(Osamu Hashimoto)

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Synopsis :

Hot rolled sheet steel with a thickness of 1.2 to 2.0 mm and good ductility similar to that of cold rolled sheet steel, KFNE, has been successfully developed by optimizing chemical composition. In the rolling of thin strip, the rolling temperature frequently drops below the Ar3 transformation temperature of the steel, and a microstructure with abnormally grown large grains develops on the surface. KFNE is designed to have lower Ar3 transformation temperature and the similar strength to that of conventional steel by lowering C, Mn, P, Al and N contents and by adding 0.5% Cr and 10 ppm B. By the addition of Cr, decreasing of solute C of ferrite matrix and coarsening of carbide are caused, which results in the improvement of elongation. Formability in stretching and stretch flanging of the developed hot rolled sheet steel KFNE are better than those of conventional hot rolled steel and similar to those of cold rolled sheet steel.

良加工性薄物熱延鋼板 KFNE の開発*

Development of Hot Rolled Thin Steel Coils with Good Formability, KFNE

要旨

冷延鋼板に匹敵する優れた伸び特性を有する薄物熱延鋼板 KFNE (1.2～2.0 mm) を開発した。薄物熱延鋼板では圧延温度の低下から2相域圧延となりやすく，粗大粒を含む異常粒組織が生じるが，本開発鋼 KFNE では低 C で低 Mn とし，0.5% の Cr 添加

Table 2 Chemical compositions of steels investigated

(wt. %)

Steel	C	Si	Mn	Cr	P	S	Al	N	O	B
A	0.040	0.01	0.09	0.01	0.005	0.002	0.010	0.0020	0.0026	0.0010
B	0.038	0.01	0.07	0.21	0.005	0.002	0.010	0.0014	0.0038	0.0008
C	0.035	0.01	0.09	0.50	0.006	0.002	0.005	0.0014	0.0048	0.0009
D	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

下に有効である。また，Cr は固溶C を低減させる作用7) をも

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