



ANKARA BRONZ

NON-IRON COLORED METALS and ENGINEERING PLASTICS



irtibat hattı

444 96 95

www.ankarabronz.com.tr

ANKARA BRONZ ALLOYS

Her Ebatda Savuuma Bronz Dökülmü

We are at your service as ANKARA BRONZE ALLOYS with the experience from 1974. Its knowledge, different casting methods

and technology pioneers specialized in their field

The founder of our company is Ali Asker KADIOĞLU and honesty is our basic principle. Bronze, Aluminum, Brass and other Special Copper

casting alloys in dimensions. Some of the alloys we cast are;

Tin Bronze / Aluminum Bronze / Manganese Bronze / Silicon Bronze / Leaded Tin Bronze / High Lead Tin Bronze / Nickel Tin Bronze and Brasses, Aluminum, Special Copper alloys

Min. / Max. 8 – 300 mm

Min in Pipes. / Max. 20 x 1 0 / 1500 x 1400 mm

In square materials Min. / Max. 8 x 8 / 300 x 300

In lama materials, Min. / Max. 8 x 15 / 120 x 400

All kinds of modeled work are produced with sand casting.

Thanks to the knowledge of ANKARA BRONZE ALLOYS

Continuous Casting Method has a more positive effect on homogeneous grain structure, machinability and mechanical properties of bronze materials compared to Sand and Centrifugal Casting methods. Filled with this method

and Perforated Round, Hexagonal, Flat, Square and special sections can be cast. Especially in High Leaded Tin Bronzes, Lead is the only method to be preferred due to deposition problem.

In the process from raw material input to product output,

the material is followed according to the analysis given before casting.

With our years of experience, we believe that our greatest asset is our ability to respond quickly to your immediate needs. This service

In special cases, we can fulfill your order within hours.

Aware of the responsibility to share the innovations in rapidly changing Metal Technology with its customers, ANKARA BRONZE ALLOYS has adopted the principle of offering you the quality that is increasing every day in this field.

All kinds of metals used in the industry in our Ostim Industrial Headquarters, (Bronze, Aluminum, Copper, Brass, Imported Ductile Iron and Cast. Stainless steel, Mercury steel, Oil steel, etc.) Engineering Plastics (Kestamid, Polyamide, Acrylic, Teflon, Delrin, PVC, Fiber) and similar products are sold in wholesale and retail.

Kurucu

Ali Asker Kadiođlu



Sürekli Döküm Bronz
Continuous Casting Bronze



Sürekli Döküm Bronz
Continuous Casting Bronze

Sinter Bronz ve
Yağlamasız Burçlar



ANKARA BRONZE ALLOYS CHEMICAL ANALYSIS TABLE

species	ORDER CODE	NORM	ALLOY ELEMENTS(%)											
			Cu	Sn	Zn	Pb	Ni	Al	Fe	Mn	P	Sb	Si	S
TIN BRONZES	ABA-1	DIN 1705 (1969) CuSn10-C	88,00 90,00	9,00 11,00	Maks. 0,50	Maks. 1,00	Maks. 2,00	Maks. 0,01	Maks. 0,20	Maks. 0,10	Maks. 0,20	Maks. 0,20	Maks. 0,02	Maks. 0,05
	ABA-2	DIN 1705 (1969) CuSn12-C	85,00 88,50	11,00 13,00	Maks. 0,50	Maks. 0,70	Maks. 2,00	Maks. 0,01	Maks. 0,20	Maks. 0,20	Maks. 0,60	Maks. 0,15	Maks. 0,01	Maks. 0,05
	ABA-3	DIN 1705 (1969) G-SnBz14	85,00 87,00	13,00 15,00										
	ABA-4	DIN 1705 (1969) CuSn 12Ni2-C	84,50 87,50	11,00 13,00	Maks. 0,40	Maks. 0,30	1,50 2,50	Maks. 0,01	Maks. 0,20	Maks. 0,20	0,05 0,40	Maks. 0,10	Maks. 0,01	Maks. 0,05
	ABA-5	DIN 1705 (1969) CuSn11Pb2	83,50 87,00	10,50 12,50	Maks. 2,00	0,70 2,50	Maks. 2,00	Maks. 0,01	Maks. 0,20	Maks. 0,20	Maks. 0,40	Maks. 0,20	Maks. 0,01	Maks. 0,08
RED BRONZES	ABA-6	DIN 1705 (1981) CuSn5Zn5Pb5-C	83,50 87,00	4,00 6,00	4,00 6,00	4,00 6,00	Maks. 2,00	Maks. 0,01	Maks. 0,30		Maks. 0,10	Maks. 0,25	Maks. 0,01	Maks. 0,10
	ABA-7	DIN 1705 (1981) CuSn7Zn4Pb7-C	81,00 85,00	6,00 8,00	2,00 5,00	5,00 8,00	Maks. 2,00	Maks. 0,01	Maks. 0,20		Maks. 0,10	Maks. 0,30	Maks. 0,01	Maks. 0,10
	ABA-8	DIN 1705 (1981) G-CuSn10Zn	86,00 89,00	9,00 11,00	1,00 3,00									
TIN-LEAD BRONZES	ABA-9	DIN 1716 D-CuPb5Sn10	84,00 87,00	9,00 11,00	Maks. 2,00	4,00 6,00	Maks. 1,50		Maks. 0,25		Maks. 0,05	Maks. 0,35		
	ABA-10	DIN 1716 CuSn10Pb10-C	78,00 82,00	9,00 11,00	Maks. 2,00	8,00 11,00	Maks. 2,00	Maks. 0,01	Maks. 0,25	Maks. 0,20	Maks. 0,10	Maks. 0,50	Maks. 0,01	Maks. 0,10
	ABA-11	DIN 1716 CuSn7Pb15-C	74,00 80,00	6,00 8,00	Maks. 2,00	13,00 17,00	0,50 2,00	Maks. 0,01	Maks. 0,25	Maks. 0,20	Maks. 0,10	Maks. 0,50	Maks. 0,01	Maks. 0,10
	ABA-12	DIN 1716 CuSn5Pb20-C	70,00 78,00	4,00 6,00	Maks. 2,00	18,00 23,00	0,50 2,50	Maks. 0,01	Maks. 0,25	Maks. 0,20	Maks. 0,10		Maks. 0,01	Maks. 0,10
ALUMINUM BRONZES	ABA-13	DIN 1714 (1981) CuAl9-C	88,00 92,00	Maks. 0,30	Maks. 0,50	Maks. 0,30	Maks. 1,00	8,00 10,50	Maks. 1,20	Maks. 0,50			Maks. 0,20	
	ABA-14	DIN 1714 (1981) CuAl10Fe2-C	88,00 89,50	Maks. 0,20	Maks. 0,50	Maks. 0,10	Maks. 1,50	8,50 10,50	1,50 3,50	Maks. 1,00			Maks. 0,20	
	ABA-16	DIN 1714 (1981) CuAl10Fe5Ni5-C	76,00 83,00	Maks. 0,10	Maks. 0,50	Maks. 0,03	4,00 6,00	8,50 10,50	4,00 5,50	Maks. 3,00			Maks. 0,10	
	ABA-16	DIN 1714 (1981) Gz-CuAl8Mn	82,0 (min)				1,00 2,00	7,00 9,00		5,00 6,50				
	ABA-17	DIN 1714 (1981) CuAl10Ni3Fe2-C	80,00 86,00	Maks. 0,20	Maks. 0,50	Maks. 0,13	1,50 4,00	8,50 10,50	1,00 3,00	Maks. 2,00			Maks. 0,20	
	ABA-18	DIN 1714 (1981) CuAl11Fe6Ni6-C	72,00 78,00	Maks. 0,20	Maks. 0,50	Maks. 0,05	4,00 7,50	10,00 12,00	4,00 7,00	Maks. 2,50			Maks. 0,10	
SPECIAL BRAZEN	ABA-19	DIN 1709 (1981) Gz-CuZn40Fe	56,00 62,00		Kalan				0,20 1,20					
	ABA-20	DIN 1709 (1981) CuZn35Mn2Al1Fe1-	57,00 65,00	Maks. 1,00	Kalan	Maks. 0,50	Maks. 6,00	0,50 2,50	0,50 2,00	0,50 3,00	Maks. 0,03	Maks. 0,08		
	ABA-21	DIN 1709 (1981) CuZn34Mn3Al2Fe1-	55,00 66,00	Maks. 0,30	Kalan	Maks. 0,30	Maks. 3,00	1,00 3,00	0,50 2,50	1,00 4,00	Maks. 0,03	Maks. 0,05	Maks. 0,10	
	ABA-22	DIN 1709 (1981) CuZn25Al5Mn4Fe3-	60,00 67,00	Maks. 0,20	Kalan	Maks. 0,20	Maks. 3,00	3,00 7,00	1,50 4,00	2,50 5,00	Maks. 0,03	Maks. 0,05	Maks. 0,10	

