

## HABA Aluminium plates

### Product overview, formats

G-ALMg3	Planalu N
G-Alu25	Alu6082
McBasic	G-Alu340
Alu28	Alu50
Alu35	Alu7075
Planalu G	

### Mechanical engineering

### Plant construction

### Apparatus construction

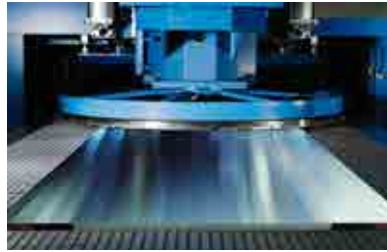
### Jig manufacturing

### Toolmaking

# Product overview

## Aluminium plates

HABA product designation	G-AlMg3 gefräst	G-Alu25 milled	G-Alu25 sawn	McBasic
Material no.	-	-	-	-
Designation	similar EN AW-5754 AlMg3	similar EN AW-5083 AlMg4.5Mn0.7	similar EN AW-5083 AlMg4.5Mn0.7	similar EN AW-5083 AlMg4.5Mn0.7
State	homogenised	homogenised	homogenised	casting plate
Surface	finely milled	finely milled	cut by band saw	finely milled
<b>HABA standard tolerance</b>				
Surface tolerance	<Ra0.8 (N6)	Ra0.8 (N6)	Ra25 (N12)	Ra0.8 (N6)
Thickness tolerance (mm)	+/-0.1	+/-0.05	+1/0	+/-0.1
Parallelism (mm)	≤0.05	≤0.05	0.3	-
Evenness (mm)	≤0.2	≤0.2	0.3	-
Length and width tolerance (mm)	+0.8/+0.3	+0.8/+0.3	+0.8/+0.3	+1/0
Customer-specific tolerance	within a tolerance field of 0.4 mm	within a tolerance field of 0.4 mm	within a tolerance field of 0.4 mm	-
<b>Mechanical properties</b>				
Machinability	very good	very good	very good	very good
Dimensional stability	very good	very good	very good	good
Tensile strength $R_m$ (N / mm <sup>2</sup> )	190-230	≥250	≥250	≥250
Elastic limit $R_{p0.2}$ (N / mm <sup>2</sup> )	≥80	≥115	≥115	≥115
Breaking strain $A_5$	6-10 %	6-10 %	6-10 %	6-10 %
Brinell hardness (HBS)	≥50	≥70	≥70	≥70
Weldability (WIG, MIG)	good	good	good	good
<b>Behaviour by anodisation</b>				
Decorative anodising	good	moderate	moderate	moderate
Protective anodising	very good	very good	very good	very good
Use in contact with food	yes	yes	yes	yes
<b>Resistance</b>				
Weatherproofness	very good	very good	very good	very good
Seawater resistance	very good	very good	very good	very good
<b>Chemical composition</b>				
Magnesium Mg	2.6-3.6 %	4.0-4.9 %	4.0-4.9 %	4.0-4.9 %
Manganese Mn	≤0.50 %	0.4-1.0 %	0.4-1.0 %	0.4-1.0 %
Chromium Cr	≤0.30 %	0.05-0.25 %	0.05-0.25 %	0.05-0.25 %
Iron Fe	≤0.40 %	≤0.40 %	≤0.40 %	≤0.40 %
Silicium Si	≤0.40 %	≤0.40 %	≤0.40 %	≤0.40 %
Copper Cu	≤0.10 %	≤0.10 %	≤0.10 %	≤0.10 %
Titanium Ti	≤0.15 %	≤0.15 %	≤0.15 %	≤0.15 %
Zinc Zn	≤0.20 %	≤0.25 %	≤0.25 %	≤0.25 %
Other elements together / individually		≤0.15 % / 0.05 %	≤0.15 % / 0.05 %	≤0.15 % / 0.05 %
<b>Comments / comparisons</b>				
	HABA G-AlMg3 is a naturally hardened aluminium casting plate which can be perfectly anodised for decoratively and technically applications. The material also reach the highest demands on machinability and dimensional stability.	G-Alu25 is a naturally hardened aluminium casting plate which fulfils the most demanding machinability and dimensional stability requirements. The special casting process is the guarantee for the homogenous join and the vacuum tightness.	G-Alu25 is a naturally hardened aluminium casting plate which fulfils the most demanding machinability and dimensional stability requirements. The special casting process is the guarantee for the homogenous join and the vacuum tightness.	McBasic is a naturally hardened casting plate with good machinability and dimensional stability. Ideally suited for price-sensitive products in larger quantities.

