



GLOBAL MATERIALS TO QUALITY LEADER

**ALUMINUM**  
**COPPER**  
**STEEL**  
**TITANIUM**

**2024**



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 CUSTOMERS

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Semiconductor  
Equipment



Automotive  
Motorcycles Components

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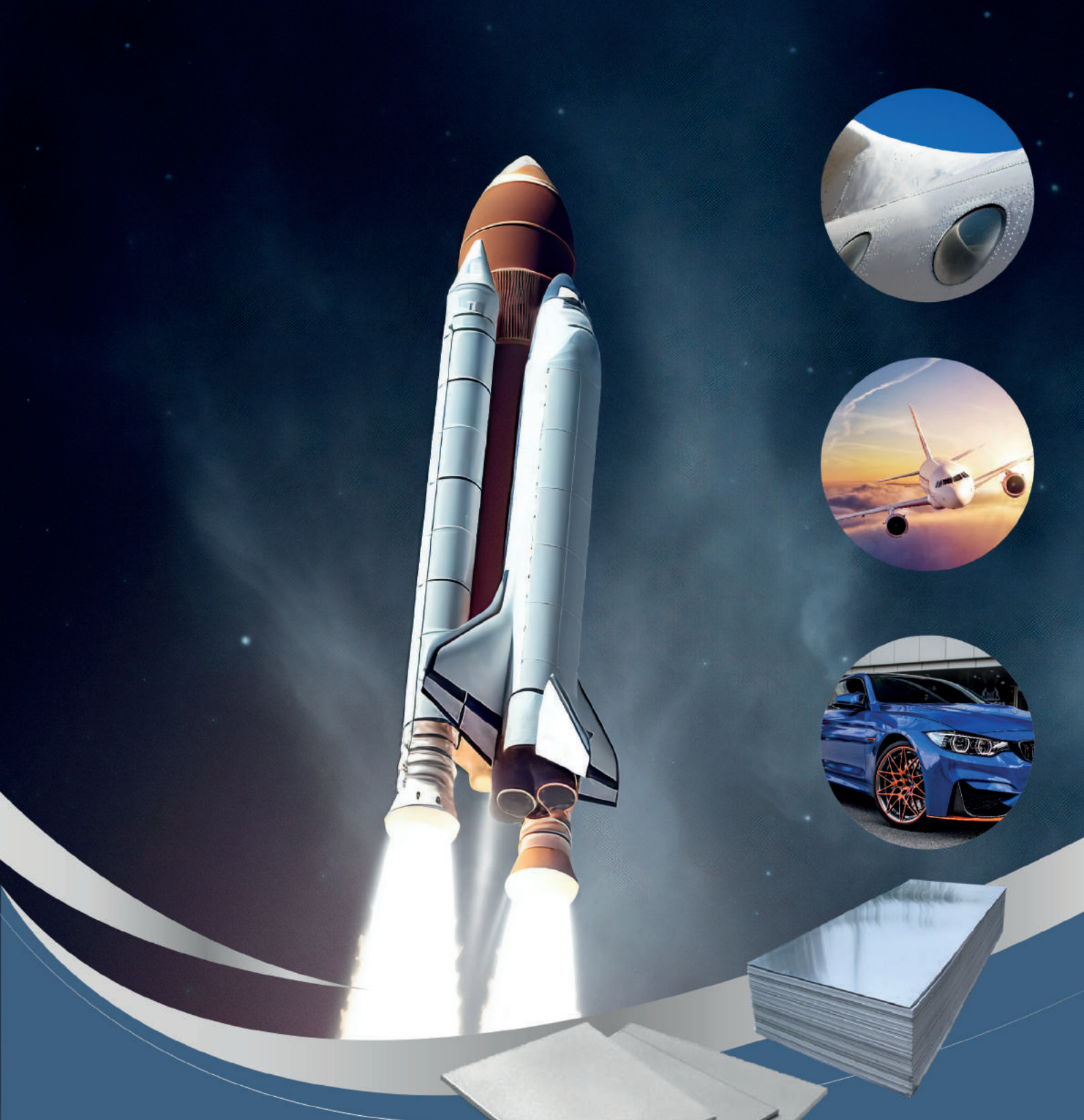
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# ALUMINUM

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Aluminum Sheet/Plate

Aluminum Coil

Aluminum Reflector Sheet/Coil

Aluminum Round Bar

Aluminum Rectangular Bar

Aluminum Billet

Aluminum Ingot

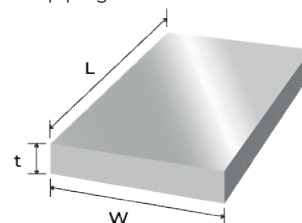
## Aluminum Rolled Sheet & Plate - A1050

Temper **O, H14, H24, H112**  
 Certificates **RoHS, Reach / Equivalent**  
 Standards **JIS H4000 / Equivalent**  
 Chemical **Si 0.25 max; Fe 0.4 max; Cu 0.05 max; Mn 0.05 max; Mg**  
 Composition (%) **0.05 max; Zn 0.05 max; Ti 0.03 max; Al rem**

Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL On request	Temper	Protective vinyl
1	1000	2000	●	H24	One surface
1.5	1000	2000	●	H24	One surface
2	1000	2000	●	H24	One surface
2.5	1000	2000	●	H24	One surface
3	1250	2500	●	H24	Both surfaces
4	1250	2500	●	H24	Both surfaces
5	1250	2500	●	H24	Both surfaces
6	1250	2500	●	H24 / H112	Both surfaces
8	1250	2500	●	H24 / H112	Both surfaces
10	1250	2500	●	H24 / H112	Both surfaces
12	1250	2500	●	H24 / H112	Both surfaces
15	1250	2500	●	H112	Both surfaces
20	1250	2500	●	H112	Both surfaces
25	1250	2500	●	H112	Both surfaces
30	1250	2500	●	H112	Both surfaces
40	1250	2500	●	H112	One surface
50	1250	2500	●	H112	One surface

With a purity of no less than 99.5%, this 1000-series pure aluminum (Al) product provides excellent electrical and thermal conductivity, bending/drawing workability, and excellent surface treatment properties, resulting in the highest corrosion resistance among aluminum alloys. Generally speaking, the strength of pure aluminum is inferior to other aluminum alloys. Main uses include heat exchangers, chemical equipment, accessories, copying machine drums, and piping.



Sizes based on JIS H4000 and supplier's standard.  
 Other dimensions upon request.

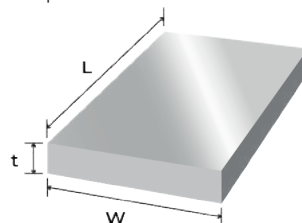
## Aluminum Rolled Sheet & Plate - (17S) A2017

Temper **T3, T351**  
 Certificates **RoHS, Reach / Equivalent**  
 Standards **JIS H4000 / Equivalent**  
 Chemical Composition (%) **Si 0.2~0.8; Fe 0.7 max; Cu 3.5~4.5; Mn 0.4~1.0; Mg 0.4~0.8; Cr 0.1 max; Zn 0.25 max; Ti 0.15 max; Al rem**

Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL On request	Temper	Protective vinyl
3	1250	2500	●	T3	Both surfaces
4	1250	2500	●	T3	Both surfaces
5	1250	2500	●	T3	Both surfaces
6	1250	2500	●	T3	Both surfaces
8	1525	3050	●	T351	Both surfaces
10	1525	3050	●	T351	Both surfaces
12	1525	3050	●	T351	Both surfaces
15	1525	3050	●	T351	Both surfaces
20	1525	3050	●	T351	Both surfaces
25	1525	3050	●	T351	Both surfaces
30	1525	3050	●	T351	Both surfaces
35	1525	3050	●	T351	One or both surfaces
40	1525	3050	●	T351	One or both surfaces
45	1525	3050	●	T351	One or both surfaces
50	1525	3050	●	T351	One or both surfaces
55	1525	3050	●	T351	One surface
60	1525	3050	●	T351	One surface
65	1525	3050	●	T351	One surface or none
70	1525	3050	●	T351	One surface or none
75	1525	3050	●	T351	One surface or none
80	1525	3050	●	T351	One surface or none
85	1525	3050	●	T351	One surface or none
90	1525	3050	●	T351	One surface or none
95	1525	3050	●	T351	One surface or none
100	1525	3050	●	T351	One surface or none
105	1525	3050	●	T351	None
110	1525	3050	●	T351	None
115	1525	3050	●	T351	None
120	1525	3050	●	T351	None
125	1525	3050	●	T351	None
130	1525	3050	●	T351	None
135	1525	3050	●	T351	None
140	1525	2850	●	T351	None
145	1525	2850	●	T351	None
150	1525	2850	●	T351	None

This product is made of A2017 (2000-series Al-Cu alloy), also called duralumin. Despite having inferior corrosion resistance and weldability, the product features high strength properties and good machinability, making it a high-demand commodity for thick plates after A5052 products. The hardening material makes the plate surface slightly darker. It is used as aircraft material and for automobile components.



Sizes based on JIS H4000 and supplier's standard.  
 Other dimensions upon request.

## Aluminum Rolled Plate A2024

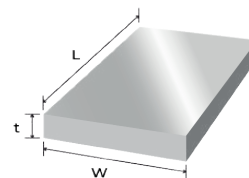
Temper  
Certificates  
Standards

**T3, T351**  
**ISO 9001,**  
**RoHS / Equivalent JIS H4000,**  
**ASTM B209-14 / Equivalent**  
**Si 0.5 max; Fe 0.5max; Cu**  
**3.8~4.9; Mn 0.3~0.9;**  
**Mg 1.2~1.8; Cr 0.1 max; Zn 0.25**  
**max; Ti 0.15max; Al rem**

Chemical Composition (%)

Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Note
6	1250	2500	●	
8	1250	2500	●	
10	1250	2500	●	
12	1250	2500	●	
12.7	1250	2500	●	
15	1250	2500	●	
16	1250	2500	●	
18	1250	2500	●	
20	1250	2500	●	
25	1250	2500	●	
30	1250	2500	●	
35	1250	2500	●	
40	1250	2500	●	
45	1250	2500	●	
50	1250	2500	●	
55	1250	2500	●	
60	1250	2500	●	
65	1250	2500	●	
70	1250	2500	●	
75	1250	2500	●	
80	1250	2500	●	
85	1250	2500	●	
90	1250	2500	●	
95	1250	2500	●	
110	1250	2500	●	



Sizes based on JIS, ASTM and supplier's standard.  
Other dimensions upon request.

## Aluminum Rolled Sheet & Plate - (YH52) A5052

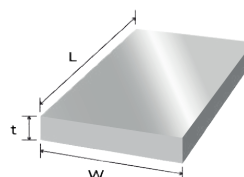
Temper  
Certificates  
Standards

**H112**  
**RoHS, Reach / Equivalent**  
**JIS H4000 / Equivalent**  
**Si 0.25 max; Fe 0.4 max;**  
**Cu 0.1 max; Mn 0.1 max;**  
**Mg 2.2~2.8; Cr 0.15~0.35;**  
**Zn 0.1 max; Al rem**

Chemical Composition (%)

Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Temper	Note
4	1525	3050	●	H112	
5	1525	3050	●	H112	
6	1525	3050	●	H112	
7	1525	3050	●	H112	
8	1525	3050	●	H112	
9	1525	3050	●	H112	
10	1525	3050	●	H112	
12	1525	3050	●	H112	
15	1525	3050	●	H112	
16	1525	3050	●	H112	
18	1525	3050	●	H112	
20	1525	3050	●	H112	
22	1525	3050	●	H112	
25	1525	3050	●	H112	
30	1525	3050	●	H112	
32	1525	3050	●	H112	
35	1525	3050	●	H112	
40	1525	3050	●	H112	
45	1525	3050	●	H112	
50	1525	3050	●	H112	



Sizes based on JIS H4000 and supplier's standard.  
Other dimensions upon request.

## Aluminum Rolled Sheet & Plate - (52S) A5052

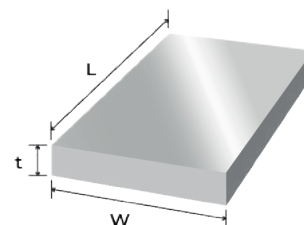
Temper	H34, H112
Certificates	RoHS, Reach / Equivalent
Standards	JIS H4000 / Equivalent
Chemical Composition (%)	Si 0.25 max; Fe 0.4 max; Cu 0.1 max; Mn 0.1 max; Mg 2.2~2.8; Cr 0.15~0.35; Zn 0.1 max; Al rem

52S is another name of A5052 (5000-series Al-Mg alloy). This alloy is the most common aluminum plate material and is used for both thin and thick plates in a wide variety of fields.

With a plate thickness of 10mm, plate thickness tolerance and flatness have both been improved by about 85% of the JIS.

Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Temper	Protective vinyl
1	1000	2000	●	H34	One surface
1.5	1000	2000	●	H34	One surface
2	1000	2000	●	H34	One surface
3	1525	3050	●	H34	Both surfaces
4	1525	3050	●	H34 / H112	Both surfaces
5	1525	3050	●	H34 / H112	Both surfaces
6	1525	3050	●	H34 / H112	Both surfaces
7	1525	3050	●	H34 / H112	Both surfaces
8	1525	3050	●	H112	Both surfaces
9	1525	3050	●	H112	Both surfaces
10	1525	3050	●	H112	Both surfaces
12	1525	3050	●	H112	Both surfaces
15	1525	3050	●	H112	Both surfaces
16	1525	3050	●	H112	Both surfaces
18	1525	3050	●	H112	Both surfaces
20	1525	3050	●	H112	Both surfaces
22	1525	3050	●	H112	Both surfaces
25	1525	3050	●	H112	Both surfaces
27	1525	3050	●	H112	Both surfaces
28	1525	3050	●	H112	Both surfaces
30	1525	3050	●	H112	Both surfaces
32	1525	3050	●	H112	Both surfaces
35	1525	3050	●	H112	Both surfaces
36	1525	3050	●	H112	Both surfaces
40	1525	3050	●	H112	Both surfaces
45	1525	3050	●	H112	Both surfaces
50	1525	3050	●	H112	Both surfaces
55	1525	3050	●	H112	One surface
60	1525	3050	●	H112	One surface
65	1525	3050	●	H112	One surface
70	1525	3050	●	H112	One surface
75	1525	3050	●	H112	One surface
80	1525	3050	●	H112	One surface
85	1525	3050	●	H112	One surface
90	1525	3050	●	H112	One surface
95	1525	3050	●	H112	One surface
100	1525	3050	●	H112	One surface
105	1525	2500	●	H112	None
110	1525	2500	●	H112	None
115	1525	2500	●	H112	None
120	1525	2500	●	H112	None
125	1525	2500	●	H112	None
130	1525	2500	●	H112	None
135	1525	2500	●	H112	None
140	1525	2500	●	H112	None
150	1525	2500	●	H112	None
160	1525	2500	●	H112	None
170	1525	2400	●	H112	None
180	1525	2300	●	H112	None
190	1525	2100	●	H112	None
200	1525	2000	●	H112	None
220	1525	2000	●	H112	None
230	1500	2500	●	H112	None
250	1500	2300	●	H112	None
260	1500	2300	●	H112	None
290	1500	2000	●	H112	None
300	1500	2000	●	H112	None
320	1500	1500	●	H112	None
350	1500	1500	●	H112	None



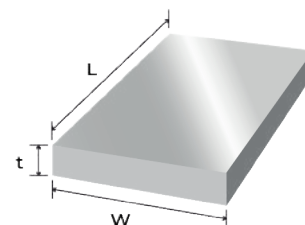
Sizes based on JIS H4000 and supplier's standard. Other dimensions upon request.

### Aluminum Rolled Plate - A5052

Temper **F, H32, H34, H112**  
 Certificates **ISO 9001, RoHS / Equivalent**  
 Standards **JIS H4000, ASTM B209-14 / Equivalent**  
 Chemical Composition (%) **Si 0.25max; Fe 0.4 max; Cu 0.1 max; Mn 0.1 max; Mg 2.2~2.8; Cr 0.15~0.35; Zn 0.1max; Al rem**

Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Note
5	1250	2500	●	
8	1250	2500	●	
10	1250	2500	●	
12	1250	2500	●	
12.7	1250	2500	●	
15	1250	2500	●	
16	1250	2500	●	
18	1250	2500	●	
20	1250	2500	●	
25	1250	2500	●	
30	1250	2500	●	
35	1250	2500	●	
40	1250	2500	●	
45	1250	2500	●	
50	1250	2500	●	
55	1250	2500	●	
60	1250	2500	●	
65	1250	2500	●	
70	1250	2500	●	
75	1250	2500	●	
80	1250	2500	●	
85	1250	2500	●	
90	1250	2500	●	
95	1250	2500	●	
110	1250	2500	●	
Upto 600	1250	2500	●	



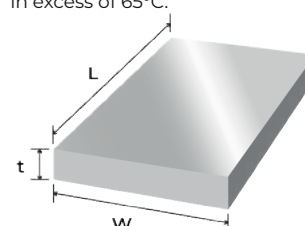
Sizes based on JIS, ASTM and supplier's standard.  
 Other dimensions upon request.

### Aluminum Rolled Plate - A5083

Temper **F, H111, H116, H321**  
 Certificates **ISO 9001, RoHS / Equivalent**  
 Standards **JIS H4000, EN 485-1:2010-02 / Equivalent**  
 Chemical Composition (%) **Si 0.4max; Fe 0.4 max; Cu 0.1 max; Mn 0.4~1.0; Mg 4.0~4.9; Cr 0.05~0.25; Zn 0.25max; Ti 0.15 max; Al rem**

Unit: mm

Thickness (t)	Width (W): 1250/ 1500/ 2000/ on request				Note
	Length (L)				
	2500	3000	6000	On request	
3	●	●	●	●	
4	●	●	●	●	
5	●	●	●	●	
6	●	●	●	●	
8	●	●	●	●	
10	●	●	●	●	
12	●	●	●	●	
15	●	●	●	●	
20	●	●	●	●	
25	●	●	●	●	
30	●	●	●	●	
35	●	●	●	●	
40	●	●	●	●	
45	●	●	●	●	
50	●	●	●	●	
55	●	●	●	●	
60	●	●	●	●	
65	●	●	●	●	
70	●	●	●	●	
75	●	●	●	●	
80	●	●	●	●	
85	●	●	●	●	
90	●	●	●	●	
95	●	●	●	●	
Upto 1050				●	



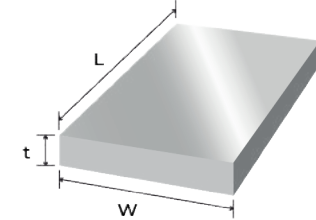
Sizes based on supplier's standard.  
 Other dimensions upon request.

## Aluminum Rolled Plate - A6061

Temper **F, T4, T6, T651**  
 Certificates **ISO 9001, RoHS / Equivalent**  
 Standards **JIS H4000, ASTM B209-14 / Equivalent**  
 Chemical Composition (%) **Si 0.4~0.8; Fe 0.7max; Cu 0.15~0.4; Mn 0.15 max; Mg 0.8~1.2; Cr 0.04~0.35; Zn 0.25 max; Ti 0.15max; Al rem**

Unit: mm

Thickness (t)	Width (W): 1250 / 1600/ on request				Note
	Length (L)				
	2500	3000	6000	On request	
4	●	●	●	●	
5	●	●	●	●	
6	●	●	●	●	
8	●	●	●	●	
10	●	●	●	●	
12	●	●	●	●	
15	●	●	●	●	
16	●	●	●	●	
20	●	●	●	●	
25	●	●	●	●	
30	●	●	●	●	
36	●	●	●	●	
41	●	●	●	●	
46	●	●	●	●	
51	●	●	●	●	
56	●	●	●	●	
61	●	●	●	●	
71	●	●	●	●	
81	●	●	●	●	
91	●	●	●	●	
101	●	●	●	●	
151	●	●	●	●	
Upto 600					



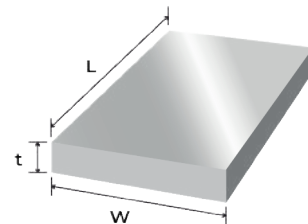
Sizes based on JIS, ASTM supplier's standard.  
 Other dimensions upon request.

## Aluminum Rolled Plate - A7075

Temper **T651**  
 Certificates **ISO 9001, RoHS / Equivalent**  
 Standards **ASTM B209-14 / Equivalent**  
 Chemical Composition (%) **Si 0.4max; Fe 0.5max; Cu 1.2~2.0; Mn 0.03 max; Mg 2.1~2.9; Cr 0.18~0.28; Zn 5.1~6.1; Ti 0.2max; Al rem**

Unit: mm

Thickness (t)	Width (W): 1250/ 1500/ 2000/ on request				Note
	Length (L)				
	2500	3000	6000	On request	
8	●	●	●	●	
10	●	●	●	●	
12	●	●	●	●	
12.7	●	●	●	●	
15	●	●	●	●	
16	●	●	●	●	
18	●	●	●	●	
20	●	●	●	●	
25	●	●	●	●	
30	●	●	●	●	
35	●	●	●	●	
40	●	●	●	●	
45	●	●	●	●	
50	●	●	●	●	
55	●	●	●	●	
60	●	●	●	●	
65	●	●	●	●	
70	●	●	●	●	
75	●	●	●	●	
80	●	●	●	●	
85	●	●	●	●	
90	●	●	●	●	
95	●	●	●	●	
Upto 250					

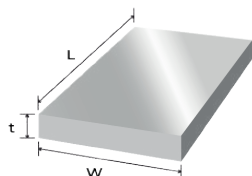


Sizes based on ASTM and supplier's standard.  
 Other dimensions upon request.

## Aluminum Cast Plate ACP5052, ACP5052R

Temper -  
 Certificates ISO 9001, ISO14001 / Equivalent  
 Standards EN AW-5052,  
 DIN ISO 2768-m / Equivalent  
 Chemical Composition (%) Alloy Al-Mg, Mg 2.5%,  
 match Alloy A5052

Very good Machinability, polishing and corrosion resistance. The grain structure is non-directional, with the mechanical values being the same in all directions. In-house heat treatment homogenises and removes the residual stresses from the microstructure throughout the cast billet.



Unit: mm

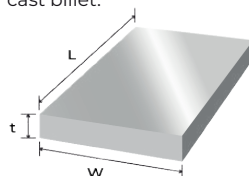
Thickness (t)	Width (W) 1520 / on request		Note
	Length (L)		
	3020	On request	
6	●	●	ACP5052 only
8	●	●	
10	●	●	
12	●	●	
14	●	●	
15	●	●	
16	●	●	
18	●	●	
20	●	●	
22	●	●	
24	●	●	
25	●	●	
26	●	●	
28	●	●	
30	●	●	
35	●	●	
40	●	●	
45	●	●	
50	●	●	
55	●	●	
60	●	●	
65	●	●	
70	●	●	
75	●	●	
80	●	●	
85	●	●	
90	●	●	
95	●	●	
100	●	●	
120	●	●	
140	●	●	
150	●	●	
160	●	●	
180	●	●	
200	●	●	
250	●	●	
300	●	●	
350	●	●	
570	●	●	ACP5052R only
800	●	●	ACP5052R only
1060	●	●	ACP5052R only

Sizes based on supplier's standard.  
 Other dimensions upon request.

## Aluminum Cast Plate - ACP5080, ACP5080S, ACP5080R, ACP5080RS, ACP5080 Giant

Temper -  
 Certificates ISO 9001, ISO14001 / Equivalent  
 Standards EN AW-5083, DIN EN 373-3/ 3.3547,  
 DIN ISO 2768-m / Equivalent  
 Chemical Composition (%) Alloy Al, Mg 4.0~4.9%  
 match Alloy A5083

Very good Machinability, polishing and corrosion resistance. The grain structure is non-directional, with the mechanical values being the same in all directions. In-house heat treatment homogenises and removes the residual stresses from the microstructure throughout the cast billet.



Unit: mm

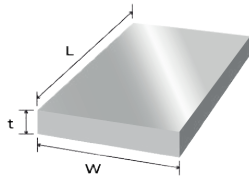
Thickness (t)	Width (W) 1520 / on request		Note
	Length (L)		
	3020	On request	
5	●	●	ACP5080 only
6	●	●	ACP5080 only
8	●	●	ACP5080/R
10	●	●	ACP5080/R
12	●	●	ACP5080/R
14	●	●	ACP5080/R
15	●	●	
16	●	●	
18	●	●	
20	●	●	
22	●	●	
24	●	●	
25	●	●	
26	●	●	
28	●	●	
30	●	●	
35	●	●	
40	●	●	
45	●	●	
50	●	●	
55	●	●	
60	●	●	
65	●	●	
70	●	●	
75	●	●	
80	●	●	
85	●	●	
90	●	●	
95	●	●	
100	●	●	
120	●	●	
140	●	●	
150	●	●	
160	●	●	
180	●	●	
200	●	●	
250	●	●	
300	●	●	ACP5080R/Giant
340	●	●	ACP5080R/Giant
570	●	●	ACP5080R/Giant
800	●	●	ACP5080R only
1060	●	●	ACP5080R only

Sizes based on supplier's standard.  
 Other dimensions upon request.

## Aluminum Cast Plate - ACP6000

Temper -  
 Certificates -  
 Standards -  
 Chemical Composition (%) Alloy Al - Zn,  
 match all Al-alloy type A7

Very good Machinability, polishing and corrosion resistance. The grain structure is non-directional, with the mechanical values being the same in all directions. In-house heat treatment homogenises and removes the residual stresses from the microstructure throughout the cast billet.



Unit: mm

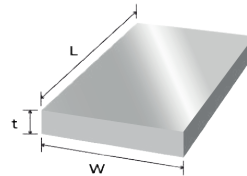
Thickness (t)	Width (W) 1570 / on request		Note
	Length (L)		
	3670	On request	
6	●	●	
8	●	●	
10	●	●	
12	●	●	
14	●	●	
15	●	●	
16	●	●	
18	●	●	
20	●	●	
22	●	●	
24	●	●	
25	●	●	
26	●	●	
28	●	●	
30	●	●	
35	●	●	
40	●	●	
45	●	●	
50	●	●	
55	●	●	
60	●	●	
65	●	●	
70	●	●	
75	●	●	
80	●	●	
85	●	●	
90	●	●	
95	●	●	
100	●	●	
120	●	●	
140	●	●	
150	●	●	
160	●	●	
180	●	●	
200	●	●	
250	●	●	

Sizes based on supplier's standard.  
 Other dimensions upon request.

## Aluminum Cast Plate - ACP7, ACP7R

Temper -  
 Certificates -  
 Standards -  
 Chemical Composition (%) Alloy Al - Zn, Zn 5.0~6.0%,  
 match Alloy A7021

Very good Machinability, polishing and corrosion resistance. The grain structure is non-directional, with the mechanical values being the same in all directions. In-house heat treatment homogenises and removes the residual stresses from the microstructure throughout the cast billet.



Unit: mm

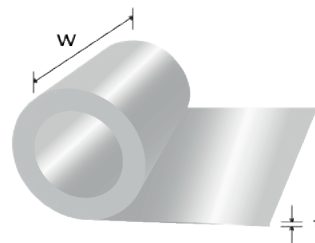
Thickness (t)	Width (W) 1520 / on request		Note
	Length (L)		
	3020	On request	
10	●	●	ACP7 only
12	●	●	ACP7 only
14	●	●	ACP7 only
15	●	●	
16	●	●	
18	●	●	
20	●	●	
22	●	●	
24	●	●	
25	●	●	
26	●	●	
28	●	●	
30	●	●	
35	●	●	
40	●	●	
45	●	●	
50	●	●	
55	●	●	
60	●	●	
65	●	●	
70	●	●	
75	●	●	
80	●	●	
85	●	●	
90	●	●	
95	●	●	
100	●	●	
120	●	●	
140	●	●	
150	●	●	
160	●	●	
180	●	●	
200	●	●	
250	●	●	ACP7R only
300	●	●	ACP7R only
350	●	●	ACP7R only
400	●	●	ACP7R only
450	●	●	ACP7R only
500	●	●	ACP7R only

Sizes based on supplier's standard.  
 Other dimensions upon request.

## Aluminum Coil - A1050

Temper **O, H12, H14, H16, H18, H24**  
 Certificates **ISO 9001 / Equivalent**  
 Standards **JIS H4000 / Equivalent**  
 Chemical Composition (%) **Al 99.5 min; Si 0.25 max; Fe 0.4 max; Cu 0.05 max; Mn 0.05 max; Mg 0.05 max; Zn 0.05 max; V 0.05 max; Ti 0.03max**

Excellent workability and corrosion resistance. 1050 aluminum alloy for industrial aluminum, is typically used for the manufacture of containers for the chemical industry.



Unit: mm

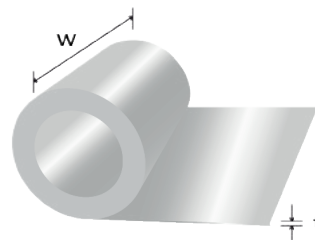
Thickness (t)	Width (W)		Note
	600	On request	
0.3	●	●	
0.5	●	●	
0.8	●	●	
1.0	●	●	
1.2	●	●	
1.5	●	●	
2.0	●	●	
2.5	●	●	
3.0	●	●	

Sizes based on JIS H4000 and supplier's standard.  
 Other dimensions upon request.

## Aluminum Coil - A1100

Temper **O, H12, H14, H16, H18, H24**  
 Certificates **ISO 9001 / Equivalent**  
 Standards **JIS H4000 / Equivalent**  
 Chemical Composition (%) **Al 99.0 min; Si+Fe 0.95 max; Cu 0.05~0.2; Mn 0.05 max; Zn 0.1 max**

Having a relatively low strength but excellent formability, weldability and corrosion resistance.  
 Used for general vessels, architectural materials, electrical appliances, various containers, printing boards and others.



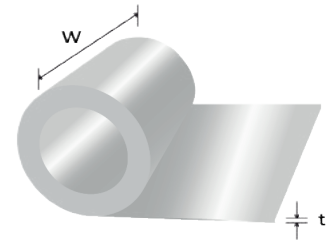
Unit: mm

Thickness (t)	Width (W)		Note
	600	On request	
0.3	●	●	
0.5	●	●	
0.8	●	●	
1.0	●	●	
1.2	●	●	
1.5	●	●	
2.0	●	●	
2.5	●	●	
3.0	●	●	

Sizes based on JIS H4000 and supplier's standard.  
 Other thickness upon request.

## Aluminum Coil - A5052

Temper **O, H32, H34, H36, H38**  
 Certificates **ISO 9001 / Equivalent**  
 Standards **JIS H4000 / Equivalent**  
 Chemical Composition (%) **Si 0.25max; Fe 0.4 max; Cu 0.1 max; Mn 0.1 max; Mg 2.2~2.8; Cr 0.15~0.35; Zn 0.1max; Al rem**



Excellent corrosion resistance, high thermal, electrical conductivity, workability and positive treasure.  
 5052 aluminum coil can also be well applied in electrical enclosure, cold stamping parts, sheet metal products and other manufacture.

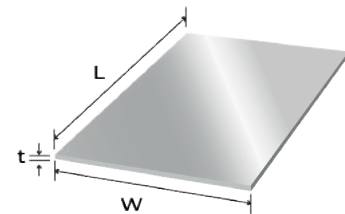
Unit: mm

Thickness (t)	Width (W)		Note
	600	On request	
0.3	●	●	
0.5	●	●	
0.8	●	●	
1.0	●	●	
1.2	●	●	
1.5	●	●	
2.0	●	●	
2.5	●	●	
3.0	●	●	
3.2	●	●	

Sizes based on JIS H4000 and supplier's standard.  
 Other thickness upon request.

## Aluminum Reflector Sheet - Miro

Temper **Hard**  
 Certificates **ISO / Equivalent**  
 Standards **DIN EN 573-3, 485-2 / Equivalent**  
 Chemical Composition (%) **Al 99.85 min.**



Choose from an extensive range of standard, high-quality, anodised surfaces with various special characteristics: reflective from matte to gloss, recyclable, coloured, scratch-resistant, antistatic and paintable. Whichever characteristics you select, all are complemented by a wide variety of surface structures.

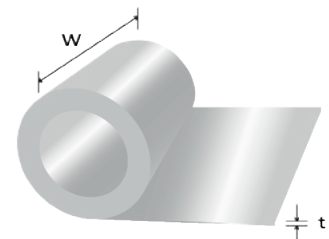
Unit: mm

Thickness (t)	Width (W): 969 / On request			Note
	Length (L)			
	1840	2500	On request	
0.4	●	●	●	
0.5	●	●	●	

Sizes based on DIN and supplier's standard.  
 Other dimensions upon request.

## Aluminum Reflector Coil - 320G

Temper **Hard**  
 Certificates **ISO, IATF / Equivalent**  
 Standards **DIN 5036-3 / Equivalent**  
 Chemical Composition (%) **Al 99.85 min.**



Choose from an extensive range of standard, high-quality, anodised surfaces with various special characteristics: reflective from matte to gloss, recyclable, coloured, scratch-resistant, antistatic and paintable. Whichever characteristics you select, all are complemented by a wide variety of surface structures.

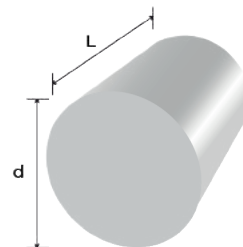
Unit: mm

Thickness (t)	Width (W)		Note
	1250	On request	
0.3	●	●	
0.4	●	●	

Sizes based on DIN and supplier's standard.  
 Other dimensions upon request.

## Aluminum Round Bar - (17S) A2017

Temper **T4**  
 Certificates **RoHS / Equivalent**  
 Standards **JIS H4040 / Equivalent**  
 Chemical Composition (%) **Si 0.2~0.8; Fe 0.7 max; Cu 3.5~4.5; Mn 0.4~1.0; Mg 0.4~0.8; Cr 0.1 max; Zn 0.25 max; Ti 0.15 max; Al rem**



This product is made of A2017 (2000-series Al-Cu alloy), also called duralumin. The product features high strength properties and good machinability despite having inferior corrosion resistance and weldability. Along with A5056, this is a high-demand product for round bars. Main uses include general-purpose components with high degrees of machining, aircraft material, and automobile components.

Unit: mm

Diameter (d)	Length (L)		
	1000	2000	On request
5		●	●
6		●	●
7		●	●
8		●	●
9		●	●
10		●	●
11		●	●
12		●	●
13		● ●	● ●
14		● ●	● ●
15		● ●	● ●
16		● ●	● ●
17		● ●	● ●
18		● ●	● ●
19		● ●	● ●
20		● ●	● ●
21		● ●	● ●
22		● ●	● ●
23		● ●	● ●
24		● ●	● ●
25		● ●	● ●
26		● ●	● ●
27		● ●	● ●
28		● ●	● ●
29		● ●	● ●
30		● ●	● ●
31		● ●	● ●
32		● ●	● ●
33		● ●	● ●
34		● ●	● ●
35		● ●	● ●
36		● ●	● ●
37		● ●	● ●
38		● ●	● ●
39		● ●	● ●
40		● ●	● ●
41		● ●	● ●
42		● ●	● ●
43		● ●	● ●
44		● ●	● ●
45		● ●	● ●
46		● ●	● ●
47		● ●	● ●
48		● ●	● ●
49		● ●	● ●
50		● ●	● ●
51		● ●	● ●
52		● ●	● ●
53		● ●	● ●
54		● ●	● ●
55		● ●	● ●
56		● ●	● ●

Unit: mm

Diameter (d)	Length (L)		
	1000	2000	On request
57		● ●	● ●
58		● ●	● ●
60		● ●	● ●
61		●	●
62		●	●
63		●	●
64		●	●
65		●	●
70		●	●
71		●	●
75		●	●
80		●	●
81		●	●
85		●	●
90		●	●
95		●	●
100		●	●
105		●	●
110		●	●
115		●	●
120		●	●
125		●	●
130		●	●
135		●	●
140		●	●
145		●	●
150		●	●
155		●	●
160		●	●
165		●	●
170		●	●
175		●	●
180		●	●
190		●	●
200		●	●
210		●	●
220		●	●
230		●	●
240		●	●
250		●	●
260		●	●
270		●	●
280		●	●
290		●	●
300		●	●
310		●	●
320		●	●
330		●	●
350	●		●
360	●		●
370	●		●

● Drawn ● Extruded

Sizes based on JIS H4040 and supplier's standard. Other dimensions upon request.