TYPICAL FEATURES OF ABA PRODUCTS

SPECIES	ORDER CODE	TYPICAL FEATURES
TIN BRONZES	ABA-1	<ul style="list-style-type: none"> It is resistant to corrosion. It has high elongation. It is resistant to sea water. Very heavy load and low speed bushings, turbine propellers, cold rolling bearings, bearings and teeth requiring high strength.
	ABA-2	<ul style="list-style-type: none"> Abrasion and sea water resistance. Durability on highly abrasive surfaces, example (Bearings, crimps, snail gears, crank and shaft nuts moving under load. Abrasion resistant Friction rings and washers
	ABA-3	<ul style="list-style-type: none"> Highly resistant to sea water. Hardness is quite high. Load-resistant, particularly extreme, load-bearing slides.
RED BRONZES	ABA-4	<ul style="list-style-type: none"> Although it is resistant to sea water, it is a material that can be soldered in medium hardness. Heat resistant water in collector rings steam is used in shipowners, wall thickness thin casting parts.
	ABA-5	<ul style="list-style-type: none"> Sea water and abrasion resistant. It is a medium hard material. Plain bearing bushes that operate under heavy loads, also in piston pin bushings operating under loadkullanılır. Crank and camshaft bearings, ship shaft and cylinder bushings It is used in the production of sliding plates and slides operating under load.
	ABA-6	<ul style="list-style-type: none"> It is a hard material resistant to sea water. Lining of ship shafts and plates and guideways operating under overload, as well as shaft nuts.

SPECIES	ORDER CODE	TYPICAL FEATURES
TIN-LEAD BRONZES	ABA-7	<ul style="list-style-type: none"> Medium hardness, abrasion resistant Light loads resistant to fatty acids In high pressure plain bearings and acid-resistant luminaires ...
	ABA-8	<ul style="list-style-type: none"> Medium hardness and corrosion resistant Bearings operating under high surface pressure. Especially in vehicle bearings It is preferably used in hot cold rolling beds.
	ABA-9	<ul style="list-style-type: none"> It is a soft material. It has high scrolling feature. Even if scrolling remains oil-free, it works even with water. In parts operating under high surface pressure.
	ABA-10	<ul style="list-style-type: none"> It has an extremely good scrolling feature. It is resistant to sulfuric acid. It is used in mattresses subject to high surface pressure with low bends. Orn. (Mills, water pumps, foil rolls) Corrosion resistant armatures and casting parts.
ALUMINUM BRONZES	ABA-11	<ul style="list-style-type: none"> They are resistant to corrosion and sea water. It is preferably used in beds in the chemical and food industries.
	ABA-12	<ul style="list-style-type: none"> It is resistant to corrosion and sea water. Especially for high strength acid-resistant parts in shipbuilding, chemical and food industry.
	ABA-13	<ul style="list-style-type: none"> Acids are very resistant to corrosion, seawater and erosion. It is preferably used in chemical, food, oil industry, shipbuilding, gear systems. Used on slide rails, hot steam fittings, ship propeller nuts.
	ABA-14	<ul style="list-style-type: none"> It is resistant to sea water, cavitation, corrosion and erosion. Due to its typical properties, it is used in shipbuilding, chemical and oil industry turbine blades and gear industry. In conductivity, it is a weak material without permeability.
NICKEL	ABA-15	<ul style="list-style-type: none"> It is a hard material with high abrasion resistance, resistant to sea water, corrosion and cavitation. It is a material that is resistant to high load and nut and movable nut under load in the construction of tubular bearings.
LEADED	ABA-16	<ul style="list-style-type: none"> It is a bedding material that is resistant to sea water and corrosion, resistant to abrasion resistance. Working under high load and speed in the manufacture of bearings and nuts.
ALUMINUM BRONZES	ABA-17	<ul style="list-style-type: none"> Resistant to salt density and warm sea water. It is a weldable material resistant to non-oxidizing acids, basic and salts. It is used in armature, food and chemical industry.
	ABA-18	<ul style="list-style-type: none"> It is a cavitation-resistant material with very good variable load strength that is not affected by air and sea water. It is used in high pressure arcs and high impact resistant bearings of hydraulic systems.