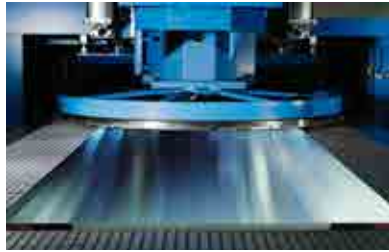


Alu28	Alu35	Planalu G	Planalu N
3.3547	3.3547	3.3547	3.3547
EN AW-5083	EN AW-5083	EN AW-5083	EN AW-5083
EN AW-AlMg4.5Mn0.7	EN AW-AlMg4.5Mn0.7	EN AW-AlMg4.5Mn0.7	EN AW-AlMg4.5Mn0.7
H111	H111 / low-tension annealed	H111 / low-tension annealed	H111
finely milled	grinded	as-rolled	as-rolled
Ra0.8 (N6)	Ra1.6 (N7)	as-rolled	as-rolled
+/-0.1	+0.2/0	EN 485-3/4	EN 485-3/4
≤0.1	≤0.1	≤0.2/100	≤0.2/100
≤0.2	≤0.2	~0.5	~0.5
+0.8/+0.3	+0.8/+0.3	+0.8/+0.3	+0.8/+0.3
within a tolerance field of 0.4 mm	within a tolerance field of 0.4 mm	within a tolerance field of 0.4 mm	within a tolerance field of 0.4 mm
good	good	good	good
good	very good	very good	good
255-350	255-350	255-350	255-350
≥105	≥105	≥105	≥105
≥12 %	≥12 %	≥12 %	≥12 %
≥70	≥70	≥70	≥70
good	good	good	good
moderate	moderate	moderate	moderate
very good	very good	very good	very good
yes	yes	yes	yes
very good	very good	very good	very good
very good	very good	very good	very good
4.0-4.9 %	4.0-4.9 %	4.0-4.9 %	4.0-4.9 %
0.4-1.0 %	0.4-1.0 %	0.4-1.0 %	0.4-1.0 %
0.05-0.25 %	0.05-0.25 %	0.05-0.25 %	0.05-0.25 %
≤0.40 %	≤0.40 %	≤0.40 %	≤0.40 %
≤0.40 %	≤0.40 %	≤0.40 %	≤0.40 %
≤0.10 %	≤0.10 %	≤0.10 %	≤0.10 %
≤0.15 %	≤0.15 %	≤0.15 %	≤0.15 %
≤0.25 %	≤0.25 %	≤0.25 %	≤0.25 %
≤0.15 % / 0.05 %	≤0.15 % / 0.05 %	≤0.15 % / 0.05 %	≤0.15 % / 0.05 %
Alu28 is an annealed, naturally hard rolled plate with a precisely milled surface. The plates have an excellent parallelism, are easy to machine and dimensionally stable.	Alu35 is a low-tension annealed rolled plate with a grinded surface. The plates have excellent parallelism, are easy to machine and extremely dimensionally stable.	Planalu is a naturally hard rolled plate with good machinability and good dimensional stability. It is easy to weld, is extremely corrosion-resistant and suitable for metallic coatings. Planalu G is additionally low-tension annealed.	Planalu is a naturally hard rolled plate with good machinability and good dimensional stability. It is easy to weld, is extremely corrosion-resistant and suitable for metallic coatings.

