

Title (en)  
HOT ROLLED STEEL SHEET WITH ULTRA-HIGH STRENGTH AND IMPROVED FORMABILITY AND METHOD FOR PRODUCING THE SAME

Title (de)  
HEISSGEWALZTES STAHLBLECH MIT ULTRAHOHER FESTIGKEIT UND VERBESSERTER FORMBARKEIT SOWIE VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)  
TÔLE D'ACIER LAMINÉE À CHAUD À ULTRA-HAUTE RÉSISTANCE ET AYANT UNE APTITUDE AU FAÇONNAGE AMÉLIORÉE ET SON PROCÉDÉ DE PRODUCTION

Publication  
**EP 3867417 A1 20210825 (EN)**

Application  
**EP 19784114 A 20191016**

Priority  
• EP 18201558 A 20181019  
• EP 2019078117 W 20191016

Abstract (en)  
[origin: WO2020079096A1] The present invention relates to a hot rolled high strength steel sheet with improved formability, consisting of the following elements in weight %: 0.13-0.35 C; 0.80-3.50 Mn; 0.01-2.50 Si; 0.02-1.00 Al; wherein the sum of Si and Al is 0.52-2.50; and optionally one or more selected from: 0.0002-0.0030 Ca; 0.0004-0.0100 REM; 0.10-1.00 Cu; 0.10-1.50 Cr; 0.10-1.00 Ni; 0.05-0.50 Mo; 0.0005-0.0050 B; 0.010-0.100 Nb; 0.010-0.100 Ti; 0.020-0.200 V; wherein the sum of Nb+Ti+V is 0-0.250 and wherein the sum of Cr+Ni+Cu+Mo is 0-1.50, and at most 0.100 P; at most 0.050 S; at most 0.0100 N; the balance consisting of inevitable impurities and Fe, wherein the hot rolled high strength steel sheet has a complex phase microstructure comprising in vol. %: 65% or more of a matrix of a mixture of carbide free bainitic ferrite (BF) and/or tempered martensite (TM), and 5 to 25% of retained austenite (RA).

IPC 8 full level  
**C21D 8/02** (2006.01); **C21D 9/46** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/12** (2006.01); **C22C 38/14** (2006.01); **C22C 38/16** (2006.01); **C22C 38/18** (2006.01); **C22C 38/22** (2006.01); **C22C 38/28** (2006.01); **C22C 38/32** (2006.01); **C22C 38/34** (2006.01); **C22C 38/38** (2006.01)

CPC (source: EP US)  
**C21D 6/004** (2013.01 - US); **C21D 6/005** (2013.01 - US); **C21D 6/008** (2013.01 - US); **C21D 8/0205** (2013.01 - EP US); **C21D 8/0226** (2013.01 - US); **C21D 8/0263** (2013.01 - EP); **C21D 9/46** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/005** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/12** (2013.01 - EP); **C22C 38/14** (2013.01 - EP); **C22C 38/16** (2013.01 - EP); **C22C 38/18** (2013.01 - EP); **C22C 38/22** (2013.01 - EP); **C22C 38/28** (2013.01 - EP); **C22C 38/32** (2013.01 - EP); **C22C 38/34** (2013.01 - EP); **C22C 38/38** (2013.01 - EP); **C22C 38/42** (2013.01 - US); **C22C 38/44** (2013.01 - US); **C22C 38/46** (2013.01 - US); **C22C 38/48** (2013.01 - US); **C22C 38/50** (2013.01 - US); **C22C 38/54** (2013.01 - US); **C21D 2211/001** (2013.01 - EP US); **C21D 2211/002** (2013.01 - EP); **C21D 2211/005** (2013.01 - EP US); **C21D 2211/008** (2013.01 - EP US)

Citation (search report)  
See references of WO 2020079096A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**WO 2020079096 A1 20200423**; EP 3867417 A1 20210825; US 2021310093 A1 20211007

DOCDB simple family (application)  
**EP 2019078117 W 20191016**; EP 19784114 A 20191016; US 201917267221 A 20191016