WEIGHTS OF VARIOUS BRONZE MATERIALS m / kg

OUTER DIAMETER	INNER DIAMETER	m/kg.
30	15	4.716
40	20	8.384
45	20	11.353
45	25	9.781
50	20	14.672
50	25	13.1
50	30	11.178
55	25	16.768
55	35	12.576
60	20	22.357
60	25	20.785
60	30	18.864
60	40	13.973
65	25	25.151
65	35	20.96
65	45	15.37
70	20	31.739
70	30	27.946
70	40	23.055
70	50	16.768
75	25	34.933
75	35	30.741
75	45	25.151
75	55	18.165
80	30	38.426
80	40	33.535
80	50	27.247
80	60	19.562
90	40	45.412
90	50	39.124
90	60	31.439
90	70	22.357
100	50	52.399
100	60	44.714
100	70	35.631
100	80	25.151
110	50	67.07
110	60	59.385
110	70	50.303
110	80	39.823
120	50	83.139
120	60	75.454
120	70	66.372
120	80	55.892
120	90	44.015
130	50	100.606
130	60	92.92
130	70	83.838
130	80	73.358
130	90	61.481
130	100	48.207
140	60	111.784
140	70	102.702
140	80	92.222
140	90	80.345
140	100	67.07
150	60	132.045
150	70	122.962
150	80	112.483
150	90	100.606
150	100	87.331
160	70	144.621
160	80	134.141
160	90	122.264
160	100	108.989
160	110	94.318
170	70	167.676

OUTER DIAMETER	INNER DIAMETER	m/kg.
170	80	157.196
170	90	145.319
170	100	132.045
170	110	117.373
170	120	101.304
170	130	83.838
180	80	181.649
180	90	169.772
180	100	156.498
180	110	141.826
180	120	125.757
180	130	108.291
180	140	89.427
190	90	195.622
190	100	182.348
190	110	167.676
190	120	151.607
190	130	134.141
190	140	115.277
200	100	209.595
200	110	194.923
200	120	178.854
200	130	161.388
200	140	142.525
200	150	122.264
210	100	238.24
210	110	223.568
210	120	207.499
210	130	190.033
210	140	171.169
210	150	150.908
210	160	129.25
220	100	268.282
220	110	253.61
220	120	237.541
220	130	220.075
220	140	201.211
220	150	180.95
220	160	159.292
220	170	136.237
230	100	299.721
230	110	285.049
230	120	268.98
230	130	251.514
230	140	232.65
230	150	212.39
230	160	190.731
230	170	167.676
240	100	332.557
240	110	317.886
240	120	301.817
240	130	284.351
240	140	265.487
240	150	245.226
240	160	223.568
240	170	200.513
240	180	176.06
250	100	366.791
250	110	352.12
250	120	336.051
250	130	318.584
250	140	299.721
250	150	279.46
250	160	257.802
250	170	234.746
250	180	210.294
250	190	184.444

DIAMETER	m/kg.
18	2.264
20	2.795
22	3.381
25	4.367
30	6.288
35	8.558
40	11.178
45	14.148
50	17.466
55	21.134
60	25.151
65	29.518
70	34.234
75	39.299
80	44.714
90	56.591
100	69.865
110	84.537
120	100.606
130	118.072
140	136.935
150	157.196
160	178.854
170	201.91
180	226.363
190	252.213
200	279.46
210	308.105
220	338.147
230	369.586
240	402.422
250	436.656
260	472.287
270	509.316
280	547.742
290	587.565
300	628.785



Bakır / Copper

Weight Chart of Some Copper Materials m / Kg.

Copper bLades

Thickness x Width	m / Kg
3 x 3	0.0801
3 x 10	0.267
3 x 20	0.534
3 x 30	0.801
3 x 40	1.068
3 x 5	1.335
3 x 60	1.602
3 x 70	1.869
3 x 80	2.136
3 x 90	2.403
3 x 100	2.67
5 x 50	0.2225
5 x 10	0.445
5 x 20	0.89
5 x 30	1.335
5 x 40	1.78
5 x 50	2.225
5 x 60	2.67
5 x 70	3.115
5 x 80	3.56
5 x 90	4.005
5 x 100	4.45
10 x 10	0.89
10 x 15	1.335
10 x 20	1.78
10 x 25	2.225
10 x 30	2.67
10 x 35	3.115
10 x 40	3.56
10 x 50	4.45
10 x 60	5.34
10 x 70	6.23
10 x 80	7.12
10 x 90	8.01
10 x 100	8.9
15 x 15	2.0025
15 x 20	2.67
15 x 30	4.005
15 x 40	5.34
15 x 50	6.675
15 x 60	8.01
15 x 70	9.345
15 x 80	10.68
15 x 90	12.015
15 x 100	13.35
20 x 20	3.56
20 x 30	5.34
20 x 40	7.12
20 x 50	8.9
20 x 60	10.68
20 x 70	12.46
20 x 80	14.24
20 x 90	16.02
20 x 100	17.8
25 x 25	5.5625
25 x 30	6.675
25 x 40	8.9
25 x 50	11.125
25 x 60	13.35
25 x 70	15.575
25 x 80	17.8
25 x 90	20.025
25 x 100	22.25
30 x 30	8.01

30 x 40	10.68
30 x 50	13.35
30 x 60	16.02
30 x 70	18.69
30 x 80	21.36
30 x 90	24.03
30 x 100	22.67
40 x 40	14.24
40 x 50	17.8
40 x 60	21.36
40 x 70	24.92
40 x 80?	28.48
40 x 90?	32.04
40 x 100	35.6
50 x 50	22.25
60 x 60	32.04
70 x 70	43.61
80 x 80	56.96
90 x 90	72.09
100 x 100	89

Copper Rods

Ø ÇAP	m/ Kg
5	0.175
6	0.252
8	0.447
10	0.699
12	1.006
15	1.572
16	1.789
18	2.264
20	2.795
22	3.381
25	4.367
30	6.288
35	8.558
40	11.178
45	14.148
50	17.466
55	21.134
60	25.151
65	29.518
70	34.234
75	39.299
80	44.714
90	56.591
100	69.865
110	84.537
120	100.606
130	118.072
140	136.935
150	157.196
160	178.854
170	201.91
180	226.363
190	252.213
200	279.46
210	308.105
220	338.147
230	369.586
240	402.422
250	436.656
260	472.287
270	509.316
280	547.742
290	587.565
300	628.785

Copper Pipes

Ø ÇAP	1mm Et Kaln.	1.5 mm Et Kaln.	2 mm Et Kaln.
5	0.112		
6	0.14		
7	0.168		
8	0.196		
9	0.224		
10	0.252	0.356	
11	0.279	0.398	
12	0.307	0.44	
13	0.335	0.482	
14	0.363	0.524	
15	0.391	0.566	0.727
16	0.419	0.608	0.782
17	0.447	0.65	0.838
18	0.475	0.692	0.894
19	0.503	0.734	0.95
20	0.531	0.776	1.006
21	0.559	0.817	1.062
22	0.587	0.859	1.118
13	0.615	0.901	1.174
24	0.643	0.943	1.23
25	0.671	0.985	1.286
26	0.699	1.027	1.341
27	0.727	1.069	1.397
28	0.755	1.111	1.453
29	0.782	1.153	1.509
30	0.81	1.195	1.565
31	0.838	1.237	1.621
32	0.866	1.279	1.677
33	0.894	1.32	1.733
34	0.922	1.362	1.789
35	0.95	1.404	1.844
36	0.978	1.446	1.9
37	1.006	1.488	1.956
38	1.034	1.53	2.012
39	1.062	1.572	2.068
40	1.09	1.614	2.124

