
Hi-Performance Alloy Series Technical Data

High Strength 5%-Tin Phosphor Bronze

Hyper C5210



1.Introduction

JX has been supplying numbers of copper alloys.

Recently, JX

5. Mechanical Properties

Table 3. Mechanical Properties of *Hyper C5210*

Temper		Tensile Strength (N/mm ²)	0.2% offset Yield Strength (N/mm ²)	Elongation (%)	Fatigue Strength (N/mm ²)
H	Range	590 705		20	
	Hyper	636	565	33.4	400
	Conventional	625	528	28.9	300
EH	Range	685 785		11	
	Hyper	729	688	22.1	450
	Conventional	724	667	19.0	350
SH	Range	735 835		9	
	Hyper	790	760	17.8	400
	Conventional	764	710	18.1	350
ESH	Range	770 885		5	
	Hyper	853	823	12.0	400
	Conventional	813	786	12.6	300
XSH	Range	835 1000		1	
	Hyper	918	879	2.8	
	Conventional				

6. Bend Formability

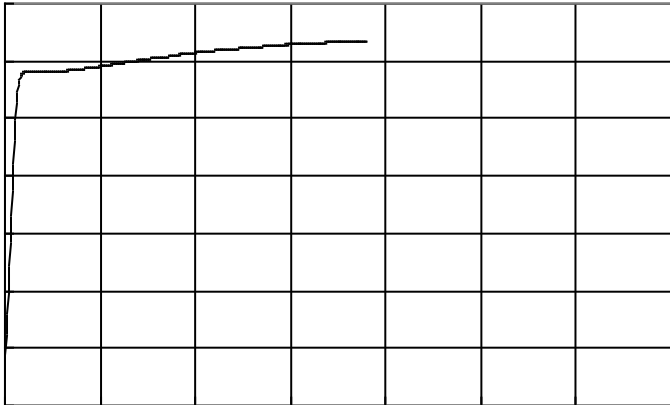
"W" shaped bending test was performed to evaluate bend formability. The minimum bending radius (MBR) without surface crack is determined. Table 4 shows MBR/t value, while fig. 1 shows outside surface. It is apparent that *Hyper C5210* gives much better bend formability.

Table 4. Minimum Bending Radius (MBR) of *Hyper C5210*

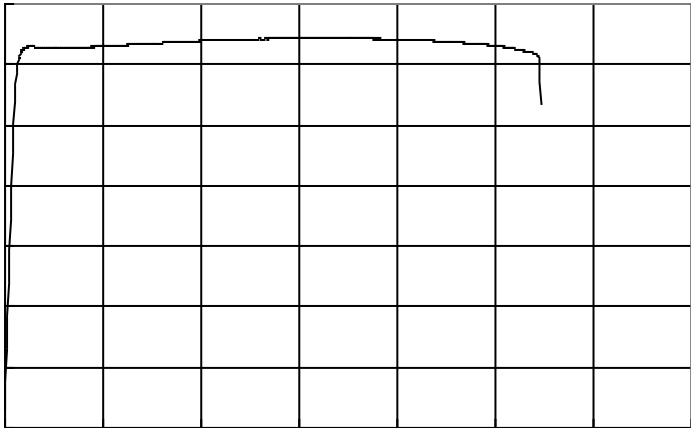
Temper	MBR/t			
	good way		bad way	
	<i>Hyper C5210</i>	C5210 (Conventional)	<i>Hyper C5210</i>	C5210 (Conventional)

8. Stress-Strain Curve

Fig.3 through Fig.4 show stress-strain curve of Hyper C5210.



S-S curve (temper H, longitude to rolling)

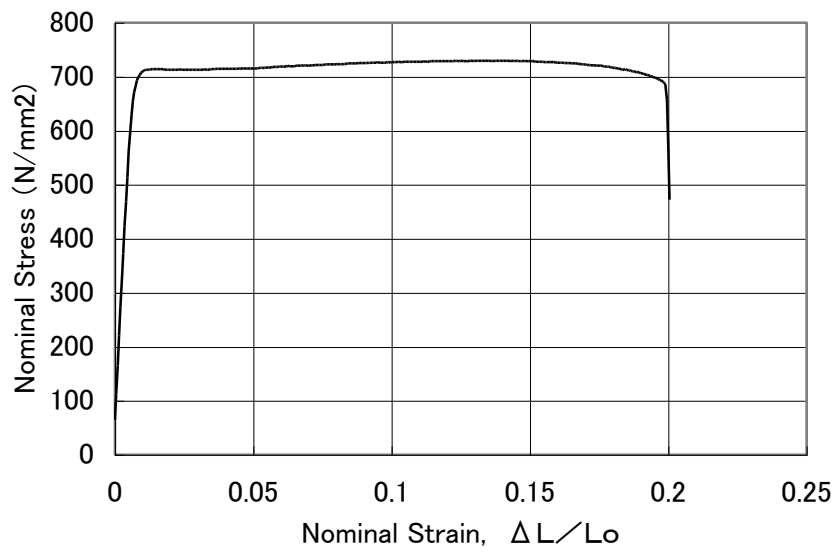


S-S curve (temper H, traverse to rolling)

Tensile test (according to JIS-Z-2241)