# Aluminum Round Bar - (24S) A2024

Temper  
 Certificates  
 Standards  
 Chemical Composition (%)

**T4**  
**RoHS / Equivalent**  
**JIS H4040 / Equivalent**  
**Si 0.5 max; Fe 0.5max; Cu 3.8~4.9; Mn 0.3~0.9; Mg 1.2~1.8; Cr 0.1 max; Zn 0.25 max; Ti 0.15max; Al rem**

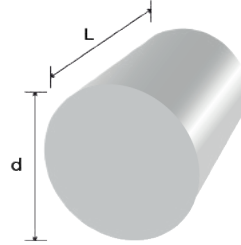
A2024 (2000-series Al-Cu alloy) is also called super duralium. The product is stronger than A2017 products and provides excellent machinability. Main uses include aircraft materials, spindles, and bolt materials.

Unit: mm

Diameter (d)	Length (L)		
	1000	2000	On request
5	●	●	●
6	●	●	●
8	●	●	●
10	●	●	●
12	●	●	●
15	●	●	●
20	●	●	●
25	●	●	●
28	●	●	●
30	●	●	●
35	●	●	●
40	●	●	●
45	●	●	●
50	●	●	●
52	●	●	●
55	●	●	●
60	●	●	●
65	●	●	●
70	●	●	●
75	●	●	●
80	●	●	●
85	●	●	●
90	●	●	●
100	●	●	●
110	●	●	●
120	●	●	●
130	●	●	●
140	●	●	●
150	●	●	●
160	●	●	●
180	●	●	●
200	●	●	●

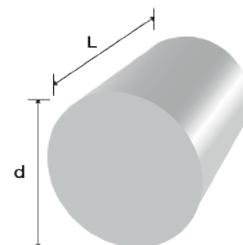
● Drawn ● Extruded

Sizes based on JIS H4040 and supplier's standard. Other dimensions upon request.



## Aluminum Round Bar - (52S) A5052

Temper **H34**  
 Certificates **RoHS / Equivalent**  
 Standards **JIS H4040 / Equivalent**  
 Chemical Composition (%) **Si 0.25 max; Fe 0.4 max; Cu 0.1 max; Mn 0.1 max; Mg 2.2~2.8; Cr 0.15~0.35; Zn 0.1 max; Al rem**



This A5052 (a 5000-series Al-Mg alloy) product offers moderate strength and good corrosion resistance and weldability. A5056 is typically used for aluminum alloy round bars, but A5052 round bars are often used in combination with plates.

Unit: mm

Diameter (d)	Length (L)		
	1000	2000	On request
5	●	●	●
6	●	●	●
7	●	●	●
8	●	●	●
9	●	●	●
10	●	●	●
11	●	●	●
12	●	●	●
13	●	●	●
14	●	●	●
15	●	●	●
16	●	●	●
17	●	●	●
18	●	●	●
19	●	●	●
20	●	●	●
21	●	●	●
22	●	●	●
23	●	●	●
24	●	●	●
25	●	●	●
26	●	●	●
27	●	●	●
28	●	●	●
29	●	●	●
30	●	●	●
31	●	●	●
32	●	●	●
33	●	●	●
34	●	●	●
35	●	●	●
36	●	●	●
37	●	●	●
38	●	●	●
39	●	●	●
40	●	●	●
41	●	●	●
42	●	●	●
43	●	●	●
44	●	●	●
45	●	●	●

Unit: mm

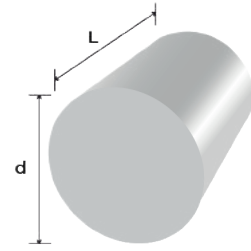
Diameter (d)	Length (L)		
	1000	2000	On request
46	●	●	●
47	●	●	●
48	●	●	●
49	●	●	●
50	●	●	●
51	●	●	●
52	●	●	●
53	●	●	●
54	●	●	●
55	●	●	●
56	●	●	●
57	●	●	●
58	●	●	●
59	●	●	●
60	●	●	●
65	●	●	●
70	●	●	●
75	●	●	●
80	●	●	●
85	●	●	●
90	●	●	●
95	●	●	●
100	●	●	●
110	●	●	●
120	●	●	●
130	●	●	●
140	●	●	●
150	●	●	●
160	●	●	●
170	●	●	●
180	●	●	●
190	●	●	●
200	●	●	●

● Drawn ● Extruded

Sizes based on JIS H4040 and supplier's standard. Other dimensions upon request.

# Aluminum Round Bar - (56S) A5056

Temper **H34**  
 Certificates **RoHS / Equivalent**  
 Standards **JIS H4040 / Equivalent**  
 Chemical Composition (%) **Si 0.3 max; Fe 0.4 max; Cu 0.1 max; Mn 0.05~0.2; Mg 4.5~5.6; Cr 0.05~0.2; Zn 0.1 max; Al rem**



A5056 (a 5000-series Al-Mg alloy) is a typical aluminum alloy round bar with good corrosion resistance, cutting machinability, and anodizing treatment preperities. Main uses include optical equipment and communication equipment components, and fasteners.

Unit: mm

Diameter (d)	Length (L)		
	1000	2000	On request
4	●	●	●
5	●	●	●
6	●	●	●
7	●	●	●
8	●	●	●
9	●	●	●
10	●	●	●
11	●	●	●
12	●	●	●
13	●	●	●
14	●	●	●
15	●	●	●
16	●	●	●
17	●	●	●
18	●	●	●
19	●	●	●
20	●	●	●
21	●	●	●
22	●	●	●
23	●	●	●
24	●	●	●
25	●	●	●
26	●	●	●
27	●	●	●
28	●	●	●
29	●	●	●
30	●	●	●
31	●	●	●
32	●	●	●
33	●	●	●
34	●	●	●
35	●	●	●
36	●	●	●
37	●	●	●
38	●	●	●
39	●	●	●
40	●	●	●
41	●	●	●
42	●	●	●
43	●	●	●
44	●	●	●
45	●	●	●
46	●	●	●
47	●	●	●
48	●	●	●
49	●	●	●
50	●	●	●
51	●	●	●
52	●	●	●
53	●	●	●
54	●	●	●
55	●	●	●
56	●	●	●
57	●	●	●
58	●	●	●
59	●	●	●
60	●	●	●

Unit: mm

Diameter (d)	Length (L)		
	1000	2000	On request
61	●	●	●
62	●	●	●
63	●	●	●
65	●	●	●
68	●	●	●
70	●	●	●
75	●	●	●
80	●	●	●
85	●	●	●
90	●	●	●
95	●	●	●
100	●	●	●
105	●	●	●
110	●	●	●
115	●	●	●
120	●	●	●
125	●	●	●
130	●	●	●
135	●	●	●
140	●	●	●
145	●	●	●
150	●	●	●
155	●	●	●
160	●	●	●
165	●	●	●
170	●	●	●
175	●	●	●
180	●	●	●
185	●	●	●
190	●	●	●
200	●	●	●
210	●	●	●
220	●	●	●
230	●	●	●
240	●	●	●
250	●	●	●
260	●	●	●
270	●	●	●
280	●	●	●
290	●	●	●
300	●	●	●

● Drawn ● Extruded

Sizes based on JIS H4040 and supplier's standard. Other dimensions upon request.

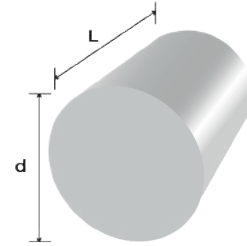
## Aluminum Round Bar - (61S) A6061

Temper **F, T6**  
 Certificates **RoHS / Equivalent**  
 Standards **JIS H4040 / Equivalent**  
 Chemical Composition (%) **Si 0.4~0.8; Fe 0.7 max; Cu 0.15~0.4; Mn 0.15 max; Mg 0.8~1.2; Cr 0.04~0.35; Zn 0.25 max; Al rem**

This is a heat-treated A6061 (6000-series Al-Mg-Si alloy) product with good corrosion resistance. The product offers a good balance of strength and corrosion resistance. Main uses include rivet materials, automobile components, and semiconductor manufacturing equipment.

Unit: mm

Diameter (d)	Length (L)				Temper
	1000	2000	3000	On request	
8	●	●	●	●	T6
10	●	●	●	●	T6
12	●	●	●	●	T6
14	●	●	●	●	T6
15	●	●	●	●	T6
16	●	●	●	●	T6
18	●	●	●	●	T6
19	●	●	●	●	T6
20	●	●	●	●	T6
25	●	●	●	●	T6
26	●	●	●	●	T6
28	●	●	●	●	T6
30	●	●	●	●	T6
32	●	●	●	●	T6
35	●	●	●	●	T6
38	●	●	●	●	T6
40	●	●	●	●	T6
42	●	●	●	●	T6
45	●	●	●	●	T6
50	●	●	●	●	T6
55	●	●	●	●	T6
60	●	●	●	●	T6
62	●	●	●	●	T6
65	●	●	●	●	T6
70	●	●	●	●	T6
75	●	●	●	●	T6
80	●	●	●	●	T6
85	●	●	●	●	T6
90	●	●	●	●	T6
95	●	●	●	●	T6
100	●	●	●	●	T6
110	●	●	●	●	T6
120	●	●	●	●	T6
130	●	●	●	●	T6
140	●	●	●	●	T6
150	●	●	●	●	T6
160	●	●	●	●	T6
170	●	●	●	●	T6
180	●	●	●	●	T6
190	●	●	●	●	T6
200	●	●	●	●	T6
210	●	●	●	●	T6
220	●	●	●	●	T6
230	●	●	●	●	T6
240	●	●	●	●	T6
250	●	●	●	●	T6
260	●	●	●	●	T6
270	●	●	●	●	T6
280	●	●	●	●	T6
290	●	●	●	●	T6
300	●	●	●	●	T6
310	●	●	●	●	T6
320	●	●	●	●	T6
330	●	●	●	●	T6
340	●	●	●	●	T6

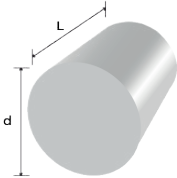


● Extruded  
 Sizes based on JIS H4040 and supplier's standard.  
 Other dimensions upon request.

## Aluminum Round Bar (63S) A6063

Temper **T6**  
 Certificates **RoHS / Equivalent**  
 Standards **JIS H4040 / Equivalent**  
 Chemical Composition (%) **Si 0.2~0.6; Fe 0.35 max;  
 Cu 0.1 max; Mn 0.1 max;  
 Mg 0.45~0.9; Cr 0.1 max;  
 Zn 0.1 max; Ti 0.1 max;  
 Al rem**

When used as a conductive material, this product offers a guaranteed conductivity of 51.0% IACS or more. The T6 heat treatment provides a hardness of no less than 205 N/mm<sup>2</sup>.



Unit: mm

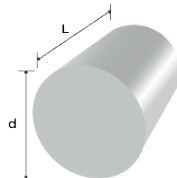
Diameter (d)	Length (L)			
	1000	2000	3000	On request
20	●	●	●	●
25	●	●	●	●
30	●	●	●	●
35	●	●	●	●
40	●	●	●	●
45	●	●	●	●
50	●	●	●	●
55	●	●	●	●
60	●	●	●	●
65	●	●	●	●
70	●	●	●	●
75	●	●	●	●
80	●	●	●	●
85	●	●	●	●
90	●	●	●	●
95	●	●	●	●
100	●	●	●	●
110	●	●	●	●
120	●	●	●	●
130	●	●	●	●
140	●	●	●	●
150	●	●	●	●
160	●	●	●	●
170	●	●	●	●
180	●	●	●	●
190	●	●	●	●
200	●	●	●	●

● Extruded  
 Sizes based on JIS H4040 and supplier's standard.  
 Other dimensions upon request.

## Aluminum Round Bar (YH75) A7075

Temper **T6, T6511**  
 Certificates **RoHS / Equivalent**  
 Standards **JIS H4040 / Equivalent**  
 Chemical Composition (%) **Si 0.4max; Fe 0.5max;  
 Cu 1.2~2.0; Mn 0.03 max;  
 Mg 2.1~2.9; Cr 0.18~0.28;  
 Zn 5.1~6.1; Ti 0.2max; Al rem**

This material is made of 7000-series Al-Zn-Mg alloy. The alloy features one of the highest levels of strength among aluminum alloys. In addition, YH75 plates, this product can be used in light-weight, high-strength applications.



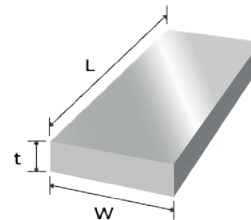
Unit: mm

Diameter (d)	Length (L)				Temper
	1000	2000	3000	On request	
10	●	●	●	●	T6511
12	●	●	●	●	T6511
14	●	●	●	●	T6511
15	●	●	●	●	T6511
16	●	●	●	●	T6511
18	●	●	●	●	T6511
20	●	●	●	●	T6511
25	●	●	●	●	T6511
30	●	●	●	●	T6511
35	●	●	●	●	T6511
40	●	●	●	●	T6511
45	●	●	●	●	T6511
50	●	●	●	●	T6511
55	●	●	●	●	T6511
60	●	●	●	●	T6511
65	●	●	●	●	T6511
70	●	●	●	●	T6511
75	●	●	●	●	T6511
80	●	●	●	●	T6511
85	●	●	●	●	T6511
90	●	●	●	●	T6511
95	●	●	●	●	T6511
100	●	●	●	●	T6511
110	●	●	●	●	T6511
120	●	●	●	●	T6511
130	●	●	●	●	T6511
140	●	●	●	●	T6511
150	●	●	●	●	T6511
160	●	●	●	●	T6 / T6511
170	●	●	●	●	T6 / T6511
180	●	●	●	●	T6 / T6511
190	●	●	●	●	T6 / T6511
200	●	●	●	●	T6 / T6511
210	●	●	●	●	T6 / T6511
220	●	●	●	●	T6 / T6511
230	●	●	●	●	T6 / T6511
240	●	●	●	●	T6 / T6511
250	●	●	●	●	T6 / T6511
260	●	●	●	●	T6 / T6511

● Extruded  
 Sizes based on JIS H4040 and supplier's standard.  
 Other dimensions upon request.

## Aluminum Flat Bar - A6063

Temper **T5**  
 Certificates **RoHS / Equivalent**  
 Standards **JIS H4040, JIS H4100 / Equivalent**  
 Chemical Composition (%) **Si 0.2~0.6; Fe 0.35 max; Cu 0.1 max; Mn 0.1 max; Mg 0.45~0.9; Cr 0.1 max; Zn 0.1 max; Ti 0.1 max; Others (Each 0.05 max; Total 0.15 max)**



This is a heat-treated A6063 (6000-series Al-Mg-Si alloy) product with corrosion resistance. Although the strength is lower than 6061 alloys, the product features excellent corrosion resistance and surface treatment properties. Typical applications include aluminum sashes, but the product can also be used for heat exchanger components, mass-production components with complicated shapes, and more.

Unit: mm

Thickness (t) x Width (W)	Length (L)		Note
	4000	On request	
2 x 10	●	●	
15	●	●	
20	●	●	
25	●	●	
30	●	●	
50	●	●	
3 x 10	●	●	
12	●	●	
15	●	●	
20	●	●	
25	●	●	
30	●	●	
35	●	●	
40	●	●	
50	●	●	
4 x 10	●	●	
12	●	●	
15	●	●	
20	●	●	
25	●	●	
30	●	●	
40	●	●	
50	●	●	
70	●	●	
5 x 10	●	●	
12	●	●	
15	●	●	
20	●	●	
25	●	●	
30	●	●	
35	●	●	
40	●	●	
50	●	●	
60	●	●	
70	●	●	
100	●	●	
6 x 10	●	●	
12	●	●	
15	●	●	
20	●	●	
25	●	●	
30	●	●	
32	●	●	
35	●	●	
40	●	●	
50	●	●	
60	●	●	
75	●	●	
100	●	●	
8 x 15	●	●	
20	●	●	
25	●	●	
30	●	●	
32	●	●	
35	●	●	

● Extruded

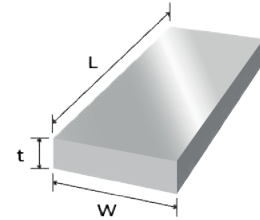
Sizes based on JIS H4040, H4100 and supplier's standard. Other dimensions upon request.

Unit: mm

Thickness (t) x Width (W)	Length (L)		Note
	4000	On request	
8 x 40	●	●	
50	●	●	
60	●	●	
75	●	●	
100	●	●	
9 x 20	●	●	
30	●	●	
40	●	●	
50	●	●	
60	●	●	
75	●	●	
100	●	●	
10 x 15	●	●	
20	●	●	
25	●	●	
30	●	●	
35	●	●	
40	●	●	
45	●	●	
50	●	●	
60	●	●	
70	●	●	
75	●	●	
80	●	●	
100	●	●	
120	●	●	
125	●	●	
150	●	●	
12 x 20	●	●	
25	●	●	
30	●	●	
40	●	●	
50	●	●	
60	●	●	
75	●	●	
100	●	●	
120	●	●	
13 x 25	●	●	
40	●	●	
15 x 20	●	●	
25	●	●	
30	●	●	
40	●	●	
50	●	●	
60	●	●	
75	●	●	
100	●	●	
150	●	●	
20 x 25	●	●	
30	●	●	
35	●	●	
40	●	●	
50	●	●	
60	●	●	
70	●	●	

## Aluminum Flat Bar - A6063

Temper	<b>T5</b>
Certificates	<b>RoHS / Equivalent</b>
Standards	<b>JIS H4040, JIS H4100 / Equivalent</b>
Chemical Composition (%)	<b>Si 0.2~0.6; Fe 0.35 max; Cu 0.1 max; Mn 01 max; Mg 0.45~0.9; Cr 0.1 max; Zn 0.1 max; Ti 0.1 max; Others (Each 0.05 max; Total 0.15 max)</b>



This is a heat-treated A6063 (6000-series Al-Mg-Si alloy) product with corrosion resistance. Although the strength is lower than 6061 alloys, the product features excellent corrosion resistance and surface treatment properties. Typical applications include aluminum sashes, but the product can also be used for heat exchanger components, mass-production components with complicated shapes, and more.

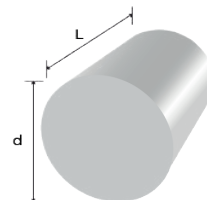
Unit: mm

Thickness (t) x Width (W)	Length (L)		Note
	4000	On request	
20 x 80	●	●	
100	●	●	
150	●	●	
25 x 30	●	●	
35	●	●	
40	●	●	
50	●	●	
60	●	●	
80	●	●	
100	●	●	
30 x 40	●	●	
50	●	●	
60	●	●	
65	●	●	
75	●	●	
100	●	●	
35 x 40	●	●	
50	●	●	
60	●	●	
75	●	●	
85	●	●	
100	●	●	
40 x 50	●	●	
60	●	●	
75	●	●	
100	●	●	

● Extruded

Sizes based on JIS H4040, H4100 and supplier's standard.  
Other dimensions upon request.

## Aluminum Billet - 1050, 1060, 1070, 1100, 6060, 6061, 6063, 6082, 6005, 6005A, 6106, 6351, 6463



Temper **O**  
 Certificates **RoHS / Equivalent**  
 Standards **ASTM E1251-88 / Equivalent**  
 Chemical Composition (%) **As table belows**

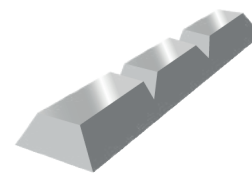
High quality billets for alluminium extrusion.

Diameter (inch / mm)	Length (mm)					Note
	1000	3000	5800	6000	On request	
3" (76mm)	●	●	●	●	●	
3.5" (89mm)	●	●	●	●	●	
4" (101mm)	●	●	●	●	●	
4.5" (114mm)	●	●	●	●	●	
5" (127mm)	●	●	●	●	●	
6" (152mm)	●	●	●	●	●	
7" (178mm)	●	●	●	●	●	
8" (203mm)	●	●	●	●	●	
9" (228mm)	●	●	●	●	●	
10" (254mm)	●	●	●	●	●	
11" (278mm)	●	●	●	●	●	

Any length is possible upto maximum 6000mm.

Alloy (AA)	Chemical Composition							
1070	Aluminum Purity: 99.70% min							
1060	Aluminum Purity: 99.60% min							
1050	Aluminum Purity: 99.50% min							
1100	Aluminum Purity: 99.00% min (Cu 0.09-0.15)							
Content (%)	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
6060	0.38-0.45	<0.25	<0.10	<0.10	0.40-0.45	<0.10	<0.10	0.008-0.014
6063	0.38-0.46	<0.25	<0.10	<0.10	0.45-0.55	<0.10	<0.10	0.008-0.014
6061	0.55-0.65	<0.25	0.20-0.30	<0.10	0.85-0.95	0.04-0.10	<0.10	0.008-0.014
6082	0.95-1.05	<0.25	<0.10	0.50-0.60	0.60-0.70	<0.10	<0.10	0.008-0.014
6005	0.65-0.75	<0.25	<0.10	<0.10	0.50-0.60	<0.10	<0.10	0.008-0.014
6005A	0.70-0.80	<0.25	0.05-0.10	0.15-0.20	0.60-0.70	0.05-0.10	<0.10	0.008-0.014
6106	0.45-0.55	<0.25	0.10-0.15	0.08-0.14	0.50-0.60	<0.10	<0.10	0.008-0.014
6351	0.80-0.90	<0.25	<0.10	0.45-0.55	0.50-0.60	<0.10	<0.10	0.008-0.014
6463	0.37-0.42	<0.15	0.10-0.15	<0.05	0.45-0.50	<0.05	<0.05	0.008-0.014

## Aluminum Primary Ingot - P1020A+, P1020A, P0610A, P0608A, EC Grade

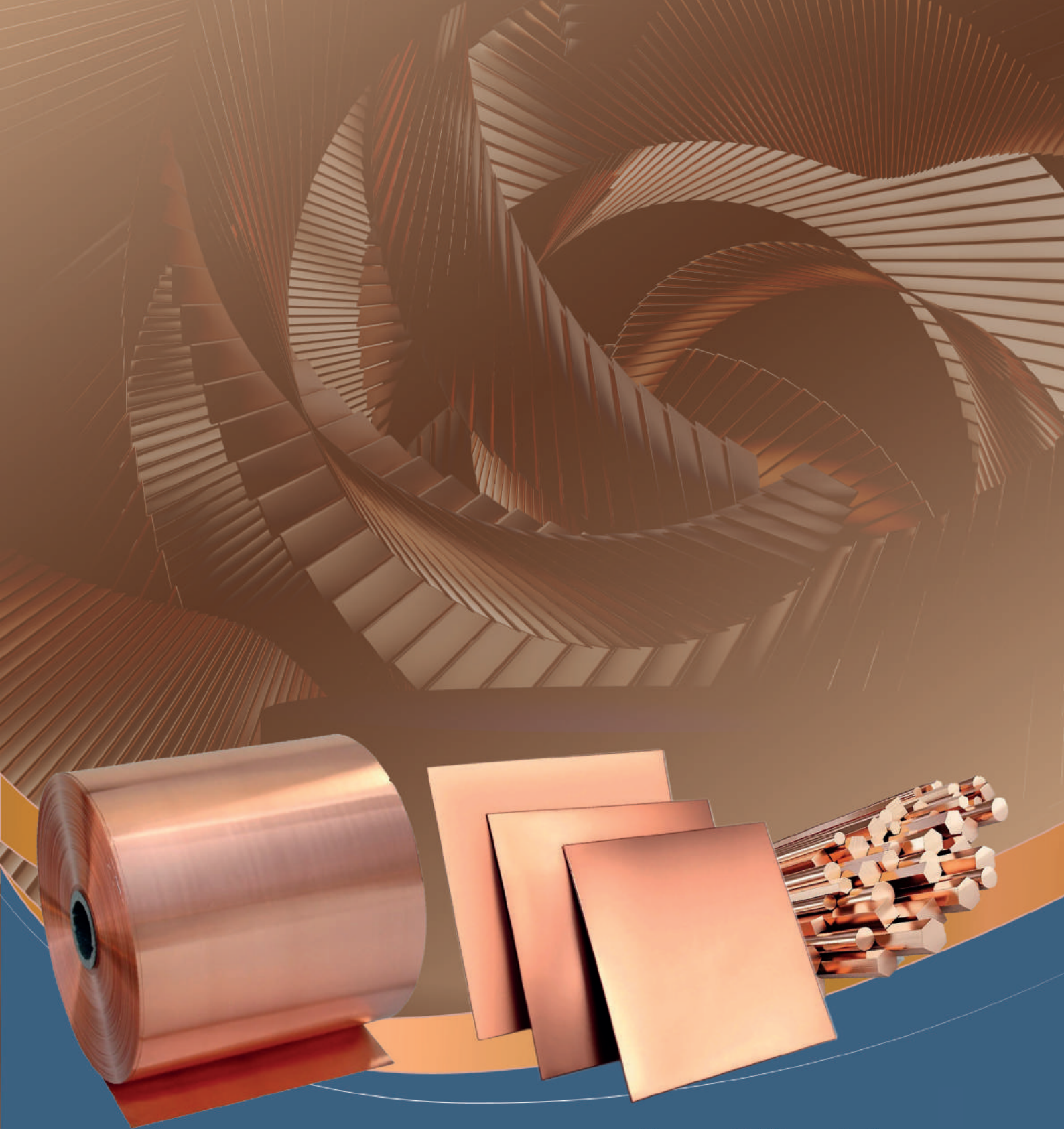


Temper **O**  
 Certificates **RoHS / Equivalent**  
 Standards **Aluminum high content LME standard**  
 Chemical Composition (%) **As table belows**

High quality Ingot for billets casting, cable, wide range of applications.

Ingot and Packaging Dimensions		
Bundle Weight	Bundle Dimensions	Bundle Labelling
1010kg* made up of 44 pieces of 22.95kg* interlocking ingot tied with two PET straps. 1 ingot dimension 750x105x166 (mm)	750mm(H) x 750mm(W) x 990mm(L)	One label each side indicating Pack number, Cast number, Chemical Analysis, Weight and Cast information.
Parking is standard, cannot be changed.		

Grade	Chemical Composition (Al>99.7%)
P1020A+ - (G3E154409)	Si: 0.085%; Fe: 0.18%; Cu: 0.010% max.
P1020A - (G3E102337)	Si: 0.085%; Fe: 0.15%; Cu: 0.010% max.
P0610A - (G3E102335)	Si: 0.065%; Fe: 0.10%; Cu: 0.005% max.
P0608A - (G3E102334)	Si: 0.055%; Fe: 0.08%; Cu: 0.002% max.
EC - C35S - (G3E141642) Boron treated	Si: 0.065%; Fe: 0.15%; Cu: 0.005% max.



# COPPER

- Copper & Alloys Coil
- Copper & Alloys Sheet/Plate
- Copper Busbar
- Copper Square Bar
- Copper & Alloys Round Bar
- Copper for Electroplating
- Brass (Hexagon)
- Brass Wire

## Copper Nickel Tin Alloy Coil - BF158 (C72900)

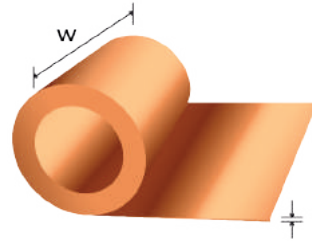
Temper **A, 1/4H, 1/2H, H, EH; AT, 1/4HT, 1/2HT, HT, EHT**  
 Certificates **AS 9100, ISO 9001 2015, ISO 14001 2021, RoHS, Reach / Equivalent**  
 Standards **UNS C72900, ASTM B740 / Equivalent**  
 Chemical Composition (%) **Nickel 14.5~15.5, Tin 7.5~8.5, Cu rem.**

Unit: mm

Thickness (t)	Width (W)			Note
	300	406	On request	
0.05	●	●	●	
0.10	●	●	●	
0.20	●	●	●	
0.30	●	●	●	
0.70	●	●	●	
1.00	●	●	●	
1.30	●	●	●	
2.00	●	●	●	

Sizes based on supplier's standard.  
 Other dimensions upon request.

BF158 strip is a high-performance, heat treatable spinodal copper-nickel-tin alloy designed to provide optimal formability and strength characteristics in conductive spring applications such as electronic connectors, switches, and sensors. The higher strength tempers provide excellent fatigue and impact performance, making them ideal for voice coil motor springs in optical image stabilization systems. BF158 strip is available in both pre-heat-treated (mill hardened) and heat treatable (age hardenable) forms.



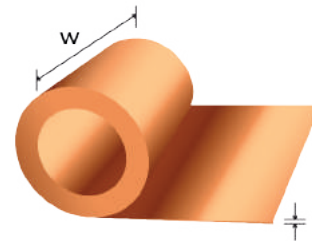
## Copper Coil - C1020

Temper **O, 1/4H, 1/2H, 3/4H, H, EH**  
 Certificates **ISO 9001, IATF 16949, RoHS / Equivalent**  
 Standards **JIS H3100 / Equivalent**  
 Chemical Composition (%) **Cu 99.96 min**

Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
0.10	●	●	●	
0.20	●	●	●	
0.25	●	●	●	
0.30	●	●	●	
0.35	●	●	●	
0.40	●	●	●	
0.50	●	●	●	
0.60	●	●	●	
0.64	●	●	●	
0.70	●	●	●	
0.80	●	●	●	
0.90	●	●	●	
1.00	●	●	●	
1.10	●	●	●	
1.20	●	●	●	
1.30	●	●	●	
1.40	●	●	●	
1.50	●	●	●	
1.60	●	●	●	
1.70	●	●	●	
1.80	●	●	●	
1.90	●	●	●	
2.00	●	●	●	
2.10	●	●	●	
2.20	●	●	●	
2.30	●	●	●	
2.40	●	●	●	
2.50	●	●	●	
2.60	●	●	●	
2.70	●	●	●	
2.80	●	●	●	
2.90	●	●	●	
3.00	●	●	●	
3.10	●	●	●	
3.20	●	●	●	
3.30	●	●	●	
3.40	●	●	●	
3.50	●	●	●	
3.60	●	●	●	
3.70	●	●	●	
3.80	●	●	●	
3.90	●	●	●	
4.00	●	●	●	

Excellent electric conductivity, heat conductivity, workability and drawability. Good weldability, corrosion resistance and weathering resistance. Free from hydrogen embrittlement when heated at elevated temperature in reducing atmosphere. Applicable to electrical use, chemical industries...



Sizes based on JIS H3100 and supplier's standard.  
 Other thickness and plating surface upon request.

## Copper Coil - C1100

Temper  
Certificates

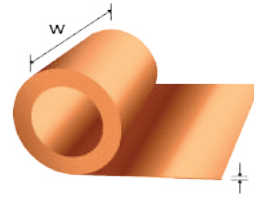
**O, 1/4H, 1/2H, 3/4H, H, EH**  
**ISO 9001, IATF 16949,**  
**RoHS / Equivalent**  
**JIS H3100 / Equivalent**  
**Cu 99.9 min.**

Standards  
Chemical Composition (%)

Excellent electric conductivity, heat conductivity, workability and drawability.  
Good weldability, corrosion resistance and weathering resistance.  
Applicable to electrical use, chemical industries etc.

Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
0.10	●	●	●	
0.20	●	●	●	
0.25	●	●	●	
0.30	●	●	●	
0.35	●	●	●	
0.40	●	●	●	
0.50	●	●	●	
0.60	●	●	●	
0.64	●	●	●	
0.70	●	●	●	
0.80	●	●	●	
0.90	●	●	●	
1.00	●	●	●	
1.10	●	●	●	
1.20	●	●	●	
1.30	●	●	●	
1.40	●	●	●	
1.50	●	●	●	
1.60	●	●	●	
1.70	●	●	●	
1.80	●	●	●	
1.90	●	●	●	
2.00	●	●	●	
2.10	●	●	●	
2.20	●	●	●	
2.30	●	●	●	
2.40	●	●	●	



Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
2.50	●	●	●	
2.60	●	●	●	
2.70	●	●	●	
2.80	●	●	●	
2.90	●	●	●	
3.00	●	●	●	
3.10	●	●	●	
3.20	●	●	●	
3.30	●	●	●	
3.40	●	●	●	
3.50	●	●	●	
3.60	●	●	●	
3.70	●	●	●	
3.80	●	●	●	
3.90	●	●	●	
4.00	●	●	●	

Sizes based on JIS H3100 and supplier's standard.  
Other thickness and plating surface upon request.

## Copper Coil - C1220

Temper  
Certificates

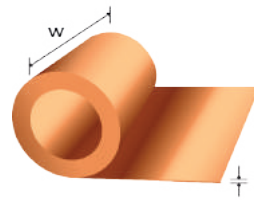
**O, 1/4H, 1/2H, 3/4H, H, EH**  
**ISO 9001, IATF 16949,**  
**RoHS / Equivalent**  
**JIS H3100 / Equivalent**  
**Cu 99.8 min; P 0.04 max**

Standards  
Chemical Composition (%)

Good workability, drawability, weldability, corrosion resistance, weathering resistance and heat conductivity.  
C1220 is free from hydrogen embrittlement when heated at elevated temperature in reducing atmosphere.  
Applicable to bath boilers, water heaters, gaskets, buildings, chemical industries.

Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
0.10	●	●	●	
0.20	●	●	●	
0.25	●	●	●	
0.30	●	●	●	
0.35	●	●	●	
0.40	●	●	●	
0.50	●	●	●	
0.60	●	●	●	
0.64	●	●	●	
0.70	●	●	●	
0.80	●	●	●	
0.90	●	●	●	
1.00	●	●	●	
1.10	●	●	●	
1.20	●	●	●	
1.30	●	●	●	
1.40	●	●	●	
1.50	●	●	●	
1.60	●	●	●	
1.70	●	●	●	
1.80	●	●	●	
1.90	●	●	●	
2.00	●	●	●	
2.10	●	●	●	
2.20	●	●	●	
2.30	●	●	●	
2.40	●	●	●	



Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
2.50	●	●	●	
2.60	●	●	●	
2.70	●	●	●	
2.80	●	●	●	
2.90	●	●	●	
3.00	●	●	●	
3.10	●	●	●	
3.20	●	●	●	
3.30	●	●	●	
3.40	●	●	●	
3.50	●	●	●	
3.60	●	●	●	
3.70	●	●	●	
3.80	●	●	●	
3.90	●	●	●	
4.00	●	●	●	

Sizes based on JIS H3100 and supplier's standard.  
Other thickness and plating surface upon request.