Paslanmaz Çelik

Stainless Steel

Chemical and Mechanical Characteristics of Standard Grades

DIN 17440 / 17441	W. Nr. Alman	AI SI Amerikan	BSI İngiliz	JIS Japon	KİMYASAL KOMPOZİSYONU Average Chemical (%)					MEKANİK KARAKTERİSTİKLER Mechanical Characteristics.				
					C Max Karbon	Cr Krom	Ni Nikel	MO Molibden	Diğerleri Others	Tensile Strength Çekme MUKAVEMETİ (N/mm ²)	Yield Strength AKMA NOKTASI (N/mm ²)	Elongation UZAMA (%)	Hardness SERTLİK (HB)max.	
X10 Cr13	1.4006	1410	1410	SUS410S	0,12	13					450-650	≤220	≤20	185
X20 Cr13	1.4021	420	420S29	SUS420J1	0,20	13					420-560	≤225	≤14	220
X6 Cr17	1.4016	430	430S15	SUS430	0,08	17					450-600	≤270	≤20	180
X10 Cr Al24	1.4749	446			0,18	25					500-700	≤230	≤20	180
X5 Cr Ni 18.10	1.4301	304	304S15	SUS304	0,07	18,5	9,5				500-700	≤230	≤45	180
X2 Cr Ni 1911	1.4306	304L	340S12	SUS304L	0,03	19	11				460-680	≤215	≤40	202
X6 Cr Ni Ti 18.10	1.4541	321	321S12	SUS321	0,08	18,5	10,5		Ti>5C ≤0,6%		460-680	≤210	≤45	183
X6 Cr Ni Nb 18.10	1.4550	347	347S17	SUS347	0,08	18,5	11		Nb>10C <1%		500-750	≤205	≤35	217
X5 Cr Ni Mo 17.12.2	1.4401	316	316S16	SUS316	0,07	17	11,5	2,25			510-710	≤205	≤40	190
X5 Cr Ni Mo 17.13.3	1.4403 1.4436	316	316S18	SUS316	0,07	17	12	2,75			510-710	≤205	≤40	217
X2 Cr Ni Mo 17.13.2	1.4404	316L	316S12	SUS316L	0,03	17	12	2,25			490-690	≤190	≤40	217
X2 Cr Ni Mo 18.14.3	1.4435	316L	316S14	SUS316L	0,03	17	12,5	2,75			490-690	≤190	≤40	217
X6 Cr Ni Mo Ti 17.12.2	1.4571	316Ti	320S17		0,08	17	11,5	2,25	Ti>5C ≤6,6%		500-730	≤210	≤40	217
X2 Cr Ni Mo 18.16.4	1.4438	317L	317S16	SUS317L	0,03	18	14,5	3,5			500-700	≤195	≤34	217
X6 Cr Ni 23.14	1.4833	309S	309S24	SUS309TB	0,08	23	13				500-750	≤210	≤26	180
X12 Cr Ni 25.21	1.4845	310S	310S24	SUS310TB	0,08	25	20				500-750	≤210	≤26	192

Pirinç
Brass



Brass Rbd & Sand Casting

Weight Table of Some Brass Materials / Kg.

Rice Lamas

Thickness x Width	m / Kg
3 x 3	0.0765
3 x 10	0.255
3 x 20	0.51
3 x 30	0.765
3 x 40	1.02
3 x 50	1.275
3 x 60	1.53
3 x 70	1.785
3 x 80	2.04
3 x 90	2.295
3 x 100	2.55
5 x 5	0.2125
5 x 10	0.425
5 x 20	0.85
5 x 30	1.275
5 x 40	1.7
5 x 50	2.125
5 x 60	2.55
5 x 70	2.975
5 x 80	3.4
5 x 90	3.825
5 x 100	4.25
10 x 10	0.85
10 x 15	1.275
10 x 20	1.7
10 x 25	2.125
10 x 30	2.55
10 x 35	2.975
10 x 40	3.4
10 x 50	4.25
0 x 60	5.1
10 x 70	5.95
10 x 80	6.8
10 x 90	7.65
10 x 100	8.5
15 x 15	1.9125
15 x 20	2.55
15 x 30	3.825
15 x 40	5.1
15 x 50	6.375
15 x 60	7.65
15 x 70	8.925
15 x 80	10.2
15 x 90	11.475
15 x 100	12.75
20 x 20	3.4
20 x 30	5.1
20 x 40	6.8
20 x 50	8.5
20 x 60	10.2
20 x 70	11.9
20 x 80	13.6
20 x 90	15.3
20 x 100	17
25 x 25	5.3125
25 x 30	6.375
25 x 40	8.5
25 x 50	10.625
25 x 60	12.75
25 x 70	14.875
25 x 80	17

25 x 90	19.125
25 x 100	21.25
30 x 30	7.65
30 x 40	10.2
30 x 50	12.75
30 x 60	15.3
30 x 70	17.85
30 x 80	20.4
30 x 90	22.95
30 x 100	25.25
40 x 40	13.6
40 x 50?	17.
40 x 60	20.4
40 x 70	23.8
40 x 80	27.2
40 x 90	30.6
40 x 100	34
50 x 50	21.25
60 x 60	30.6
70 x 70	41.65
80 x 80	54.4
90 x 90	68.85
100 x 100	85

