

## Title (en)

Process for manufacturing steel flat products from boron microalloyed multi phase steel

## Title (de)

Verfahren zum Herstellen von Stahl-Flachprodukten aus einem mit Bor mikrolegierten Mehrphasenstahl

## Title (fr)

Procédé pour la fabrication de produits plats à partir d'un acier à plusieurs phases micro-allié en bore

## Publication

**EP 1918406 A1 20080507 (DE)**

## Application

**EP 06123139 A 20061030**

## Priority

EP 06123139 A 20061030

## Abstract (en)

The method for the production of flat steel products useful for automotive industry, comprises casting a steel into a cast strip having a thickness of 1-4 mm, hot-rolling the cast strip in-line into a hot-rolled strip having a thickness of higher than 1.5 mm in a continuous process at a final hot-rolling temperature at 800-1100[deg] C and coiling the hot-rolled strip at a coiling temperature of 250-570[deg] C to obtain a hot-rolled strip, which has a minimum tensile strength R<sub>m</sub> of 800 MPa and a minimum breaking elongation A<sub>80</sub> of 5%. The method for the production of flat steel products useful for automotive industry, comprises casting a steel into a cast strip having a thickness of 1-4 mm, hot-rolling the cast strip in-line into a hot-rolled strip having a thickness of higher than 1.5 mm in a continuous process at a final hot-rolling temperature of 800-1100[deg] C and coiling the hot-rolled strip at a coiling temperature of 250-570[deg] C to obtain a hot-rolled strip, which has a minimum tensile strength R<sub>m</sub> of 800 MPa and a minimum breaking elongation A<sub>80</sub> of 5%. The steel forms a complex phase structure. The shaping degree is greater than 20%. The width of the hot-rolled strip is more than 1.600 mm. The hot-rolled strip is cold-rolled with a thickness of 0.5-1.4 mm at 750-850[deg] C to obtain a cold-rolled strip, which has a minimum tensile strength of 800 MPa and a minimum breaking elongation A<sub>50</sub> of 10%. The cold or hot-rolled strip is provided with a metallic coating, which is galvanizing. The hot-rolled temperature is 900-1020[deg] C and the coiling temperature is 420-490[deg] C, when the minimum breaking elongation A<sub>80</sub> of the obtained hot-rolled strip is 10%. The hot-rolled temperature is 900-1100[deg] C and the coiling temperature is 450-570[deg] C, when the minimum tensile strength of the obtained hot-rolled strip is 1000 MPa.

## Abstract (de)

Die Erfindung betrifft ein Verfahren, mit dem sich hochfeste Stahl-Flachprodukte über eine große Bandbreite von geometrischen Abmessungen bei vermindertem Herstelleraufwand erzeugen lassen. Dazu wird erfindungsgemäß ein ein Mehrphasengefüge bildender Stahl, der (in Gew.-%) 0,08 - 0,12 % C, 1,70 - 2,00 % Mn, bis zu 0,030 % P, bis zu 0,004 % S, bis zu 0,20 % Si, 0,01 - 0,06 % Al, bis zu 0,0060 % N, 0,20 - 0,50 % Cr, 0,010 - 0,050 % Ti, 0,0010 - 0,0045 % B und als Rest Eisen und unvermeidbare Verunreinigungen enthält, zu einem gegossenen Band mit einer Dicke von 1 - 4 mm vergossen, das gegossene Band in einem kontinuierlichen Arbeitsablauf mit einem Umformgrad von mehr als 20 % in-Line bei einer im Bereich von 800 - 1100 °C liegenden Warmwalzendtemperatur zu einem Warmband mit einer Dicke von 0,5 - 3,2 mm warmgewalzt und das Warmband bei einer 250 - 570 °C betragenden Haspeltemperatur gehaspelt, so dass ein Warmband erhalten wird, dessen Zugfestigkeit R<sub>m</sub> mindestens 800 MPa bei einer Bruchdehnung A<sub>80</sub> von mindestens 5 % beträgt.

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## Citation (search report)

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