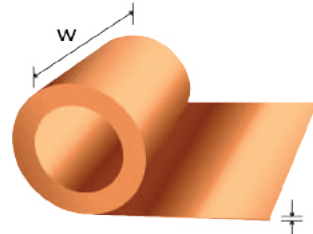
## Copper Coil - KHP109 (CuNi1Sn0.9) (C19025)

Temper **R335, R440, R500, R540, R580, R630**  
 Certificates **ISO 9001, DIN EN ISO 14001,**  
 Standards **DIN EN ISO 50001 / Equivalent**  
**UNS C19025 / Equivalent**  
 Chemical Composition (%) **Ni 0.8~1.2; Sn 0.7~1.1; P 0.03~0.07;**  
**Cu residual**

Unit: mm

Thickness (t)	Width (W)		Note
	400	On request	
0.10	●	●	
0.20	●	●	
0.30	●	●	
0.40	●	●	
0.50	●	●	
0.60	●	●	
0.70	●	●	
0.80	●	●	
1.00	●	●	
1.20	●	●	
1.40	●	●	
1.50	●	●	
1.80	●	●	
1.90	●	●	
2.00	●	●	
2.10	●	●	
2.20	●	●	
2.30	●	●	
2.40	●	●	
2.50	●	●	
2.60	●	●	
2.70	●	●	
2.80	●	●	
2.90	●	●	
3.00	●	●	

Excellent electric conductivity, heat conductivity, workability and drawability.  
 Good weldability, corrosion resistance and weathering resistance.  
 Applications: Connectors, contact springs, switches, relays, IC leadframes.  
 Hot dip tinning thickness: 0.8 - 2µm upon request.



Sizes based on UNS C19025 and supplier's standard.  
 Other thickness and plating surface upon request.

## Beryllium Copper Coil - C1720 (Alloy 25)

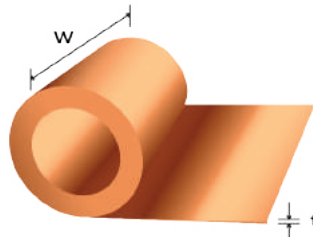
Temper **A, 1/4H, 1/2H, H; AT, 1/4HT, 1/2HT, HT**  
 Certificates **AS 9100, ISO 9001 2015, ISO 14001 2021,**  
 Standards **RoHS, Reach / Equivalent**  
 Chemical Composition (%) **UNS C17200, ASTM B-194 / Equivalent**  
**Be 1.8~2%; Ni+Co 0.2 min;**  
**Ni+Co+Fe 0.6 max; Cu rem.**

Unit: mm

Thickness (t)	Width (W)			Note
	300	406	On request	
0.05	●	●	●	
0.10	●	●	●	
0.20	●	●	●	
0.30	●	●	●	
0.70	●	●	●	
1.00	●	●	●	
1.30	●	●	●	
2.00	●	●	●	

Sizes based on supplier's standard.  
 Other thickness and plating surface upon request.

C1720 strip provides the highest strength of any copper alloy, with electrical conductivity considerably greater than other high-strength copper alloys. Since it is heat treated after forming, it provides excellent formability and ductility. This alloy features good stress relaxation resistance and high fatigue strength. Typical applications include pressure sensor bellows, burn-in and test socket contacts, computer processor socket contacts, and electromagnetic shielding gaskets.



## Brass Coil - C2600

Temper  
Certificates

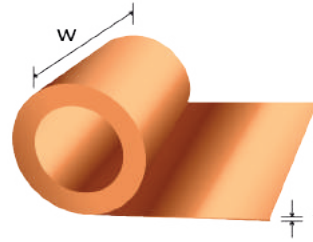
O, 1/4H, 1/2H, 3/4H, H, EH  
ISO 9001, IATF 16949,  
RoHS / Equivalent  
JIS H3100 / Equivalent  
Cu 70 max; Pb 0.05 max;  
Fe 0.05 max; Zn residual

Standards  
Chemical Composition (%)

Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
0.10	●	●	●	
0.20	●	●	●	
0.25	●	●	●	
0.30	●	●	●	
0.35	●	●	●	
0.40	●	●	●	
0.50	●	●	●	
0.60	●	●	●	
0.64	●	●	●	
0.70	●	●	●	
0.80	●	●	●	
0.90	●	●	●	
1.00	●	●	●	
1.10	●	●	●	
1.20	●	●	●	
1.30	●	●	●	
1.40	●	●	●	
1.50	●	●	●	
1.60	●	●	●	
1.70	●	●	●	
1.80	●	●	●	
1.90	●	●	●	
2.00	●	●	●	
2.10	●	●	●	
2.20	●	●	●	
2.30	●	●	●	
2.40	●	●	●	

Excellent workability and drawability, and good properties on plating.  
Applicable to terminal connectors.  
Reflow tinning thickness: 0.8~2 µm upon request.



Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
2.50	●	●	●	
2.60	●	●	●	
2.70	●	●	●	
2.80	●	●	●	
2.90	●	●	●	
3.00	●	●	●	
3.10	●	●	●	
3.20	●	●	●	
3.30	●	●	●	
3.40	●	●	●	
3.50	●	●	●	
3.60	●	●	●	
3.70	●	●	●	
3.80	●	●	●	
3.90	●	●	●	
4.00	●	●	●	

Sizes based on JIS H3100 and supplier's standard.  
Other thickness and plating surface upon request.

## Brass Coil - C2680

Temper  
Certificates

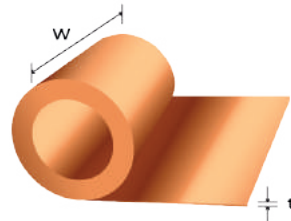
O, 1/4H, 1/2H, 3/4H, H, EH  
ISO 9001, IATF 16949,  
RoHS / Equivalent  
JIS H3100 / Equivalent  
Cu 65 max; Pb 0.05 max;  
Fe 0.05 max; Zn residual

Standards  
Chemical Composition (%)

Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
0.10	●	●	●	
0.20	●	●	●	
0.25	●	●	●	
0.30	●	●	●	
0.35	●	●	●	
0.40	●	●	●	
0.50	●	●	●	
0.60	●	●	●	
0.64	●	●	●	
0.70	●	●	●	
0.80	●	●	●	
0.90	●	●	●	
1.00	●	●	●	
1.10	●	●	●	
1.20	●	●	●	
1.30	●	●	●	
1.40	●	●	●	
1.50	●	●	●	
1.60	●	●	●	
1.70	●	●	●	
1.80	●	●	●	
1.90	●	●	●	
2.00	●	●	●	
2.10	●	●	●	
2.20	●	●	●	
2.30	●	●	●	
2.40	●	●	●	

Good workability, drawability and good properties on plating.  
Intended for use in deep drawing work such as snap buttons, cameras, thermos bottles.  
Applicable to terminal connectors and wiring appliances.  
Reflow tinning thickness: 0.8~2 µm upon request.



Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
2.50	●	●	●	
2.60	●	●	●	
2.70	●	●	●	
2.80	●	●	●	
2.90	●	●	●	
3.00	●	●	●	
3.10	●	●	●	
3.20	●	●	●	
3.30	●	●	●	
3.40	●	●	●	
3.50	●	●	●	
3.60	●	●	●	
3.70	●	●	●	
3.80	●	●	●	
3.90	●	●	●	
4.00	●	●	●	

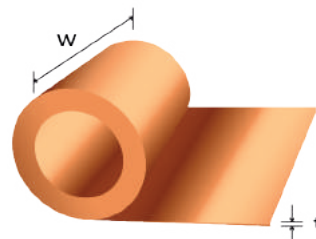
Sizes based on JIS H3100 and supplier's standard.  
Other thickness and plating surface upon request.

## Brass Coil - C2801

Temper **O, 1/4H, 1/2H, 3/4H, H, EH**  
 Certificates **ISO 9001, IATF 16949, RoHS / Equivalent**  
 Standards **JIS H3100 / Equivalent**  
 Chemical Composition (%) **Cu 60 max; Pb 0.1 max; Fe 0.07 max; Zn residual.**

Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
0.10	●	●	●	
0.20	●	●	●	
0.25	●	●	●	
0.30	●	●	●	
0.35	●	●	●	
0.40	●	●	●	
0.50	●	●	●	
0.60	●	●	●	
0.64	●	●	●	
0.70	●	●	●	
0.80	●	●	●	
0.90	●	●	●	
1.00	●	●	●	
1.10	●	●	●	
1.20	●	●	●	
1.30	●	●	●	
1.40	●	●	●	
1.50	●	●	●	
1.60	●	●	●	
1.70	●	●	●	
1.80	●	●	●	
1.90	●	●	●	
2.00	●	●	●	
2.10	●	●	●	
2.20	●	●	●	
2.30	●	●	●	
2.40	●	●	●	



Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
2.50	●	●	●	
2.60	●	●	●	
2.70	●	●	●	
2.80	●	●	●	
2.90	●	●	●	
3.00	●	●	●	
3.10	●	●	●	
3.20	●	●	●	
3.30	●	●	●	
3.40	●	●	●	
3.50	●	●	●	
3.60	●	●	●	
3.70	●	●	●	
3.80	●	●	●	
3.90	●	●	●	
4.00	●	●	●	

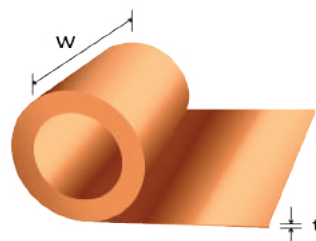
Sizes based on JIS H3100 and supplier's standard. Other thickness and plating surface upon request.

## Bronze Coil - C5102

Temper **1/2H, 3/4H, H, EH, SH**  
 Certificates **ISO 9001, IATF 16949, RoHS / Equivalent**  
 Standards **JIS H3110 / Equivalent**  
 Chemical Composition (%) **Cu+Sn+P 99.5 min; P 0.03~0.35; Fe 0.1 max; Pb 0.02 max; Zn 0.2 max; Sn 4.5~5.5**

Unit: mm

Thickness (t)	Width (W)		Note
	382	On request	
0.05	●	●	
0.06	●	●	
0.07	●	●	
0.08	●	●	
0.09	●	●	
0.10	●	●	
0.11	●	●	
0.12	●	●	
0.13	●	●	
0.14	●	●	
0.15	●	●	
0.16	●	●	
0.17	●	●	
0.18	●	●	
0.19	●	●	
0.20	●	●	
0.25	●	●	
0.30	●	●	
0.35	●	●	
0.40	●	●	
0.45	●	●	
0.50	●	●	
0.55	●	●	



Unit: mm

Thickness (t)	Width (W)		Note
	382	On request	
0.60	●	●	
0.65	●	●	
0.70	●	●	
0.75	●	●	
0.80	●	●	
0.85	●	●	
0.90	●	●	
0.95	●	●	
1.00	●	●	
1.10	●	●	
1.20	●	●	

Sizes based on JIS H3110 and supplier's standard. Other thickness and plating surface upon request.

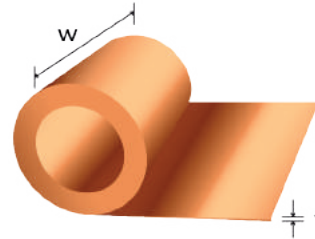
## Bronze Coil - C5111

Temper **1/2H, 3/4H, H, EH, SH**  
 Certificates **ISO 9001, IATF 16949, RoHS / Equivalent**  
 Standards **JIS H3110 / Equivalent**  
 Chemical Composition (%) **Cu+Sn+P 99.5 min; P 0.03~0.35; Fe 0.1 max; Pb 0.02 max; Zn 0.2 max; Sn 3.5~4.5**

Good workability, fatigue resistance and corrosion resistance.  
 Applicable to springs for electronic and electric apparatuses, switches, lead frames, connectors, diaphragms, bellows, fuse clips, sliding piece bearings, bushings and percussion instrument.  
 Hot dip tinning thickness: 0.7~8 µm upon request.

Unit: mm

Thickness (t)	Width (W)		Note
	382	On request	
0.05	●	●	
0.06	●	●	
0.07	●	●	
0.08	●	●	
0.09	●	●	
0.10	●	●	
0.11	●	●	
0.12	●	●	
0.13	●	●	
0.14	●	●	
0.15	●	●	
0.16	●	●	
0.17	●	●	
0.18	●	●	
0.19	●	●	
0.20	●	●	
0.25	●	●	
0.30	●	●	
0.35	●	●	
0.40	●	●	
0.45	●	●	
0.50	●	●	
0.55	●	●	



Unit: mm

Thickness (t)	Width (W)		Note
	382	On request	
0.60	●	●	
0.65	●	●	
0.70	●	●	
0.75	●	●	
0.80	●	●	
0.85	●	●	
0.90	●	●	
0.95	●	●	
1.00	●	●	
1.10	●	●	
1.20	●	●	

Sizes based on JIS H3110 and supplier's standard.  
 Other thickness and plating surface upon request.

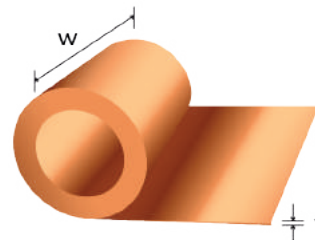
## Bronze Coil - C5191

Temper **1/2H, 3/4H, H, EH, SH**  
 Certificates **ISO 9001, IATF 16949, RoHS / Equivalent**  
 Standards **JIS H3110 / Equivalent**  
 Chemical Composition (%) **Cu+Sn+P 99.5 min; P 0.03~0.35 max; Fe 0.1 max; Pb 0.02 max; Zn 0.2 max; Sn 5.5~7.0**

Good workability, fatigue resistance and corrosion resistance.  
 Applicable to springs for electronic and electric apparatuses, switches, lead frames, connectors, diaphragms, bellows, fuse clips, sliding piece bearings, bushings and percussion instrument.  
 Hot dip tinning thickness: 0.7~8 µm upon request.

Unit: mm

Thickness (t)	Width (W)		Note
	382	On request	
0.05	●	●	
0.06	●	●	
0.07	●	●	
0.08	●	●	
0.09	●	●	
0.10	●	●	
0.11	●	●	
0.12	●	●	
0.13	●	●	
0.14	●	●	
0.15	●	●	
0.16	●	●	
0.17	●	●	
0.18	●	●	
0.19	●	●	
0.20	●	●	
0.25	●	●	
0.30	●	●	
0.35	●	●	
0.40	●	●	
0.45	●	●	
0.50	●	●	
0.55	●	●	



Unit: mm

Thickness (t)	Width (W)		Note
	382	On request	
0.60	●	●	
0.65	●	●	
0.70	●	●	
0.75	●	●	
0.80	●	●	
0.85	●	●	
0.90	●	●	
0.95	●	●	
1.00	●	●	
1.10	●	●	
1.20	●	●	

Sizes based on JIS H3110 and supplier's standard.  
 Other thickness and plating surface upon request.

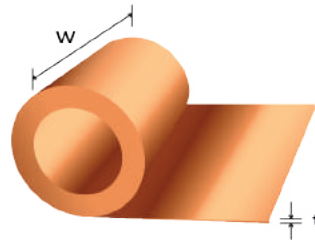
### Bronze Coil - C5210

Temper **1/2H, 3/4H, H, EH, SH, ESH**  
 Certificates **ISO 9001, IATF 16949, RoHS / Equivalent**  
 Standards **JIS H3130 / Equivalent**  
 Chemical Composition (%) **Cu+Sn+P 99.5 min; P 0.03~0.35 max; Fe 0.1 max; Zn 0.2 max; Pb 0.02 max; Sn 7.0~9.0**

Unit: mm

Thickness (t)	Width (W)		Note
	382	On request	
0.05	●	●	
0.06	●	●	
0.07	●	●	
0.08	●	●	
0.09	●	●	
0.10	●	●	
0.11	●	●	
0.12	●	●	
0.13	●	●	
0.14	●	●	
0.15	●	●	
0.16	●	●	
0.17	●	●	
0.18	●	●	
0.19	●	●	
0.20	●	●	
0.254	●	●	
0.30	●	●	
0.35	●	●	
0.40	●	●	
0.45	●	●	
0.50	●	●	
0.55	●	●	

Good workability, fatigue endurance and corrosion resistance.  
 Low temperature annealed, and therefore especially suitable for high quality springs.  
 Applicable to springs of switches, connectors, relays... for electronic, communication, information, electric or measuring instruments and apparatus.  
 Hot dip tinning thickness: 0.7~8 μm upon request.



Unit: mm

Thickness (t)	Width (W)		Note
	382	On request	
0.60	●	●	
0.65	●	●	
0.70	●	●	
0.75	●	●	
0.80	●	●	
0.85	●	●	
0.90	●	●	
0.95	●	●	
1.00	●	●	
1.10	●	●	
1.20	●	●	

Sizes based on JIS H3130 and supplier's standard.  
 Other thickness and plating surface upon request.

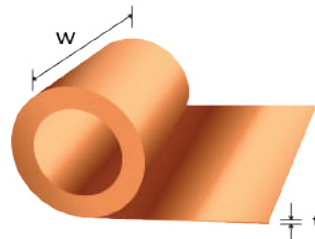
### Bronze Coil - C5240

Temper **H, EH, SH, ESH, XSH**  
 Certificates **ISO 9001, IATF 16949, RoHS / Equivalent**  
 Standards **JIS H3130 / Equivalent**  
 Chemical Composition (%) **Cu+Sn+P 99.5 min; P 0.03~0.35; Fe 0.1 max; Zn 0.2 max; Pb 0.02 max; Sn 9.0~11.0**

Unit: mm

Thickness (t)	Width (W)		Note
	382	On request	
0.05	●	●	
0.06	●	●	
0.07	●	●	
0.08	●	●	
0.09	●	●	
0.10	●	●	
0.11	●	●	
0.12	●	●	
0.13	●	●	
0.14	●	●	
0.15	●	●	
0.16	●	●	
0.17	●	●	
0.18	●	●	
0.19	●	●	
0.20	●	●	
0.254	●	●	
0.30	●	●	
0.35	●	●	
0.40	●	●	
0.45	●	●	
0.50	●	●	
0.55	●	●	

Good workability, fatigue endurance and corrosion resistance.  
 Low temperature annealed, and therefore especially suitable for high quality springs.  
 Applicable to springs of switches, connectors, relays... for electronic, communication, information, electric or measuring instruments and apparatus.  
 Hot dip tinning thickness: 0.7~8 μm upon request.



Unit: mm

Thickness (t)	Width (W)		Note
	382	On request	
0.60	●	●	
0.65	●	●	
0.70	●	●	
0.75	●	●	
0.80	●	●	
0.85	●	●	
0.90	●	●	
0.95	●	●	
1.00	●	●	
1.10	●	●	
1.20	●	●	

Sizes based on JIS H3130 and supplier's standard.  
 Other thickness and plating surface upon request.

## Nickel Silver Coil - C7521

Temper  
Certificates

1/2H, H, EH, SH  
ISO 9001, IATF 16949,  
RoHS / Equivalent

Standards

JIS H3110 / Equivalent

Chemical Composition (%)

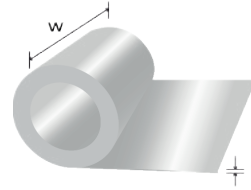
Cu 64 max; Pb 0.03 max;  
Fe 0.25 max; Mn 0.5 max;  
Ni 19.5 max; Zn residual

Fine gloss, good workability, fatigue resistance and corrosion resistance.

Applicable to quartz oscillator cases, transistor caps, sliding pieces of resistor for volume control, clock dial cases, decoration, tableware, medical apparatus, building, wind instrument...

Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
0.15	●	●	●	
0.20	●	●	●	
0.30	●	●	●	
0.40	●	●	●	
0.50	●	●	●	
0.60	●	●	●	
0.70	●	●	●	
0.80	●	●	●	
0.90	●	●	●	
1.00	●	●	●	
1.10	●	●	●	
1.20	●	●	●	
1.30	●	●	●	
1.40	●	●	●	
1.50	●	●	●	
1.60	●	●	●	
1.70	●	●	●	
1.80	●	●	●	
1.90	●	●	●	
2.00	●	●	●	
2.10	●	●	●	
2.20	●	●	●	
2.30	●	●	●	
2.40	●	●	●	



Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
2.50	●	●	●	
2.60	●	●	●	
2.70	●	●	●	
2.80	●	●	●	
2.90	●	●	●	
3.00	●	●	●	
3.10	●	●	●	
3.20	●	●	●	
3.30	●	●	●	
3.40	●	●	●	
3.50	●	●	●	
3.60	●	●	●	
3.70	●	●	●	
3.80	●	●	●	
3.90	●	●	●	
4.00	●	●	●	

Sizes based on JIS H3110 and supplier's standard.  
Other thickness and plating surface upon request.

## Nickel Silver Coil - C7701

Temper  
Certificates

1/2H, H, EH, SH  
ISO 9001, IATF 16949,  
RoHS / Equivalent

Standards

JIS H3130 / Equivalent

Chemical Composition (%)

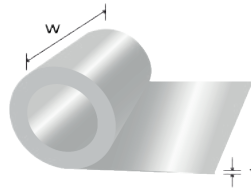
Cu 56 max; Pb 0.03 max;  
Fe 0.25 max; Mn 0.5 max;  
Ni 19.5 max; Zn residual

Fine gloss, good workability, fatigue resistance and corrosion resistance.

Applicable to springs of switches, connectors, relays... for electronic, communication, information, electric or measuring instruments and apparatus.

Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
0.15	●	●	●	
0.20	●	●	●	
0.30	●	●	●	
0.40	●	●	●	
0.50	●	●	●	
0.60	●	●	●	
0.70	●	●	●	
0.80	●	●	●	
0.90	●	●	●	
1.00	●	●	●	
1.10	●	●	●	
1.20	●	●	●	
1.30	●	●	●	
1.40	●	●	●	
1.50	●	●	●	
1.60	●	●	●	
1.70	●	●	●	
1.80	●	●	●	
1.90	●	●	●	
2.00	●	●	●	
2.10	●	●	●	
2.20	●	●	●	
2.30	●	●	●	
2.40	●	●	●	



Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
2.50	●	●	●	
2.60	●	●	●	
2.70	●	●	●	
2.80	●	●	●	
2.90	●	●	●	
3.00	●	●	●	
3.10	●	●	●	
3.20	●	●	●	
3.30	●	●	●	
3.40	●	●	●	
3.50	●	●	●	
3.60	●	●	●	
3.70	●	●	●	
3.80	●	●	●	
3.90	●	●	●	
4.00	●	●	●	

Sizes based on JIS H3130 and supplier's standard.  
Other thickness and plating surface upon request.

## Copper Sheet & Plate - C1100

Temper  
Certificates

O, 1/4H, 1/2H, 3/4H, H  
ISO 9001, ISO 9002, ISO 14001,  
IATF/TS 16949, RoHS / Equivalent  
JIS H3100 / Equivalent  
Chemical Composition (%) Cu 99.9 min; O 0.045 max

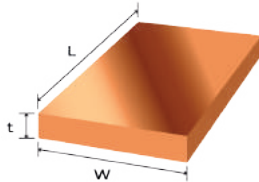
Standards

Chemical Composition (%)

Excellent electric conductivity, heat conductivity, workability and drawability.

Good weldability, corrosion resistance and weathering resistance.

Applicable to electrical use, chemical industries etc.



Unit: mm

Thickness (t)	Width (W): 600 / on request			Note
	Length (L)			
	1200	2000	On request	
0.3	●	●	●	
0.35	●	●	●	
0.4	●	●	●	
0.5	●	●	●	
0.6	●	●	●	
0.64	●	●	●	
0.7	●	●	●	
0.8	●	●	●	
0.9	●	●	●	
1.0	●	●	●	
1.1	●	●	●	
1.2	●	●	●	
1.3	●	●	●	
1.4	●	●	●	
1.5	●	●	●	
1.6	●	●	●	
1.7	●	●	●	
1.8	●	●	●	
1.9	●	●	●	
2.0	●	●	●	
3.0	●	●	●	
4.0	●	●	●	
5.0	●	●	●	
6.0	●	●	●	
7.0	●	●	●	
8.0	●	●	●	
9.0	●	●	●	
10.0	●	●	●	
11.0	●	●	●	
12.0	●	●	●	
13.0	●	●	●	
14.0	●	●	●	
15.0	●	●	●	
16.0	●	●	●	
17.0	●	●	●	
18.0	●	●	●	
19.0	●	●	●	
20.0	●	●	●	
21.0	●	●	●	
22.0	●	●	●	
23.0	●	●	●	
24.0	●	●	●	
25.0	●	●	●	
26.0	●	●	●	
27.0	●	●	●	
28.0	●	●	●	
29.0	●	●	●	
30.0	●	●	●	
31.0	●	●	●	

Unit: mm

Thickness (t)	Width (W): 600 / on request			Note
	Length (L)			
	1200	2000	On request	
32.0	●	●	●	
33.0	●	●	●	
34.0	●	●	●	
35.0	●	●	●	
36.0	●	●	●	
37.0	●	●	●	
38.0	●	●	●	
39.0	●	●	●	
40.0	●	●	●	
41.0	●	●	●	
42.0	●	●	●	
43.0	●	●	●	
44.0	●	●	●	
45.0	●	●	●	
46.0	●	●	●	
47.0	●	●	●	
48.0	●	●	●	
49.0	●	●	●	
50.0	●	●	●	
60.0	●	●	●	
70.0	●	●	●	
80.0	●	●	●	

Sizes based on JIS H3100 and supplier's standard.  
Other thickness and plating surface upon request.

## Brass Sheet & Plate - C2801

Temper  
Certificates

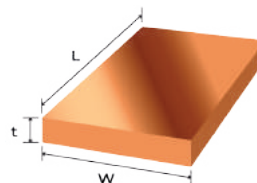
O, 1/4H, 1/2H, 3/4H, H, EH  
ISO 9001, ISO 9002, ISO 14001,  
IATF/TS 16949, RoHS / Equivalent  
JIS H3100 / Equivalent  
Chemical Composition (%) Cu 62 max; Pb 0.1 max;  
Fe 0.07 max; Zn residual

Standards

Chemical Composition (%)

High strength and moderate workability.

Applicable to parts of writing appliance used as punched or in a bent state, name plates, instrument panels.



Unit: mm

Thickness (t)	Width (W): 600 / on request			Note
	Length (L)			
	1200	2000	On request	
0.3	●	●	●	
0.35	●	●	●	
0.4	●	●	●	
0.5	●	●	●	
0.6	●	●	●	
0.64	●	●	●	
0.7	●	●	●	
0.8	●	●	●	
0.9	●	●	●	
1.0	●	●	●	
1.1	●	●	●	
1.2	●	●	●	
1.3	●	●	●	

## Brass Sheet & Plate - C2801 (Continues)

Unit: mm

Thickness (t)	Width (W): 600 / on request			Note
	Length (L)			
	1200	2000	On request	
1.4	●	●	●	
1.5	●	●	●	
1.6	●	●	●	
1.7	●	●	●	
1.8	●	●	●	
1.9	●	●	●	
2.0	●	●	●	
3.0	●	●	●	
3.5	●	●	●	
4.0	●	●	●	
5.0	●	●	●	
6.0	●	●	●	
7.0	●	●	●	
8.0	●	●	●	
9.0	●	●	●	
10.0	●	●	●	
11.0	●	●	●	
12.0	●	●	●	
13.0	●	●	●	
14.0	●	●	●	
15.0	●	●	●	
16.0	●	●	●	
17.0	●	●	●	
18.0	●	●	●	
19.0	●	●	●	
20.0	●	●	●	
21.0	●	●	●	
22.0	●	●	●	
23.0	●	●	●	
24.0	●	●	●	
25.0	●	●	●	
26.0	●	●	●	
27.0	●	●	●	
28.0	●	●	●	
29.0	●	●	●	
30.0	●	●	●	
31.0	●	●	●	
32.0	●	●	●	
33.0	●	●	●	
34.0	●	●	●	
35.0	●	●	●	
36.0	●	●	●	
37.0	●	●	●	
38.0	●	●	●	
39.0	●	●	●	
40.0	●	●	●	
41.0	●	●	●	
42.0	●	●	●	
43.0	●	●	●	
44.0	●	●	●	
45.0	●	●	●	
46.0	●	●	●	
47.0	●	●	●	
48.0	●	●	●	
49.0	●	●	●	
50.0	●	●	●	
60.0	●	●	●	
70.0	●	●	●	
80.0	●	●	●	

Sizes based on JIS H3100 and supplier's standard.  
Other thickness and plating surface upon request.

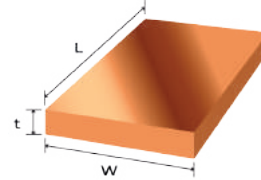
## Beryllium Copper Plate

Temper  
Certificates

HH, LH, XL, V, SC  
AS 9100, ISO 9001 2015,  
ISO 14001 2021, RoHS,  
Reach / Equivalent  
UNS, ASTM / Equivalent  
Be 1.9; Co+Ni 0.25 max.;  
Cu rem

Standards  
Chemical Composition (%)

All MoldMAX products are high performance alloys specifically designed for the plastic processing industry. These alloys offer a unique combination of thermal conductivity and strength that provides significant advantages for the molding process.



Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Temper
4.5 - 14.9	15.0 - 70.0	1,500.0	●	HH, LH, XL, V, SC
4.5 - 14.9	70.1 - 200.0	1,500.0	●	HH, LH, XL, V, SC
15.0 - 69.9	15.0 - 70.0	1,500.0	●	HH, LH, XL, V, SC
15.0 - 69.9	70.1 - 200.0	1,500.0	●	HH, LH, XL, V, SC
15.0 - 69.9	200.1 - 440.0	1,500.0	●	HH, LH, XL, V, SC
15.0 - 69.9	440.1 - 600.0	1,500.0	●	HH, LH, XL, V, SC
70.0 - 230.0	70.1 - 200.0	1,500.0	●	HH, LH, XL, V, SC
70.0 - 230.0	200.1 - 440.0	1,500.0	●	HH, LH, XL, V, SC
70.0 - 230.0	440.1 - 600.0	1,500.0	●	HH, LH, XL, V, SC

Other dimensions upon request.

COPPER

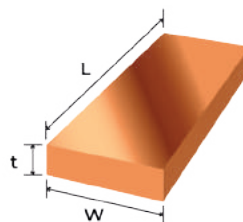
## Copper Bus Bar - C1100

Temper **O, 1/4H, 1/2H, H**  
 Certificates **ISO 9001, ISO 14001, ASTA, RoHS / Equivalent**  
 Standards **JIS H3140, JIS H3250, ASTM B187 / Equivalent**  
 Chemical Composition (%) **Cu 99.9min**

Unit: mm

Thickness (t) x Width (W)	Length (L)		
	3000	4000	On request
2 x 12~100	●	●	●
2.5 x 10~146	●	●	●
3 x 10~150	●	●	●
4 x 7~225	●	●	●
5 x 10~240	●	●	●
6 x 10~240	●	●	●
7 x 13~220	●	●	●
8 x 10~200	●	●	●
9 x 25~84	●	●	●
10 x 12~300	●	●	●
11 x 15~100	●	●	●
12 x 18~270	●	●	●
13 x 55~120	●	●	●
15 x 20~300	●	●	●
16 x 28~254	●	●	●
18 x 34/45/55/60/300	●	●	●
19 x 25/38/250/305	●	●	●
20 x 25~300	●	●	●
21 x 42/185/190/250	●	●	●
22 x 36~207	●	●	●
23 x 33~80	●	●	●
24 x 45/52/56	●	●	●
25 x 30~150	●	●	●
26 x 65	●	●	●
27 x 68	●	●	●
28 x 39/44/45/47	●	●	●
29 x 43	●	●	●
30 x 38~180	●	●	●

Excellent electric conductivity, heat conductivity, workability and drawability.  
 Good weldability, corrosion resistance and weathering resistance.  
 Free from hydrogen embrittlement when heated at elevated temperature in reducing atmosphere.  
 Applicable to electrical use, chemical industries etc.



Unit: mm

Thickness (t) x Width (W)	Length (L)		
	3000	4000	On request
31 x 41	●	●	●
32 x 72/80	●	●	●
33 x 69/88/95/130	●	●	●
35 x 40~130	●	●	●
36 x 48	●	●	●
38 x 50/60	●	●	●
40 x 55~200	●	●	●
45 x 75	●	●	●
50 x 55~150	●	●	●
60 x 70~150	●	●	●
65 x 110/130/200	●	●	●
70 x 100	●	●	●
75 x 90	●	●	●

Other dimensions upon request.  
 SE (Slightly Edge), FR (Full Round Edge) upon request.

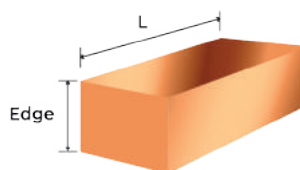
## Copper Square Bar - C1100

Temper **1/4H, 1/2H, H**  
 Certificates **ISO 9001:2015, RoHS, REACH / Equivalent**  
 Standards **KS D5101, JIS H3140 / Equivalent**  
 Chemical Composition (%) **Cu 99.9min**

Unit: mm

Edge	Length (L)		
	2000	3000	On request
5.0	●	●	●
8.0	●	●	●
10.0	●	●	●
12.0	●	●	●
15.0	●	●	●
20.0	●	●	●
25.0	●	●	●
30.0	●	●	●
35.0	●	●	●
40.0	●	●	●
45.0	●	●	●
50.0	●	●	●
55.0	●	●	●
60.0	●	●	●
65.0	●	●	●
70.0	●	●	●
75.0	●	●	●
80.0	●	●	●
85.0	●	●	●
88.6	●	●	●

Excellent electric conductivity, heat conductivity, workability and drawability.  
 Good weldability, corrosion resistance and weathering resistance.  
 Free from hydrogen embrittlement when heated at elevated temperature in reducing atmosphere.  
 Applicable to electrical use, chemical industries etc.



● Drawn  
 Other dimensions upon request.

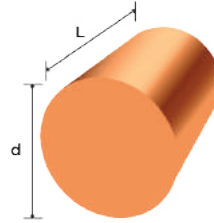
# Copper Round Bar - C1100

Temper **O, 1/2H, H**  
 Certificates **ISO 9001, ISO 14001, ASTA, RoHS / Equivalent**  
 Standards **JIS H3250, ASTM B187 / Equivalent**  
 Chemical Composition (%) **Cu 99.9min**

Unit: mm

Diameter (d)	Length (L)			Note
	3000	4000	On request	
6.35	●	●	●	
7.00	●	●	●	
7.50	●	●	●	
7.94	●	●	●	
8.13	●	●	●	
8.80	●	●	●	
9.00	●	●	●	
9.53	●	●	●	
10.00	●	●	●	
11.00	●	●	●	
12.00	●	●	●	
12.25	●	●	●	
12.70	●	●	●	
13.00	●	●	●	
14.00	●	●	●	
14.28	●	●	●	
14.50	●	●	●	
15.00	●	●	●	
15.88	●	●	●	
16.00	●	●	●	
16.90	●	●	●	
17.00	●	●	●	
17.50	●	●	●	
18.00	●	●	●	
18.60	●	●	●	
18.80	●	●	●	
19.00	●	●	●	
19.05	●	●	●	
19.50	●	●	●	
19.80	●	●	●	
19.90	●	●	●	
20.00	●	●	●	
20.50	●	●	●	
21.00	●	●	●	
22.00	●	●	●	
22.23	●	●	●	
23.00	●	●	●	
23.60	●	●	●	
24.00	●	●	●	
24.89	●	●	●	
25.00	●	●	●	
25.40	●	●	●	
26.00	●	●	●	
26.50	●	●	●	
27.00	●	●	●	
27.20	●	●	●	
28.00	●	●	●	
28.58	●	●	●	
29.00	●	●	●	
30.00	●	●	●	
30.20	●	●	●	
31.00	●	●	●	
31.75	●	●	●	
32.00	●	●	●	
32.13	●	●	●	
33.00	●	●	●	
33.50	●	●	●	
34.00	●	●	●	
34.65	●	●	●	
34.92	●	●	●	
35.00	●	●	●	
36.00	●	●	●	

Excellent electric conductivity, heat conductivity, workability and drawability.  
 Good weldability, corrosion resistance and weathering resistance.  
 Free from hydrogen embrittlement when heated at elevated temperature in reducing atmosphere.  
 Applicable to electrical use, chemical industries etc.



