High structural resistance components for Aviation and Defense

Havacılık ve Savunma için yüksek yapısal dirençli bileşenler

2017A

2015/863 AMENDING ANNEX II TO DIRECTIVE 2011/65/EU

Colour Code EU - USA Green

This alloy offers high mechanical properties and excellent resistance to fatigue. It also has good machinability. However, it is not suitable for automatic lathes as it produces long chips in the machining process. It can be replaced by alloy 2007, which has similar mechanical properties but offers better machinability and higher productivity.

Bu alaşım, yüksek mekanik özelliklere ve yorulmaya karşı mükemmel bir direnç sunar. Ayrıca, işlenebilirlik açısından da oldukça iyidir. Ancak, işleme sürecinde uzun talaşlar oluşturduğundan otomatik torna tezgahları için uygun değildir. Benzer mekanik özelliklere sahip olan ancak daha iyi işlenebilirlik sağlayan ve daha yüksek üretkenlik sunan 2007 alaşımı ile değiştirilebilir.

Unit mm	●	■	▬	⬢
Extruded	20 - 170	20 - 120	5 - 105	20 - 145

Minimum Mechanical Properties / Min. Mekanik Özellikler

			Rm	Rp0,2		HBW
	Temper	Diam. mm	MPa	MPa	A%	Typical
	O, H111	≤ 200	250	135	12	45
EXTRUDE	T4,T4510,T4511	25 < D ≤ 75	400	270	10	105
EXTRUDE	T4,T4510,T4511	75 < D ≤ 150	390	260	9	105
EXTRUDE	T4,T4510,T4511	150 < D ≤ 200	370	240	8	105
EXTRUDE	T4,T4510,T4511	200 < D ≤ 250	360	220	7	105

Chemical Composition / Kimyasal Bileşenler

Si	0,20 - 0,80
Fe	≤ 0,70
Cu	3,50 - 4,50
Mn	0,40 - 1,00
Mg	0,40 - 1,00
Cr	≤ 0,10
Ni	-
Zn	≤ 0,25
Zr + Ti	≤ 0,25
Pb	-
Bi	-
Others	Each 0,05 Total 0,15
Al	Remainder

Properties / Özellikler	T4
Machinability	■■□□
Protective anodizing	■■□□
Decorative anodizing	■□□□
Hard anodizing	■□□□
Resistance to atmospheric corrosion	■■□□
Resistance to marine corrosion	■□□□
MIG-TIG weldability	■■□□
Resistance weldability	■■■□
Brazing weldability	■□□□
Plastic formability when cold	■□□□
Plastic formability when hot	■■□□

Physical Properties / Fiziksel Özellikler

Density	Kg/ dm^3	2,79
Modulus of elasticity	Mpa	75.000
Coefficient of thermal expansion	$x10^{-6}$ /°C	23,6
Thermal conductivity at 20°C	W / mK	134
Typical electrical resistivity at 20°C	Ω mm^2 / m	0,051

■■■■ **Excellent** *Çok İyi*

■■■□ **Good** *İyi*

■■□□ **Acceptable** *Kabul Edilebilir*

■□□□ **Not recommended** *Önerilmez*

Weight of Aluminium Bars

in Kg/linear meter (Density 2,8 Kg/dm^3)

Kg/lineer metre cinsinden Alüminyum Çubukların Ağırlıkları

mm	●	■	⬣
20	0,879	1,120	0,969
21	0,969	1,234	1,069
22	1,064	1,355	1,173
23	1,163	1,481	1,282
24	1,266	1,613	1,396
25	1,374	1,750	1,515
26	1,486	1,893	1,679
27	1,603	2,041	1,767
28	1,724	2,195	1,901
29	1,849	2,355	2,039
30	1,979	2,520	2,182
31	2,113	2,690	2,330
32	2,251	2,867	2,483
33	2,394	3,049	2,640
34	2,542	3,236	2,803
35	2,693	3,430	2,970
36	2,850	3,628	3,142
37	3,010	3,833	3,319
38	3,175	4,043	3,501
39	3,344	4,258	3,688
40	3,518	4,480	3,879
41	3,696	4,706	4,076
42	3,879	4,939	4,277
43	4,066	5,177	4,483
44	4,257	5,420	4,694
45	4,552	5,670	4,910
46	4,653	5,924	5,131
47	4,857	6,185	5,356
48	5,066	6,451	5,586
49	5,280	6,722	5,822
50	5,497	7,000	6,062
51	5,719	7,282	6,307
52	5,946	7,571	6,556
53	6,177	7,865	6,811
54	6,412	8,165	7,071
55	6,652	8,470	7,335
56	6,896	8,780	7,604
57	7,144	9,097	7,878
58	7,397	9,419	8,157
59	7,655	9,746	8,441
60	7,916	10,080	8,729
61	8,183	10,418	9,023
62	8,453	10,763	9,321
63	8,728	11,113	9,624
64	9,007	11,468	9,932
65	9,291	11,830	10,245
66	9,579	12,196	10,562
67	9,872	12,569	10,885

mm	●	■	⬣
68	10,169	12,947	11,212
69	10,470	13,330	11,544
70	10,775	13,720	11,881
71	11,096	14,115	12,223
72	11,400	14,515	12,570
73	11,719	14,921	12,922
74	12,042	15,332	13,278
75	12,370	15,750	13,639
76	12,702	16,173	14,006
77	13,038	16,601	14,377
78	13,379	17,035	14,753
79	13,724	17,475	15,133
80	14,074	17,920	15,519
81	14,428	18,370	15,909
82	14,786	18,827	16,305
83	15,149	19,290	16,705
84	15,517	19,756	17,109
85	15,888	20,230	17,519
86	16,264	20,708	17,934
87	16,645	21,193	18,353
88	17,030	21,683	18,778
89	17,419	22,178	19,207
90	17,813	22,680	19,641
91	18,210	23,186	20,080
92	18,613	23,649	20,524
93	19,020	24,217	20,972
94	19,413	24,740	21,426
95	19,837	25,270	21,884
96	20,267	25,805	22,347
97	20,691	26,345	22,815
98	21,120	26,891	23,288
99	21,553	27,442	23,766
100	21,991	28,000	24,248
105	24,245	30,870	26,733
110	26,609	33,880	29,340
120	29,083	-	32,068
120	31,667	-	34,917
125	34,344	-	37,888
130	37,165	-	40,979
135	40,078	-	44,192
140	43,102	-	47,526
145	46,236	-	50,981
150	49,480	-	-
155	52,833	-	-
160	56,297	-	-
165	59,870	-	-
170	63,554	-	-

let's
develop
solutions
that will make a
difference

FormaL Aluminium
2003

birlikte
fark yaratacak
çözümler
geliştirelim.

www.formal.com.tr