# Product overview

## Aluminium plates

HABA product designation	Alu6082 milled	Alu6082 as-rolled	G-Alu340 milled
Material no.	3.2315	3.2315	-
Designation	EN AW-6082 EN AW- $\text{AlSi1MgMn}$	EN AW-6082 EN AW- $\text{AlSi1MgMn}$	- $\text{AlZn5Mg1}$
State	T6/T651	T6/T651	casting plate
Surface	finely milled	as-rolled	finely milled
<b>HABA standard tolerance</b>			
Surface tolerance	Ra0.8 (N6)	as-rolled	Ra0.8 (N6)
Thickness tolerance (mm)	+/-0.1	EN 485-3/4	+/-0.1
Parallelism (mm)	$\leq 0.05$	$\leq 0.2/100$	$\leq 0.05$
Evenness (mm)	$\leq 0.2$	$\leq 0.5$	$\leq 0.2$
Length and width tolerance (mm)	+0.8/+0.3	+0.8/+0.3	+0.8/+0.3
Customer-specific tolerance	within a tolerance field of 0.4 mm	within a tolerance field of 0.4 mm	within a tolerance field of 0.4 mm
<b>Mechanical properties</b>			
Machinability	good	good	very good
Dimensional stability	medium-good	medium-good	very good
Thickness in mm			
Tensile strength $R_m$ (N / mm <sup>2</sup> )	275-350	275-350	$\geq 340$
Elastic limit $R_{p0.2}$ (N / mm <sup>2</sup> )	240-310	240-310	$\geq 300$
Breaking strain $A_5$	6-10 %	6-10 %	$\geq 5$ %
Brinell hardness (HBS)	84-104	84-104	$\geq 110$
Weldability (WIG, MIG)	very good	very good	very good
<b>Behaviour by anodisation</b>			
Decorative anodising	good	good	good
Protective anodising	very good	very good	good
Use in contact with food	yes	yes	no
<b>Resistance</b>			
Weatherproofness	very good	very good	good
Seawater resistance	very good	very good	good
<b>Chemical composition</b>			
Magnesium	Mg 0.7-1.3 %	0.7-1.3 %	$\leq 0.1$ %
Manganese	Mn 0.6-1.2 %	0.6-1.2 %	0.7-1.2 %
Chromium	Cr 0.4-1.0 %	0.4-1.0 %	0.045-0.125 %
Iron	Fe $\leq 0.25$ %	$\leq 0.25$ %	0.08-0.24 %
Silicium	Si $\leq 0.5$ %	$\leq 0.5$ %	0.095-0.2 %
Copper	Cu $\leq 0.1$ %	$\leq 0.1$ %	$\leq 0.05$ %
Titanium	Ti $\leq 0.1$ %	$\leq 0.1$ %	0.01-0.15 %
Zinc	Zn $\leq 0.2$ %	$\leq 0.2$ %	5.0-6.0 %
Other elements together / individually	$\leq 0.15$ % / 0.15 %	$\leq 0.15$ % / 0.15 %	
<b>Comments / comparisons</b>			
	Alu6082 is an artificially aged rolled plate with a precisely milled or rolled surface. The material is very easy to machine and has medium to good dimensional stability. It has outstanding corrosion resistance against weather and seawater.	Alu6082 is an artificially aged rolled plate with a precisely milled or rolled surface. The material is very easy to machine and has medium to good dimensional stability. It has outstanding corrosion resistance against weather and seawater.	G-Alu340 is an aluminium casting plate with significantly higher dimensional stability than naturally hardened casting plates. We achieve the persistent equal strength with a multi-stage process of heat-treating and natural aging. The material stands out for its excellent machinability and great stability.



