

Title (en)  
STEEL WITH REDUCED DENSITY AND METHOD FOR PRODUCING A STEEL FLAT OR LONG PRODUCT MADE FROM SUCH STEEL

Title (de)  
STAHL MIT REDUZIERTER DICHTHE UND VERFAHREN ZUR HERSTELLUNG EINES STAHLFLACH- ODER -LANGPRODUKTS AUS EINEM SOLCHEN STAHL

Title (fr)  
ACIER A EPAISSEUR REDUITE ET PROCEDE DE FABRICATION D'UN PRODUIT ALLONGE OU PLAT EN ACIER A PARTIR D'UN TEL ACIER

Publication  
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Application  
**EP 16162652 A 20160329**

Priority  
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Abstract (en)  
[origin: WO2017167778A1] The invention relates to an iron-based reduced-density material, the mechanical properties of which make said material suitable for a broad range of applications, in particular in the automotive industry. For this purpose, the steel has a density of less than 7.25 kg/dm<sup>3</sup> according to the invention and consists of (in wt%) C: up to 0.20%, Si: 0.1 - 3.50%, Mn: 0.1 - 3.50%, N: up to 0.020%, S: up to 0.40%, P: up to 0.009%, Al: 6.0 - 25.0%, Ti: 0.55 - 10.0%, Cr: up to 6.0%, Mo: up to 3.0%, Ni: up to 4.0%, V: up to 1.0%, W: up to 1.0%, Cu: up to 4%, B: up to 0.08%, Nb: up to 1.5%, the remainder iron and unavoidable production-related impurities. The microstructure of the steel has more than 85 vol% ferrite and up to 10 vol% austenite and, as the remainder, contents of intermetallic phases and fractions of carbide, nitride, bainite, or pearlite.

Abstract (de)  
Die Erfindung stellt einen dichtereduzierten Werkstoff auf Eisenbasis zur Verfügung, dessen mechanische Eigenschaften ihn für ein breites Anwendungsspektrum insbesondere im Bereich der Automobilindustrie geeignet machen. Zu diesem Zweck weist der Stahl erfindungsgemäß eine Dichte von weniger als 7,25 kg/dm<sup>3</sup> und besteht aus (in Gew.-%) C: bis zu 0,20 %, Si: 0,1 - 3,50 %, Mn: 0,1 - 3,50 %, N: bis zu 0,020 %, S: bis zu 0,40 %, P: bis 0,009 %, Al: 6,0 - 25,0 %, Ti: 0,55 - 10,0 %, Cr: bis zu 6,0 %, Mo: bis zu 3,0 %, Ni: bis 4,0 %, V: bis 1,0 %, W: bis 1,0 %, Cu: bis 4 %, B: bis 0,08 %, Nb: bis 1,5 %, Rest Eisen und herstellungsbedingt unvermeidbare Verunreinigungen. Dabei weist das Gefüge des Stahls mehr als 85 Vol.-% Ferrit sowie bis zu 10 Vol.-% Austenit und als Rest Gehalte an intermetallischen Phasen sowie Anteile von Karbid, Nitrid, Bainit oder Perlit auf.

IPC 8 full level  
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