Unit: mm

Diameter (d)	Length (L)			Note
	3000	4000	On request	
41.28	●	●	●	
42.00	●	●	●	
42.50	●	●	●	
43.00	●	●	●	
44.45	●	●	●	
44.65	●	●	●	
44.96	●	●	●	
45.00	●	●	●	
45.70	●	●	●	
46.02	●	●	●	
47.00	●	●	●	
48.00	●	●	●	
49.00	●	●	●	
50.00	●	●	●	
50.80	●	●	●	
52.00	●	●	●	
53.00	●	●	●	
54.00	●	●	●	
55.00	●	●	●	
56.00	●	●	●	
56.40	●	●	●	
57.15	●	●	●	
59.50	●	●	●	
60.00	●	●	●	
61.00	●	●	●	
62.00	●	●	●	
63.00	●	●	●	
63.50	●	●	●	
65.00	●	●	●	
70.00	●	●	●	
71.00	●	●	●	
72.00	●	●	●	
75.00	●	●	●	
76.20	●	●	●	
80.00	●	●	●	
82.55	●	●	●	
85.00	●	●	●	
86.00	●	●	●	
88.90	●	●	●	
89.00	●	●	●	
90.00	●	●	●	
95.25	●	●	●	
100.00	●	●	●	
101.60	●	●	●	
102.00	●	●	●	
114.30	●	●	●	
120.00	●	●	●	
127.00	●	●	●	
150.00	●	●	●	
152.40	●	●	●	

● Drawn  
 Other dimensions upon request.

**COPPER**

## Brass Round Bar - C3604

Temper  
Certificates

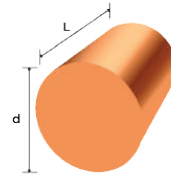
**F**  
**ISO 9001, RoHS,**  
**REACH / Equivalent**  
**JIS H3250 / Equivalent**  
**Chemical Composition (%)** **Cu 57~61; Pb 1.8~3.7; Fe 0.5**  
**max; Fe+Sn 1.0 max;**  
**Zn residual**

Standards  
Chemical Composition (%)

Unit: mm

Diameter (d)	Length (L)			Note
	2500	3000	On request	
2.0	●		●	
3.0	●		●	
4.0	●		●	
5.0	●		●	
6.0	●		●	
7.0	●		●	
8.0	●		●	
9.0	●		●	
10.0	●	●	●	
11.0	●	●	●	
12.0	●	●	●	
13.0	●	●	●	
14.0	●	●	●	
15.0	●	●	●	
16.0	●	●	●	
17.0	●	●	●	
18.0	●	●	●	
19.0	●	●	●	
20.0	●	●	●	
21.0	●	●	●	
22.0	●	●	●	
23.0	●	●	●	
24.0	●	●	●	
25.0	●	●	●	
26.0	●	●	●	
27.0	●	●	●	
28.0	●	●	●	
29.0	●	●	●	
30.0	●	●	●	
31.0	●	●	●	
32.0	●	●	●	
33.0	●	●	●	

Having excellent machinability. Good workability.  
Applicable to bolts, nuts, machine screws, spindles, gears,  
valves, parts of lighter, clock, watch, camera etc.



Unit: mm

Diameter (d)	Length (L)			Note
	2500	3000	On request	
34.0	●	●	●	
35.0	●	●	●	
36.0	●	●	●	
37.0	●	●	●	
38.0	●	●	●	
39.0	●	●	●	
40.0	●	●	●	
41.0	●	●	●	
42.0	●	●	●	
43.0	●	●	●	
44.0	●	●	●	
45.0	●	●	●	
46.0	●	●	●	
47.0	●	●	●	
48.0	●	●	●	
49.0	●	●	●	
50.0	●	●	●	
51.0	●	●	●	
52.0	●	●	●	
53.0	●	●	●	
54.0	●	●	●	
55.0	●	●	●	
56.0	●	●	●	
57.0	●	●	●	
58.0	●	●	●	
59.0	●	●	●	
60.0	●	●	●	

● Drawn  
Other dimensions upon request.

## Electroplating Copper - C1220

Temper  
Certificates

**-**  
**ISO 9001, ISO 14001, ASTA,**  
**RoHS / Equivalent**  
**Standards** **JIS H3250, ASTM B187 / Equivalent**  
**Chemical Composition (%)** **Cu 99.9min; P 0.015 ~0.04**

Standards  
Chemical Composition (%)

Unit: mm

Bar		Length (L)		
Thickness (t)	Width (W)	600	3000	On request
20	100	●	●	●
20	150	●	●	●

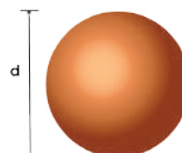
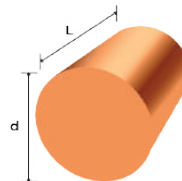
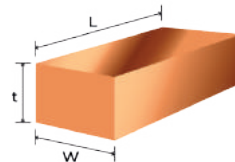
Nugget	Diameter (d)	Length (L)
	12	12
	16	16
	20	25
	25	25
	14	28
28	28	

Ball Shape	Diameter (d)
	16
	25
	28
	50
55	

Other dimensions upon request.

Copper anodes are made from high purity copper cathode  
with a purity of  $\geq 99.90\%$

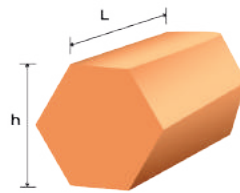
The advanced technological process enables to produce the  
finest copper anode  
that has perfect properties for copper electroplating.



## Brass Hexagon Bar - C3604

Temper **F**  
 Certificates **ISO 9001, RoHS, REACH / Equivalent**  
 Standards **JIS H3250 / Equivalent**  
 Chemical Composition (%) **Cu 57~61; Pb 1.8~3.7; Fe 0.5 max; Fe+Sn 1.0 max; Zn residual**

Having excellent machinability. Good workability.  
 Applicable to bolts, nuts, machine screws, spindles, gears, valves, parts of lighter, clock, watch, camera etc.



Unit: mm

Width across flats (h)	Length (L)		Note
	2500	On request	
4.0	●	●	
5.0	●	●	
6.0	●	●	
7.0	●	●	
8.0	●	●	
9.0	●	●	
10.0	●	●	
11.0	●	●	
12.0	●	●	
13.0	●	●	
14.0	●	●	
15.0	●	●	
16.0	●	●	
17.0	●	●	
18.0	●	●	
19.0	●	●	
20.0	●	●	
21.0	●	●	
22.0	●	●	
23.0	●	●	
24.0	●	●	
25.0	●	●	
26.0	●	●	
27.0	●	●	
28.0	●	●	
29.0	●	●	
30.0	●	●	
31.0	●	●	
32.0	●	●	
33.0	●	●	

Unit: mm

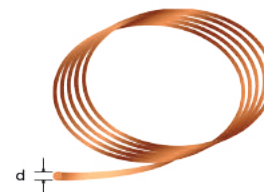
Width across flats (h)	Length (L)		Note
	2500	On request	
34.0	●	●	
35.0	●	●	
36.0	●	●	
37.0	●	●	
38.0	●	●	
39.0	●	●	
40.0	●	●	
41.0	●	●	
42.0	●	●	
43.0	●	●	
44.0	●	●	
45.0	●	●	

● Drawn  
 Other dimensions upon request.

## Brass Wire - C2700

Temper **O, 1/8H, 1/4H, 1/2H, 3/4H, H, EH**  
 Certificates **ISO 9001, RoHS, REACH / Equivalent**  
 Standards **JIS H3260 / Equivalent**  
 Chemical Composition (%) **Cu 63~67; Pb 0.05max; Fe 0.05 max; Zn residual**

Good workability, cold forgeability and thread rolling.  
 Applicable to rivets, machine screws, pin, needles, springs, wire netting, etc.



Diameter (d) (mm)	Temper	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)
1.0	O	275 min.	20 min.
	1/8H	345~440	10 min.
	1/4H	390~510	5 min.
	1/2H	490~610	-
	3/4H	590~705	-
	H	685~805	-
1.1~3.0	EH	785 min.	-
	O	275 min.	20 min.
	1/8H	345~440	10 min.
	1/4H	390~510	5 min.
	1/2H	490~610	-
	3/4H	590~705	-
4.0~6.0	H	685~805	-
	EH	785 min.	-
	O	275 min.	20 min.
	1/8H	345~440	10 min.
	1/4H	390~510	5 min.
	1/2H	490~610	-
7.0~10.0	3/4H	590~705	-
	H	685~805	-
	EH	785 min.	-
	O	275 min.	20 min.
	1/8H	345~440	10 min.
	1/4H	390~510	5 min.
11.0~20.0	1/2H	490~610	-
	3/4H	590~705	-
	H	685~805	-
	EH	785 min.	-
	O	275 min.	20 min.
	1/8H	345~440	10 min.

Diameter (d) (mm)	Temper	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)
7.0~10.0	O	275 min.	20 min.
	1/8H	345~440	10 min.
	1/4H	390~510	5 min.
	1/2H	490~610	-
	3/4H	590~705	-
	H	685~805	-
11.0~20.0	EH	785 min.	-
	O	275 min.	20 min.
	1/8H	345~440	10 min.
	1/4H	390~510	5 min.
	1/2H	490~610	-
	3/4H	590~705	-
11.0~20.0	H	685~805	-
	EH	785 min.	-
	O	275 min.	20 min.
	1/8H	345~440	10 min.
	1/4H	390~510	5 min.
	1/2H	490~610	-

Other dimensions upon request.



# STEEL

Tool Steel Plate/Bar

Tool Steel Round Bar

Stainless Steel Sheet/Plate

Stainless Steel Coil

Stainless Steel Round Bar

Stainless Steel Square/Hexagonal Bar

Stainless Steel Rectangular Bar

Stainless Steel Round Pipe

Steel Square/Rectangular Pipe

Steel Angle

Steel Wire

Steel Coil

Carbon Steel Plate

Carbon Steel Round Bar

# HEAT TREATMENT CAPABILITY

## DEFINITION

Heat treatment involves the use of heating or chilling, normally to extreme temperatures, to achieve the desired result such as hardening or softening of a material.

## EFFECTS

- + Improve strength, hardness, toughness, wear resistance ect.;
- + Increase manufacturing quality;
- + Reduce cost;
- + Reduce machining time;
- + Increase productivity.

## CAPABILITIES

### LABOR FORCE

- + Experienced labor force in heat treatment service;
- + Good technical know-how, customers understanding;
- + Continuous R&D, improvement, HT optimization.

### FACILITIES

- + 01 ALD (Germany) vacuum furnace;
- + 01 IVA (Germany) vacuum furnace;
- + 03 furnaces of tempering, nitriding;
- + Checking machines (hardness, flatness).

### STANDARDS

- + ISO 9001:2015;
- + Oristar's standard;
- + Customers' requirements.

01

Quick receive and exact respond customers' requirements

02

Fast and save 2-way delivery

03

Standarized HT flowchart

04

QUALIFIED HT PRODUCTS

## VACUUM HEAT TREATMENT FURNACES

## NITRIDING VACUUM FURNACE

## TEMPERING FURNACE

### ALD



- + Dimension (WxHxL): 600x600x900mm
- + Max temperature: 1300°C
- + Vacuum pressure: min. 5\*10<sup>-1</sup> bar
- + Nitrogen quenching pressure: max. 10 bar
- + Productivity: 450kg/lot x 2 lots/day
- + Origin: Germany

### IVA



- + Dimension (WxHxL): 600x600x900mm
- + Max temperature: 1350°C
- + Vacuum pressure: min. 8\*10<sup>-2</sup> bar
- + Nitrogen quenching pressure: max. 4 bar
- + Productivity: 500kg/lot x 2 lots/day
- + Origin: Germany

### IVA



- + Dimension (WxHxL): 650x500x700mm
- + Max temperature: 750°C
- + Nitriding gas: NH<sub>3</sub>
- + Productivity: 500kg/lot/day
- + Origin: Germany

Even nitrogen diffusion on products' whole surface, improve strength and wear resistance.



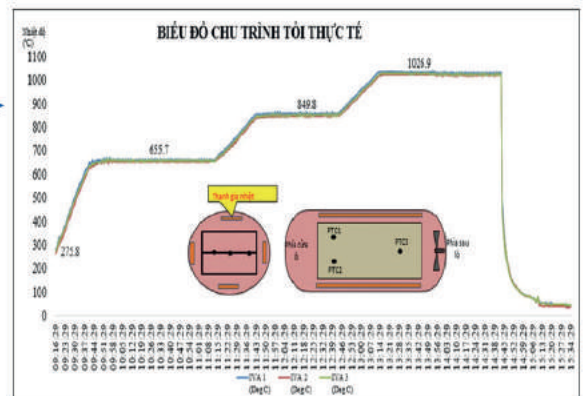
- + Dimension (WxHxL): 600x800x1000mm
- + Max temperature: 800°C
- + Productivity: 500kg/lot x 6 lots/day

## HT MORNITOR SYSTEM



Keyence temperature recording

Time/Temp. tracking & export data



ORIS/A		BIỂU ĐỒ THỜI GIAN CHU TRÌNH XỬ LÝ NHIỆT												ĐIỀU KIỆN: Theo định mức 2 Ngày xuất: 25-03-2023 Tên lò nhiệt: Lò chân không IVA.				
Bước	Mức độ ưu tiên (C/P/H)	Thời gian chờ nhiệt (C/P/H)				Thời gian giữ nhiệt ưu tiên (C/P/H)				Nhiệt độ (°C)	Nhiệt độ Plan (°C)	Thời gian làm nguội (C/P/H)	Thời gian làm nguội (C/P/H)					
		IVA1/ALD1	IVA2/ALD2	IVA3/ALD3	IVA4/ALD4	IVA1/ALD1	IVA2/ALD2	IVA3/ALD3	IVA4/ALD4				IVA1/ALD1	IVA2/ALD2	IVA3/ALD3	IVA4/ALD4		
Bước 1	850/15	12'30	14'47	13'57	14'06	-	30	30	30	30	-	803.85	670.00	-	30'20	30'05	24'30	-
Bước 2	850/15	4'0	6'12	5'38	5'53	-	30	63	63	63	-	841.25	665.60	-	-	-	-	-
Bước 3	1030/15	3'7	5'35	5'45	5'48	-	30	33	33	31	-	1011.50	1030.45	-	-	-	-	-
Bước 4																		

## CHECKING FACILITIES



Mitutoyo electrical hardness Testing (HRC, HB, HV)



Novotest hardness testing



Perpendicular testing

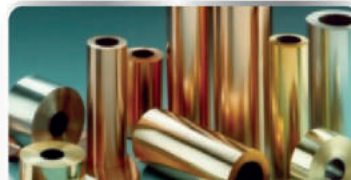


Handy hardness testing



Testo furnace temperature testing

## HT APPLICATIONS



ANNEALING NON-FERROUS METALS



HOT FORGING, HOT PRESSING DIE CASTING MOLDS



COLD STAMPING MOLDS



AL EXTRUSION MOLDS



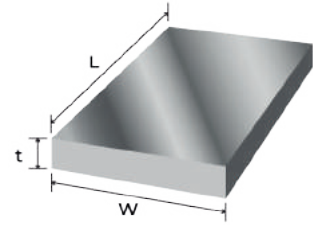
PLASTIC INJECTION MOLDS



PRECISE MACHINING PARTS

## Tool Steel Plate & Flat Bar - K110

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 1.55; Si 0.3; Mn 0.38; Cr 11.3; Mo 0.75; V 0.75**



High-duty cutting tools (dies and punches), blanking and punching tools, woodworking tools, shear blades for cutting light-gauge material, thread rolling tools, tools for drawing, deep drawing and cold extrusion, pressing tools for the ceramics and pharmaceutical industries, cold rolls (working rolls) for multiple-roll stands, measuring instruments and gauges small moulds for the plastics industry where excellent wear resistance is required

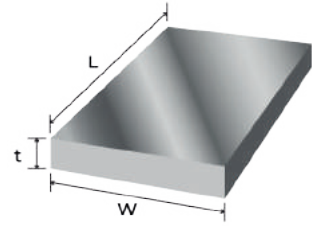
Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Hardness Recommendation	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Annealed (250 HB)	58 - 61 HRC	
4.5 - 14.9	70.1 - 200.0	Random	●	Annealed (250 HB)	58 - 61 HRC	
15.0 - 69.9	15.0 - 70.0	Random	●	Annealed (250 HB)	58 - 61 HRC	
15.0 - 69.9	70.1 - 200.0	Random	●	Annealed (250 HB)	58 - 61 HRC	
15.0 - 69.9	200.1 - 440.0	Random	●	Annealed (250 HB)	58 - 61 HRC	
15.0 - 69.9	440.1 - 1600.0	Random	●	Annealed (250 HB)	58 - 61 HRC	
70.0 - 199.9	70.1 - 200.0	Random	●	Annealed (250 HB)	58 - 61 HRC	
70.0 - 199.9	200.1 - 440.0	Random	●	Annealed (250 HB)	58 - 61 HRC	
70.0 - 199.9	440.1 - 1600.0	Random	●	Annealed (250 HB)	58 - 61 HRC	
200.0 - 439.9	200.1 - 440.0	Random	●	Annealed (250 HB)	58 - 61 HRC	
200.0 - 439.9	440.1 - 1600.0	Random	●	Annealed (250 HB)	58 - 61 HRC	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Annealed (250 HB)	58 - 61 HRC	

Other dimensions upon request.

## Tool Steel Plate & Flat Bar - K340 ECOSTAR

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 1.1; Si 0.7; Mn 0.4; Cr 8.3; Mo 2.1; V 0.5; Al + Nb**



K340 ECOSTAR belongs to the group of conventionally produced 8% chromium steels. Compared to conventional 12% chromium steels, this conventionally smelted tool steel has better toughness, hardening response and higher adhesive wear resistance. This combination of high adhesive wear resistance and toughness also offers advantages for industrial knives subject to high stress. This grade is also used for stamping and cutting tools.

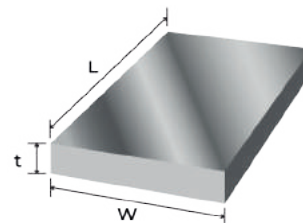
Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Hardness Recommendation	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
4.5 - 14.9	70.1 - 200.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
15.0 - 69.9	15.0 - 70.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
15.0 - 69.9	70.1 - 200.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
15.0 - 69.9	200.1 - 440.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
15.0 - 69.9	440.1 - 1600.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
70.0 - 199.9	70.1 - 200.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
70.0 - 199.9	200.1 - 440.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
70.0 - 199.9	440.1 - 1600.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
200.0 - 439.9	200.1 - 440.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
200.0 - 439.9	440.1 - 1600.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Annealed (235 HB)	57 - 63 HRC	

Other dimensions upon request.

## Tool Steel Plate & Flat Bar - K340 ISODUR

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 1.1; Si 0.7; Mn 0.4; Cr 8.3; Mo 2.1; V 0.5; Al + Nb**



K340 ISODUR is produced by electro-slag remelting (ESR). This tried-and-tested remelting technology, assures low micro and macrosegregation and gives the material the cleanliness and homogeneity necessary for the best performance in practice.

Unit: mm

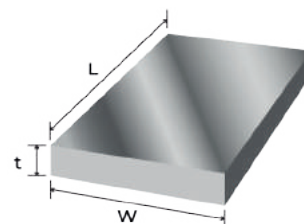
Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Hardness Recommendation	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
4.5 - 14.9	70.1 - 200.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
15.0 - 69.9	15.0 - 70.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
15.0 - 69.9	70.1 - 200.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
15.0 - 69.9	200.1 - 440.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
15.0 - 69.9	440.1 - 1600.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
70.0 - 199.9	70.1 - 200.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
70.0 - 199.9	200.1 - 440.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
70.0 - 199.9	440.1 - 1600.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
200.0 - 439.9	200.1 - 440.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
200.0 - 439.9	440.1 - 1600.0	Random	●	Annealed (235 HB)	57 - 63 HRC	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Annealed (235 HB)	57 - 63 HRC	

Other dimensions upon request.

STEEL

## Tool Steel Plate & Flat Bar - W302 ISODISC

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.39; Si 1.1; Mn 0.4; Cr 5.2; Mo 1.3; V 0.95**



Heavy duty hot work tools and dies, mainly for light alloy processing: mandrels, dies, and containers for metal tube and rod extrusion; hot extrusion equipment; tools and dies for the manufacture of hollow bodies, screws, rivets, nuts and bolts. Die casting equipment, forming dies, die inserts, hot shear blades, and plastic moulding dies.

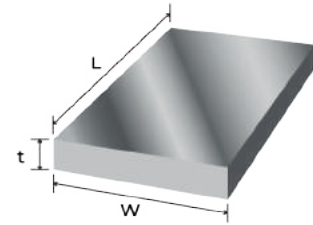
Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Hardness Recommendation	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
4.5 - 14.9	70.1 - 200.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
15.0 - 69.9	15.0 - 70.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
15.0 - 69.9	70.1 - 200.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
15.0 - 69.9	200.1 - 440.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
15.0 - 69.9	440.1 - 1600.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
70.0 - 199.9	70.1 - 200.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
70.0 - 199.9	200.1 - 440.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
70.0 - 199.9	440.1 - 1600.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
200.0 - 439.9	200.1 - 440.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
200.0 - 439.9	440.1 - 1600.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Annealed (206 HB)	50 - 54 HRC	

Other dimensions upon request.

## Tool Steel Plate & Flat Bar - W302 ISOBLOC

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.39; Si 1.1; Mn 0.4; Cr 5.2; Mo 1.3; V 0.95**



W302 ISOBLOC has ESR technology to improve homogeneity and increased toughness. Heavy duty hot work tools and dies, mainly for light alloy processing: mandrels, dies, and containers for metal tube and rod extrusion; hot extrusion equipment; tools and dies for the manufacture of hollow bodies, screws, rivets, nuts and bolts. Die casting equipment, forming dies, die inserts, hot shear blades, and plastic moulding dies.

Unit: mm

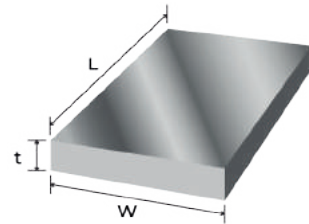
Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Hardness Recommendation	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
4.5 - 14.9	70.1 - 200.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
15.0 - 69.9	15.0 - 70.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
15.0 - 69.9	70.1 - 200.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
15.0 - 69.9	200.1 - 440.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
15.0 - 69.9	440.1 - 1600.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
70.0 - 199.9	70.1 - 200.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
70.0 - 199.9	200.1 - 440.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
70.0 - 199.9	440.1 - 1600.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
200.0 - 439.9	200.1 - 440.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
200.0 - 439.9	440.1 - 1600.0	Random	●	Annealed (206 HB)	50 - 54 HRC	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Annealed (206 HB)	50 - 54 HRC	

Other dimensions upon request.

STEEL

## Tool Steel Plate & Flat Bar - W350 ISOBLOC

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.38; Si 0.2; Mn 0.5; Cr 5.0; Mo 1.8; V 0.53; Ni 0.04**



A balanced alloy composition ensuring high toughness even in large tools and an improved thermal stability opts for an optimal hardness/strength-toughness/ductility ratio (elongation after fracture and percentage reduction of area after fracture) tailor-fit to every application.

Unit: mm

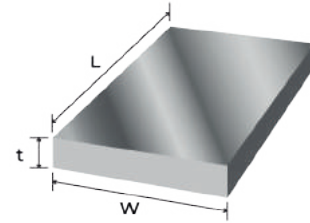
Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Hardness Recommendation	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Annealed (240 HB)	50 - 53 HRC	
4.5 - 14.9	70.1 - 200.0	Random	●	Annealed (240 HB)	50 - 53 HRC	
15.0 - 69.9	15.0 - 70.0	Random	●	Annealed (240 HB)	50 - 53 HRC	
15.0 - 69.9	70.1 - 200.0	Random	●	Annealed (240 HB)	50 - 53 HRC	
15.0 - 69.9	200.1 - 440.0	Random	●	Annealed (240 HB)	50 - 53 HRC	
15.0 - 69.9	440.1 - 1600.0	Random	●	Annealed (240 HB)	50 - 53 HRC	
70.0 - 199.9	70.1 - 200.0	Random	●	Annealed (240 HB)	50 - 53 HRC	
70.0 - 199.9	200.1 - 440.0	Random	●	Annealed (240 HB)	50 - 53 HRC	
70.0 - 199.9	440.1 - 1600.0	Random	●	Annealed (240 HB)	50 - 53 HRC	
200.0 - 439.9	200.1 - 440.0	Random	●	Annealed (240 HB)	50 - 53 HRC	
200.0 - 439.9	440.1 - 1600.0	Random	●	Annealed (240 HB)	50 - 53 HRC	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Annealed (240 HB)	50 - 53 HRC	

Other dimensions upon request.

## Tool Steel Plate & Flat Bar - W360 ISOBLOC

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.5; Si 0.2; Mn 0.25; Cr 4.5; Mo 3.0; V 0.6**

Hot work tool steel with high hardness, specially developed for use in warm forging applications or for forging dies.  
 W360 ISOBLOC has a significantly higher toughness than 1.2367 ESR – at a higher hardness.



Unit: mm

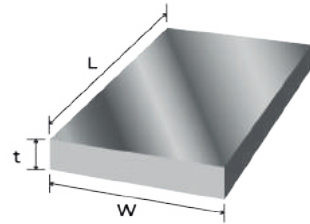
Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Hardness Recommendation	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Annealed (205 HB)	56 - 58 HRC	
4.5 - 14.9	70.1 - 200.0	Random	●	Annealed (205 HB)	56 - 58 HRC	
15.0 - 69.9	15.0 - 70.0	Random	●	Annealed (205 HB)	56 - 58 HRC	
15.0 - 69.9	70.1 - 200.0	Random	●	Annealed (205 HB)	56 - 58 HRC	
15.0 - 69.9	200.1 - 440.0	Random	●	Annealed (205 HB)	56 - 58 HRC	
15.0 - 69.9	440.1 - 1600.0	Random	●	Annealed (205 HB)	56 - 58 HRC	
70.0 - 199.9	70.1 - 200.0	Random	●	Annealed (205 HB)	56 - 58 HRC	
70.0 - 199.9	200.1 - 440.0	Random	●	Annealed (205 HB)	56 - 58 HRC	
70.0 - 199.9	440.1 - 1600.0	Random	●	Annealed (205 HB)	56 - 58 HRC	
200.0 - 439.9	200.1 - 440.0	Random	●	Annealed (205 HB)	56 - 58 HRC	
200.0 - 439.9	440.1 - 1600.0	Random	●	Annealed (205 HB)	56 - 58 HRC	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Annealed (205 HB)	56 - 58 HRC	

Other dimensions upon request.

## Tool Steel Plate & Flat Bar - M238 HIGHHARD

Temper **Prehardened**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.38; Si 0.3; Mn 1.45; Cr 1.95; Mo 0.2; Ni 1.05**

M238 HH is a hardened and tempered, not corrosion resistant plastic mould steel. Because of the Ni-addition, there is no hardness decrease in the center of large sizes (up to 600 mm). A special melting technology offers good machinability.



Unit: mm

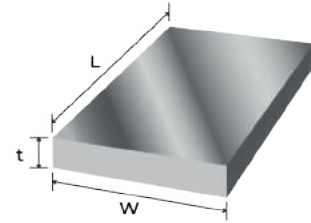
Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Prehardened (38 - 42 HRC)	
4.5 - 14.9	70.1 - 200.0	Random	●	Prehardened (38 - 42 HRC)	
15.0 - 69.9	15.0 - 70.0	Random	●	Prehardened (38 - 42 HRC)	
15.0 - 69.9	70.1 - 200.0	Random	●	Prehardened (38 - 42 HRC)	
15.0 - 69.9	200.1 - 440.0	Random	●	Prehardened (38 - 42 HRC)	
15.0 - 69.9	440.1 - 1600.0	Random	●	Prehardened (38 - 42 HRC)	
70.0 - 199.9	70.1 - 200.0	Random	●	Prehardened (38 - 42 HRC)	
70.0 - 199.9	200.1 - 440.0	Random	●	Prehardened (38 - 42 HRC)	
70.0 - 199.9	440.1 - 1600.0	Random	●	Prehardened (38 - 42 HRC)	
200.0 - 439.9	200.1 - 440.0	Random	●	Prehardened (38 - 42 HRC)	
200.0 - 439.9	440.1 - 1600.0	Random	●	Prehardened (38 - 42 HRC)	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Prehardened (38 - 42 HRC)	

Other dimensions upon request.

## Tool Steel Plate & Flat Bar - M261 EXTRA

Temper **Prehardened**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.13; Si 0.3; Mn 1.95; Cr 0.35; Ni 3.5; S 0.13; Al 1.75; Cu 1.2**

M261 Extra is a precipitation-hardening steel grade for plastic moulds, featuring excellent machinability in the as-supplied, i.e. solution annealed and aged, condition. There is no need for an additional heat treatment, significantly shortening the throughput time.



Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Prehardened (38 - 42 HRC)	
4.5 - 14.9	70.1 - 200.0	Random	●	Prehardened (38 - 42 HRC)	
15.0 - 69.9	15.0 - 70.0	Random	●	Prehardened (38 - 42 HRC)	
15.0 - 69.9	70.1 - 200.0	Random	●	Prehardened (38 - 42 HRC)	
15.0 - 69.9	200.1 - 440.0	Random	●	Prehardened (38 - 42 HRC)	
15.0 - 69.9	440.1 - 1600.0	Random	●	Prehardened (38 - 42 HRC)	
70.0 - 199.9	70.1 - 200.0	Random	●	Prehardened (38 - 42 HRC)	
70.0 - 199.9	200.1 - 440.0	Random	●	Prehardened (38 - 42 HRC)	
70.0 - 199.9	440.1 - 1600.0	Random	●	Prehardened (38 - 42 HRC)	
200.0 - 439.9	200.1 - 440.0	Random	●	Prehardened (38 - 42 HRC)	
200.0 - 439.9	440.1 - 1600.0	Random	●	Prehardened (38 - 42 HRC)	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Prehardened (38 - 42 HRC)	

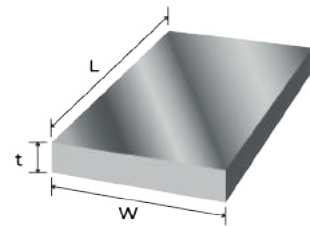
Other dimensions upon request.

STEEL

## Tool Steel Plate & Flat Bar - M303 Extra

Temper **Prehardened**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.27; Si 0.3; Mn 0.65; Cr 14.5; Mo 1; Ni 0.85**

M303 Extra is a corrosion resistant martensitic chromium steel, offering excellent toughness, corrosion and wear resistance. It is characterized by improved machinability and polishability.



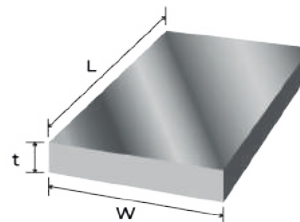
Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Prehardened (32 - 36 HRC)	
4.5 - 14.9	70.1 - 200.0	Random	●	Prehardened (32 - 36 HRC)	
15.0 - 69.9	15.0 - 70.0	Random	●	Prehardened (32 - 36 HRC)	
15.0 - 69.9	70.1 - 200.0	Random	●	Prehardened (32 - 36 HRC)	
15.0 - 69.9	200.1 - 440.0	Random	●	Prehardened (32 - 36 HRC)	
15.0 - 69.9	440.1 - 1600.0	Random	●	Prehardened (32 - 36 HRC)	
70.0 - 199.9	70.1 - 200.0	Random	●	Prehardened (32 - 36 HRC)	
70.0 - 199.9	200.1 - 440.0	Random	●	Prehardened (32 - 36 HRC)	
70.0 - 199.9	440.1 - 1600.0	Random	●	Prehardened (32 - 36 HRC)	
200.0 - 439.9	200.1 - 440.0	Random	●	Prehardened (32 - 36 HRC)	
200.0 - 439.9	440.1 - 1600.0	Random	●	Prehardened (32 - 36 HRC)	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Prehardened (32 - 36 HRC)	

Other dimensions upon request.

## Tool Steel Plate & Flat Bar - M303 HIGHHARD

Temper **Prehardened**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.27; Si 0.3; Mn 0.65; Cr 14.5; Mo 1; Ni 0.85**



M303HH is a corrosion resistant martensitic chromium steel, offering excellent toughness, corrosion and wear resistance. It is characterized by improved machinability and polishability.

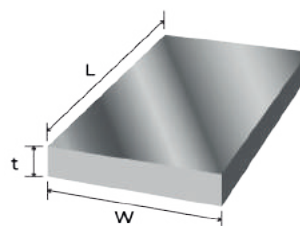
Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Prehardened (38 - 40 HRC)	
4.5 - 14.9	70.1 - 200.0	Random	●	Prehardened (38 - 40 HRC)	
15.0 - 69.9	15.0 - 70.0	Random	●	Prehardened (38 - 40 HRC)	
15.0 - 69.9	70.1 - 200.0	Random	●	Prehardened (38 - 40 HRC)	
15.0 - 69.9	200.1 - 440.0	Random	●	Prehardened (38 - 40 HRC)	
15.0 - 69.9	440.1 - 1600.0	Random	●	Prehardened (38 - 40 HRC)	
70.0 - 199.9	70.1 - 200.0	Random	●	Prehardened (38 - 40 HRC)	
70.0 - 199.9	200.1 - 440.0	Random	●	Prehardened (38 - 40 HRC)	
70.0 - 199.9	440.1 - 1600.0	Random	●	Prehardened (38 - 40 HRC)	
200.0 - 439.9	200.1 - 440.0	Random	●	Prehardened (38 - 40 HRC)	
200.0 - 439.9	440.1 - 1600.0	Random	●	Prehardened (38 - 40 HRC)	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Prehardened (38 - 40 HRC)	

Other dimensions upon request.

## Tool Steel Plate & Flat Bar - M310 ISOPLAST

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.38; Si 0.7; Mn 0.43; Cr 14.25; V 0.2**



Advanced martensitic stainless chromium steel for plastic molds. By electroslag remelting and optimization of the chemical composition, M310 ISOPLAST offers many advantages.

Unit: mm

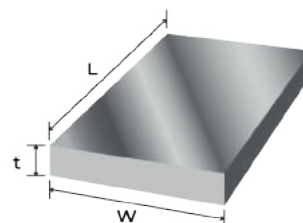
Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Hardness Recommendation	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Annealed (225 HB)	48 - 52 HRC	
4.5 - 14.9	70.1 - 200.0	Random	●	Annealed (225 HB)	48 - 52 HRC	
15.0 - 69.9	15.0 - 70.0	Random	●	Annealed (225 HB)	48 - 52 HRC	
15.0 - 69.9	70.1 - 200.0	Random	●	Annealed (225 HB)	48 - 52 HRC	
15.0 - 69.9	200.1 - 440.0	Random	●	Annealed (225 HB)	48 - 52 HRC	
15.0 - 69.9	440.1 - 1600.0	Random	●	Annealed (225 HB)	48 - 52 HRC	
70.0 - 199.9	70.1 - 200.0	Random	●	Annealed (225 HB)	48 - 52 HRC	
70.0 - 199.9	200.1 - 440.0	Random	●	Annealed (225 HB)	48 - 52 HRC	
70.0 - 199.9	440.1 - 1600.0	Random	●	Annealed (225 HB)	48 - 52 HRC	
200.0 - 439.9	200.1 - 440.0	Random	●	Annealed (225 HB)	48 - 52 HRC	
200.0 - 439.9	440.1 - 1600.0	Random	●	Annealed (225 HB)	48 - 52 HRC	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Annealed (225 HB)	48 - 52 HRC	

Other dimensions upon request.