<b>G-Alu340 sawn</b>	<b>Alu50</b>	<b>Alu7075 milled</b>	<b>Alu7075 as-rolled</b>
-	3.4345	3.4365	3.4365
-	EN AW-7022	EN AW-7075	EN AW-7075
AlZn5.5Mg1	EN AW-AlZn5Mg3Cu	EN AW-AlZnMgCu1.5	EN AW-AlZnMgCu1.5
casting plate	T6/T651	T6/T651	T6/T651
cut by band saw	milled	milled	as-rolled
Ra25 (N11)	Ra0.8 (N6)	Ra0.8 (N6)	as-rolled
+1/0	+0.2/0	+/-0.1	EN 485-3/4
≤0.3	≤0.1	≤0.1	≤0.2/100
≤0.5	≤0.2	≤0.2	≤0.5
+0.8/+0.3	+0.8/+0.3	+0.8/+0.3	+0.8/+0.3
within a tolerance field of 0.4 mm	within a tolerance field of 0.4 mm	within a tolerance field of 0.4 mm	within a tolerance field of 0.4 mm
very good	very good	very good	very good
very good	good	medium-good	moderate
	<50    50-100    >100	<50    50-100    >100	<50    50-100    >100
≥340	≥450    ≥430    ≥410	≥500    ≥480-500    ≥400	≥500    ≥480-500    ≥400
≥300	≥370    ≥350    ≥330	≥450    ≥390-430    ≥280	≥450    ≥390-430    ≥280
≥5 %	≥7 %    ≥5 %    ≥3 %	3-8 %    ≥2 %    ≥2 %	3-8 %    ≥2 %    ≥2 %
≥110	≥125    ≥110    ≥100	≥140    ≥130    ≥120	≥140    ≥130    ≥120
very good	moderate	moderate	moderate
good	moderate	bad or unsuitable	bad or unsuitable
good	good	good	good
no	no	no	no
good	moderate	moderate	moderate
good	moderate	moderate	moderate
≤0.1 %	≤0.5 %	≤0.4 %	≤0.4 %
0.7-1.2 %	2.6-3.7 %	2.1-2.9 %	2.1-2.9 %
0.045-0.125 %	0.1-0.4 %	≤0.3 %	≤0.3 %
0.08-0.24 %	0.1-0.3 %	0.18-0.28 %	0.18-0.28 %
0.095-0.2 %	≤0.5 %	≤0.5 %	≤0.5 %
≤0.05 %	0.5-1.0 %	1.2-2.0 %	1.2-2.0 %
0.01-0.15 %	≤0.2 % (Ti+Zr)	≤0.2 % (Ti+Zr ≤0.25 %)	≤0.2 % (Ti+Zr ≤0.25 %)
5.0-6.0 %	4.3-5.2 %	5.1-6.1 %	5.1-6.1 %
		≤0.15 % / ≤0.15 %	≤0.15 % / ≤0.15 %
G-Alu340 is an aluminium casting plate with significantly higher dimensional stability than naturally hardened casting plates. We achieve the persistent equal strength with a multi-stage process of heat-treating and natural aging. The material stands out for its excellent machinability and great stability.	Alu50 is an artificially aged and additionally low-tension annealed rolled plate with high tensility and good machinability. The material also has a great hardness and a very good dimensional stability.	Alu7075 is an artificially aged rolled plate with very high tensility and hardness. The material can be easily machined. Slight bending is possible.	Alu7075 is an artificially aged rolled plate with very high tensility and hardness. The material can be easily machined. Slight bending is possible.

