

## Title (en)

Ferritic steel and its manufacture and use

## Title (de)

Ferritischer Stahl und Verfahren zu seiner Herstellung und Verwendung

## Title (fr)

Acier ferritique; sa fabrication et son utilisation

## Publication

**EP 0750049 A1 19961227 (DE)**

## Application

**EP 96107884 A 19960517**

## Priority

- DE 19521836 A 19950616
- DE 19605696 A 19960216

## Abstract (en)

A ferritic steel contains (wt. %) 0.05-0.3 C, 0.8-3.0 Mn, 0.4-2.5 Al, < 0.2 Si, < 0.08 P, < 0.05 S, balance Fe and unavoidable impurities.  $C_{eq} = \%C + <1>/20\%Mn + <1>/20\%Cr + <1>/15\%Mo = 0.1-0.325$ .  $Al \geq 7.6C_{eq} - 0.36$  wt. %. Also claimed is a process for producing the above steel having high strength, good cold workability and surface quality in the hot-rolled state and good cold-rollability with a structure consisting predominantly of pre-eutectic ferrite and smaller proportions of martensite and/or bainite and/or residual austenite, which is cast into a blank, hot rolled with a starting temperature of above 1000 degrees C and an end temperature (ET) in the region  $Ar3 - 50$  degrees C < ET <  $Ar3 + 100$  degrees C, cooled from the ET at a rate of 15-70 K/s to the coiling temperature which is below 500 degrees C, and coiled.

## Abstract (de)

Die Erfindung betrifft einen Dualphasenstahl mit überwiegend polygonal-ferritischem Gefüge, in dem eine kohlenstoffangereicherte perlitfreie harte zweite Phase eingelagert ist, die aus Martensit und/oder Bainit und/oder Restaustenit besteht, mit hoher Festigkeit und guter Umformbarkeit sowie verbesserter Oberflächenqualität nach einer Warmverformung, ein Verfahren zu seiner Herstellung und Verwendung. <IMAGE>

## IPC 1-7

**C21D 8/02**; **C22C 38/06**

## IPC 8 full level

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## Citation (applicant)

- DE 2924340 C2 19851017
- EP 0072867 B1 19860416
- DE 3440752 C2 19870806

## Citation (search report)

- [X] BE 899253 A 19840716 - GIELEN PAUL M E L
- [A] FR 2253841 A1 19750704 - CENTRO SPERIMENT METALLURG [IT]
- [A] US 4316753 A 19820223 - KANEKO KUNISHIGE, et al
- [A] EP 0586704 A1 19940316 - NIPPON STEEL CORP [JP]
- [PX] US 5470529 A 19951128 - NOMURA SHIGEKI [JP], et al
- [X] PATENT ABSTRACTS OF JAPAN vol. 018, no. 668 (C - 1289) 16 December 1994 (1994-12-16)
- [X] PATENT ABSTRACTS OF JAPAN vol. 017, no. 373 (C - 1083) 14 July 1993 (1993-07-14)

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