

Title (en)

STRUCTURAL STEEL MATERIAL AND METHOD FOR MANUFACTURING SAME

Title (de)

BAUSTAHL MATERIAL UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)

MATÉRIAU D'ACIER STRUCTURAL ET PROCÉDÉ DE FABRICATION D'UN TEL MATÉRIAU

Publication

**EP 4079906 A1 20221026 (EN)**

Application

**EP 20904167 A 20201215**

Priority

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Abstract (en)

A structural steel material according to an aspect of the present invention contains, in weight percent, 0.12-0.18% of C, 0.02-0.5% of Si, 0.6-1.6% of Mn, 0.002-0.06% of Sol. Al, 0.001-0.05% of Nb, 0.001-0.06% of V, 0.003-0.009% of Ti, 0.0002-0.006% of Ca, 0.0002-0.0005% of B, 0.001-0.006% of N, 0.02% or less of P, and 0.003% or less of S, with the remainder comprising Fe and inevitable impurities, and satisfies relational expression 1 below. The microstructure of the structural steel material includes a composite structure in which ferrite is the main phase and pearlite is the second phase, with the remainder comprising a hard structure, wherein the average grain size of the ferrite may be 20  $\mu\text{m}$  or less. [Relational expression 1]  $[N] - 0.3*[Ti] - 0.1*[Nb] \leq 0.001(\text{wt}\%)$ , where [N], [Ti], and [Nb] represent the contents (wt%) of N, Ti, and Nb in the steel material, respectively.

IPC 8 full level

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