

Title (en)

HIGH-STRENGTH STEEL PLATE HAVING HIGH DYNAMIC DEFORMATION RESISTANCE AND METHOD OF MANUFACTURING THE SAME

Title (de)

HOCHFESTE STAHLPLATTE MIT HOHER DYNAMISCHEN VERFORMUNGSBESTÄNDIGKEIT UND VERFAHREN ZUR HERSTELLUNG DERSELBEN

Title (fr)

PLAQUE D'ACIER A HAUTE RESISTANCE MECANIQUE DOTEES D'UNE FORTE RESISTANCE A LA DEFORMATION DYNAMIQUE ET PROCEDE DE FABRICATION CORRESPONDANT

Publication

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Application

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Abstract (en)

[origin: EP0952235A1] The object of the present invention is to provide high-strength steel sheets exhibiting high impact energy absorption properties, as steel materials, to be used for shaping and working into such parts as front side members of automobiles which absorb impact energy upon collision, as well as a method for their production. The high-strength steel sheets of the invention which exhibit high impact energy absorption properties are high-strength steel sheets with high flow stress during dynamic deformation characterized in that the microstructure of the steel sheets in their final form is a composite microstructure of a mixture of ferrite and/or bainite, either of which is the dominant phase, and a third phase including retained austenite at a volume fraction between 3% and 50%, wherein the average value σ_{dyn} (MPa) of the flow stress in the range of 3 SIMILAR 10% of equivalent strain when deformed in a strain rate range of 5×10^{-2} SIMILAR 5×10^{-3} (1/sec) after pre-deformation of greater than 0% and less than or equal to 10% of equivalent strain, satisfies the inequality: $\sigma_{dyn} \geq 0.766 \times TS + 250$ as expressed in terms of the maximum stress TS (MPa) in the static tensile test as measured in a strain rate range of 5×10^{-4} SIMILAR 5×10^{-3} (1/s) without deformation, and the work hardening coefficient between 1% and 5% of a strain is at least 0.080. <IMAGE>

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Citation (search report)

- [X] EP 0295500 A1 19881221 - NIPPON STEEL CORP [JP]
- [X] EP 0586704 A1 19940316 - NIPPON STEEL CORP [JP]
- [X] EP 0707087 A1 19960417 - NIPPON STEEL CORP [JP]
- See references of WO 9823785A1

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