## Tool Steel Plate & Flat Bar - M315 EXTRA

Temper **Prehardened**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.05; Si 0.3; Mn 0.95; Cr 12.6; Ni 0.45; S 0.1; Cu 0.4**

M315 is a corrosion resistant mould frame / bolster steel with a significantly improved machinability.



Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Prehardened (32 - 36 HRC)	
4.5 - 14.9	70.1 - 200.0	Random	●	Prehardened (32 - 36 HRC)	
15.0 - 69.9	15.0 - 70.0	Random	●	Prehardened (32 - 36 HRC)	
15.0 - 69.9	70.1 - 200.0	Random	●	Prehardened (32 - 36 HRC)	
15.0 - 69.9	200.1 - 440.0	Random	●	Prehardened (32 - 36 HRC)	
15.0 - 69.9	440.1 - 1600.0	Random	●	Prehardened (32 - 36 HRC)	
70.0 - 199.9	70.1 - 200.0	Random	●	Prehardened (32 - 36 HRC)	
70.0 - 199.9	200.1 - 440.0	Random	●	Prehardened (32 - 36 HRC)	
70.0 - 199.9	440.1 - 1600.0	Random	●	Prehardened (32 - 36 HRC)	
200.0 - 439.9	200.1 - 440.0	Random	●	Prehardened (32 - 36 HRC)	
200.0 - 439.9	440.1 - 1600.0	Random	●	Prehardened (32 - 36 HRC)	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Prehardened (32 - 36 HRC)	

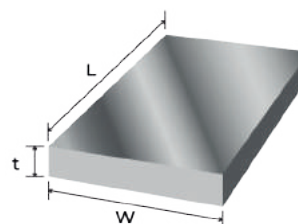
Other dimensions upon request.

STEEL

## Tool Steel Plate & Flat Bar - M333 ISOPLAST

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.28; Si 0.3; Mn 0.3; Cr 13.5; +N**

Corrosion resistant plastic mould steel with the best polishability for products which require an outstanding surface finish.



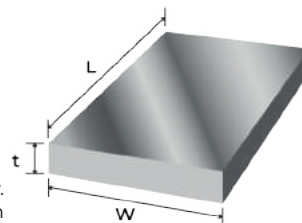
Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Hardness Recommendation	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Annealed (220 HB)	48 - 50 HRC	
4.5 - 14.9	70.1 - 200.0	Random	●	Annealed (220 HB)	48 - 50 HRC	
15.0 - 69.9	15.0 - 70.0	Random	●	Annealed (220 HB)	48 - 50 HRC	
15.0 - 69.9	70.1 - 200.0	Random	●	Annealed (220 HB)	48 - 50 HRC	
15.0 - 69.9	200.1 - 440.0	Random	●	Annealed (220 HB)	48 - 50 HRC	
15.0 - 69.9	440.1 - 1600.0	Random	●	Annealed (220 HB)	48 - 50 HRC	
70.0 - 199.9	70.1 - 200.0	Random	●	Annealed (220 HB)	48 - 50 HRC	
70.0 - 199.9	200.1 - 440.0	Random	●	Annealed (220 HB)	48 - 50 HRC	
70.0 - 199.9	440.1 - 1600.0	Random	●	Annealed (220 HB)	48 - 50 HRC	
200.0 - 439.9	200.1 - 440.0	Random	●	Annealed (220 HB)	48 - 50 HRC	
200.0 - 439.9	440.1 - 1600.0	Random	●	Annealed (220 HB)	48 - 50 HRC	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Annealed (220 HB)	48 - 50 HRC	

Other dimensions upon request.

## Tool Steel Plate & Flat Bar - M390 MICROCLEAN

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 1.91; Si 0.6; Mn 0.3; Cr 20.0; Mo 1.0; V 4.0; W 0.6**



M390 MICROCLEAN is a martensitic chromium steel produced with powder metallurgy. Due to its alloying concept this steel offers extremely high wear resistance and high corrosion resistance – the perfect combination for best application properties.

Unit: mm

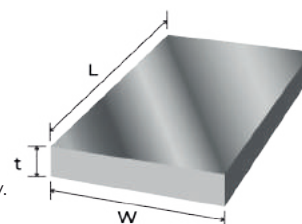
Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Hardness Recommendation	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Annealed (280 HB)	58 - 60 HRC	
4.5 - 14.9	70.1 - 200.0	Random	●	Annealed (280 HB)	58 - 60 HRC	
15.0 - 69.9	15.0 - 70.0	Random	●	Annealed (280 HB)	58 - 60 HRC	
15.0 - 69.9	70.1 - 200.0	Random	●	Annealed (280 HB)	58 - 60 HRC	
15.0 - 69.9	200.1 - 440.0	Random	●	Annealed (280 HB)	58 - 60 HRC	
15.0 - 69.9	440.1 - 1600.0	Random	●	Annealed (280 HB)	58 - 60 HRC	
70.0 - 199.9	70.1 - 200.0	Random	●	Annealed (280 HB)	58 - 60 HRC	
70.0 - 199.9	200.1 - 440.0	Random	●	Annealed (280 HB)	58 - 60 HRC	
70.0 - 199.9	440.1 - 1600.0	Random	●	Annealed (280 HB)	58 - 60 HRC	
200.0 - 439.9	200.1 - 440.0	Random	●	Annealed (280 HB)	58 - 60 HRC	
200.0 - 439.9	440.1 - 1600.0	Random	●	Annealed (280 HB)	58 - 60 HRC	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Annealed (280 HB)	58 - 60 HRC	

Other dimensions upon request.

STEEL

## Tool Steel Plate & Flat Bar - M398 MICROCLEAN

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 2.7; Si 0.5; Mn 0.5; Cr 20.0; Mo 1.0; V 7.2; W 0.7**



M398 MICROCLEAN is a martensitic chromium steel produced with powder metallurgy. Due to its alloying concept this steel offers extremely high wear resistance and high corrosion resistance – the perfect combination for highly wear-resistant tools.

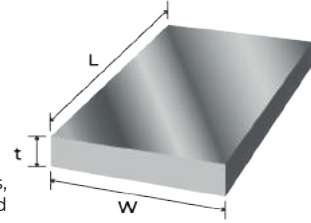
Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Hardness Recommendation	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Annealed (280 HB)	60 - 63 HRC	
4.5 - 14.9	70.1 - 200.0	Random	●	Annealed (280 HB)	60 - 63 HRC	
15.0 - 69.9	15.0 - 70.0	Random	●	Annealed (280 HB)	60 - 63 HRC	
15.0 - 69.9	70.1 - 200.0	Random	●	Annealed (280 HB)	60 - 63 HRC	
15.0 - 69.9	200.1 - 440.0	Random	●	Annealed (280 HB)	60 - 63 HRC	
15.0 - 69.9	440.1 - 1600.0	Random	●	Annealed (280 HB)	60 - 63 HRC	
70.0 - 199.9	70.1 - 200.0	Random	●	Annealed (280 HB)	60 - 63 HRC	
70.0 - 199.9	200.1 - 440.0	Random	●	Annealed (280 HB)	60 - 63 HRC	
70.0 - 199.9	440.1 - 1600.0	Random	●	Annealed (280 HB)	60 - 63 HRC	
200.0 - 439.9	200.1 - 440.0	Random	●	Annealed (280 HB)	60 - 63 HRC	
200.0 - 439.9	440.1 - 1600.0	Random	●	Annealed (280 HB)	60 - 63 HRC	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Annealed (280 HB)	60 - 63 HRC	

Other dimensions upon request.

## Tool Steel Plate & Flat Bar - S590 MICROCLEAN

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 1.29; Si 0.6; Mn 0.3; Cr 4.2; Mo 5.0; V 3.0; W 6.3; Co 8.4**



High-speed steel manufactured in a powder metallurgy process, with good hot hardness, compressive strength, and wear resistance. PM technology gives it good toughness and excellent workability, such as the best machinability.

Unit: mm

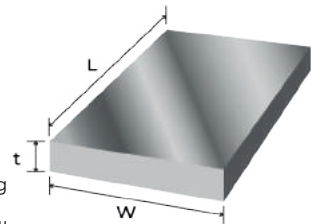
Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Hardness Recommendation	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Annealed (300 HB)	65 - 67 HRC	
4.5 - 14.9	70.1 - 200.0	Random	●	Annealed (300 HB)	65 - 67 HRC	
15.0 - 69.9	15.0 - 70.0	Random	●	Annealed (300 HB)	65 - 67 HRC	
15.0 - 69.9	70.1 - 200.0	Random	●	Annealed (300 HB)	65 - 67 HRC	
15.0 - 69.9	200.1 - 440.0	Random	●	Annealed (300 HB)	65 - 67 HRC	
15.0 - 69.9	440.1 - 1600.0	Random	●	Annealed (300 HB)	65 - 67 HRC	
70.0 - 199.9	70.1 - 200.0	Random	●	Annealed (300 HB)	65 - 67 HRC	
70.0 - 199.9	200.1 - 440.0	Random	●	Annealed (300 HB)	65 - 67 HRC	
70.0 - 199.9	440.1 - 1600.0	Random	●	Annealed (300 HB)	65 - 67 HRC	
200.0 - 439.9	200.1 - 440.0	Random	●	Annealed (300 HB)	65 - 67 HRC	
200.0 - 439.9	440.1 - 1600.0	Random	●	Annealed (300 HB)	65 - 67 HRC	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Annealed (300 HB)	65 - 67 HRC	

Other dimensions upon request.

STEEL

## Tool Steel Plate & Flat Bar - S600

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.9; Cr 4.1; Mo 5.0; V 1.8; W 6.2**



S600 is tungsten-molybdenum high speed steel with excellent toughness and cutting properties, for a wide variety of uses.

Applications: Taps, twist drills, reamers, broaching tools, metal saws, milling tools of all types, woodworking tools, cold work tools.

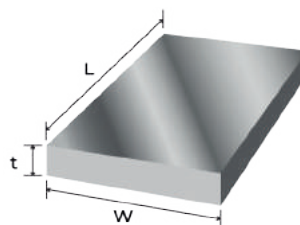
Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Hardness Recommendation	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Annealed (280 HB)	63 - 65 HRC	
4.5 - 14.9	70.1 - 200.0	Random	●	Annealed (280 HB)	63 - 65 HRC	
15.0 - 69.9	15.0 - 70.0	Random	●	Annealed (280 HB)	63 - 65 HRC	
15.0 - 69.9	70.1 - 200.0	Random	●	Annealed (280 HB)	63 - 65 HRC	
15.0 - 69.9	200.1 - 440.0	Random	●	Annealed (280 HB)	63 - 65 HRC	
15.0 - 69.9	440.1 - 1600.0	Random	●	Annealed (280 HB)	63 - 65 HRC	
70.0 - 199.9	70.1 - 200.0	Random	●	Annealed (280 HB)	63 - 65 HRC	
70.0 - 199.9	200.1 - 440.0	Random	●	Annealed (280 HB)	63 - 65 HRC	
70.0 - 199.9	440.1 - 1600.0	Random	●	Annealed (280 HB)	63 - 65 HRC	
200.0 - 439.9	200.1 - 440.0	Random	●	Annealed (280 HB)	63 - 65 HRC	
200.0 - 439.9	440.1 - 1600.0	Random	●	Annealed (280 HB)	63 - 65 HRC	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Annealed (280 HB)	63 - 65 HRC	

Other dimensions upon request.

## Tool Steel Plate & Flat Bar - S690 MICROCLEAN

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 1.35; Si 0.6; Mn 0.3; Cr 4.1; Mo 5.0; V 4.1; W 5.9**



The tough high-speed steel for challenging machining and cold forming.

Unit: mm

Thickness (t)	Width (W)	Length (L)	WxL on request	Condition	Hardness Recommendation	Note*
4.5 - 14.9	15.0 - 70.0	Random	●	Annealed (280 HB)	64 - 66 HRC	
4.5 - 14.9	70.1 - 200.0	Random	●	Annealed (280 HB)	64 - 66 HRC	
15.0 - 69.9	15.0 - 70.0	Random	●	Annealed (280 HB)	64 - 66 HRC	
15.0 - 69.9	70.1 - 200.0	Random	●	Annealed (280 HB)	64 - 66 HRC	
15.0 - 69.9	200.1 - 440.0	Random	●	Annealed (280 HB)	64 - 66 HRC	
15.0 - 69.9	440.1 - 1600.0	Random	●	Annealed (280 HB)	64 - 66 HRC	
70.0 - 199.9	70.1 - 200.0	Random	●	Annealed (280 HB)	64 - 66 HRC	
70.0 - 199.9	200.1 - 440.0	Random	●	Annealed (280 HB)	64 - 66 HRC	
70.0 - 199.9	440.1 - 1600.0	Random	●	Annealed (280 HB)	64 - 66 HRC	
200.0 - 439.9	200.1 - 440.0	Random	●	Annealed (280 HB)	64 - 66 HRC	
200.0 - 439.9	440.1 - 1600.0	Random	●	Annealed (280 HB)	64 - 66 HRC	
440.0 - 1000.0	440.1 - 1600.0	Random	●	Annealed (280 HB)	64 - 66 HRC	

Other dimensions upon request.

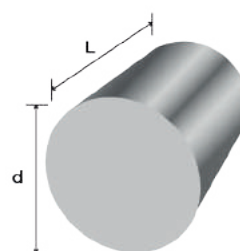
## Tool Steel Round Bar - K110

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 1.55; Si 0.3; Mn 0.38; Cr 11.3; Mo 0.75; V 0.75**

Unit: mm

Diameter (d)	Length (L)		Condition	Hardness Recommendation
	Random	On request		
8	●	●	Annealed (250 HB)	58 - 61 HRC
10	●	●	Annealed (250 HB)	58 - 61 HRC
12	●	●	Annealed (250 HB)	58 - 61 HRC
14	●	●	Annealed (250 HB)	58 - 61 HRC
16	●	●	Annealed (250 HB)	58 - 61 HRC
18	●	●	Annealed (250 HB)	58 - 61 HRC
20	●	●	Annealed (250 HB)	58 - 61 HRC
25	●	●	Annealed (250 HB)	58 - 61 HRC
30	●	●	Annealed (250 HB)	58 - 61 HRC
35	●	●	Annealed (250 HB)	58 - 61 HRC
40	●	●	Annealed (250 HB)	58 - 61 HRC
45	●	●	Annealed (250 HB)	58 - 61 HRC
50	●	●	Annealed (250 HB)	58 - 61 HRC
60	●	●	Annealed (250 HB)	58 - 61 HRC
70	●	●	Annealed (250 HB)	58 - 61 HRC
80	●	●	Annealed (250 HB)	58 - 61 HRC
90	●	●	Annealed (250 HB)	58 - 61 HRC
100	●	●	Annealed (250 HB)	58 - 61 HRC
200	●	●	Annealed (250 HB)	58 - 61 HRC
300	●	●	Annealed (250 HB)	58 - 61 HRC
400	●	●	Annealed (250 HB)	58 - 61 HRC
500	●	●	Annealed (250 HB)	58 - 61 HRC
600	●	●	Annealed (250 HB)	58 - 61 HRC
700	●	●	Annealed (250 HB)	58 - 61 HRC
800	●	●	Annealed (250 HB)	58 - 61 HRC
900	●	●	Annealed (250 HB)	58 - 61 HRC
1000	●	●	Annealed (250 HB)	58 - 61 HRC

K110 is a 12% ledeburitic chromium steel and corresponds to material number 1.2379 (X153CrMoV12, D2). This tool steel combines the advantages of conventional 12% ledeburitic chromium steels with those of advanced tool steels. In the group of 12% ledeburitic chromium steels, K110 offers the best combination of wear resistance, compressive strength and toughness, for which reason it is used in virtually all cold work applications. Its advantageous tempering behavior with a pronounced secondary hardness maximum also enables the use of advanced coatings. This also makes K110 suitable for complex tools requiring a high degree of dimensional stability and shape stability.



Other dimensions upon request.

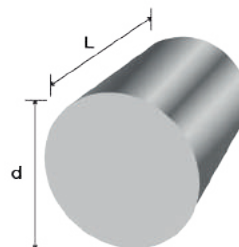
## Tool Steel Round Bar - K340 ECOSTAR

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 1.1; Si 0.7; Mn 0.4; Cr 8.3; Mo 2.1; V 0.5, Al + Nb**

Unit: mm

Diameter (d)	Length (L)		Condition	Hardness Recommendation
	Random	On request		
12	●	●	Annealed (235 HB)	57 - 63 HRC
14	●	●	Annealed (235 HB)	57 - 63 HRC
16	●	●	Annealed (235 HB)	57 - 63 HRC
18	●	●	Annealed (235 HB)	57 - 63 HRC
20	●	●	Annealed (235 HB)	57 - 63 HRC
25	●	●	Annealed (235 HB)	57 - 63 HRC
30	●	●	Annealed (235 HB)	57 - 63 HRC
35	●	●	Annealed (235 HB)	57 - 63 HRC
40	●	●	Annealed (235 HB)	57 - 63 HRC
45	●	●	Annealed (235 HB)	57 - 63 HRC
50	●	●	Annealed (235 HB)	57 - 63 HRC
60	●	●	Annealed (235 HB)	57 - 63 HRC
70	●	●	Annealed (235 HB)	57 - 63 HRC
80	●	●	Annealed (235 HB)	57 - 63 HRC
90	●	●	Annealed (235 HB)	57 - 63 HRC
100	●	●	Annealed (235 HB)	57 - 63 HRC
200	●	●	Annealed (235 HB)	57 - 63 HRC
300	●	●	Annealed (235 HB)	57 - 63 HRC
400	●	●	Annealed (235 HB)	57 - 63 HRC
500	●	●	Annealed (235 HB)	57 - 63 HRC
600	●	●	Annealed (235 HB)	57 - 63 HRC
700	●	●	Annealed (235 HB)	57 - 63 HRC
800	●	●	Annealed (235 HB)	57 - 63 HRC
900	●	●	Annealed (235 HB)	57 - 63 HRC
1000	●	●	Annealed (235 HB)	57 - 63 HRC

K340 ECOSTAR belongs to the group of conventionally produced 8% chromium steels. Compared to conventional 12% chromium steels, this conventionally smelted tool steel has better toughness, hardening response and higher adhesive wear resistance. This combination of high adhesive wear resistance and toughness also offers advantages for industrial knives subject to high stress. This grade is also used for stamping and cutting tools.



Other dimensions upon request.

STEEL

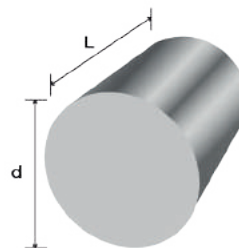
## Tool Steel Round Bar - W302 ISODISC

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.39; Si 1.1; Mn 0.4; Cr 5.2; Mo 1.3; V 0.95**

Unit: mm

Diameter (d)	Length (L)		Condition	Hardness Recommendation
	Random	On request		
8	●	●	Annealed (206 HB)	50 - 54 HRC
10	●	●	Annealed (206 HB)	50 - 54 HRC
12	●	●	Annealed (206 HB)	50 - 54 HRC
14	●	●	Annealed (206 HB)	50 - 54 HRC
16	●	●	Annealed (206 HB)	50 - 54 HRC
18	●	●	Annealed (206 HB)	50 - 54 HRC
20	●	●	Annealed (206 HB)	50 - 54 HRC
25	●	●	Annealed (206 HB)	50 - 54 HRC
30	●	●	Annealed (206 HB)	50 - 54 HRC
35	●	●	Annealed (206 HB)	50 - 54 HRC
40	●	●	Annealed (206 HB)	50 - 54 HRC
45	●	●	Annealed (206 HB)	50 - 54 HRC
50	●	●	Annealed (206 HB)	50 - 54 HRC
60	●	●	Annealed (206 HB)	50 - 54 HRC
70	●	●	Annealed (206 HB)	50 - 54 HRC
80	●	●	Annealed (206 HB)	50 - 54 HRC
90	●	●	Annealed (206 HB)	50 - 54 HRC
100	●	●	Annealed (206 HB)	50 - 54 HRC
200	●	●	Annealed (206 HB)	50 - 54 HRC
300	●	●	Annealed (206 HB)	50 - 54 HRC
400	●	●	Annealed (206 HB)	50 - 54 HRC
500	●	●	Annealed (206 HB)	50 - 54 HRC
600	●	●	Annealed (206 HB)	50 - 54 HRC
700	●	●	Annealed (206 HB)	50 - 54 HRC
800	●	●	Annealed (206 HB)	50 - 54 HRC
900	●	●	Annealed (206 HB)	50 - 54 HRC
1000	●	●	Annealed (206 HB)	50 - 54 HRC

Heavy duty hot work tools and dies, mainly for light alloy processing: mandrels, dies, and containers for metal tube and rod extrusion; hot extrusion equipment; tools and dies for the manufacture of hollow bodies, screws, rivets, nuts and bolts. Die casting equipment, forming dies, die inserts, hot shear blades, and plastic moulding dies.



Other dimensions upon request.

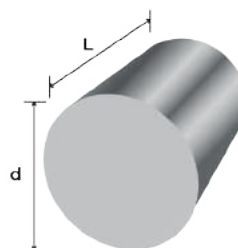
## Tool Steel Round Bar - M303 Extra

Temper **Prehardened**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.27; Si 0.3; Mn 0.65; Cr 14.5; Mo 1; Ni 0.85**

Unit: mm

Diameter (d)	Length (L)		Condition
	Random	On request	
8	●	●	Prehardened (32 - 36 HRC)
10	●	●	Prehardened (32 - 36 HRC)
12	●	●	Prehardened (32 - 36 HRC)
14	●	●	Prehardened (32 - 36 HRC)
16	●	●	Prehardened (32 - 36 HRC)
18	●	●	Prehardened (32 - 36 HRC)
20	●	●	Prehardened (32 - 36 HRC)
25	●	●	Prehardened (32 - 36 HRC)
30	●	●	Prehardened (32 - 36 HRC)
35	●	●	Prehardened (32 - 36 HRC)
40	●	●	Prehardened (32 - 36 HRC)
45	●	●	Prehardened (32 - 36 HRC)
50	●	●	Prehardened (32 - 36 HRC)
60	●	●	Prehardened (32 - 36 HRC)
70	●	●	Prehardened (32 - 36 HRC)
80	●	●	Prehardened (32 - 36 HRC)
90	●	●	Prehardened (32 - 36 HRC)
100	●	●	Prehardened (32 - 36 HRC)
200	●	●	Prehardened (32 - 36 HRC)
300	●	●	Prehardened (32 - 36 HRC)
400	●	●	Prehardened (32 - 36 HRC)
500	●	●	Prehardened (32 - 36 HRC)
600	●	●	Prehardened (32 - 36 HRC)
700	●	●	Prehardened (32 - 36 HRC)
800	●	●	Prehardened (32 - 36 HRC)
900	●	●	Prehardened (32 - 36 HRC)
1000	●	●	Prehardened (32 - 36 HRC)

M303 Extra is a corrosion resistant martensitic chromium steel, offering excellent toughness, corrosion and wear resistance. It is characterized by improved machinability and polishability.



Other dimensions upon request.

STEEL

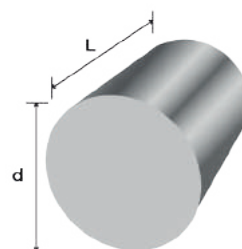
## Tool Steel Round Bar - M303 HIGHHARD

Temper **Prehardened**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.27; Si 0.3; Mn 0.65; Cr 14.5; Mo 1; Ni 0.85**

Unit: mm

Diameter (d)	Length (L)		Condition
	Random	On request	
8	●	●	Prehardened (38 - 40 HRC)
10	●	●	Prehardened (38 - 40 HRC)
12	●	●	Prehardened (38 - 40 HRC)
14	●	●	Prehardened (38 - 40 HRC)
16	●	●	Prehardened (38 - 40 HRC)
18	●	●	Prehardened (38 - 40 HRC)
20	●	●	Prehardened (38 - 40 HRC)
25	●	●	Prehardened (38 - 40 HRC)
30	●	●	Prehardened (38 - 40 HRC)
35	●	●	Prehardened (38 - 40 HRC)
40	●	●	Prehardened (38 - 40 HRC)
45	●	●	Prehardened (38 - 40 HRC)
50	●	●	Prehardened (38 - 40 HRC)
60	●	●	Prehardened (38 - 40 HRC)
70	●	●	Prehardened (38 - 40 HRC)
80	●	●	Prehardened (38 - 40 HRC)
90	●	●	Prehardened (38 - 40 HRC)
100	●	●	Prehardened (38 - 40 HRC)
200	●	●	Prehardened (38 - 40 HRC)
300	●	●	Prehardened (38 - 40 HRC)
400	●	●	Prehardened (38 - 40 HRC)
500	●	●	Prehardened (38 - 40 HRC)
600	●	●	Prehardened (38 - 40 HRC)
700	●	●	Prehardened (38 - 40 HRC)
800	●	●	Prehardened (38 - 40 HRC)
900	●	●	Prehardened (38 - 40 HRC)
1000	●	●	Prehardened (38 - 40 HRC)

M303HH is a corrosion resistant martensitic chromium steel, offering excellent toughness, corrosion and wear resistance. It is characterized by improved machinability and polishability.



Other dimensions upon request.

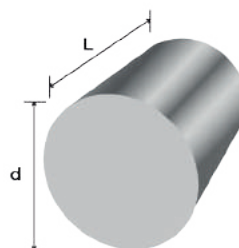
## Tool Steel Round Bar - M310 ISOPLAST

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 0.38; Si 0.7; Mn 0.43; Cr 14.25; V 0.2**

Unit: mm

Diameter (d)	Length (L)		Condition	Hardness Recommendation
	Random	On request		
8	●	●	Annealed (225 HB)	48 - 52 HRC
10	●	●	Annealed (225 HB)	48 - 52 HRC
12	●	●	Annealed (225 HB)	48 - 52 HRC
14	●	●	Annealed (225 HB)	48 - 52 HRC
16	●	●	Annealed (225 HB)	48 - 52 HRC
18	●	●	Annealed (225 HB)	48 - 52 HRC
20	●	●	Annealed (225 HB)	48 - 52 HRC
25	●	●	Annealed (225 HB)	48 - 52 HRC
30	●	●	Annealed (225 HB)	48 - 52 HRC
35	●	●	Annealed (225 HB)	48 - 52 HRC
40	●	●	Annealed (225 HB)	48 - 52 HRC
45	●	●	Annealed (225 HB)	48 - 52 HRC
50	●	●	Annealed (225 HB)	48 - 52 HRC
60	●	●	Annealed (225 HB)	48 - 52 HRC
70	●	●	Annealed (225 HB)	48 - 52 HRC
80	●	●	Annealed (225 HB)	48 - 52 HRC
90	●	●	Annealed (225 HB)	48 - 52 HRC
100	●	●	Annealed (225 HB)	48 - 52 HRC
200	●	●	Annealed (225 HB)	48 - 52 HRC
300	●	●	Annealed (225 HB)	48 - 52 HRC
400	●	●	Annealed (225 HB)	48 - 52 HRC
500	●	●	Annealed (225 HB)	48 - 52 HRC
600	●	●	Annealed (225 HB)	48 - 52 HRC
700	●	●	Annealed (225 HB)	48 - 52 HRC
800	●	●	Annealed (225 HB)	48 - 52 HRC
900	●	●	Annealed (225 HB)	48 - 52 HRC
1000	●	●	Annealed (225 HB)	48 - 52 HRC

Advanced martensitic stainless chromium steel for plastic molds. By electroslag remelting and optimization of the chemical composition, M310 ISOPLAST offers many advantages.



STEEL

Other dimensions upon request.

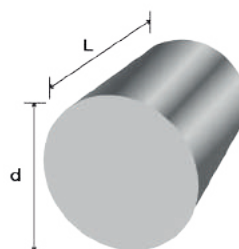
## Tool Steel Round Bar - M390 MICROCLEAN

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 1.91; Si 0.6; Mn 0.3; Cr 20.0; Mo 1.0; V 4.0; W 0.6**

Unit: mm

Diameter (d)	Length (L)		Condition	Hardness Recommendation
	Random	On request		
8	●	●	Annealed (280 HB)	58 - 60 HRC
10	●	●	Annealed (280 HB)	58 - 60 HRC
12	●	●	Annealed (280 HB)	58 - 60 HRC
14	●	●	Annealed (280 HB)	58 - 60 HRC
16	●	●	Annealed (280 HB)	58 - 60 HRC
18	●	●	Annealed (280 HB)	58 - 60 HRC
20	●	●	Annealed (280 HB)	58 - 60 HRC
25	●	●	Annealed (280 HB)	58 - 60 HRC
30	●	●	Annealed (280 HB)	58 - 60 HRC
35	●	●	Annealed (280 HB)	58 - 60 HRC
40	●	●	Annealed (280 HB)	58 - 60 HRC
45	●	●	Annealed (280 HB)	58 - 60 HRC
50	●	●	Annealed (280 HB)	58 - 60 HRC
60	●	●	Annealed (280 HB)	58 - 60 HRC
70	●	●	Annealed (280 HB)	58 - 60 HRC
80	●	●	Annealed (280 HB)	58 - 60 HRC
90	●	●	Annealed (280 HB)	58 - 60 HRC
100	●	●	Annealed (280 HB)	58 - 60 HRC
200	●	●	Annealed (280 HB)	58 - 60 HRC
300	●	●	Annealed (280 HB)	58 - 60 HRC
400	●	●	Annealed (280 HB)	58 - 60 HRC
500	●	●	Annealed (280 HB)	58 - 60 HRC
600	●	●	Annealed (280 HB)	58 - 60 HRC
700	●	●	Annealed (280 HB)	58 - 60 HRC
800	●	●	Annealed (280 HB)	58 - 60 HRC
900	●	●	Annealed (280 HB)	58 - 60 HRC
1000	●	●	Annealed (280 HB)	58 - 60 HRC

M390 MICROCLEAN is a martensitic chromium steel produced with powder metallurgy. Due to its alloying concept this steel offers extremely high wear resistance and high corrosion resistance – the perfect combination for best application properties.



Other dimensions upon request.

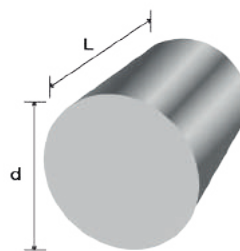
## Tool Steel Round Bar - M398 MICROCLEAN

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 2.7; Si 0.5; Mn 0.5; Cr 20.0; Mo 1.0; V 7.2; W 0.7**

Unit: mm

Diameter (d)	Length (L)		Condition	Hardness Recommendation
	Random	On request		
8	●	●	Annealed (280 HB)	60 - 63 HRC
10	●	●	Annealed (280 HB)	60 - 63 HRC
12	●	●	Annealed (280 HB)	60 - 63 HRC
14	●	●	Annealed (280 HB)	60 - 63 HRC
16	●	●	Annealed (280 HB)	60 - 63 HRC
18	●	●	Annealed (280 HB)	60 - 63 HRC
20	●	●	Annealed (280 HB)	60 - 63 HRC
25	●	●	Annealed (280 HB)	60 - 63 HRC
30	●	●	Annealed (280 HB)	60 - 63 HRC
35	●	●	Annealed (280 HB)	60 - 63 HRC
40	●	●	Annealed (280 HB)	60 - 63 HRC
45	●	●	Annealed (280 HB)	60 - 63 HRC
50	●	●	Annealed (280 HB)	60 - 63 HRC
60	●	●	Annealed (280 HB)	60 - 63 HRC
70	●	●	Annealed (280 HB)	60 - 63 HRC
80	●	●	Annealed (280 HB)	60 - 63 HRC
90	●	●	Annealed (280 HB)	60 - 63 HRC
100	●	●	Annealed (280 HB)	60 - 63 HRC
200	●	●	Annealed (280 HB)	60 - 63 HRC
300	●	●	Annealed (280 HB)	60 - 63 HRC
400	●	●	Annealed (280 HB)	60 - 63 HRC
500	●	●	Annealed (280 HB)	60 - 63 HRC
600	●	●	Annealed (280 HB)	60 - 63 HRC
700	●	●	Annealed (280 HB)	60 - 63 HRC
800	●	●	Annealed (280 HB)	60 - 63 HRC
900	●	●	Annealed (280 HB)	60 - 63 HRC
1000	●	●	Annealed (280 HB)	60 - 63 HRC

M398 MICROCLEAN is a martensitic chromium steel produced with powder metallurgy. Due to its alloying concept this steel offers extremely high wear resistance and high corrosion resistance – the perfect combination for highly wear-resistant tools.



Other dimensions upon request.

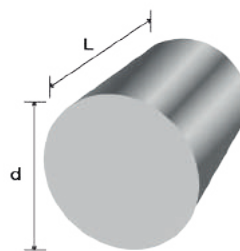
## Tool Steel Round Bar - S590 MICROCLEAN

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 1.29; Si 0.6; Mn 0.3; Cr 4.2; Mo 5.0; V 3.0; W 6.3; Co 8.4**

Unit: mm

Diameter (d)	Length (L)		Condition	Hardness Recommendation
	Random	On request		
8	●	●	Annealed (300 HB)	65 - 67 HRC
10	●	●	Annealed (300 HB)	65 - 67 HRC
12	●	●	Annealed (300 HB)	65 - 67 HRC
14	●	●	Annealed (300 HB)	65 - 67 HRC
16	●	●	Annealed (300 HB)	65 - 67 HRC
18	●	●	Annealed (300 HB)	65 - 67 HRC
20	●	●	Annealed (300 HB)	65 - 67 HRC
25	●	●	Annealed (300 HB)	65 - 67 HRC
30	●	●	Annealed (300 HB)	65 - 67 HRC
35	●	●	Annealed (300 HB)	65 - 67 HRC
40	●	●	Annealed (300 HB)	65 - 67 HRC
45	●	●	Annealed (300 HB)	65 - 67 HRC
50	●	●	Annealed (300 HB)	65 - 67 HRC
60	●	●	Annealed (300 HB)	65 - 67 HRC
70	●	●	Annealed (300 HB)	65 - 67 HRC
80	●	●	Annealed (300 HB)	65 - 67 HRC
90	●	●	Annealed (300 HB)	65 - 67 HRC
100	●	●	Annealed (300 HB)	65 - 67 HRC
200	●	●	Annealed (300 HB)	65 - 67 HRC
300	●	●	Annealed (300 HB)	65 - 67 HRC
400	●	●	Annealed (300 HB)	65 - 67 HRC
500	●	●	Annealed (300 HB)	65 - 67 HRC
600	●	●	Annealed (300 HB)	65 - 67 HRC
700	●	●	Annealed (300 HB)	65 - 67 HRC
800	●	●	Annealed (300 HB)	65 - 67 HRC
900	●	●	Annealed (300 HB)	65 - 67 HRC
1000	●	●	Annealed (300 HB)	65 - 67 HRC

High-speed steel manufactured in a powder metallurgy process, with good hot hardness, compressive strength, and wear resistance. PM technology gives it good toughness and excellent workability, such as the best machinability.



Other dimensions upon request.

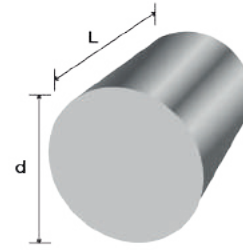
## Tool Steel Round Bar - S690 MICROCLEAR

Temper **Annealed**  
 Certificates **ISO 9001:2015, EN ISO 14001:2015 / Equivalent**  
 Standards **EN / Equivalent**  
 Chemical Composition (%) **C 1.35; Si 0.6; Mn 0.3; Cr 4.1; Mo 5.0; V 4.1; W 5.9**

The tough high-speed steel for challenging machining and cold forming.