Brass Rods

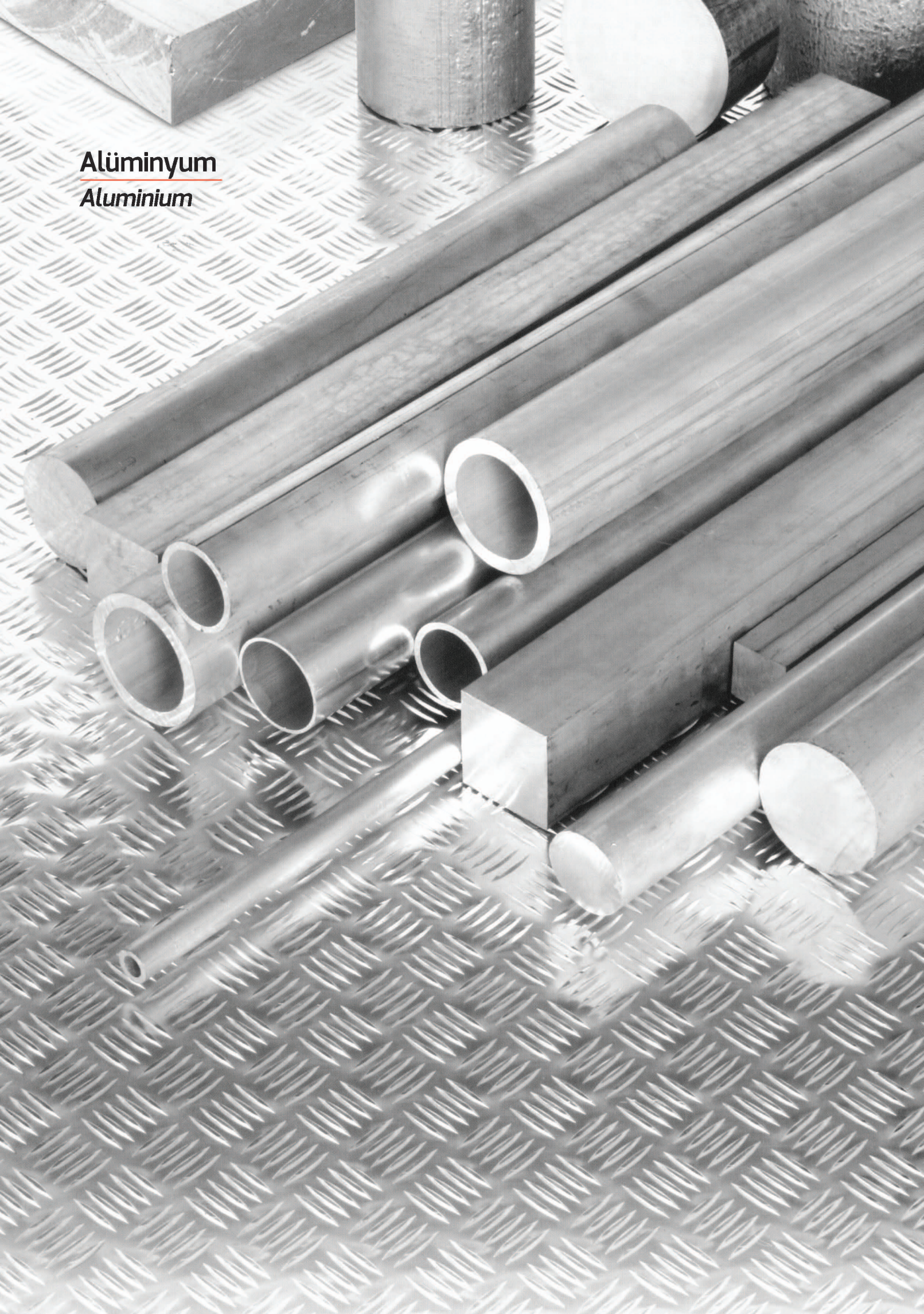
Ø CAP	m / Kg
2	0.027
3	0.06
4	0.107
5	0.167
6	0.24
7	0.327
8	0.427
9	0.54
10	0.667
12	0.961
15	1.501
16	1.708
18	2.162
20	2.669
22	3.229
25	4.17
30	6.005
35	8.174
40	10.676
45	13.512
50	16.681
55	20.184
60	24.021
65	28.191
70	32.695
75	37.533
80	42.704
90	54.047
100	66.725
110	80.737
120	96.084
130	112.765
140	130.781
150	150.131
160	170.816
170	192.835
180	216.189
190	240.877
200	266.9
210	294.257
220	322.949
230	352.975
240	384.336
250	417.031
260	451.061
270	486.425
280	523.124
290	561.157
300	600.525

Brass Tubes

Ø CAP	1 mm. Thickness	1.5mm. Thickness	2mm. Thickness
5	0.107		
6	0.133		
7	0.16		
8	0.187		
9	0.214		
10	0.24	0.34	
11	0.267	0.38	
12	0.294	0.42	
13	0.32	0.46	
14	0.347	0.5	
15	0.374	0.54	0.694
16	0.4	0.581	0.747
17	0.427	0.621	0.801
18	0.454	0.661	0.854
19	0.48	0.701	0.907
20	0.507	0.741	0.961
21	0.534	0.781	1.014
22	0.56	0.821	1.068
23	0.587	0.861	1.121
24	0.614	0.901	1.174
25	0.641	0.941	1.228
26	0.667	0.981	1.281
27	0.694	1.021	1.335
28	0.721	1.061	1.388
29	0.747	1.101	1.441
30	0.774	1.141	1.495
31	0.801	1.181	1.548
32	0.827	1.221	1.601
33	0.854	1.261	1.655
34	0.881	1.301	1.708
35	0.907	1.341	1.762
36	0.934	1.381	1.815
37	0.961	1.421	1.868
38	0.988	1.461	1.922
39	1.014	1.501	1.975
40	1.041	1.541	2.028



Alüminyum
Aluminium

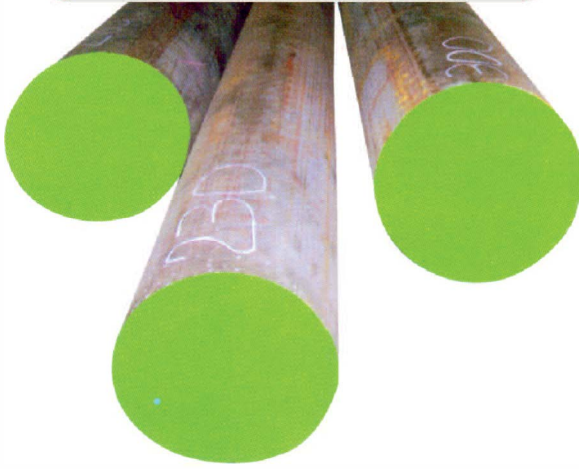


FUNDAMENTALS OF ALUMINUM ALLOYS

ETIAlORM	Heat Treatment	MECHANICAL FEATURES					PHYSICAL FEATURES					OTHER FEATURES		
		yield strengt Kg/mm ²	tensile strength Kg/mm ²	% elongation (50mm) mm/mm	hardness (HB) Kg/mm ²	shear strength Kg/mm ²	specific g/weight Cr/cm ³	Elasticity module Kg/mm ²	thermal conductivity Cal/cmS°C	Expansion coefficient (20-100°C) 1/°C	electrical resistance(20°C) ohm mm ² /m	Corrosion resistance	ability to g/eld	anodizing ability
ETIAl-6E-7E	F	2	6	40	20	5,5	2,70	7000	0,54	23x10 ⁻⁶	0,027	Excellent	Excellent	Excellent
ETIAl-8	O	2	6	32	16		2,70	7000	0,53	23x10 ⁻⁶	0,028	Excellent	Excellent	Excellent
ETIAl-6-7	O	2	6	32	18		2,70	7000	0,53	24x10 ⁻⁶	0,028	Excellent	Excellent	Excellent
ETIAl-5	O	2,5	7	30	20		2,71	7000	0,52	24x10 ⁻⁶	0,028	Excellent	Excellent	Excellent
ETIAl-3	O	2,5	7	30	20	2,5	2,71	7000	0,50	24x10 ⁻⁶	0,028	Excellent	Excellent	Excellent
	F	3,5	7	28	21									
ETIAl-0	O	3,5	9		23	6	2,71	6900	0,52	24x10 ⁻⁶	0,030	Very good	Excellent	Very good
ETIAl-30 3003	O	3,5	11	25	28	7,5	2,73	7000	0,38	23x10 ⁻⁶	0,040	Very good	Very good	Very good
ETIAl-31 3004	O	6	16	17	40	11	2,72	6750	0,36	24x10 ⁻⁶	0,041	Good	Very good	Good
ETIAl-33 3103	O	3,5	9	21	27	8	2,74	7000	0,38	25x10 ⁻⁶	0,043	Very good	Very good	Good
ETIAl-35 3105	O	5,5	11,5	16	30	8,5	2,72	6900	0,41	24x10 ⁻⁶	0,038	Very good	Very good	Good
ETIAl-52 5052	O	9,5	20	27	45	12	2,68	7200	0,33	23x10 ⁻⁶	0,050	Excellent	Very good	Excellent
ETIAl-53 5754	O	11,5	24,5	25	58	12,5	2,65	7000	0,31	25x10 ⁻⁶	0,052	Excellent	Good	Excellent
ETIAl-54 5251	F	6	17	14	40	10	2,69	7000	0,44	25x10 ⁻⁶	0,044	Excellent	Very good	Excellent
ETIAl-60 6063	O	5	9	30	26	7,5	2,71	6900	0,48	23x10 ⁻⁶	0,033	Very good	Good	Very good
	T5	12	15,5	8	60	11,5								
	T6	16,5	19	8	70	14								
ETIAl-61 6351	T4	14,5	23	16	75	16	2,71	7000	0,44	24x10 ⁻⁶	0,038	Good	Good	Good
	T6	26	28	8	90	20,5								
ETIAl-62 6082	T4	14	22	14	75	16	2,70	7000	0,44	24x10 ⁻⁶	0,038	Good	Good	Good
	T6	26	30	10	95	20,5								
ETIAl-64 6463	T6	17,5	21	8	74	15	2,71	6900	0,48	23x10 ⁻⁶	0,033	Very good	Good	Excellent
ETIAl-65 6061	T4	11	18	16	65	16,5	2,70	6900	0,40	24x10 ⁻⁶	0,040	Good	Good	Good
	T6	24	25	8	85	21								
ETIAl-21 2014	T4	24,5	35	12	105	26,5	2,80	7300	0,37	23x10 ⁻⁶	0,045	Weak	Weak	Good
	T6	37	42	7	135	29,5								
ETIAl-24 2024	O	11	22,5	12	47	12,5	2,77	7300	0,29	23x10 ⁻⁶	0,057	Weak	Weak	Good
	T4	29,5	40	12	120	28,5								
ETIAl-43 7178	O	10,5	23,2	10	65		2,82	7200	0,29	24x10 ⁻⁶	0,058	Weak	Resistance Source Recommended	Good
	T6	50	57,6	5	160									
ETIAl-44 7078	O	12,5	21,5	10	60	15,5	2,80	7200	0,29	24x10 ⁻⁶	0,058	Weak	Resistance Source Recommended	Good
	T6	49	55	7	150	33,5								



