

Title (en)  
HIGH STRENGTH COLD ROLLED STEEL SHEET WITH SUPERIOR FORMABILITY AND WELDABILITY, AND MANUFACTURING METHOD THEREFOR

Title (de)  
HOCHFESTES KALTGEWALZTES STAHLBLECH MIT ÜBERLEGENER FORMBARKEIT UND SCHWEISSBARKEIT UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)  
FEUILLE D'ACIER DE HAUTE RESISTANCE LAMINEE A FROID DOTEE DE CARACTERISTIQUES SUPERIEURES DE FORMABILITE ET DE SOUDABILITE, ET PROCEDE DE FABRICATION

Publication  
**EP 1458896 A1 20040922 (EN)**

Application  
**EP 02741471 A 20020620**

Priority  
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• KR 20010085539 A 20011227

Abstract (en)  
[origin: WO03056041A1] A high strength cold-rolled steel sheet, which simultaneously provides a tensile strength of 70 to 90 kgf/mm<sup>2</sup> grade and is easily formed, thereby increasing an impact energy absorption in case of collision and enhancing the safety of automobiles, and its manufacturing method. The high strength cold-rolled steel sheet with excellent formability and weldability, comprises, in terms of percent by weight, 0.15 to 0.25% C, 0.5 to 1.5% Si, 1.0 to 2.0% Mn, 0.25% or less P, 0.020% or less S, 0.015 to 0.050% Al, 0.008 to 0.026% N, balance Fe and incidental impurities while satisfying a condition of  $1.2 \leq \text{Si}[\%] + 50/8\text{P}[\%] \leq 2.0$ . The method comprises the steps of hot rolling a steel having the above composition using a conventional method, cold rolling the hot-rolled steel sheet using a conventional method to form a cold-rolled steel sheet; continuous annealing the cold-rolled steel sheet at a temperature range satisfying a condition of  $563 + 651\text{C}[\%] + 42\text{Si}[\%] + 18\text{Mn}[\%] \leq \text{annealing temperature } [^{\circ}\text{C}] \leq 850$ ; and quenching the continuous annealed steel sheet at a rate of 20 to 100 °C/s to an austempering initiating temperature ranging from 400 to 450 °C and then cooling to a temperature ranging from 350 to 400 °C .

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