



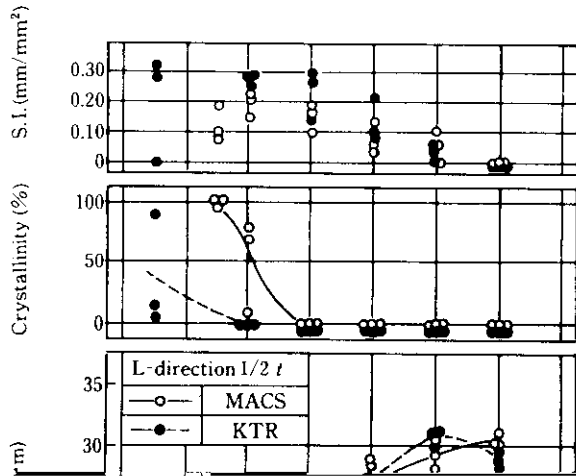
# Structural Steel Plates for Arctic Use Produced by Multipurpose Accelerated Cooling System\*

*Synopsis:*

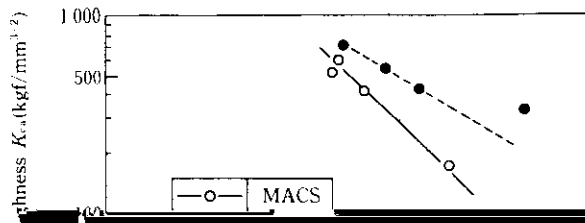
**Table 1** Chemical compositions of steels for YP 36 kgf/mm<sup>2</sup> arctic use produced by MACS and KTR (wt%)

Element	MACS	KTR
C		
Mn		
P		
S		
Si		
N		
Al		
Fe		
Cr		
Ni		
Mo		
Cu		
As		
Sb		
Bi		
Se		
Te		
Ag		
Au		
Cd		
Ce		
Co		
Ca		
Cl		
Al		
Br		
B		
Be		
Ba		
C		
Ca		
Cl		
Co		
Cr		
Cu		
Fe		
Al		
Si		
Mn		
Ni		
P		
S		
Se		
Te		
Ag		
Au		
Cd		
Ce		
Co		
Ca		
Cl		
Al		
Br		
B		
Be		
Ba		

**Table 4** Results of three point bending test



Process	Direction	Temp. (°C)	Critical COD (mm)	
MACS (ACC)	L	-40	2.039,	1.752
		-60	1.630,	1.666
		-80	1.690,	1.667
	T	-40	1.509,	1.618
		-60	1.391,	1.413
		-80	1.378,	1.157
KTR	L	-40	2.215,	2.437
		-60	2.058,	2.346
		-80	2.115,	2.225
	T	-40	2.122,	1.355
		-60	2.072,	1.658
		-80	1.467,	1.419



**Table 7** Tensile test results at high heat input welding joint of steel plates produced by MACS process

Welding	TS (kgf/mm <sup>2</sup> )	Fracture location
One side	549	RM



any welding process, thickness level and notch position.

As shown in Fig. 4, the individual values of charact.

**Table 9** Results of wide-width center-notched tensile test under residual stress for brittle fracture

process were tested. As a result, it was proved that the said steel plates can be welded without reheatin- and

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