

Title (en)  
Cold-rolled steel sheet and galvanized steel sheet having excellent strain age hardenability and method of producing the same

Title (de)  
Kaltgewalztes Stahlblech und Zinkblech mit Reckalterungseigenschaften und Verfahren zur dessen Herstellung

Title (fr)  
Tole d'acier laminee a froid, galvanisee ayant excellent aptitude au durcissement au vieillissement par ecrouissage et son procede de fabrication

Publication  
**EP 1498507 B1 20060628 (EN)**

Application  
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Priority

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Abstract (en)  
[origin: EP1291448A1] An object of the present invention is to provide a cold-rolled steel sheet and an alloyed hot-dip galvanized steel sheet in which tensile strength is effectively increased by press forming and heat treatment while maintaining excellent deep drawability in press forming. Specifically, a steel composition contains less than 0.01% of C, 0.005 to 1.0% of Si, 0.01 to 1.0% of Mn, 0.005 to 0.050% of Nb, 0.005 to 0.030% of Al, 0.005 to 0.040% of N, 0.0005 to 0.0015% of B, 0.05% or less of P, and 0.01% or less of S, the balance substantially composed of Fe, in which the following equations (1) and (2) are satisfied: 
$$\text{N} \% \geq 0.0015 + 14/93 \cdot \text{Nb} \% + 14/27 \cdot \text{Al} \% + 14/11 \cdot \text{B} \% \quad (1)$$
$$\text{C} \% \leq (12/93) \cdot \text{Nb} \% \quad (2)$$

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