Unit: mm

Diameter (d)	Length (L)		Condition	Hardness Recommendation
	Random	On request		
8	●	●	Annealed (280 HB)	64 - 66 HRC
10	●	●	Annealed (280 HB)	64 - 66 HRC
12	●	●	Annealed (280 HB)	64 - 66 HRC
14	●	●	Annealed (280 HB)	64 - 66 HRC
16	●	●	Annealed (280 HB)	64 - 66 HRC
18	●	●	Annealed (280 HB)	64 - 66 HRC
20	●	●	Annealed (280 HB)	64 - 66 HRC
25	●	●	Annealed (280 HB)	64 - 66 HRC
30	●	●	Annealed (280 HB)	64 - 66 HRC
35	●	●	Annealed (280 HB)	64 - 66 HRC
40	●	●	Annealed (280 HB)	64 - 66 HRC
45	●	●	Annealed (280 HB)	64 - 66 HRC
50	●	●	Annealed (280 HB)	64 - 66 HRC
60	●	●	Annealed (280 HB)	64 - 66 HRC
70	●	●	Annealed (280 HB)	64 - 66 HRC
80	●	●	Annealed (280 HB)	64 - 66 HRC
90	●	●	Annealed (280 HB)	64 - 66 HRC
100	●	●	Annealed (280 HB)	64 - 66 HRC
200	●	●	Annealed (280 HB)	64 - 66 HRC
300	●	●	Annealed (280 HB)	64 - 66 HRC
400	●	●	Annealed (280 HB)	64 - 66 HRC
500	●	●	Annealed (280 HB)	64 - 66 HRC
600	●	●	Annealed (280 HB)	64 - 66 HRC
700	●	●	Annealed (280 HB)	64 - 66 HRC
800	●	●	Annealed (280 HB)	64 - 66 HRC
900	●	●	Annealed (280 HB)	64 - 66 HRC
1000	●	●	Annealed (280 HB)	64 - 66 HRC



Other dimensions upon request.

STEEL

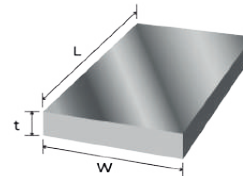
## Stainless Steel Sheet & Plate - SUS303 (HNS303)

Temper **-**  
 Certificates **RoHS / Equivalent**  
 Standards **JIS G4304 / Equivalent**  
 Chemical Composition (%) **C 0.15 max; Si 1 max; Mn 2 max; P 0.2 max; S 0.15 max; Ni 8~10; Cr 17~19**

A stainless steel material with good machinability. Corrosion resistance has been improved compared to conventional SUS303 by adding Mo (molybdenum). The product has a plate surface thickness that has undergone No. 1 finishing.

Unit: mm

Thickness (t)	Width (W): 1219 / on request		Note
	Length (L)		
	2438	On request	
3	●	●	
4	●	●	
5	●	●	
6	●	●	
8	●	●	
9	●	●	
10	●	●	
12	●	●	
13	●	●	
14	●	●	
15	●	●	
16	●	●	
18	●	●	
20	●	●	
22	●	●	
25	●	●	
28	●	●	
30	●	●	
32	●	●	
35	●	●	
38	●	●	
40	●	●	
43	●	●	
45	●	●	



Unit: mm

Thickness (t)	Width (W): 1219 / on request		Note
	Length (L)		
	2438	On request	
48	●	●	
50	●	●	
53	●	●	
55	●	●	
58	●	●	
60	●	●	
63	●	●	
65	●	●	
68	●	●	
70	●	●	
75	●	●	
80	●	●	
85	●	●	
90	●	●	
100	●	●	
110	●	●	
120	●	●	
150	●	●	

Sizes based on JIS G4304 and supplier's standard. Other dimensions upon request.



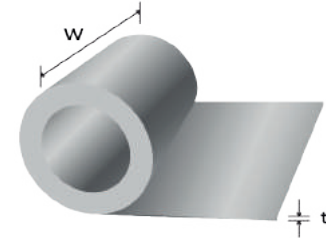
## Stainless Steel Coil - SUS 301CSP

Temper **1/2H, 3/4H, H, EH**  
 Certificates **ISO 9001, RoHS / Equivalent**  
 Standards **JIS G4313, KS-D3698 / Equivalent**  
 Chemical Composition (%) **C 0.15max; Si 1 max; Mn 2 max; P 0.045 max; S 0.03 max; Ni 6~8; Cr 16~18**

Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
0.05	●	●	●	
0.08	●	●	●	
0.10	●	●	●	
0.15	●	●	●	
0.20	●	●	●	
0.25	●	●	●	
0.30	●	●	●	
0.35	●	●	●	
0.40	●	●	●	
0.50	●	●	●	
0.60	●	●	●	
0.70	●	●	●	
0.80	●	●	●	
1.00	●	●	●	
1.20	●	●	●	
1.50	●	●	●	

Sizes based on JIS G4313, KS-D3698 and supplier's standard.  
 Other thickness upon request.



Type 301 is a high strength grade of steel. Its resistance to atmosphere corrosion and its bright, attractive surface make it an excellent choice for decorative structural applications. Application: Stamping parts etc.

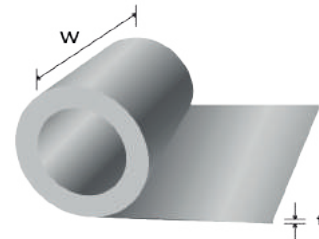
## Stainless Steel Coil - SUS 304CSP

Temper **1/2H, 3/4H, H**  
 Certificates **ISO 9001, RoHS / Equivalent**  
 Standards **JIS G4313, KS-D3698 / Equivalent**  
 Chemical Composition (%) **C 0.08max; Si 1 max; Mn 2 max; P 0.045 max; S 0.03 max; Ni 8~10.5; Cr 18~20**

Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
0.05	●	●	●	
0.08	●	●	●	
0.10	●	●	●	
0.15	●	●	●	
0.20	●	●	●	
0.25	●	●	●	
0.30	●	●	●	
0.35	●	●	●	
0.40	●	●	●	
0.50	●	●	●	
0.60	●	●	●	
0.70	●	●	●	
0.80	●	●	●	
1.00	●	●	●	
1.20	●	●	●	
1.50	●	●	●	

Sizes based on JIS G4313, KS-D3698 and supplier's standard.  
 Other thickness upon request.



Type 304 stainless steel is a T 300 Series Stainless Steel austenitic. It has a minimum of 18% chromium and 8% nickel, combined with a maximum of 0.08% carbon. It is defined as a Chromium-Nickel austenitic alloy. Application: Stamping parts etc.

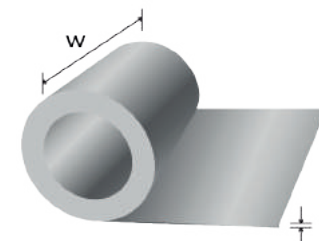
## Stainless Steel Coil - SUS 301

Temper **1/4H, 1/2H, 3/4H, H**  
 Certificates **ISO 9001, RoHS / Equivalent**  
 Standards **JIS G4305, KS-D3698 / Equivalent**  
 Chemical Composition (%) **C 0.15max; Si 1 max; Mn 2 max; P 0.045 max; S 0.03 max; Ni 6~8; Cr 16~18**

Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
0.20	●	●	●	
0.25	●	●	●	
0.30	●	●	●	
0.35	●	●	●	
0.40	●	●	●	
0.50	●	●	●	
0.60	●	●	●	
0.70	●	●	●	
0.80	●	●	●	
1.00	●	●	●	
1.20	●	●	●	
1.50	●	●	●	
2.00	●	●	●	
2.50	●	●	●	
3.00	●	●	●	

Sizes based on JIS G4305, KS-D3698 and supplier's standard.  
 Other thickness upon request.



**STEEL**

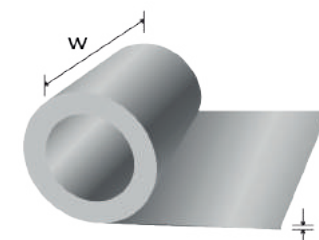
## Stainless Steel Coil - SUS 304

Temper **-**  
 Certificates **ISO 9001, RoHS**  
 Standards **JIS G4305, KS-D3698 / Equivalent**  
 Chemical Composition (%) **C 0.08max; Si 1 max; Mn 2 max; P 0.045 max; S 0.03 max; Ni 8~10.5; Cr 18~20**

Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
0.20	●	●	●	
0.25	●	●	●	
0.30	●	●	●	
0.35	●	●	●	
0.40	●	●	●	
0.50	●	●	●	
0.60	●	●	●	
0.70	●	●	●	
0.80	●	●	●	
1.00	●	●	●	
1.20	●	●	●	
1.50	●	●	●	
2.00	●	●	●	
2.50	●	●	●	
3.00	●	●	●	

Sizes based on JIS G4305, KS-D3698 and supplier's standard.  
 Other thickness upon request.



Type 304 stainless steel is a T 300 Series Stainless Steel austenitic. It has a minimum of 18% chromium and 8% nickel, combined with a maximum of 0.08% carbon. It is defined as a Chromium-Nickel austenitic alloy.  
 Application: Stamping parts etc.  
 Surface: BA, 2B, No. 4, No. 8

## Stainless Steel Coil - SUS 316

Temper -  
 Certificates **ISO 9001, RoHS**  
 Standards **JIS G4305, KS-D3698 / Equivalent**  
 Chemical Composition (%) **C 0.08max; Si 1 max; Mn 2 max; P 0.045 max; S 0.03 max; Ni 10~14; Cr 16~18; Mo 2~3**

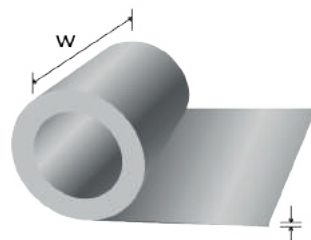
Unit: mm

Thickness (t)	Width (W)			Note
	400	600	On request	
0.20	●	●	●	
0.25	●	●	●	
0.30	●	●	●	
0.35	●	●	●	
0.40	●	●	●	
0.50	●	●	●	
0.60	●	●	●	
0.70	●	●	●	
0.80	●	●	●	
1.00	●	●	●	
1.20	●	●	●	
1.50	●	●	●	
2.00	●	●	●	
2.50	●	●	●	
3.00	●	●	●	

Sizes based on JIS G4305, KS-D3698 and supplier's standard.  
 Other thickness upon request.

Stainless steel 316 contains an addition of molybdenum that gives it improved corrosion resistance. This is particularly apparent for pitting and crevice corrosion in chloride environments.

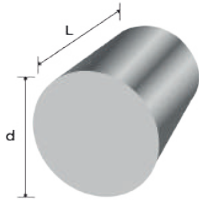
Application: Stamping parts etc.  
 Surface: BA, 2B, No. 4, No. 8



## Stainless Steel Round Bar SUS 303 Cold / Hot

Temper  
Certificates -  
ISO 9001, IATF 16949,  
AS9100 / 9120, RoHS,  
Reach-SVHC / Equivalent  
Standards ASTM, JIS G4318 / Equivalent  
Chemical Composition (%) C 0.15 max; Si 1 max; Mn 2 max;  
P 0.2 max; S 0.15 max; Ni 8~10;  
Cr 17~19

303 is a type of steel in which sulfur (S) has been added to a 304 base to improve machinability.  
Application: Machining, Automotive, Oil & Gas.



Unit: mm

Diameter (d)	Length (L)			
	2500	3000	6000	On request
5	●	●		●
6	●	●		●
7	●	●		●
8	●	●		●
9	●	●		●
10	●	●		●
11	●	●		●
12	●	●		●
13	●	●		●
14	●	●		●
15	●	●		●
16	●	● ●	●	● ●
17	●	● ●	●	● ●
18	●	● ●	●	● ●
19	●	● ●	●	● ●
20	●	● ●	●	● ●
21	●	● ●	●	● ●
22	●	● ●	●	● ●
23	●	● ●	●	● ●
24	●	● ●	●	● ●
25	●	● ●	●	● ●
26	●	● ●	●	● ●
27	●	● ●	●	● ●
28	●	● ●	●	● ●
29	●	● ●	●	● ●
30	●	● ●	●	● ●
35	●	● ●	●	● ●
40	●	● ●	●	● ●
50	●	● ●	●	● ●
60	●	● ●	●	● ●
70	●	● ●	●	● ●
80	●	● ●	●	● ●
85		●	●	●
90		●	●	●
95		●	●	●
100		●	●	●
110		●	●	●
120		●	●	●
130		●	●	●
140		●	●	●
150		●	●	●
160		●	●	●
170		●	●	●
180		●	●	●

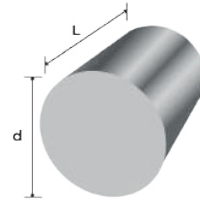
● Cold ● Hot

Sizes based on ASTM, JIS and supplier's standard.  
Other dimensions upon request.

## Stainless Steel Round Bar SUS 304 Cold / Hot

Temper  
Certificates -  
ISO 9001, IATF 16949,  
AS9100 / 9120, RoHS,  
Reach-SVHC / Equivalent  
Standards ASTM, JIS G4318 / Equivalent  
Chemical Composition (%) C 0.08max; Si 1 max; Mn 2 max;  
P 0.045 max; S 0.03 max;  
Ni 8~10.5; Cr 18~20

Type 304 stainless steel is a T 300 Series Stainless Steel austenitic. It has a minimum of 18% chromium and 8% nickel, combined with a maximum of 0.08% carbon. It is defined as a Chromium-Nickel austenitic alloy.  
Application: Machining, Automotive, Oil & Gas.



Unit: mm

Diameter (d)	Length (L)			
	2500	3000	6000	On request
5	●	●		●
6	●	●		●
7	●	●		●
8	●	●		●
9	●	●		●
10	●	●		●
11	●	●		●
12	●	●		●
13	●	●		●
14	●	●		●
15	●	●		●
16	●	● ●	●	● ●
17	●	● ●	●	● ●
18	●	● ●	●	● ●
19	●	● ●	●	● ●
20	●	● ●	●	● ●
21	●	● ●	●	● ●
22	●	● ●	●	● ●
23	●	● ●	●	● ●
24	●	● ●	●	● ●
25	●	● ●	●	● ●
26	●	● ●	●	● ●
27	●	● ●	●	● ●
28	●	● ●	●	● ●
29	●	● ●	●	● ●
30	●	● ●	●	● ●
35	●	● ●	●	● ●
40	●	● ●	●	● ●
50	●	● ●	●	● ●
60	●	● ●	●	● ●
70	●	● ●	●	● ●
80	●	● ●	●	● ●
85		●	●	●
90		●	●	●
95		●	●	●
100		●	●	●
110		●	●	●
120		●	●	●
130		●	●	●
140		●	●	●
150		●	●	●
160		●	●	●
170		●	●	●
180		●	●	●

● Cold ● Hot

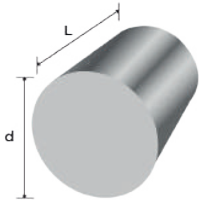
Sizes based on ASTM, JIS and supplier's standard.  
Other dimensions upon request.

## Stainless Steel Round Bar SUS 316L Cold / Hot

Temper -  
 Certificates ISO 9001, IATF 16949, AS9100 / 9120, RoHS, Reach-SVHC / Equivalent  
 Standards ASTM, JIS G4318 / Equivalent  
 Chemical Composition (%) C 0.03max; Si 1 max; Mn 2 max; P 0.045 max; S 0.03 max; Ni 10~14; Cr 16~18; Mo 2~3

Stainless steel 316 contains an addition of molybdenum that gives it improved corrosion resistance. This is particularly apparent for pitting and crevice corrosion in chloride environments.

Application: Machining, Automotive, Oil & Gas.



Unit: mm

Diameter (d)	Length (L)			
	2500	3000	6000	On request
5	●	●		●
6	●	●		●
7	●	●		●
8	●	●		●
9	●	●		●
10	●	●		●
11	●	●		●
12	●	●		●
13	●	●		●
14	●	●		●
15	●	●		●
16	●	●●	●	●●
17	●	●●	●	●●
18	●	●●	●	●●
19	●	●●	●	●●
20	●	●●	●	●●
21	●	●●	●	●●
22	●	●●	●	●●
23	●	●●	●	●●
24	●	●●	●	●●
25	●	●●	●	●●
26	●	●●	●	●●
27	●	●●	●	●●
28	●	●●	●	●●
29	●	●●	●	●●
30	●	●●	●	●●
35	●	●●	●	●●
40	●	●●	●	●●
50	●	●●	●	●●
60	●	●●	●	●●
70	●	●●	●	●●
80	●	●●	●	●●
85		●	●	●
90		●	●	●
95		●	●	●
100		●	●	●
110		●	●	●
120		●	●	●
130		●	●	●
140		●	●	●
150		●	●	●
160		●	●	●
170		●	●	●
180		●	●	●

● Cold ● Hot

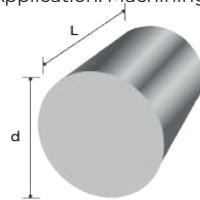
Sizes based on ASTM, JIS and supplier's standard. Other dimensions upon request.

## Stainless Steel Round Bar SUS 440C Cold / Hot

Temper -  
 Certificates ISO 9001, IATF 16949, AS9100 / 9120, RoHS, Reach-SVHC / Equivalent  
 Standards ASTM, JIS G4318 / Equivalent  
 Chemical Composition (%) C 0.95~1.2; Si 1 max; Mn 1 max; P 0.04 max; S 0.03 max; Cr 16~18

440C is a martensitic 400 series stainless steel, and has the highest carbon content of the 400 stainless steel series. It can be heat treated to reach hardness of 58 to 60 HRC. It can be used to make rolling contact stainless bearings, e.g. ball bearings and roller bearings. It is also used to make knife blades.

Application: Machining, Automotive, Oil & Gas.



Unit: mm

Diameter (d)	Length (L)			
	2500	3000	6000	On request
4	●	●	●	●
5	●	●	●	●
6	●	●	●	●
7	●	●	●	●
8	●	●	●	●
9	●	●	●	●
10	●	●	●	●
11	●	●	●	●
12	●	●	●	●
13	●	●	●	●
14	●	●	●	●
15	●	●	●	●●
16	●●	●●	●●	●●
17	●●	●●	●●	●●
18	●●	●●	●●	●●
19	●●	●●	●●	●●
20	●●	●●	●●	●●
21	●●	●●	●●	●●
22	●●	●●	●●	●●
23	●●	●●	●●	●●
24	●●	●●	●●	●●
25	●●	●●	●●	●●
26	●●	●●	●●	●●
27	●●	●●	●●	●●
28	●●	●●	●●	●●
29	●●	●●	●●	●●
30	●●	●●	●●	●●
35	●	●	●	●
40	●	●	●	●
45	●	●	●	●
50	●	●	●	●
55	●	●	●	●

● Cold ● Hot

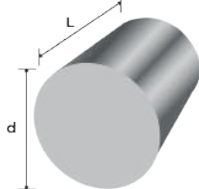
Sizes based on ASTM, JIS and supplier's standard. Other dimensions upon request.

## Stainless Steel Round Bar SUS 630 Cold / Hot

Temper -  
 Certificates ISO 9001, IATF 16949,  
 AS9100 / 9120, RoHS,  
 Reach-SVHC / Equivalent  
 Standards ASTM, JIS G4318 / Equivalent  
 Chemical Composition (%) C 0.07 max; Si 1 max; Mn 1 max;  
 P 0.04 max; S 0.03 max; Ni 3~5;  
 Cr 15~17.5; Cu 3~5; Nb 0.15~0.45

Grade 630 stainless steels are martensitic stainless steels that are precipitation hardened to achieve excellent mechanical properties. These steel achieve high strength and hardness following heat treatment. The heat and corrosion resistance of grade 630 are similar to that of grade 304 steels.

Application: Machining, Automotive, Oil & Gas.



Unit: mm

Diameter (d)	Length (L)			
	2500	3000	6000	On request
5	●	●		●
6	●	●		●
7	●	●		●
8	●	●		●
9	●	●		●
10	●	●		●
11	●	●		●
12	●	●		●
13	●	●		●
14	●	●		●
15	●	●		●
16	●	● ●	●	● ●
17	●	● ●	●	● ●
18	●	● ●	●	● ●
19	●	● ●	●	● ●
20	●	● ●	●	● ●
21	●	● ●	●	● ●
22	●	● ●	●	● ●
23	●	● ●	●	● ●
24	●	● ●	●	● ●
25	●	● ●	●	● ●
26	●	● ●	●	● ●
27	●	● ●	●	● ●
28	●	● ●	●	● ●
29	●	● ●	●	● ●
30	●	● ●	●	● ●
35		●	●	●
40		●	●	●
50		●	●	●
60		●	●	●
70		●	●	●
80		●	●	●
85		●	●	●
90		●	●	●
95		●	●	●
100		●	●	●
110		●	●	●
120		●	●	●
130		●	●	●
140		●	●	●
150		●	●	●
160		●	●	●
170		●	●	●
180		●	●	●

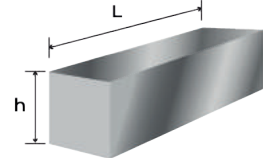
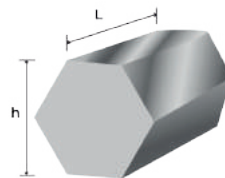
● Cold ● Hot

Sizes based on ASTM, JIS and supplier's standard.  
 Other dimensions upon request.

## Stainless Steel Square Bar Hexagon Bar - SUS 303 Cold

Temper Cold Drawn (CD)  
 Certificates ISO 9001, IATF 16949,  
 AS9100 / 9120, RoHS,  
 Reach-SVHC / Equivalent  
 Standards ASTM, JIS G4318 / Equivalent  
 Chemical Composition (%) C 0.15 max; Si 1 max; Mn 2 max;  
 P 0.2 max; S 0.15 max; Ni 8~10;  
 Cr 17~19

It is classified as austenitic stainless steel, and is ideal for machinability, heat resistance improvements, and automatic lathes. Mainly used for machine parts, tools, shafts, bolts, and nuts.



Unit: mm

Square Edge (h) / Hexagonal Width across flats (h)	Length (L)			Note
	2500	3000	On request	
5	●	●	●	
6	●	●	●	
7	●	●	●	
8	●	●	●	
9	●	●	●	
10	●	●	●	
11	●	●	●	
12	●	●	●	
13	●	●	●	
14	●	●	●	
15	●	●	●	
16	●	●	●	
17	●	●	●	
18	●	●	●	
19	●	●	●	
20	●	●	●	
22	●	●	●	
24	●	●	●	
26	●	●	●	
28	●	●	●	
30	●	●	●	
35	●	●	●	
40	●	●	●	
45	●	●	●	
50	●	●	●	
55	●	●	●	
60	●	●	●	
65	●	●	●	
70	●	●	●	

Sizes based on ASTM, JIS G4318 and  
 supplier's standard.  
 Other dimensions upon request.

## Stainless Steel Square Bar Hexagon Bar - SUS 304 Cold

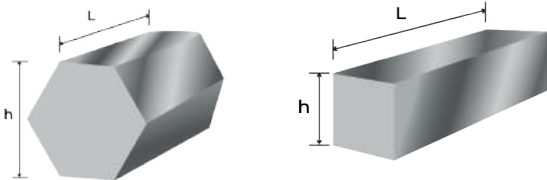
Temper  
Certificates

**Cold Drawn (CD)**  
ISO 9001, IATF 16949,  
AS9100 / 9120, RoHS,  
Reach-SVHC / Equivalent  
ASTM, JIS G4318 / Equivalent  
**C 0.08max; Si 1 max; Mn 2 max;**  
**P 0.045 max; S 0.03 max;**  
**Ni 8~10.5; Cr 18~20**

Standards

Chemical Composition (%)

Type 304 stainless steel is a T 300 Series Stainless Steel austenitic. It has a minimum of 18% chromium and 8% nickel, combined with a maximum of 0.08% carbon. It is defined as a Chromium-Nickel austenitic alloy.  
Application: Machining, Automotive, Oil & Gas.



Unit: mm

Square Edge (h) / Hexagonal Width across flats (h)	Length (L)			Note
	2500	3000	On request	
5	●	●	●	
6	●	●	●	
7	●	●	●	
8	●	●	●	
9	●	●	●	
10	●	●	●	
11	●	●	●	
12	●	●	●	
13	●	●	●	
14	●	●	●	
15	●	●	●	
16	●	●	●	
17	●	●	●	
18	●	●	●	
19	●	●	●	
20	●	●	●	
22	●	●	●	
24	●	●	●	
26	●	●	●	
28	●	●	●	
30	●	●	●	
35	●	●	●	
40	●	●	●	
45	●	●	●	
50	●	●	●	
55	●	●	●	
60	●	●	●	
65	●	●	●	
70	●	●	●	

Sizes based on ASTM, JIS G4318 and supplier's standard.  
Other dimensions upon request.

## Stainless Steel Square Bar Hexagon Bar - SUS 316L Cold

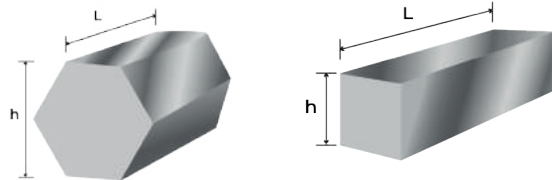
Temper  
Certificates

**Cold Drawn (CD)**  
ISO 9001, IATF 16949,  
AS9100 / 9120, RoHS,  
Reach-SVHC / Equivalent  
ASTM, JIS G4318 / Equivalent  
**C 0.03max; Si 1 max; Mn 2 max;**  
**P 0.045 max; S 0.03 max;**  
**Ni 10~14; Cr 16~18; Mo 2~3**

Standards

Chemical Composition (%)

Stainless steel 316 contains an addition of molybdenum that gives it improved corrosion resistance. This is particularly apparent for pitting and crevice corrosion in chloride environments.  
Application: Machining, Automotive, Oil & Gas.



Unit: mm

Square Edge (h) / Hexagonal Width across flats (h)	Length (L)			Note
	2500	3000	On request	
5	●	●	●	
6	●	●	●	
7	●	●	●	
8	●	●	●	
9	●	●	●	
10	●	●	●	
11	●	●	●	
12	●	●	●	
13	●	●	●	
14	●	●	●	
15	●	●	●	
16	●	●	●	
17	●	●	●	
18	●	●	●	
19	●	●	●	
20	●	●	●	
22	●	●	●	
24	●	●	●	
26	●	●	●	
28	●	●	●	
30	●	●	●	
35	●	●	●	
40	●	●	●	
45	●	●	●	
50	●	●	●	
55	●	●	●	
60	●	●	●	
65	●	●	●	
70	●	●	●	

Sizes based on ASTM, JIS G4318 and supplier's standard.  
Other dimensions upon request.

## Stainless Steel Flat Bar - SUS303 Hot

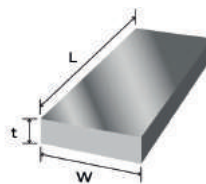
Temper  
Certificates  
Standards  
Chemical Composition (%)

-  
**RoHS / Equivalent**  
**JIS G4303 / Equivalent**  
**C 0.15 max; Si 1 max; Mn 2 max;**  
**P 0.2 max; S 0.15 max;**  
**Ni 8~10; Cr 17~19**

303 is a type of steel in which sulfur (S) has been added to a 304 base to improve machinability. Surface specifications are a pickled texture (round, dull white color).

Unit: mm

Thickness (t) x Width (W)	Length (L)		Note
	4000	On request	
6 x 25	●	●	
30	●	●	
40	●	●	
50	●	●	
65	●	●	
75	●	●	
100	●	●	
9 x 25	●	●	
30	●	●	
40	●	●	
50	●	●	
65	●	●	
75	●	●	
100	●	●	
12 x 25	●	●	
30	●	●	
40	●	●	
50	●	●	
65	●	●	
75	●	●	
100	●	●	
150	●	●	
16 x 25	●	●	
30	●	●	
40	●	●	
50	●	●	
65	●	●	
75	●	●	
100	●	●	
150	●	●	
200	●	●	
19 x 25	●	●	
30	●	●	
40	●	●	
50	●	●	
65	●	●	
75	●	●	
100	●	●	



Unit: mm

Thickness (t) x Width (W)	Length (L)		Note
	4000	On request	
22 x 25	●	●	
30	●	●	
40	●	●	
50	●	●	
65	●	●	
75	●	●	
100	●	●	
25 x 50	●	●	
65	●	●	
75	●	●	
100	●	●	
150	●	●	
200	●	●	
30 x 50	●	●	
75	●	●	
100	●	●	
35 x 50	●	●	
75	●	●	
40 x 50	●	●	
75	●	●	
100	●	●	
45 x 50	●	●	
75	●	●	
100	●	●	
50 x 75	●	●	
100	●	●	

Sizes based on JIS G4303 and supplier's standard. Other dimensions upon request.

STEEL

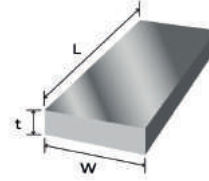
## Stainless Steel Flat Bar - SUS304 Hot

Temper -  
 Certificates **RoHS / Equivalent**  
 Standards **JIS G4303 / Equivalent**  
 Chemical Composition (%) **C 0.08max; Si 1 max; Mn 2 max; P 0.045 max; S 0.03 max; Ni 8~10.5; Cr 18~20**

Type 304 stainless steel is a T 300 Series Stainless Steel austenitic. It has a minimum of 18% chromium and 8% nickel, combined with a maximum of 0.08% carbon. It is defined as a Chromium-Nickel austenitic alloy. Surface specifications are a pickled texture (rough, dull white color).

Unit: mm

Thickness (t) x Width (W)	Length (L)		Note
	4000	On request	
8 x 25	●	●	
30	●	●	
40	●	●	
9 x 16	●	●	
20	●	●	
25	●	●	
30	●	●	
32	●	●	
35	●	●	
40	●	●	
50	●	●	
60	●	●	
75	●	●	
100	●	●	
10 x 20	●	●	
25	●	●	
30	●	●	
35	●	●	
40	●	●	
50	●	●	
65	●	●	
10 x 75	●	●	
100	●	●	
125	●	●	
150	●	●	
12 x 20	●	●	
25	●	●	
30	●	●	
40	●	●	
50	●	●	



Unit: mm

Thickness (t) x Width (W)	Length (L)		Note
	4000	On request	
12 x 65	●	●	
75	●	●	
100	●	●	
150	●	●	
200	●	●	
30 x 50	●	●	
75	●	●	
100	●	●	
35 x 50	●	●	
75	●	●	
40 x 50	●	●	
75	●	●	
100	●	●	
45 x 50	●	●	
75	●	●	
100	●	●	
50 x 75	●	●	
100	●	●	

Sizes based on JIS G4303 and supplier's standard. Other dimensions upon request.

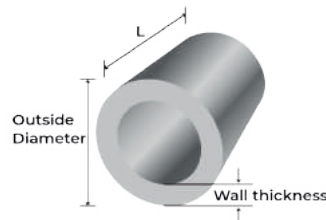
## Stainless Steel Round Pipe - SUS304TKA (Seamless)

Temper -  
 Certificates **RoHS / Equivalent**  
 Standards **JIS G3446 / Equivalent**  
 Chemical Composition (%) **C 0.08 max; Si 1 max; Mn 2 max; P 0.045 max; S 0.03 max; Ni 8~10.5; Cr 18~20**

"TKA" refers to "Tube K": It is an abbreviation for structural annealing (solid solution heat treatment) and refers to stainless steel piping for mechanical structures. "Seamless" refers to pipes with no seams. By using this for thick pipe shapes cored out from round bars or plate materials, short delivery times and lower costs can be achieved.

Unit: mm

Outside Diameter	Wall thickness	Length (L)	
		2100	On request
46.0	10.0	●	●
50.8	14.5	●	●
56.0	13.8	●	●
67.0	14.5	●	●
71.0	18.0	●	●
82.0	15.0	●	●
92.0	16.8	●	●
100.0	10.0	●	●
100.0	20.0	●	●
101.0	18.0	●	●
112.0	19.0	●	●
123.0	13.0	●	●
131.0	26.0	●	●
140.0	30.0	●	●
150.0	12.5	●	●
160.0	20.0	●	●
170.0	26.0	●	●
190.0	20.0	●	●
200.0	15.0	●	●



Sizes based on JIS G3446 and supplier's standard. Other dimensions upon request.

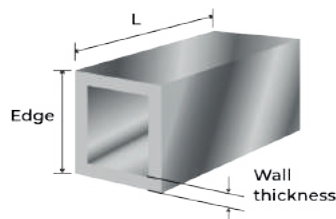
## Stainless Steel Square Pipe - SUS304 HL

Temper -  
 Certificates -  
 Standards -  
 Chemical Composition (%) **RoHS / Equivalent  
 Maker's standard**  
**C 0.08 max; Si 1 max; Mn 2 max;  
 P 0.045 max; S 0.03 max;  
 Ni 8~10.5; Cr 18~20**

A product in which the surface has been finished with HL (hairline) polishing. HL refers to an elongated and continuous mark much like a thread of hair. Polishing is usually performed with a polishing belt with No. 150 to 240 grains.

Unit: mm

Edge	Wall thickness	Length (L)		Note
		5000	On request	
16.0	1.5	●	●	
19.0	1.5	●	●	
20.0	1.5	●	●	
21.0	1.5	●	●	
22.0	1.5	●	●	
24.0	1.5	●	●	
25.0	1.5	●	●	
25.4	1.5	●	●	
28.6	1.5	●	●	
30.0	1.5	●	●	
32.0	1.5	●	●	
35.0	1.5	●	●	
38.5	1.5	●	●	
41.0	1.5	●	●	
41.0	2.0	●	●	
46.0	1.5	●	●	
50.0	1.5	●	●	
50.0	2.0	●	●	



Unit: mm

Edge	Wall thickness	Length (L)		Note
		5000	On request	
50.0	3.0	●	●	
60.0	1.5	●	●	
60.0	3.0	●	●	
75.0	2.0	●	●	
75.0	3.0	●	●	
100.0	2.0	●	●	
100.0	3.0	●	●	

Sizes based on supplier's standard.  
 Other dimensions upon request.

## Steel Rectangular Pipe - STKR400

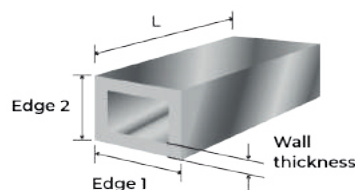
Temper -  
 Certificates -  
 Standards -  
 Chemical Composition (%) **RoHS / Equivalent  
 JIS G3466 / Equivalent**  
**C 0.25 max; P 0.04 max;  
 S 0.04 max**

Square and rectangular tubes, used for civil engineering, architecture and other structures.

Unit: mm

Edge 1	Edge 2	Wall thickness	Length (L)		
			5000	6000	On request
60	30	2.3	●		●
150	100	2.3		●	●

Sizes based on supplier's standard.  
 Other dimensions upon request.



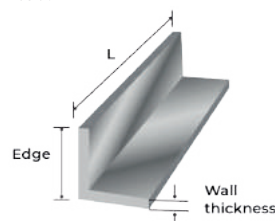
## Stainless Steel Angle Bar - SUS304 Hot

Temper -  
 Certificates -  
 Standards -  
 Chemical Composition (%) **RoHS / Equivalent  
 JIS G4317 / Equivalent**  
**C 0.08max; Si 1 max; Mn 2 max;  
 P 0.045 max; S 0.03 max;  
 Ni 8~10.5; Cr 18~20**

Angles are also known as L-beams. Stainless steel is used for construction materials or mechanical structure materials for areas where rust is unwanted.