GG 25 PİK



AVAILABLE SIZES

Round : 25-750 mm
Square : 40x40-410x410
Re Ctangle : 20x40-360x650
lengths : 3000-4000 mm

GGG 40-50-60- SFERO



AVAILABLE SIZES

Round : 25-750 mm
Square : 40x40-360x650
Re Ctangle : 20x40-4000 mm
lengths : 3000-4000 mm

Civa Çeliği

Mercury Steel

Ø DIAMETERmm	Kg / m
2 mm	0,040 kg
3 mm	0,056 kg
3,5 mm	0,076 kg
4 mm	0,100 kg
4,5 mm	0,125 kg
5 mm	0,154 kg
5,5 mm	0,187 kg
6 mm	0,222 kg
6,5 mm	0,261 kg
7 mm	0,302 kg
7,5 mm	0,350 kg
8 mm	0,395 kg
8,5 mm	0,445 kg
9 mm	0,500 kg
9,5 mm	0,556 kg
10 mm	0,617 kg
10,5 mm	0,680 kg
?11 mm	0,750 kg
?11,5 mm	0,815 kg
?12 mm	0,888 kg
?12,5 mm	0,963 kg
?13 mm	1,002 kg
?13,5 mm	1,124 kg
14 mm	1,208 kg
14,5 mm	1,296 kg
?15 mm	1,387 kg
16 mm	1,578 kg
17 mm	1,782 kg
18 mm	1,998 kg
19 mm	2,226 kg
20 mm	2,466 kg
21 mm	2,719 kg
22 mm	2,984 kg
23 mm	3,262 kg
24 mm	3,560 kg
25 mm	3,853 kg
26 mm	4,168 kg
27 mm	4,495 kg
28 mm	4,824 kg
30 mm	5,550 kg
32 mm	6,313 kg
35 mm	7,550 kg
40 mm	9,865 kg