Specimen : JIS-Z-2201#5 tensile test specimen number of tests : 2

Fig. 3 Stress-Strain Curve 1

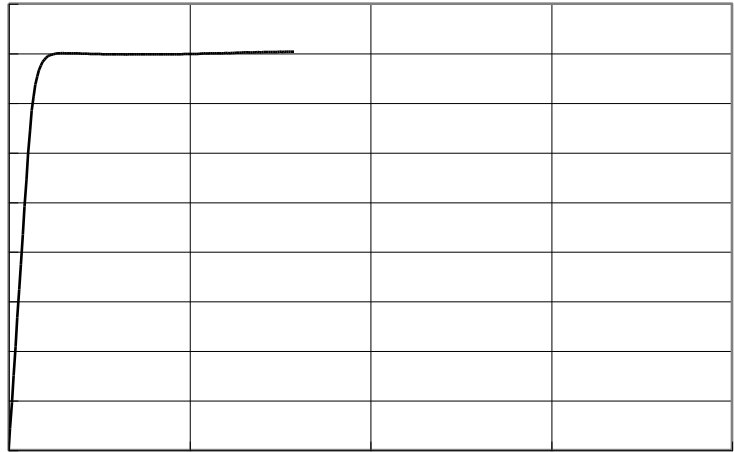


S-S curve (temper EH, longitude to rolling)

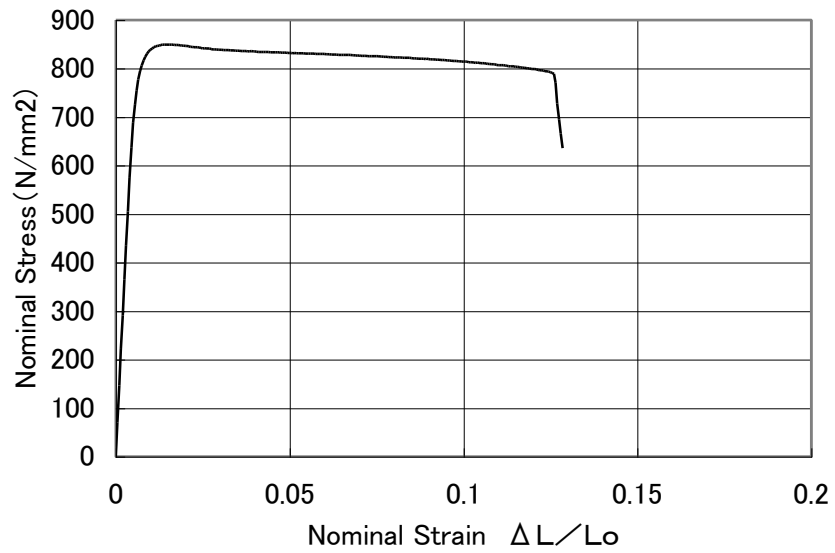


S-S curve (temper EH, transverse to rolling)

Fig. 4 Stress-Strain Curve 2

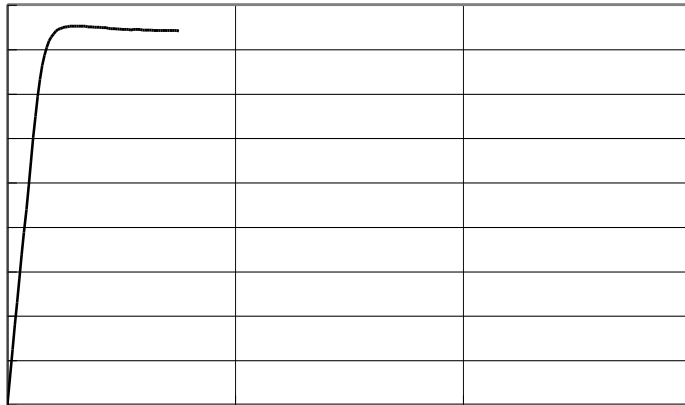


S-S curve (temper SH, longitude to rolling)

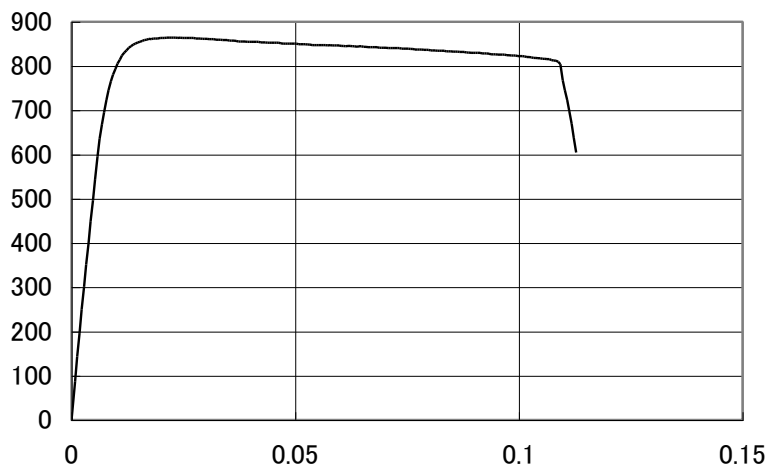


S-S curve (temper SH, transverse to rolling)

Fig. 5 Stress-Strain Curve



S-S curve (temperESH, longitude to rolling)



S-S curve (temper ESH, transverse to rolling)

Fig. 6 Stress-Strain Curve

Further Information