Unit: mm

Edge	Wall thickness	Length (L)		
		4000	6000	On request
20	3	●		●
25	3	●		●
30	3	●	●	●
30	4		●	●
30	5		●	●
40	3	●	●	●
40	4	●	●	●
40	5	●	●	●
40	6		●	●
50	3		●	●
50	4	●	●	●
50	5	●	●	●



Unit: mm

Edge	Wall thickness	Length (L)		
		4000	6000	On request
50	6	●	●	●
65	6	●	●	●
75	6		●	●
75	9		●	●
90	9		●	●
100	10		●	●

Sizes based on JIS G4317 and supplier's standard.  
 Other dimensions upon request.

## Stainless Steel Wire SUS304 WPA / WPB

Temper -  
 Certificates ISO 9001, IATF 16949, RoHS, Reach-SVHC / Equivalent  
 Standards JIS G4314 / Equivalent  
 Chemical Composition (%) C 0.08max; Si 1 max; Mn 2 max; P 0.045 max; S 0.03 max; Ni 8~10.5; Cr 18~20

Excellent mechanical properties.  
 Advanced surface: Bright / Ni-co / Ni-co Bright.  
 Application: Springs.



## Stainless Steel Square Wire SUS304 WPB

Temper -  
 Certificates ISO 9001, IATF 16949, RoHS, Reach-SVHC / Equivalent  
 Standards -  
 Chemical Composition (%) C 0.08max; Si 1 max; Mn 2 max; P 0.045 max; S 0.03 max; Ni 8~10.5; Cr 18~20

Excellent mechanical properties.  
 Advanced surface: Bright / Ni-co / Ni-co Bright.  
 Application: Springs.



Unit: mm

Diameter (d) (mm)	Coil weight (kg)	Tensile strength (N/mm <sup>2</sup> )	
		WPA	WPB
0.2	10	1650~1900	2150~2400
0.3	10	1600~1850	2050~2300
0.4	25	1600~1850	2050~2300
0.5	40	1600~1850	1950~2200
0.6	40	1600~1850	1950~2200
0.7	40	1530~1780	1850~2100
0.8	50	1530~1780	1850~2100
0.9	50	1530~1780	1850~2100
1.0	100	1530~1780	1850~2100
1.1	100	1450~1700	1750~2000
1.2	100	1450~1700	1750~2000
1.3	100	1450~1700	1750~2000
1.4	100	1450~1700	1750~2000
1.5	100	1400~1650	1650~1900
1.6	100	1400~1650	1650~1900
1.7	100	1400~1650	1650~1900
1.8	100	1400~1650	1650~1900
1.9	100	1400~1650	1650~1900
2.0	150	1400~1650	1650~1900
2.1	150	1320~1570	1550~1800
2.2	150	1320~1570	1550~1800
2.3	150	1320~1570	1550~1800
2.4	150	1320~1570	1550~1800
2.5	150	1320~1570	1550~1800
3.0	150	1230~1480	1450~1700
4.0	200	1230~1480	1450~1700
5.0	200	1100~1350	1350~1600
6.0	200	1100~1350	1350~1600
7.0	200	1000~1250	1270~1520
8.0	200	1000~1250	1270~1520
9.0	200	-	1130~1380
10.0	200	-	980~1230
11.0	200	-	880~1130
12.0	200	-	880~1130

Sizes based on JIS G4314.  
 Other diameter and mechanical properties upon request.

Thickness (t)	Corner radius (R)	Note
0.6	min 0.1	
0.7	min 0.1	
0.8	min 0.1	
0.9	min 0.1	
1.0	min 0.1	
1.1	min 0.1	
1.2	min 0.1	
1.3	min 0.1	
1.4	min 0.1	
1.5	min 0.1	
1.6	min 0.1	
1.7	min 0.1	
1.8	min 0.1	
1.9	min 0.1	
2.0	min 0.1	

Other dimensions upon request.

## Stainless Steel Wire SUS316 WPA

Temper -  
 Certificates **ISO 9001, IATF 16949, RoHS, Reach-SVHC / Equivalent**  
 Standards **JIS G4314 / Equivalent**  
 Chemical Composition (%) **C 0.08max; Si 1 max; Mn 2 max; P 0.045 max; S 0.03 max; Ni 10~14; Cr 16~18; Mo 2~3**

Excellent mechanical properties.  
 Advanced surface: Bright / Ni-co / Ni-co Bright.  
 Application: Springs.



Diameter (d) (mm)	Coil weight (kg)	Tensile strength (N/mm <sup>2</sup> )
		WPA
0.2	10	1650~1900
0.3	10	1600~1850
0.4	25	1600~1850
0.5	40	1600~1850
0.6	40	1600~1850
0.7	40	1530~1780
0.8	50	1530~1780
0.9	50	1530~1780
1.0	100	1530~1780
1.1	100	1450~1700
1.2	100	1450~1700
1.3	100	1450~1700
1.4	100	1450~1700
1.5	100	1400~1650
1.6	100	1400~1650
1.7	100	1400~1650
1.8	100	1400~1650
1.9	100	1400~1650
2.0	150	1400~1650
2.1	150	1320~1570
2.2	150	1320~1570
2.3	150	1320~1570
2.4	150	1320~1570
2.5	150	1320~1570
3.0	150	1230~1480
4.0	200	1230~1480
5.0	200	1100~1350
6.0	200	1100~1350
7.0	200	1000~1250
8.0	200	1000~1250

Sizes based on JIS G4314.  
 Other diameter and mechanical properties upon request.

## Stainless Steel Wire SUS631J1 WPC

Temper -  
 Certificates **ISO 9001, IATF 16949, RoHS, Reach-SVHC / Equivalent**  
 Standards **JIS G4314 / Equivalent**  
 Chemical Composition (%) **C 0.09max; Si 1 max; Mn 1 max; P 0.04 max; S 0.03 max; Ni 7~8.5; Cr 16~18; Al 0.75~1.5**

Excellent mechanical properties.  
 Advanced surface: Bright / Ni-co / Ni-co Bright.  
 Application: Springs.



Diameter (d) (mm)	Coil weight (kg)	Tensile strength (N/mm <sup>2</sup> )
		WPC
0.2	10	1950~2200
0.3	10	1930~2180
0.4	25	1930~2180
0.5	40	1850~2100
0.6	40	1850~2100
0.7	40	1800~2050
0.8	50	1800~2050
0.9	50	1800~2050
1.0	100	1800~2050
1.1	100	1700~1950
1.2	100	1700~1950
1.3	100	1700~1950
1.4	100	1700~1950
1.5	100	1600~1850
1.6	100	1600~1850
1.7	100	1600~1850
1.8	100	1600~1850
1.9	100	1600~1850
2.0	150	1600~1850
2.1	150	1500~1750
2.2	150	1500~1750
2.3	150	1500~1750
2.4	150	1500~1750
2.5	150	1500~1750
3.0	150	1400~1650
4.0	200	1400~1650
5.0	200	1300~1550
6.0	200	1300~1550

Sizes based on JIS G4314.  
 Other diameter and mechanical properties upon request.

## High Carbon Steel Wire - SWA, SWB, SWC

Temper -  
 Certificates **ISO 9001, IATF 16949, RoHS, Reach-SVHC / Equivalent**  
 Standards **JIS G3521 / Equivalent**  
 Chemical Composition (%) **C~0.8**

Excellent mechanical properties.  
 Advanced surface: Bright / Ni-co / Ni-co Bright.  
 Application: Springs.



Diameter (d) (mm)	Coil weight (kg)	Tensile strength (N/mm <sup>2</sup> )		
		SWA	SWB	SWC
0.20	10	1910~2210	2210~2500	2500~2790
0.23	10	1860~2160	2160~2450	2450~2750
0.26	10	1810~2110	2110~2400	2400~2700
0.29	10	1770~2060	2060~2350	2350~2650
0.32	20	1720~2010	2010~2300	2300~2600
0.35	20	1720~2010	2010~2300	2300~2600
0.40	20	1670~1960	1960~2260	2260~2550
0.45	20	1620~1910	1910~2210	2210~2500
0.50	50	1620~1910	1910~2210	2210~2500
0.60	50	1570~1810	1810~2110	2110~2400
0.70	70	1520~1770	1770~2060	2060~2350
0.80	70	1520~1770	1770~2010	2010~2300
0.90	100	1520~1770	1770~2010	2010~2260
1.00	100	1470~1720	1720~1960	1960~2210
1.20	100	1420~1670	1670~1910	1910~2160
1.40	100	1370~1620	1620~1860	1860~2110
1.60	150	1320~1570	1570~1810	1810~2060
1.80	150	1270~1520	1520~1760	1760~2010
2.00	250	1270~1470	1470~1720	1720~1960
2.30	250	1230~1420	1420~1670	1670~1910
2.60	250	1230~1420	1420~1670	1670~1910

Diameter (d) (mm)	Coil weight (kg)	Tensile strength (N/mm <sup>2</sup> )		
		SWA	SWB	SWC
2.90	250	1180~1370	1370~1620	1620~1860
3.20	250	1180~1370	1370~1570	1570~1810
3.50	250	1180~1370	1370~1570	1570~1770
4.00	250	1180~1370	1370~1570	1570~1770
4.50	250	1130~1320	1320~1520	1520~1720
5.00	250	1130~1320	1320~1520	1520~1720
6.00	300	1030~1230	1230~1420	1420~1620
7.00	300	980~1180	1180~1370	1370~1570
8.00	300	980~1180	1180~1370	1370~1570
9.00	300	930~1130	1130~1320	1320~1520
10.00	300	930~1130	1130~1320	1320~1520
11.00	300	-	1080~1270	1270~1470
12.00	300	-	1080~1270	1270~1470

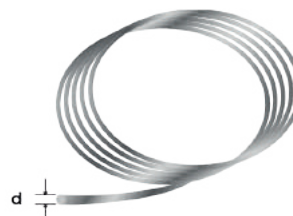
Sizes based on JIS G3521.  
 Other diameter and mechanical properties upon request.

## Oil Quenched & Tempered Wire - SWO-A/B, SWOSC-B, SWOSC-V / VHV

Temper -  
 Certificates **ISO 9001, IATF 16949, RoHS, Reach-SVHC / Equivalent**  
 Standards **JIS G3560 / Equivalent**  
 Chemical Composition (%) **C~0.55; Alloy Cr-Si (and -V); Cr 0.55~0.9; Si 1.2~1.6**

Superior strength & toughness, implement excellent elasticity, ductility, better resistance against fatigue & deformation.  
 Application: Springs, Valve springs.

Diameter (d) (mm)	Coil weight (kg)	Tensile strength (N/mm <sup>2</sup> )			
		SWO-A	SWO-B	SWOSC-B	SWOSC-V
0.5	100	-	-	-	2010~2160
0.6	100	-	-	-	2010~2160
0.7	100	-	-	-	2010~2160
0.8	300	-	-	-	2010~2160
0.9	300	-	-	-	2010~2160
1.0	300	-	-	1960~2110	2010~2160
1.2	300	-	-	1960~2110	2010~2160
1.4	300	-	-	1960~2110	1960~2110
1.5	300	-	-	1960~2110	1960~2110
1.6	300	-	-	1960~2110	1960~2110
1.8	300	-	-	1960~2110	1960~2110
2.0	500	1570~1720	1720~1860	1910~2060	1910~2060
2.3	500	1570~1720	1720~1860	1910~2060	1910~2060
2.6	500	1570~1720	1720~1860	1910~2060	1910~2060
2.9	500	1520~1670	1670~1810	1910~2060	1910~2060
3.0	500	1470~1620	1620~1770	1860~2010	1860~2010
3.2	500	1470~1620	1620~1770	1860~2010	1860~2010
3.5	1000	1470~1620	1620~1770	1860~2010	1860~2010
4.0	1000	1420~1570	1570~1720	1810~1960	1810~1960
4.5	1000	1370~1520	1520~1670	1810~1960	1810~1960
5.0	1000	1370~1520	1520~1670	1760~1910	1760~1910
5.5	1000	1320~1470	1470~1620	1760~1910	1760~1910
6.0	1000	1320~1470	1470~1620	1710~1860	1710~1860
7.0	1000	1230~1370	1370~1520	1660~1810	1660~1810
8.0	1000	1230~1370	1370~1520	1660~1810	1660~1810
9.0	1000 ~ 2000	1230~1370	1370~1520	1660~1810	-
10.0	1000 ~ 2000	1180~1320	1320~1470	1660~1810	-
11.0	1000 ~ 2000	1180~1320	1320~1470	1660~1810	-
12.0	1000 ~ 2000	1180~1320	1320~1470	1610~1760	-
13.0	1000 ~ 2000	-	-	1610~1760	-
14.0	1000 ~ 2000	-	-	1610~1760	-
15.0	1000 ~ 2000	-	-	1610~1760	-
16.0	1000 ~ 2000	-	-	1610~1760	-



Sizes based on JIS G3560.  
 Other diameter and plating surface upon request.

## High Carbon Steel Wire SWP-A, SWP-B

Temper	-
Certificates	ISO 9001, IATF 16949, RoHS, Reach-SVHC / Equivalent
Standards	JIS G3522 / Equivalent
Chemical Composition (%)	C~0.8

Excellent chemical & physical properties, used in automotive, electronic equipment, precision machines.  
Surface: Ungalvanized / Galvanized.  
Application: Precision Springs.



Diameter (d) (mm)	Coil weight (kg)	Tensile strength (N/mm <sup>2</sup> )	
		SWP-A	SWP-B
0.20	10	2600~2840	2840~3090
0.23	10	2550~2790	2790~3040
0.26	10	2500~2750	2750~2990
0.29	10	2450~2700	2700~2940
0.32	20	2400~2650	2650~2890
0.35	20	2400~2650	2650~2890
0.40	20	2350~2600	2600~2840
0.45	20	2300~2550	2500~2790
0.50	50	2300~2550	2500~2790
0.60	50	2210~2450	2450~2700
0.70	70	2160~2400	2400~2650
0.80	70	2110~2350	2350~2600
0.90	100	2110~2300	2300~2500
1.00	100	2060~2260	2260~2450
1.20	100	2010~2210	2210~2400
1.40	100	1960~2160	2160~2350
1.60	150	1910~2110	2110~2300
1.80	150	1860~2060	2060~2260
2.00	250	1810~2010	2010~2210
2.30	250	1770~1960	1960~2160
2.60	250	1770~1960	1960~2160
2.90	250	1720~1910	1910~2110
3.00	250	1670~1860	1860~2060
3.20	250	1670~1860	1860~2060
3.50	250	1670~1810	1810~1960
4.00	250	1670~1810	1810~1960
4.50	250	1620~1770	1770~1910
5.00	250	1620~1770	1770~1910
6.00	300	1520~1670	1670~1810
7.00	300	1470~1620	1620~1770
8.00	300	1470~1620	-
9.00	300	1420~1570	-
10.00	300	1420~1570	-

Sizes based on JIS G3522.

Other diameter and mechanical properties upon request.

## High Carbon Steel Square Rectangular Wire - SWP-B

Temper	-
Certificates	ISO 9001, IATF 16949, RoHS, Reach-SVHC / Equivalent
Standards	-
Chemical Composition (%)	C~0.8

Excellent flexibility and casting.  
Surface: Ungalvanized.  
Application: Flat Springs.



Unit: mm

Thickness (t)	Width (w)	Corner radius (R)
0.5	0.5~1.0	min 0.1
0.6	0.6~1.2	min 0.1
0.7	0.7~1.4	min 0.1
0.8	0.8~1.6	min 0.1
0.9	0.9~1.8	min 0.1
1.0	1.0~2.0	min 0.1
1.1	1.1~2.2	min 0.1
1.2	1.2~2.4	min 0.1
1.3	1.3~2.6	min 0.1
1.4	1.4~2.8	min 0.1
1.5	1.5~3.0	min 0.1
1.6	1.6~3.2	min 0.1
1.7	1.7~3.4	min 0.1
1.8	1.8~3.6	min 0.1
1.9	1.9~3.8	min 0.1
2.0	2.0~4.0	min 0.1
2.5	2.5~5.0	min 0.1
3.0	3.0~6.0	min 0.1
4.0	4.0~7.0	min 0.1

Other dimensions upon request.

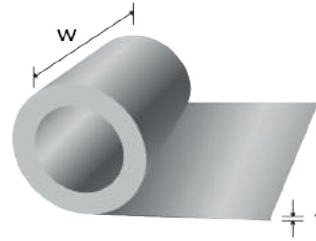
## Carbon Steel Coil - SK85 (SK5)

Temper -  
 Certificates **ISO 9001, RoHS / Equivalent**  
 Standards **JIS G3311 / Equivalent**  
 Chemical Composition (%) **C 0.8~0.9; Si 0.1~0.35; Mn 0.1~0.5; P 0.03 max; S 0.03 max; Cu 0.25 max; Ni 0.25 max; Cr 0.3 max**

Unit: mm

Thickness (t)	Width (W)		Note
	500	On request	
0.10		●	
0.13		●	
0.15	●	●	
0.20	●	●	
0.25	●	●	
0.30	●	●	
0.35	●	●	
0.40	●	●	
0.50	●	●	
0.60	●	●	
0.70	●	●	
0.80	●	●	
0.90	●	●	
1.00	●	●	
1.10	●	●	
1.20	●	●	
1.50	●	●	
1.60	●	●	
2.00	●	●	

SK85 SK5 is a Japanese high-range Carbon steel. After quenching and tempering, SK5 steel has high hardness and wear resistance. SK5 high carbon steel is used to make various tools which request high hardness and wear resistance, such as the shape of the mold and the simple punch, metal cutting tools, drilling tools, woodworking cutter, countersink drills, axes, chisels, hand saws longitudinal and fitter assembly tools, rivet die and other minor tools. We can supply SK5 steel in hardened & tempered process and annealing process.



Sizes based on JIS G3311 and supplier's standard. Other thickness upon request.

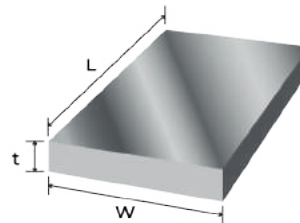
## Carbon Steel Plate S45C Hot, S50C Hot

Temper -  
 Certificates **ISO 9001 / Equivalent**  
 Standards **GB/T699-1999 - JIS / Equivalent**  
 Chemical Composition (%) **C 0.42~0.48 (S45C); 0.47~0.53 (S50C)**

Unit: mm

Thickness (t)	Width (W)	Length (L)		
		3000	6000	On request
6	2200~2500	●	●	●
8	2200~2500	●	●	●
10	2200~2500	●	●	●
12	2200~2500	●	●	●
13	2200~2500	●	●	●
14	2200~2500	●	●	●
15	2200~2500	●	●	●
16	2200~2500	●	●	●
18	2200~2500	●	●	●
20	2200~2500	●	●	●
22	2200~2500	●	●	●
24	2200~2500	●	●	●
25	2200~2500	●	●	●
26	2200~2500	●	●	●
28	2200~2500	●	●	●
30	2200~2500	●	●	●
35	2200~2500	●	●	●
40	2200~2500	●	●	●
45	2200~2500	●	●	●
50	2200~2500	●	●	●
55	2200~2500	●	●	●
60	2200~2500	●	●	●
65	2200~2500	●	●	●
70	2200~2500	●	●	●
75	2200~2500	●	●	●
80	2200~2500	●	●	●
85	2200~2500	●	●	●

S45C, S50C are medium tensile low hardenability carbon steel, with a typical tensile strength range 600 – 950 Mpa and Brinell hardness range 179 – 280. Application: Machining, molding.



Unit: mm

Thickness (t)	Width (W)	Length (L)		
		3000	6000	On request
90	2200~2500	●	●	●
95	2200~2500	●	●	●
100	2200~2500	●	●	●
110	2200~2500	●	●	●
120	2200~2500	●	●	●
130	2200~2500	●	●	●
140	2200~2500	●	●	●
150	2200~2500	●	●	●
160	2200~2500	●	●	●
170	2200~2500	●	●	●
180	2200~2500	●	●	●
190	2200~2500	●	●	●
200	2200~2500	●	●	●

Sizes based on GB and supplier's standard. Other dimensions upon request.

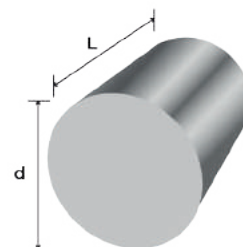
## Carbon Steel Round Bar - S45C Hot, S50C Hot

Temper -  
 Certificates ISO 9001 / Equivalent  
 Standards GB/T699-1999 - JIS / Equivalent  
 Chemical Composition (%) C 0.42~0.48 (S45C); 0.47~0.53 (S50C)

S45C, S50C are medium tensile low hardenability carbon steel, with a typical tensile strength range 600 – 950 Mpa and Brinell hardness range 179 – 280.  
 Application: Machining, molding.

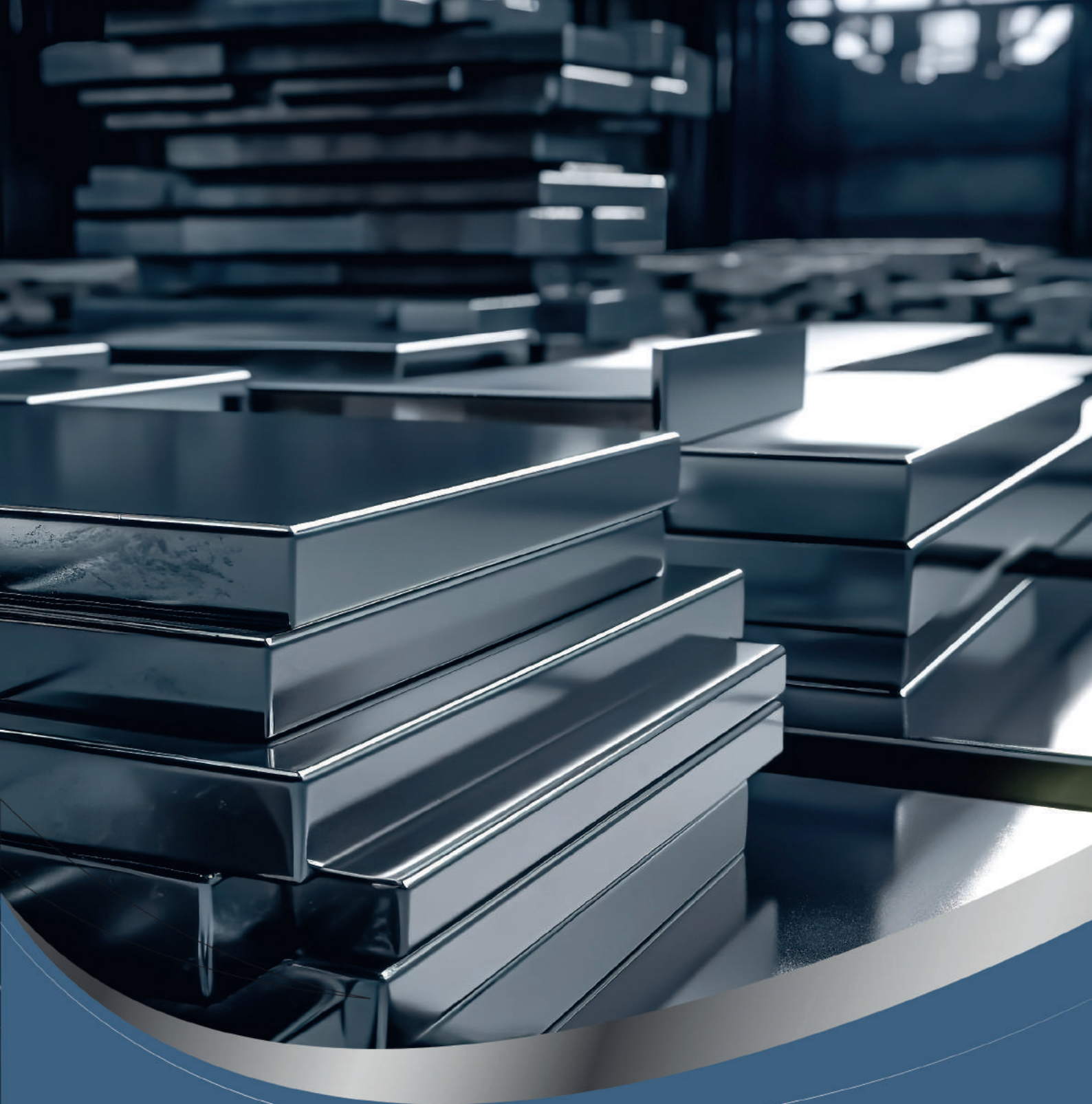
Unit: mm

Diameter (d)	Length (L)			Note
	3000	6000	On request	
12	●	●	●	
13	●	●	●	
14	●	●	●	
16	●	●	●	
18	●	●	●	
20	●	●	●	
22	●	●	●	
24	●	●	●	
25	●	●	●	
28	●	●	●	
30	●	●	●	
35	●	●	●	
40	●	●	●	
45	●	●	●	
50	●	●	●	
55	●	●	●	
60	●	●	●	
65	●	●	●	
70	●	●	●	
75	●	●	●	
80	●	●	●	
85	●	●	●	
90	●	●	●	
95	●	●	●	
100	●	●	●	
110	●	●	●	
120	●	●	●	
130	●	●	●	
140	●	●	●	
150	●	●	●	
160	●	●	●	
170	●	●	●	
180	●	●	●	
190	●	●	●	
200	●	●	●	



**STEEL**

Sizes based on GB and supplier's standard.  
 Other dimensions upon request.



# TITANIUM

Titanium & Alloys Sheet/Plate  
Titanium & Alloys Round Bar

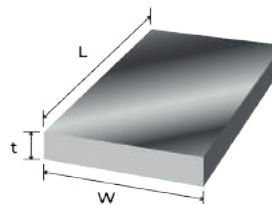
## Titanium Sheet & Plate - GRADE 1

Temper -  
 Certificates **ISO 9001, RoHS, Reach**  
 Standards **ASTM B348**  
 Chemical Composition (%) **C 0.08 max; O 0.18 max; H 0.015 max; Fe 0.20 max, N 0.03 max, Ti rem.**

Grade 1 is known to possess excellent resistance to mildly reducing to highly oxidizing media with or without chlorides, high weldability, good impact toughness, excellent room-temperature ductility. It is nonmagnetic.

Unit: mm

Thickness (t)	Width (W): 400 / On request			Note
	Length (L)			
	1000	3000	On request	
4.0	●	●	●	
4.5	●	●	●	
5.0	●	●	●	
5.5	●	●	●	
6.0	●	●	●	
6.5	●	●	●	
7.0	●	●	●	
8.0	●	●	●	
9.0	●	●	●	
10.0	●	●	●	
15.0	●	●	●	
20.0	●	●	●	
25.0	●	●	●	
30.0	●	●	●	
35.0	●	●	●	
40.0	●	●	●	
45.0	●	●	●	
50.0	●	●	●	
55.0	●	●	●	
60.0	●	●	●	



Manufacturing method: Hot rolling.  
 Sizes based on supplier's standard.  
 Other dimensions upon request.

**TITANIUM**

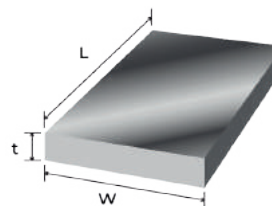
## Titanium Sheet & Plate - GRADE 2

Temper -  
 Certificates **ISO 9001, RoHS, Reach**  
 Standards **ASTM B348**  
 Chemical Composition (%) **C 0.08 max; O 0.25 max; H 0.015 max; Fe 0.30 max; N 0.03 max; Ti rem.**

Grade 2 Unalloyed Ti ("Pure") 50A alloy is the most commonly used and widely available grade of unalloyed titanium. It is non-magnetic. This alloy has been approved for sour service use under the NACE MR-01-75 Standard.

Unit: mm

Thickness (t)	Width (W): 400 / On request			Note
	Length (L)			
	1000	3000	On request	
4.0	●	●	●	
4.5	●	●	●	
5.0	●	●	●	
5.5	●	●	●	
6.0	●	●	●	
6.5	●	●	●	
7.0	●	●	●	
8.0	●	●	●	
9.0	●	●	●	
10.0	●	●	●	
15.0	●	●	●	
20.0	●	●	●	
25.0	●	●	●	
30.0	●	●	●	
35.0	●	●	●	
40.0	●	●	●	
45.0	●	●	●	
50.0	●	●	●	
55.0	●	●	●	
60.0	●	●	●	



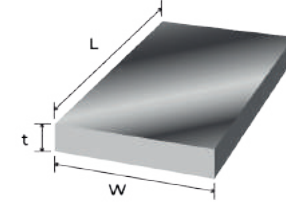
Manufacturing method: Hot rolling.  
 Sizes based on supplier's standard.  
 Other dimensions upon request.

## Titanium Sheet & Plate - GRADE 3

Temper -  
 Certificates ISO 9001, RoHS, Reach  
 Standards ASTM B348  
 Chemical Composition (%) C 0.08 max; O 0.35 max; H 0.015 max;  
 Fe 0.30 max; N 0.05 max; Ti rem.

Unit: mm

Thickness (t)	Width (W): 400 / On request			Note
	Length (L)			
	1000	3000	On request	
4.0	●	●	●	
4.5	●	●	●	
5.0	●	●	●	
5.5	●	●	●	
6.0	●	●	●	
6.5	●	●	●	
7.0	●	●	●	
8.0	●	●	●	
9.0	●	●	●	
10.0	●	●	●	
15.0	●	●	●	
20.0	●	●	●	
25.0	●	●	●	
30.0	●	●	●	
35.0	●	●	●	
40.0	●	●	●	
45.0	●	●	●	
50.0	●	●	●	
55.0	●	●	●	
60.0	●	●	●	



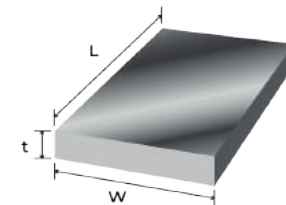
Manufacturing method: Hot rolling.  
 Sizes based on supplier's standard.  
 Other dimensions upon request.

## Titanium Alloy Sheet & Plate - GRADE 5

Temper -  
 Certificates ISO 9001, RoHS, Reach  
 Standards ASTM B348  
 Chemical Composition (%) C 0.08 max; O 0.2 max; H 0.015 max; Fe 0.40 max;  
 N 0.05 max; Al 5.5~6.75; V 3.5~4.5; Ti rem.

Unit: mm

Thickness (t)	Width (W): 400 / On request			Note
	Length (L)			
	1000	3000	On request	
0.5	●	●	●	
1.0	●	●	●	
1.5	●	●	●	
2.0	●	●	●	
2.5	●	●	●	
3.0	●	●	●	
3.5	●	●	●	
4.0	●	●	●	



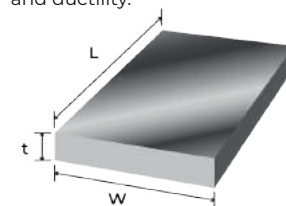
Manufacturing method: Cold rolling. Sizes based on supplier's standard. Other dimensions upon request.

## Titanium Alloy Sheet - GRADE 7

Temper -  
 Certificates ISO 9001, RoHS, Reach  
 Standards ASTM B348  
 Chemical Composition (%) C 0.08 max; O 0.25 max; H 0.015 max;  
 Fe 0.30 max; N 0.03 max; Pd 0.12~0.25; Ti rem.

Unit: mm

Thickness (t)	Width (W): 400 / On request			Note
	Length (L)			
	1000	3000	On request	
0.5	●	●	●	
1.0	●	●	●	
1.5	●	●	●	
2.0	●	●	●	
2.5	●	●	●	
3.0	●	●	●	
3.5	●	●	●	
4.0	●	●	●	



Grade 7 Ti-0.15Pd alloy is highly resistant to corrosion in reducing acids and localized attack in hot halide media. The presence of palladium helps to enhance the alloy's corrosion resistance. This alloy is similar to grade 2, and possesses medium strength and ductility.

Manufacturing method: Cold rolling. Sizes based on supplier's standard. Other dimensions upon request.

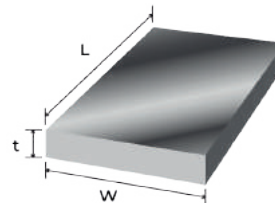
## Titanium Alloy Sheet & Plate - GRADE 9

Temper -  
 Certificates **ISO 9001, RoHS, Reach**  
 Standards **ASTM B348**  
 Chemical Composition (%) **C 0.08 max; O 0.15 max; H 0.015 max; Fe 0.25 max; N 0.03 max; Al 2.5~3.5; V 2~3; Ti rem.**

Grade 9 Ti 3Al 2.5V alloy is an alpha-beta alloy that has improved strength over commercially pure titanium grades. This grade also has excellent corrosion resistance, formability and weldability.

Unit: mm

Thickness (t)	Width (W): 400 / On request			Note
	Length (L)			
	1000	3000	On request	
0.5	●	●	●	
1.0	●	●	●	
1.5	●	●	●	
2.0	●	●	●	
2.5	●	●	●	
3.0	●	●	●	
3.5	●	●	●	
4.0	●	●	●	



Manufacturing method: Cold rolling. Sizes based on supplier's standard. Other dimensions upon request.

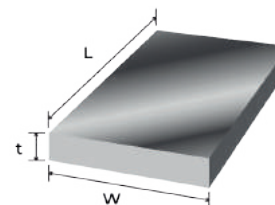
## Titanium Alloy Sheet - GRADE 12

Temper -  
 Certificates **ISO 9001, RoHS, Reach**  
 Standards **ASTM B348**  
 Chemical Composition (%) **C 0.08 max; O 0.25 max; H 0.015 max; Fe 0.30 max; N 0.03 max; Mo 0.2~0.4; Ni 0.6~0.9; Ti rem.**

Grade 12 Ti 0.3 Mo 0.8 Ni is a commercially pure wrought alloy. This alloy has excellent strength at high temperatures coupled with excellent weldability and crevice corrosion resistance.

Unit: mm

Thickness (t)	Width (W): 400 / On request			Note
	Length (L)			
	1000	3000	On request	
0.5	●	●	●	
1.0	●	●	●	
1.5	●	●	●	
2.0	●	●	●	
2.5	●	●	●	
3.0	●	●	●	
3.5	●	●	●	
4.0	●	●	●	



Manufacturing method: Cold rolling. Sizes based on supplier's standard. Other dimensions upon request.

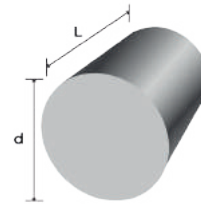
**TITANIUM**

## Titanium Round Bar - GRADE 1

Temper -  
 Certificates ISO 9001, RoHS, Reach  
 Standards ASTM B348  
 Chemical Composition (%) C 0.08 max; O 0.18 max; H 0.015 max;  
 Fe 0.20 max, N 0.03 max, Ti rem.

Unit: mm

Diameter (d)	Length (L)			Note
	2000	3000	On request	
8	●	●	●	
10	●	●	●	
20	●	●	●	
25	●	●	●	
30	●	●	●	
35	●	●	●	
40	●	●	●	
50	●	●	●	
60	●	●	●	
70	●	●	●	
80	●	●	●	
90	●	●	●	
100	●	●	●	
110	●	●	●	
120	●	●	●	
130	●	●	●	
140	●	●	●	
150	●	●	●	
160	●	●	●	
170	●	●	●	
180	●	●	●	
190	●	●	●	
200	●	●	●	



Grade 1 is known to possess excellent resistance to mildly reducing to highly oxidizing media with or without chlorides, high weldability, good impact toughness, excellent room-temperature ductility. It is nonmagnetic.

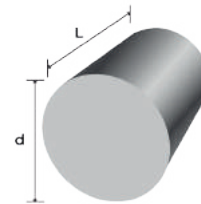
Manufacturing method: Hot rolling.  
 Sizes based on supplier's standard.  
 Other dimensions upon request.