CHEMICAL PROPERTIES

BY DIN 17006 : 115 Cr V3

CHEMICAL ANALY SIS : % C1, 15 - CR 0,70 - V 0.10

HOT SHAPIN G AND HEAT TREAT MENT

Forg h g Tava : 1050 - 800 °C

Soft en l g Pan : 700 -720 °C

An eal h g Hardness : Max l mum 280 HB

Stress R ell ev h g An eal h g : 600 °C

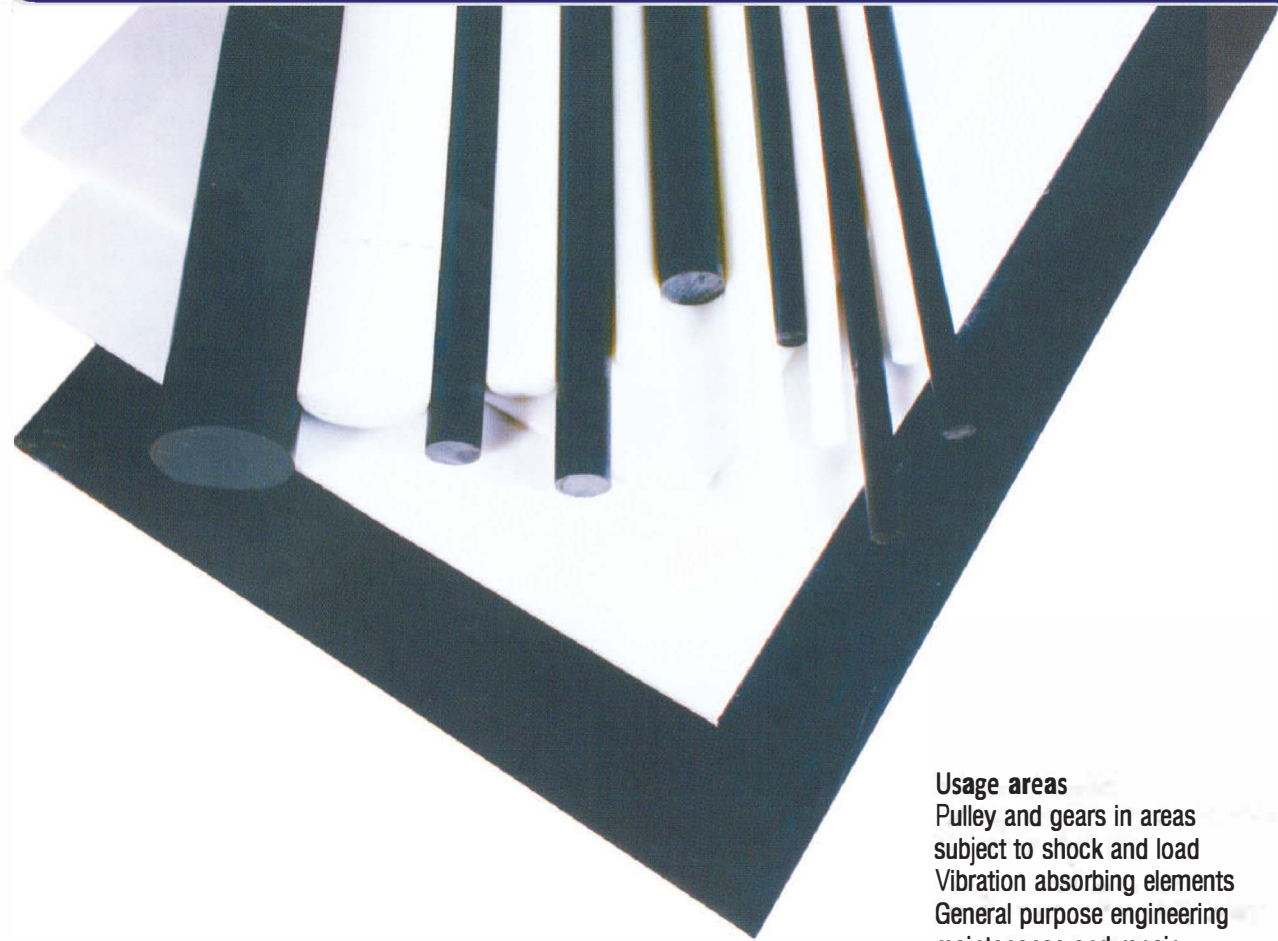
Pre-heat for Harden h g : 650 °C

Harden h g (quen Ch h g) : up to 12 mm 780 - 800 °C I n oil
up to 12-20 mm 780-790 °C I n water
up to 20-40 mm 790-800 °C I n water
up to 40-60 mm 800-820 °C I n water

Temper h g : 180-200 °C - 1 hour/25 mm



Polyamide



Usage areas

Pulley and gears in areas
subject to shock and load
Vibration absorbing elements
General purpose engineering
maintenance and repair
applications

polythene

Usage areas

Conveyor fittings in coal tanks
Cement, gypsum, lime in electric
power stations in chain conveyor
guides,
in the food industries
On cutting and chopping plates



Casting Polyamide / Kestamit

Usage areas

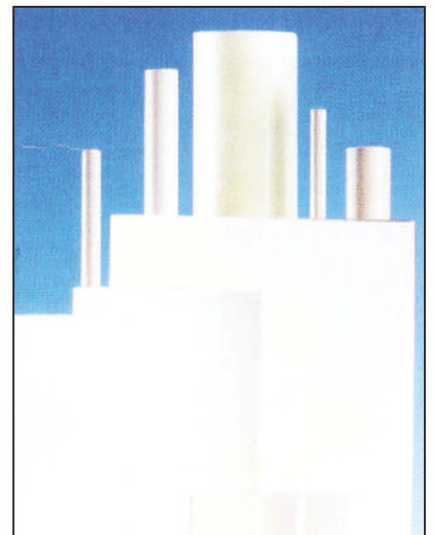
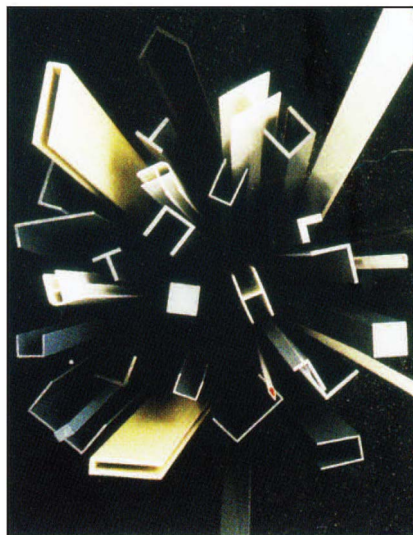
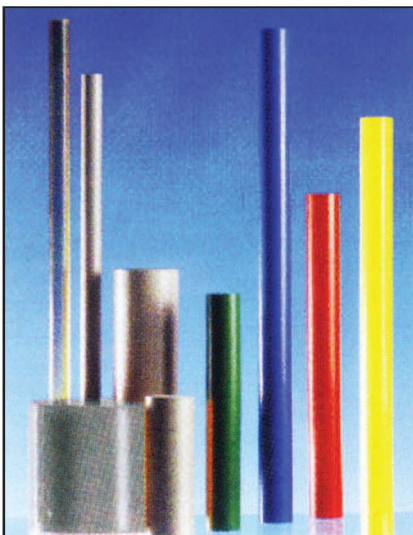
wheels
gears
sleighs
Machines
Wear plates
And printing industry parts



PVC

Usage areas

Acid boilers
Chemical
devices
Electronic
Packaging
industry Paper
industry ...



PTFE / Teflon

Some properties of Teflon materials

It has a working temperature between 210-270 ° and its resistance against industrial chemicals. Its electrical insulation is very good. Abrasion resistance is excellent in friction.

