and a pearlite lamellar spacing is 0.20 μm or less on average: $A = 103 \times 128 \times C \% \times 0.80 \% \text{ where } [C (\%)]$ in the formula (1) indicates the C content in percent by mass.

IPC 8 full level

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CPC (source: EP KR US)

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Citation (search report)

- [I] EP 2796586 A1 20141029 - KOBE STEEL LTD [JP]
- [Y] JP 2013007089 A 20130110 - KOBE STEEL LTD
- [Y] JP H0953142 A 19970225 - SUMITOMO METAL IND
- See references of WO 2017033773A1

Cited by

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Designated contracting state (EPC)

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