## Titanium Round Bar - GRADE 2

Temper -  
 Certificates ISO 9001, RoHS, Reach  
 Standards ASTM B348  
 Chemical Composition (%) C 0.08 max; O 0.25 max; H 0.015 max;  
 Fe 0.30 max; N 0.03 max; Titan rem.

Unit: mm

Diameter (d)	Length (L)			Note
	2000	3000	On request	
8	●	●	●	
10	●	●	●	
20	●	●	●	
25	●	●	●	
30	●	●	●	
35	●	●	●	
40	●	●	●	
50	●	●	●	
60	●	●	●	
70	●	●	●	
80	●	●	●	
90	●	●	●	
100	●	●	●	
110	●	●	●	
120	●	●	●	
130	●	●	●	
140	●	●	●	
150	●	●	●	
160	●	●	●	
170	●	●	●	
180	●	●	●	
190	●	●	●	
200	●	●	●	



Grade 2 Unalloyed Ti ("Pure") 50A alloy is the most commonly used and widely available grade of unalloyed titanium. It is non-magnetic. This alloy has been approved for sour service use under the NACE MR-01-75 Standard.

Manufacturing method: Hot rolling.  
 Sizes based on supplier's standard.  
 Other dimensions upon request.

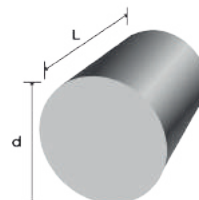
## Titanium Round Bar - GRADE 3

Temper -  
 Certificates **ISO 9001, RoHS, Reach**  
 Standards **ASTM B348**  
 Chemical Composition (%) **C 0.08 max; O 0.35 max; H 0.015 max; Fe 0.30 max; N 0.05 max; Ti rem.**

Unit: mm

Diameter (d)	Length (L)			Note
	2000	3000	On request	
8	●	●	●	
10	●	●	●	
20	●	●	●	
25	●	●	●	
30	●	●	●	
35	●	●	●	
40	●	●	●	
50	●	●	●	
60	●	●	●	
70	●	●	●	
80	●	●	●	
90	●	●	●	
100	●	●	●	
110	●	●	●	
120	●	●	●	
130	●	●	●	
140	●	●	●	
150	●	●	●	
160	●	●	●	
170	●	●	●	
180	●	●	●	
190	●	●	●	
200	●	●	●	

Commercially Pure Titanium Grade 3 offers slightly higher mechanical properties than Grade 2, while displaying similar ductility and formability. Generally used where corrosion resistance is a major design factor in chemical production components, marine and airframe applications. It can be used for parts requiring strength up to 400°F and oxidation resistance to 600°F.



**TITANIUM**

*Manufacturing method: Hot rolling.  
 Sizes based on supplier's standard.  
 Other dimensions upon request.*

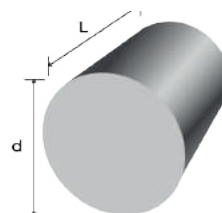
## Titanium Alloy Round Bar - GRADE 5

Temper -  
 Certificates **ISO 9001, RoHS, Reach**  
 Standards **ASTM B348**  
 Chemical Composition (%) **C 0.08 max; O 0.2 max; H 0.015 max; Fe 0.40 max; N 0.05 max; Al 5.5~6.75; V 3.5~4.5; Ti rem.**

Unit: mm

Diameter (d)	Length (L)			Note
	1000	1500	On request	
8	●	●	●	
10	●	●	●	
15	●	●	●	
20	●	●	●	
25	●	●	●	
30	●	●	●	
35	●	●	●	
40	●	●	●	

Titanium Grade 5 is the most commonly used Titanium worldwide and is the most commonly used alloy in the oilfield. Titanium Grade 5 is an alloyed titanium and is considered to be an alpha-beta alloy. Titanium Grade 5 is alloyed with 6% Aluminum and 4% Vanadium and is commonly known as Ti 6Al-4V.



*Manufacturing method: Hot rolling.  
 Sizes based on supplier's standard.  
 Other dimensions upon request.*

## Titanium Alloy Round Bar - GRADE 7

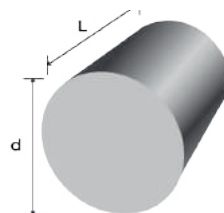
Temper -  
 Certificates ISO 9001, RoHS, Reach  
 Standards ASTM B348  
 Chemical Composition (%) C 0.08 max; O 0.25 max; H 0.015 max;  
 Fe 0.30 max; N 0.03 max; Pd 0.12~0.25;  
 Ti rem.

Unit: mm

Diameter (d)	Length (L)			Note
	1000	1500	On request	
8	●	●	●	
10	●	●	●	
15	●	●	●	
20	●	●	●	
25	●	●	●	
30	●	●	●	
35	●	●	●	
40	●	●	●	

Manufacturing method: Hot rolling.  
 Sizes based on supplier's standard.  
 Other dimensions upon request.

Grade 7 Ti-0.15Pd alloy is highly resistant to corrosion in reducing acids and localized attack in hot halide media. The presence of palladium helps to enhance the alloy's corrosion resistance. This alloy is similar to grade 2, and possesses medium strength and ductility.



## Titanium Alloy Round Bar - GRADE 9

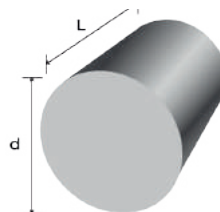
Temper -  
 Certificates ISO 9001, RoHS, Reach  
 Standards ASTM B348  
 Chemical Composition (%) C 0.08 max; O 0.15 max; H 0.015 max;  
 Fe 0.25 max; N 0.03 max; Al 2.5~3.5;  
 V 2~3; Ti rem.

Unit: mm

Diameter (d)	Length (L)			Note
	1000	1500	On request	
8	●	●	●	
10	●	●	●	
15	●	●	●	
20	●	●	●	
25	●	●	●	
30	●	●	●	
35	●	●	●	
40	●	●	●	

Manufacturing method: Hot rolling.  
 Sizes based on supplier's standard.  
 Other dimensions upon request.

Grade 9 Ti 3Al 2.5V alloy is an alpha-beta alloy that has improved strength over commercially pure titanium grades. This grade also has excellent corrosion resistance, formability and weldability.



## Titanium Alloy Round Bar - GRADE 11

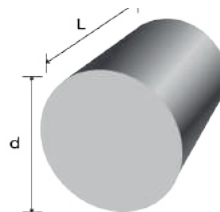
Temper -  
 Certificates ISO 9001, RoHS, Reach  
 Standards ASTM B348  
 Chemical Composition (%) C 0.08 max; O 0.18 max; H 0.015 max;  
 Fe 0.20 max; N 0.03 max; Pd 0.12~0.25;  
 Ti rem.

Unit: mm

Diameter (d)	Length (L)			Note
	1000	1500	On request	
8	●	●	●	
10	●	●	●	
15	●	●	●	
20	●	●	●	
25	●	●	●	
30	●	●	●	
35	●	●	●	
40	●	●	●	

Manufacturing method: Hot rolling.  
 Sizes based on supplier's standard.  
 Other dimensions upon request.

Grade 11 Ti-0.15Pd alloy's mechanical properties are known to be similar to commercially pure titanium grade 1. The main difference is the presence of palladium in grade 11. Palladium helps to enhance the alloy's corrosion resistance in crevices and reducing acid chloride environments. This alloy has excellent ductility, high-impact toughness and useful strength.



## Titanium Alloy Round Bar - GRADE 12

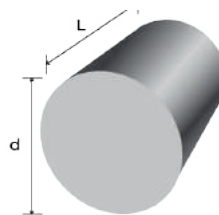
Temper -  
 Certificates **ISO 9001, RoHS, Reach**  
 Standards **ASTM B348**  
 Chemical Composition (%) **C 0.08 max; O 0.25 max; H 0.015 max;  
 Fe 0.30 max; N 0.03 max; Mo 0.2~0.4;  
 Ni 0.6~0.9; Ti rem.**

Unit: mm

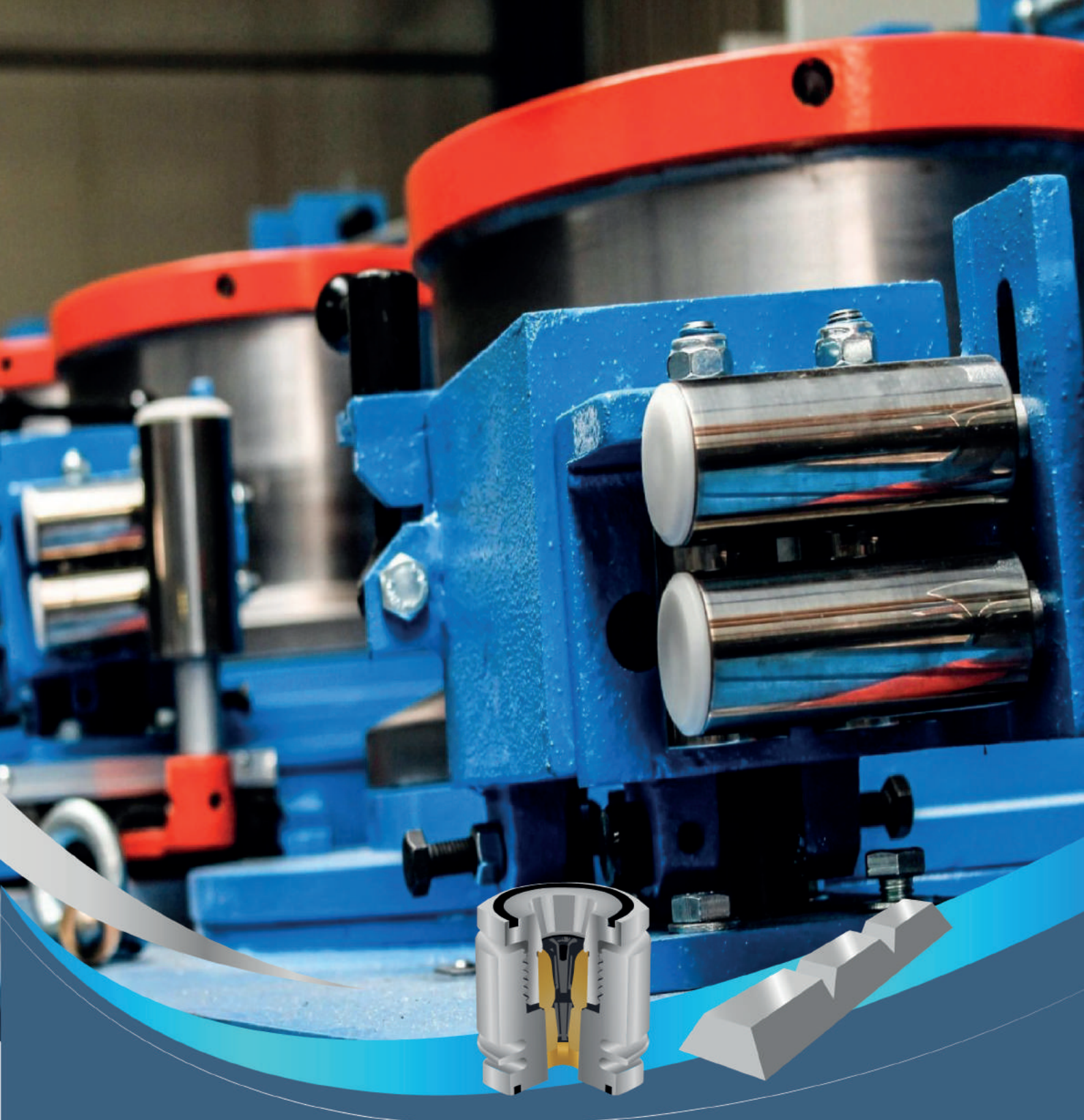
Diameter (d)	Length (L)			Note
	1000	1500	On request	
8	●	●	●	
10	●	●	●	
15	●	●	●	
20	●	●	●	
25	●	●	●	
30	●	●	●	
35	●	●	●	
40	●	●	●	

Manufacturing method: Hot rolling.  
 Sizes based on supplier's standard.  
 Other dimensions upon request.

Grade 12 Ti 0.3 Mo 0.8 Ni is a commercially pure wrought alloy. This alloy has excellent strength at high temperatures coupled with excellent weldability and crevice corrosion resistance.



**TITANIUM**

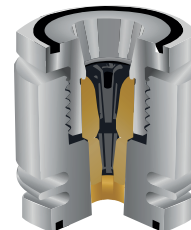


# OTHERS

Wire Drawing Dies  
Tin Ingot

## Wire Drawing Die - TR Insert, PS Holder

Temper -  
 Certificates ISO  
 Standards ASTM  
 Chemical Composition (%) Carbide (Insert); Stainless steel (Box)



High grade carbide yields superior die life.  
 Exchangeable tungsten carbide wire drawing dies which can be placed into a reusable die holder.  
 The inserts listed are standard inventory. Other diameters, approach angles, and tolerances available upon request.  
 PS holder: Pressure holder, Straight outer shape.

### TR4 insert - PS holder

Drawing insert type	Standard Angles	Standard Size Range
TR4	9°	0.75 - 1.99
		2.00 - 5.00
	12°	0.75 - 1.99
		2.00 - 4.98
		5.00 - 5.85
	16°	1.80 - 2.99
3.00 - 5.85		

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
43mm	TR4	PS43X44-45BFR	43mm	44mm	4
53mm	TR4	PS53X57-45BFR	53mm	57mm	5
75mm	TR4	PS75X65-45BFR	75mm	65mm	8

### TR4D insert - PS holder

Drawing insert type	Standard Angles	Standard Size Range
TR4D	9°	0.15 - 0.64
		0.65 - 1.50

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
43mm	TR4D	PS43X44-45BFR	43mm	44mm	4
53mm	TR4D	PS53X57-45BFR	53mm	57mm	5
75mm	TR4D	PS75X65-45BFR	75mm	65mm	8

### TR6 insert - PS holder

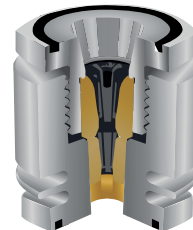
Drawing insert type	Standard Angles	Standard Size Range
TR6	8°	4.00 - 8.45
		4.00 - 8.90
	16°	3.80 - 5.49
		5.50 - 8.90

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
53mm	TR6	PS53X57-68BFR	53mm	57mm	5
75mm	TR6	PS75X65-68BFR	75mm	65mm	8
100mm	TR6	PS100X90-68BFR	100mm	90mm	12

OTHERS

## Wire Drawing Die - TR Insert, PS Holder

Temper -  
 Certificates ISO  
 Standards ASTM  
 Chemical Composition (%) Carbide (Insert); Stainless steel (Box)



High grade carbide yields superior die life.  
 Exchangeable tungsten carbide wire drawing dies which can be placed into a reusable die holder.  
 The inserts listed are standard inventory. Other diameters, approach angles, and tolerances available upon request.  
 PS holder: Pressure holder, Straight outer shape.

### TR8 insert - PS holder

Drawing insert type	Standard Angles	Standard Size Range
TR8	12°	5.30 - 13.00
	16°	4.50 - 7.50
	18°	6.00 - 13.00

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
75mm	TR8	PS75X65-89BFR	75mm	65mm	8
100mm	TR8	PS100X90-89BFR	100mm	90mm	12

### TR9 insert - PS holder

Drawing insert type	Standard Angles	Standard Size Range
TR9	18°	12.60 - 16.50

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
100mm	TR9	PS100X90-910BFR	100mm	90mm	12

### TR10 insert - PS holder

Drawing insert type	Standard Angles	Standard Size Range
TR10	12°/18°	16.50 - 22.50

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
100mm	TR10	PS100X90-1011BFR	100mm	90mm	12

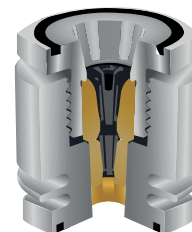
### TR30 insert - PS holder

Drawing insert type	Standard Angles	Standard Size Range
T30	10°	4.90 - 12.50
	12°	6.50 - 16.50

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
75mm	T30	PS75X70-3010BFR	75mm	70mm	8
100mm	T30	PS100X90-3010BFR	100mm	90mm	12

## Wire Drawing Die - TR Insert, PT Holder

Temper -  
 Certificates ISO  
 Standards ASTM  
 Chemical Composition (%) Carbide (Insert); Stainless steel (Box)



High grade carbide yields superior die life.  
 Exchangeable tungsten carbide wire drawing dies which can be placed into a reusable die holder.  
 The inserts listed are standard inventory. Other diameters, approach angles, and tolerances available upon request.  
 PT holder: Pressure holder, Tapered outer shape.

### TR4 insert - PT holder

Drawing insert type	Standard Angles	Standard Size Range
TR4	9°	0.75 - 1.99
		2.00 - 5.00
	12°	0.75 - 1.99
		2.00 - 4.98
		5.00 - 5.85
	16°	1.80 - 2.99
3.00 - 5.85		

Die Box Diameter	Available Draw Insert Types	Item Number	Assembled Height	O.D Taper (Including Angle)	Socket Type
43mm	TR4	PT43X44-45B6	44mm	6°	3
53mm	TR4	PT53X57-45B6	57mm	6°	5
75mm	TR4	PT75X80-45B6	80mm	6°	7

### TR4D insert - PT holder

Drawing insert type	Standard Angles	Standard Size Range
TR4D	9°	0.15 - 0.64
		0.65 - 1.50

Die Box Diameter	Available Draw Insert Types	Item Number	Assembled Height	O.D Taper (Including Angle)	Socket Type
43mm	TR4D	PT43X44-45B6	44mm	6°	3
53mm	TR4D	PT53X57-45B6	57mm	6°	5
75mm	TR4D	PT75X80-45B6	80mm	6°	7

### TR6 insert - PT holder

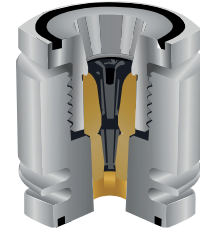
Drawing insert type	Standard Angles	Standard Size Range
TR6	8°	4.00 - 8.45
	12°	4.00 - 8.90
		3.80 - 5.49
	16°	5.50 - 8.90

Die Box Diameter	Available Draw Insert Types	Item Number	Assembled Height	O.D Taper (Including Angle)	Socket Type
53mm	TR6	PT53X57-68B6	57mm	6°	5
75mm	TR6	PT75X80-68B6	80mm	6°	7
100mm	TR6	PT100X90-68B6	90mm	6°	12

OTHERS

# Wire Drawing Die - TR Insert, PT Holder

Temper -  
 Certificates ISO  
 Standards ASTM  
 Chemical Composition (%) Carbide (Insert); Stainless steel (Box)



High grade carbide yields superior die life.  
 Exchangeable tungsten carbide wire drawing dies which can be placed into a reusable die holder.  
 The inserts listed are standard inventory. Other diameters, approach angles, and tolerances available upon request.  
 PT holder: Pressure holder, Tapered outer shape.

## TR8 insert - PT holder

Drawing insert type	Standard Angles	Standard Size Range
TR8	12°	5.30 - 13.00
	16°	4.50 - 7.50
	18°	6.00 - 13.00

Die Box Diameter	Available Draw Insert Types	Item Number	Assembled Height	O.D Taper (Including Angle)	Socket Type
75mm	TR8	PT75X80-89B6	80mm	6°	7
100mm	TR8	PT100X90-89B6	90mm	6°	12

## TR10 insert - PT holder

Drawing insert type	Standard Angles	Standard Size Range
TR10	12°/18°	16.50 - 22.50

Die Box Diameter	Available Draw Insert Types	Item Number	Assembled Height	O.D Taper (Including Angle)	Socket Type
100mm	TR10	PT100X90-1011B6	90mm	6°	12

## TR11 insert - PT holder

Drawing insert type	Standard Angles	Standard Size Range
TR11	18°	22.50 - 32.00

Die Box Diameter	Available Draw Insert Types	Item Number	Assembled Height	O.D Taper (Including Angle)	Socket Type
100mm	TR11	PT100X90-1112B6	90mm	6°	12

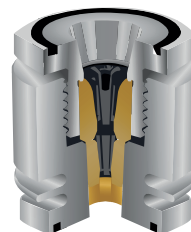
## TR30 insert - PT holder

Drawing insert type	Standard Angles	Standard Size Range
T30	10°	4.90 - 12.50
	12°	6.50 - 16.50

Die Box Diameter	Available Draw Insert Types	Item Number	Assembled Height	O.D Taper (Including Angle)	Socket Type
75mm	T30	PT75X80-300B6	80mm	6°	7
100mm	T30	PT100X90-3010B6	90mm	6°	12

## Wire Drawing Die - TR Insert, NS Holder

Temper -  
 Certificates ISO  
 Standards ASTM  
 Chemical Composition (%) Carbide (Insert); Stainless steel (Box)



High grade carbide yields superior die life.  
 Exchangeable tungsten carbide wire drawing dies which can be placed into a reusable die holder.  
 The inserts listed are standard inventory. Other diameters, approach angles, and tolerances available upon request.

NS holder: Non-Pressure holder, Straight outer shape.

Type A: Basic holder.

Type B: Threaded cap.

### TR4 insert - NS holder Type A

Drawing insert type	Standard Angles	Standard Size Range
TR4	9°	0.75 - 1.99
		2.00 - 5.00
	12°	0.75 - 1.99
		2.00 - 4.98
		5.00 - 5.85
	16°	1.80 - 2.99
3.00 - 5.85		

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
28mm	TR4	NS28X16-4A	28mm	16mm	-
43mm	TR4	NS43X27-4A	43mm	27mm	-
53mm	TR4	NS53X35-4A	53mm	35mm	-

### TR4 insert - NS holder Type B

Drawing insert type	Standard Angles	Standard Size Range
TR4	9°	0.75 - 1.99
		2.00 - 5.00
	12°	0.75 - 1.99
		2.00 - 4.98
		5.00 - 5.85
	16°	1.80 - 2.99
3.00 - 5.85		

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
43mm	TR4	NS43X27-4B	43mm	27mm	4
53mm	TR4	NS53X35-4B	53mm	35mm	5
75mm	TR4	NS75X44-4B	75mm	44mm	6

### TR4D insert - NS holder Type A

Drawing insert type	Standard Angles	Standard Size Range
TR4D	9°	0.15 - 0.64
		0.65 - 1.50

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
28mm	TR4D	NS28X16-4A	28mm	16mm	-
43mm	TR4D	NS43X27-4A	43mm	27mm	-
53mm	TR4D	NS53X35-4A	53mm	35mm	-

OTHERS

## Wire Drawing Die - TR Insert, NS Holder

Temper	-
Certificates	ISO
Standards	ASTM
Chemical Composition (%)	Carbide (Insert); Stainless steel (Box)



High grade carbide yields superior die life.

Exchangeable tungsten carbide wire drawing dies which can be placed into a reusable die holder. The inserts listed are standard inventory. Other diameters, approach angles, and tolerances available upon request.

NS holder: Non-Pressure holder, Straight outer shape.

Type A: Basic holder.

Type B: Threaded cap.

### TR4D insert - NS holder Type B

Drawing insert type	Standard Angles	Standard Size Range
TR4D	9°	0.15 - 0.64
		0.65 - 1.50

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
43mm	TR4	NS43X27-4B	43mm	27mm	4
53mm	TR4	NS53X35-4B	53mm	35mm	5
75mm	TR4	NS75X44-4B	75mm	44mm	6

### TR6 insert - NS holder Type A

Drawing insert type	Standard Angles	Standard Size Range
TR6	8°	4.00 - 8.45
	12°	4.00 - 8.90
		3.80 - 5.49
16°	5.50 - 8.90	

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
43mm	TR6	NS43X27-6A	43mm	27mm	-
53mm	TR6	NS53X35-6A	53mm	35mm	-
75mm	TR6	NS75X44-6A	75mm	44mm	-

### TR6 insert - NS holder Type B

Drawing insert type	Standard Angles	Standard Size Range
TR6	8°	4.00 - 8.45
	12°	4.00 - 8.90
	16°	3.80 - 5.49
5.50 - 8.90		

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
53mm	TR6	NS53X35-6B	53mm	35mm	5
75mm	TR6	NS75X44-6B	75mm	44mm	6

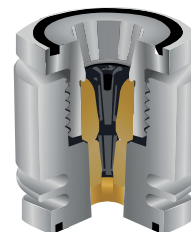
### TR8 insert - NS holder Type A

Drawing insert type	Standard Angles	Standard Size Range
TR8	12°	5.30 - 13.00
	16°	4.50 - 7.50
	18°	6.00 - 13.00

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
53mm	TR8	NS53X35-8A	53mm	35mm	-
75mm	TR8	NS75X44-8A	75mm	44mm	-

## Wire Drawing Die - TR Insert, NS Holder

Temper -  
 Certificates ISO  
 Standards ASTM  
 Chemical Composition (%) Carbide (Insert); Stainless steel (Box)



High grade carbide yields superior die life.  
 Exchangeable tungsten carbide wire drawing dies which can be placed into a reusable die holder.  
 The inserts listed are standard inventory. Other diameters, approach angles, and tolerances available upon request.

NS holder: Non-Pressure holder, Straight outer shape.

Type A: Basic holder.

Type B: Threaded cap.

### TR8 insert - NS holder Type B

Drawing insert type	Standard Angles	Standard Size Range
TR8	12°	5.30 - 13.00
	16°	4.50 - 7.50
	18°	6.00 - 13.00

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
53mm	TR8	NS53X35-8B	53mm	35mm	5
75mm	TR8	NS75X44-8B	75mm	44mm	6

### TR10 insert - NS holder Type A

Drawing insert type	Standard Angles	Standard Size Range
TR10	12°/18°	16.50 - 22.50

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
75mm	TR10	NS75X44-10A	75mm	44mm	-

### TR10 insert - NS holder Type B

Drawing insert type	Standard Angles	Standard Size Range
TR10	12°/18°	16.50 - 22.50

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
75mm	TR10	NS75X44-10B	75mm	44mm	6

### TR30 insert - NS holder Type A

Drawing insert type	Standard Angles	Standard Size Range
T30	10°	4.90 - 12.50
	12°	6.50 - 16.50

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
75mm	T30	NS75X44-30A	75mm	44mm	-

### TR30 insert - NS holder Type B

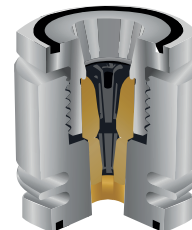
Drawing insert type	Standard Angles	Standard Size Range
T30	10°	4.90 - 12.50
	12°	6.50 - 16.50

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	Assembled Height	Socket Type
75mm	T30	NS75X44-30B	75mm	44mm	6

OTHERS

# Wire Drawing Die - TR Insert, NT Holder

Temper -  
 Certificates ISO  
 Standards ASTM  
 Chemical Composition (%) Carbide (Insert); Stainless steel (Box)



High grade carbide yields superior die life.  
 Exchangeable tungsten carbide wire drawing dies which can be placed into a reusable die holder.  
 The inserts listed are standard inventory. Other diameters, approach angles, and tolerances available upon request.  
 NT holder: Non-Pressure holder, Tapered outer shape.  
 Type B: Threaded cap.

## TR4 insert - NT holder Type B

Drawing insert type	Standard Angles	Standard Size Range
TR4	9°	0.75 - 1.99
		2.00 - 5.00
	12°	0.75 - 1.99
		2.00 - 4.98
		5.00 - 5.85
	16°	1.80 - 2.99
3.00 - 5.85		

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	O.D. Taper (including Angle)	Socket Type
43mm	TR4	NT43X27-4B6	43mm	6°	4
53mm	TR4	NT53X35-4B6	53mm	6°	5
75mm	TR4	NT75X44-4B6	75mm	6°	6.5

## TR4D insert - NT holder Type B

Drawing insert type	Standard Angles	Standard Size Range
TR4D	9°	0.15 - 0.64
		0.65 - 1.50

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	O.D. Taper (including Angle)	Socket Type
43mm	TR4	NT43X27-4B6	43mm	6°	4
53mm	TR4	NT53X35-4B6	53mm	6°	5
75mm	TR4	NT75X44-4B6	75mm	6°	6.5

## TR6 insert - NT holder Type B

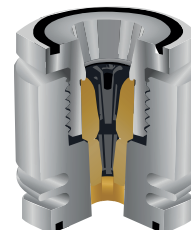
Drawing insert type	Standard Angles	Standard Size Range
TR6	8°	4.00 - 8.45
		4.00 - 8.90
	16°	3.80 - 5.49
		5.50 - 8.90

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	O.D. Taper (including Angle)	Socket Type
53mm	TR6	NT53X35-6B6	53mm	6°	5
75mm	TR6	NT75X44-6B6	75mm	6°	6.5

OTHERS

## Wire Drawing Die - TR Insert, NT Holder

Temper -  
 Certificates **ISO**  
 Standards **ASTM**  
 Chemical Composition (%) **Carbide (Insert); Stainless steel (Box)**



High grade carbide yields superior die life.  
 Exchangeable tungsten carbide wire drawing dies which can be placed into a reusable die holder.  
 The inserts listed are standard inventory. Other diameters, approach angles, and tolerances available upon request.  
 NT holder: Non-Pressure holder, Tapered outer shape.  
 Type B: Threaded cap.

### TR8 insert - NT holder Type B

Drawing insert type	Standard Angles	Standard Size Range
TR8	12°	5.30 - 13.00
	16°	4.50 - 7.50
	18°	6.00 - 13.00

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	O.D. Taper (including Angle)	Socket Type
75mm	TR8	NT75X44-8B6	75mm	6°	6.5

### TR10 insert - NT holder Type B

Drawing insert type	Standard Angles	Standard Size Range
TR10	12°/18°	16.50 - 22.50

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	O.D. Taper (including Angle)	Socket Type
75mm	TR10	NT75X44-10B6	75mm	6°	6.5

### TR30 insert - NT holder Type B

Drawing insert type	Standard Angles	Standard Size Range
T30	10°	4.90 - 12.50
	12°	6.50 - 16.50

Die Box Diameter	Available Draw Insert Types	Item Number	Outside Diameter	O.D. Taper (including Angle)	Socket Type
75mm	T30	T75X44-30B6	75mm	6°	6.5

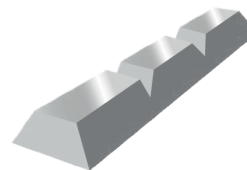
OTHERS

# Pure Tin Ingot Bar / Ball - Sn100A

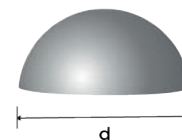
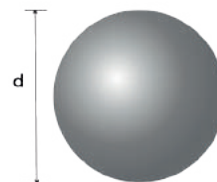
Temper -  
 Certificates **ISO 9001:2015, ISO 14001:2015 / Equivalent**  
 Standards **BS EN 610:1996, ASTM Grade A B339-19 / Equivalent**  
 Chemical Composition (%) **Sn 99.9 min, Pb 0.05 max**

Used for soldering assembly operation, of electrical, electronic parts and electronic parts coating.

Bar Dimension (mm)			Packing
Thickness	Width	Length	
90	135	460	Pallet
75	110	380	Pallet
45	92	245	Pallet



Ball Dimension (d) (mm)	Shape	Packing
10	Full ball	10kg / carton
13	Full ball	10kg / carton
15	Full ball	10kg / carton
18	Full ball	10kg / carton
20	Full ball	10kg / carton
25	Full ball	10kg / carton
30	Full ball	10kg / carton
40	Full ball	10kg / carton
15	Half - ball	10kg / carton
18	Half - ball	10kg / carton
22	Half - ball	10kg / carton
25	Half - ball	10kg / carton

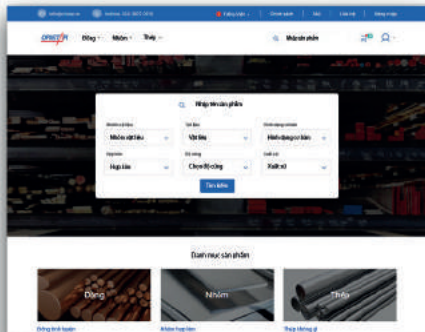


Other dimensions upon request.

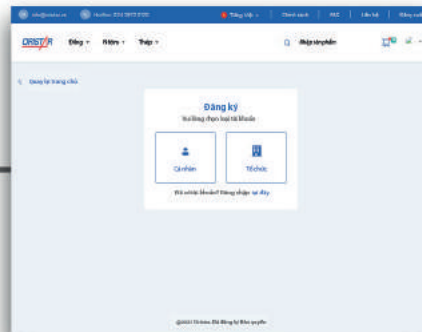
**OTHERS**

# E-Commerce

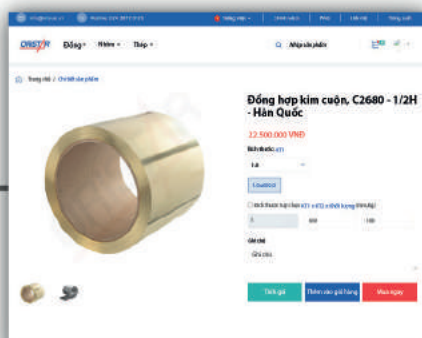
## DIGITALIZING THE PURCHASE EXPERIMENT



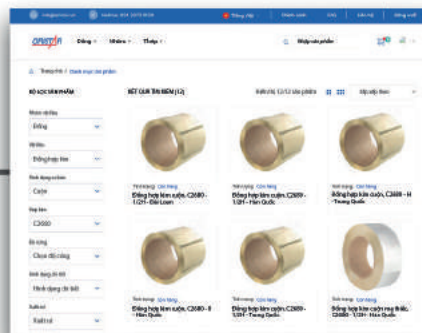
Truy cập website: [oristarmetal.com](http://oristarmetal.com)  
Visit website: [oristarmetal.com](http://oristarmetal.com)



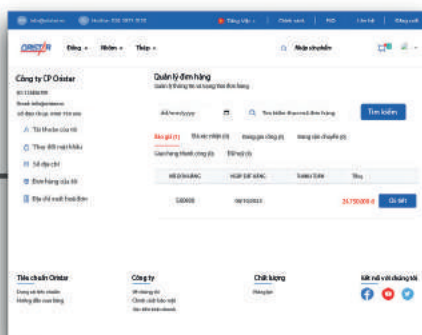
Đăng ký tài khoản  
Registration



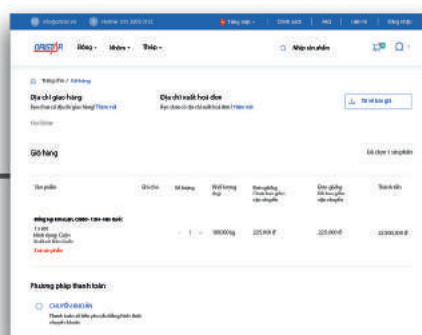
Điền thông số theo yêu cầu và tính giá  
Fullfill the required specification  
and get quotes



Tìm kiếm & lựa chọn sản phẩm  
Search and select the products



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Tracking & managing orders



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- Simple & precise products searching
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**HeadOffice**

9th Floor Detach Tower  
No. 8 Ton That Thuyet street  
My Dinh 2 ward, Nam Tu Liem district, Hanoi  
Tel: 024 3972 0120  
Fax: 024 3972 0124  
Email: info@oristar.vn

**Representative Office**

3rd floor, Indochina Riverside Office Building  
74 Bach Dang street, Hai Chau I Ward, Hai Chau  
District, Da Nang City, Vietnam

**Branch**

Lot 1 - 4B - 2.2 N3 road,  
HiTech Industrial Park, Long Thanh My ward  
Thu Duc city, Ho Chi Minh  
Tel: 028 7108 8838  
Fax: 028 7108 8638  
Email: info@oristar.vn

**Factory**

Tan Quang Industrial Park  
Tan Quang commune, Van Lam district  
Hung Yen province  
Tel: 0221 379 1661  
Fax: 0221 379 1607  
Email: info@oristar.vn

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