Pure teflon

Carbon Teflon

Glass fiber teflon

Bronze teflon

Rod

Wedge

Plate

Film

Hose

Packing cord

cord



POM / Delrin

Properties

Dimensional resistance

Resistance to load and shock

Excellent abrasion resistance

Mechanical strength and rigidity

Bearing without oil ratio

High electrical resistance



Engineering Plastics Weights m / Kg

Ø diameter	teflon	delrin	kestamid	polyamide	polythene	pvc	polypropylene	fiber	epoxy
6	0.059	0.04	0.032	0.032	0.027	0.04	0.026	0.04	0.052
7	0.081	0.055	0.044	0.044	0.037	0.055	0.035	0.055	0.07
8	0.106	0.071	0.057	0.057	0.048	0.071	0.046	0.071	0.092
9	0.134	0.09	0.072	0.072	0.06	0.09	0.058	0.09	0.116
10	0.165	0.111	0.089	0.089	0.075	0.111	0.071	0.111	0.144
12	0.237	0.161	0.129	0.129	0.107	0.161	0.103	0.161	0.207
15	0.371	0.251	0.201	0.201	0.168	0.251	0.161	0.251	0.323
16	0.422	0.285	0.229	0.229	0.191	0.285	0.183	0.285	0.368
18	0.534	0.361	0.29	0.29	0.242	0.361	0.231	0.361	0.465
20	0.659	0.446	0.358	0.358	0.298	0.446	0.286	0.446	0.575
22	0.798	0.54	0.433	0.433	0.361	0.54	0.346	0.54	0.695
25	1.03	0.697	0.559	0.559	0.466	0.697	0.446	0.697	0.898
30	1.484	1.003	0.805	0.805	0.671	1.003	0.643	1.003	1.293
35	2.019	1.366	1.096	1.096	0.914	1.366	0.875	1.366	1.76
40	2.638	1.784	1.432	1.432	1.193	1.784	1.143	1.784	2.298
45	3.338	2.257	1.812	1.812	1.51	2.257	1.447	2.257	2.909
50	4.121	2.787	2.237	2.237	1.864	2.787	1.786	2.787	3.591
55	4.987	3.372	2.707	2.707	2.256	3.372	2.161	3.372	4.346
60	5.935	4.013	3.222	3.222	2.685	4.013	2.572	4.013	5.172
65	6.965	4.71	3.781	3.781	3.151	4.71	3.018	4.71	6.069
70	8.078	5.462	4.385	4.385	3.654	5.462	3.5	5.462	7.039
75	9.273	6.27	5.034	5.034	4.195	6.27	4.018	6.27	8.081
80	10.55	7.134	5.727	5.727	4.773	7.134	4.572	7.134	9.194
90	13.353	9.029	7.249	7.249	6.041	9.029	5.786	9.029	11.636
100	16.485	11.147	8.949	8.949	7.458	11.147	7.144	11.147	14.366
110	19.947	13.488	10.828	10.828	9.024	13.488	8.644	13.488	17.382
120	23.738	16.052	12.887	12.887	10.739	16.052	10.287	16.052	20.686
130	27.86	18.838	15.124	15.124	12.603	18.838	12.073	18.838	24.278
140	32.311	21.848	17.54	17.54	14.617	21.848	17.001	21.848	28.156
150	37.091	25.081	20.135	20.135	16.779	25.081	16.073	25.081	32.322
160	42.202	28.536	22.909	22.909	19.091	28.536	18.287	28.536	36.776
170	47.642	32.215	25.863	25.863	21.552	32.215	20.645	32.215	41.516
180	53.411	36.116	28.995	28.995	24.162	36.116	23.145	36.116	46.544
190	59.511	40.241	23.306	23.306	26.922	40.241	25.788	40.241	51.859
200	65.94	44.588	35.796	35.796	29.83	44.588	28.574	44.588	57.462
210	72.699	49.158	39.465	39.465	32.888	49.158	31.503	49.158	63.352
220	79.787	53.951	43.313	43.313	36.094	53.951	34.575	53.951	69.529
230	87.206	58.968	47.34	47.34	39.45	58.968	37.789	58.968	75.993
240	94.954	64.207	51.546	51.546	42.955	64.207	41.147	64.207	82.745
250	103.031	69.669	55.931	55.931	46.609	69.669	44.647	69.669	89.784
260	111.439	75.354	60.495	60.495	50.413	75.354	48.29	75.354	97.111
270	120.176	81.262	65.238	65.238	54.365	81.262	52.076	81.262	104.724
280	129.242	87.392	70.16	70.16	58.467	87.392	56.005	87.392	112.626
290	138.639	93.746	75.261	75.261	62.718	93.746	60.077	93.746	120.814
300	148.365	100.323	80.541	80.541	67.118	100.323	64.292	100.323	129.29





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INTERNATIONAL

Sertifika

**ANKARA BRONZ ALAŞIMLARI MAKİNA İNŞAAT GIDA
TURİZM MÜHENDİSLİK NAKLİYE SANAYİ VE TİCARET
LİMİTED ŞİRKETİ**

OSTİM 100.YIL BULVARI 1230/1 SOKAK NO:4 YENİMAHALLE ANKARA

TS EN ISO 9001:2008

**METAL VE MÜHENDİSLİK SEKTÖRLERİ İÇİN METAL VE PLASTİK MALZEMELERİN SATIŞI
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Bitiş Tarihi	: 13.02.2017
Geçerlilik Periyodu	: 3 Yıl
Baskı No	: 01



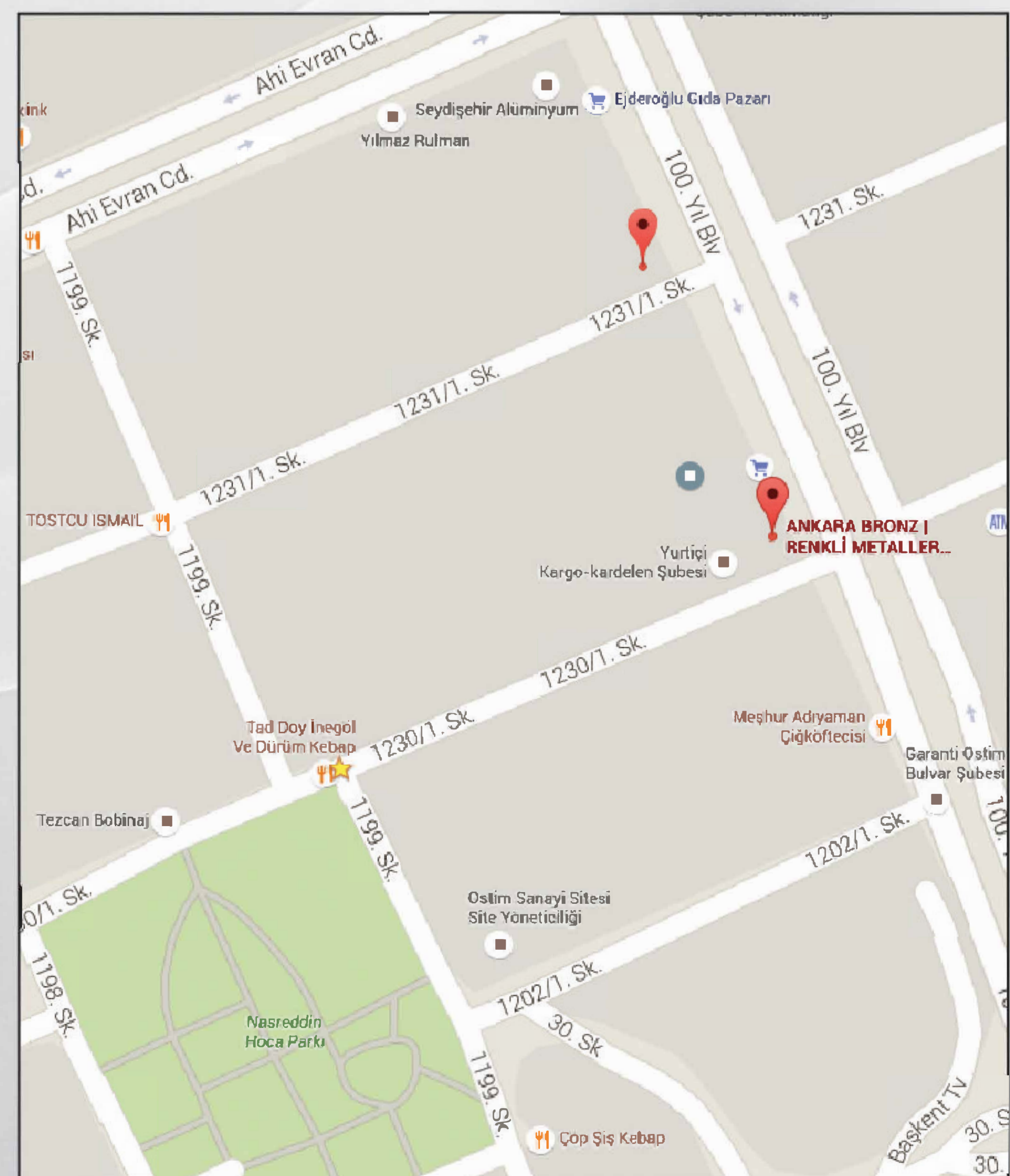

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