

Title (en)

STEEL PLATE SUBJECTED TO HEAT TREATMENT AND PROCESS FOR PRODUCING THE SAME

Title (de)

WÄRMEBEHANDELTE STAHLPLATTE UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

TOLE D'ACIER SOUMISE A UN TRAITEMENT THERMIQUE ET PROCEDE DE PRODUCTION CORRESPONDANT

Publication

**EP 1484423 A4 20050406 (EN)**

Application

**EP 03743986 A 20030228**

Priority

- JP 0302300 W 20030228
- JP 2002063488 A 20020308

Abstract (en)

[origin: WO03076675A1] A steel plate subjected to heat treatment, consisting essentially of 0.05 to 0.09 mass% of C, 1 mass% or less of Si, 1.6 to 2.4 mass% of Mn, 0.02 mass% or less of P, 0.02 mass% or less of S, 0.01 to 0.1 mass% of sol.Al, 0.005 mass% or less of N, 0.0003 to 0.003 mass% of B, Ti whose amount satisfies the relationship  $(48/32)S + (48/14)N \leq Ti \leq 2[(48/32)S + (48/14)N]$ , and the remainder of Fe, wherein the average grain diameter of iron carbide deposited in the steel is 2  $\mu\text{m}$  or less. This steel plate subjected to heat treatment is sequentially subjected to press forming and heat treatment. The resultant steel plate exhibits high strength and excellent delayed fracture resisting characteristics, so that it is suitable for use in automobile structural members.

IPC 1-7

**C22C 38/00**; B21B 3/00; C22C 38/02; C22C 38/04; C22C 38/06; C22C 38/14; C21D 8/04; C21D 8/02

IPC 8 full level

**C21D 9/46** (2006.01); **C21D 8/02** (2006.01); **C21D 8/04** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/14** (2006.01); **C22C 38/38** (2006.01)

CPC (source: EP US)

**C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/14** (2013.01 - EP US); **C21D 9/46** (2013.01 - EP US)

Citation (search report)

- [A] EP 0816524 A1 19980107 - NIPPON KOKAN KK [JP]
- [DA] PATENT ABSTRACTS OF JAPAN vol. 1998, no. 14 31 December 1998 (1998-12-31)
- [DA] PATENT ABSTRACTS OF JAPAN vol. 2000, no. 08 6 October 2000 (2000-10-06)
- See references of WO 03076675A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT SE SI SK TR

DOCDB simple family (publication)

**WO 03076675 A1 20030918**; DE 60306500 D1 20060810; DE 60306500 T2 20061109; EP 1484423 A1 20041208; EP 1484423 A4 20050406; EP 1484423 B1 20060628; JP 2003268489 A 20030925; JP 3918589 B2 20070523; US 2005121119 A1 20050609

DOCDB simple family (application)

**JP 0302300 W 20030228**; DE 60306500 T 20030228; EP 03743986 A 20030228; JP 2002063488 A 20020308; US 50557504 A 20040930