# HABA storage formats

	G-AlMg3	G-Alu25	G-Alu25	McBasic	Alu28	Alu35	Planalu G	Planalu N
Standard format in mm Max format in mm	1520 x 3020	1600 x 3000 2350 x 4250	1600 x 3000 2350 x 4250	2070 x 4000	1520 x 3020 2010 x 3020	1003 x 3020 2010 x 3020	1520 x 3020	1520 x 3020
Thickness in mm	finely milled	finely milled	cut by band saw	finely milled	finely milled	grinded	as-rolled	as-rolled
3	◆	◆◆						
4		◆◆						
5		◆◆			◆	◆	◆	◆
6	◆	◆◆			◆	◆	◆	◆
7		◆◆						
8	◆	◆◆		◇	◆	◆	◆	◆
9		◆◆						
10	◆	◆◆		◇	◆	◆	◆	◆
11		◆◆						
12	◆	◆◆		◇	◆	◆	◆	◆
13		◆◆						
14		◆◆						
15	◆	◆◆		◇	◆	◆	◆	◆
16		◆◆						
17		◆◆						
18		◆◆						
19		◆◆		◇	◆	◆	◆	◆
20	◆	◆◆						
21		◆◆	21 +1/0 ◆	◇	◆	◆	◆	◆
22	◆	◆◆						
23		◆◆						
24		◆◆						
25		◆◆		◇	◆	◆	◆	◆
26	◆	◆◆	26 +1/0 ◆					
27	◆◆	◆◆						
28	◆◆	◆◆						
29		◆◆		◇	◆	◆	◆	◆
30	◆	◆◆	31 +1/0 ◆					
35	◆◆	◆		◇	◆	◆	◆	◆
37	◆◆	◆						
40		◆	36 +1/0 ◆	◇	◆	◆	◆	◆
45		◆	41 +1/0 ◆ 46 +1/0	◇	◆	◆	◆	◆
50	◆	◆		◇	◆	◆	◆	◆
51		◆	51 +1/0 ◆					
60	◆	◆		◇	◆	◆	◆	◆
70	◆	◆	61 +1/0 ◆ 71 +1/0 ◆	◇		◆	◆	◆
80	◆	◆		◇		◆	◆	◆
81		◆	81 +1/0 ◆					
90	◆	◆		◇		◆	◆	◆
100	◆	◆	91 +1/0 ◆ 101 +1/0 ◆	◇		◆	◆	◆
110		◆	111 +1/0 ◆				◆	◆
120		◆	121 +1/0 ◆				◆	◆
130		◆					◆	◆
140		◆					◆	◆
150		◆					◆	◆
160		◆					◆	◆

◆ 1-3 days delivery  
◇ 5 days delivery

On request we can also produce special thicknesses and special tolerances  
Subject to changes in stocks

	Alu6082	Alu6082	G-Alu340	G-Alu340	Alu50	Alu7075	Alu7075
Standard format in mm	1520 x 3020	1520 x 3020	1550 x 3000	1550 x 3000	1500 x 3000	1520 x 3020	1520 x 3020
Thickness in mm	finely milled	as-rolled	finely milled	cut by band saw	finely milled	finely milled	as-rolled
3							
4							
5		◆					
6		◆	◆		◆		
7							
8	◆	◆	◆		◆		
9							
10	◆	◆	◆		◆	◆	◆
11							
12	◆	◆	◆		◆	◆	◆
13							
14							
15	◆	◆	◆		◆	◆	◆
16							
17							
18							
19							
20	◆	◆	◆		◆	◆	◆
21				21 +1/0 ◆			
22							
23							
24							
25	◆	◆	◆		◆	◆	◆
26				26 +1/0 ◆			
27							
28							
29							
30	◆	◆	◆	31 +1/0 ◆	◆	◆	◆
35							
40	◆	◆	◆	36 +1/0 ◆	◆	◆	◆
45				41 +1/0 ◆	◆		◆
50							
60		◆	◆	51 +1/0 ◆	◆	◆	◆
70				61 +1/0 ◆ 71 +1/0 ◆	◆		◆
80					◆		◆
90		◆	◆	81 +1/0 ◆	◆		◆
100				91 +1/0 ◆ 101 +1/0 ◆	◆		◆
110		◆			◆		◆
120		◆			◆		◆
130		◆			◆		◆
140		◆			◆		◆
150		◆			◆		◆
160		◆			◆		◆

◆ 1-3 days delivery  
◇ 5 days delivery

On request we can also produce special thicknesses and special tolerances  
Subject to changes in stocks

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