

# Aluminium

## Chemical Composition

### CHEMICAL COMPOSITION EN 573-3

Designation of the material		Chemical Composition									Other elements		Min. Al
Classification of symbols	Numerical classification	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Notes	Each	Total	
EN AW-1050A	EN AW-Al 99.5	0.25	0.40	0.05	0.05	0.05	-	0.07	0.05				99.5
EN AW-2017A	EN AW-Al CuMgSi (A)	0.20 - 0.8	0.70	3.5 - 4.5	0.40 - 1.0	0.40 - 1.0	0.10	0.25	0.25 (Ti+Zr)		0.05	0.15	Remainder
EN AW-2024	EN AW-Al Cu4MgSi	0.50	0.50	3.8 - 4.9	0.30 - 0.9	1.2 - 1.8	0.10	0.25	0.15				
EN AW-5052	EN AW-Al Cu4Mg1	0.25	0.40	0.10	0.10	2.2 - 2.8	0.15 - 0.35	0.15 - 0.35	0.10		0.05	0.15	Remainder
EN AW-5754	EN AW-Al Mg3	0.40	0.40	0.10	0.50	2.6 - 3.6	0.30	0.20	0.15	0.10 - 0.6 Mn + Cr	0.05	0.15	Remainder
EM AW-6082	EN AW-Al Si1MgMn	0.7 - 1.3	0.50	0.10	0.40 - 1.00	0.6 - 1.2	0.25	0.20	0.10		0.05	0.15	Remainder
EN AW-7075	EN AW-Al Zn5.5MgCu	0.40	0.50	1.2 - 2.0	0.30	2.1 - 2.9	0.18 - 0.28	5.1 - 6.1	0.2 - 0.25 (Zr+Ti)		0.05	0.15	Remainder

## Equivalents

		Approximate international equivalents					
Classification of symbols	Numerical classification	US (AISI)		Japan (JIS)		China (GB)	
EN AW-1050A	EN AW-Al 99.5						
EN AW-2017A	EN AW-Al CuMgSi (A)						
EN AW-2024	EN AW-Al Cu4MgSi						
EN AW-5052	EN AW-Al Cu4Mg1						
EN AW-5754	EN AW-Al Mg3						
EN AW-6082	EN AW-Al Si1MgMn						
EN AW-7075	EN AW-Al Zn5.5MgCu						

## Mechanical properties

### MECHANICAL PROPERTIES EN 1301-2

#### 1000 SERIES (AL)

Designation of the material	Metallurgical condition	Diameter $d$ up to & including (mm)	Tensile strength		Yield strength $R_{p0.2}$	Elongation
			$R_m$			
			MPa		MPa	$A_{100\text{ mm}}$
			min.	max.	typical	(typical %)
EN AW-1050A [Al 99.5]	O	20	-	95	-	35
	H14	18	100	-	95	5
	H16	15	120	-	115	3
	H18	10	140	-	135	3

#### 2000 SERIES (AL CU)

Designation of the material	Metallurgical condition	Diameter $d$ up to & including (mm)	Tensile strength		Yield strength $R_{p0.2}$	Elongation
			$R_m$			
			MPa		MPa	$A_{100\text{ mm}}$
			min.	max.	typical	(typical %)
EN AW-2017A [Al Cu4MgSi(A)]	H13	18	210	300	190	5
	T4	18	380	-	255	18
	H18	10	315	-	-	-
EN AW-2024 [Al Cu4Mg1]	H13	18	230	300	200	5
	T4	18	420	-	315	18
	H18	10	320	-	-	-

**5000 SERIES (AL MN)**

Designation of the material	Metallurgical condition	Diameter $d$ up to & including (mm)	Tensile strength		Yield strength $R_{p0.2}$	Elongation
			$R_m$			
			MPa		MPa	$A_{100}$ mm
			min.	max.	typical	(typical %)
EN AW-5052 [Al Mg2.5]	O	20	-	225	100	15
	H14	18	225	275	225	4
	H18	10	275	-	275	3
	H32	18	190	240	145	11
	H34	15	215	265	195	8
	H38	10	260	-	245	5
EN AW-5754 [Al Mg3]	O	20	-	250	110	16
	H12	18	230	280	200	6
	H14	18	255	305	250	3
	H18	10	305	-	300	2
	H32	18	220	270	160	11
	H34	15	245	295	210	8
	H38	10	290	-	260	4

## 6000 SERIES (AL MGSI)

Designation of the material	Metallurgical condition	Diameter $d$ up to & including (mm)	Tensile strength		Yield strength $R_{p0.2}$	Elongation
			$R_m$			
			MPA		MPa	$A_{100\text{ mm}}$
			min.	max.	typical	(typical %)
EN AW-6082 [Al Si1MgMn]	H13	$\leq 18$	165	225	130	4
	H18	$\leq 10$	220	-	200	2
	T39	$\geq 6$	310	-	-	-
	T39	$< 6$	360	-	-	-
	T4	$\leq 20$	205	285	135	13
	T6	$\leq 20$	300	-	270	10
	T89	$< 6$	340	-	-	-

## 7000 SERIES (AL ZN)

Designation of the material	Metallurgical condition	Diameter $d$ up to & including (mm)	Tensile strength		Yield strength $R_{p0.2}$	Elongation
			$R_m$			
			MPA		MPa	$A_{100\text{ mm}}$
			min.	max.	typical	(typical %)
EN AW-7075 [Al Zn5.5MgCu]	O	20	-	275	110	13
	H13	18	230	310	230	2.5
	H18	10	285	-	260	2
	T6	20	510	-	485	10

## Finishes

- To be determined under a commercial agreement when placing the order or requesting the quote.

## Tolerances

### DIMENSIONAL TOLERANCES ACCORDING TO STANDARD UNE-EN 1301-3

#### DIMENSIONAL TOLERANCES ROUND WIRE

Specified diameter		Tolerance
From	To (inclusive)	General Application
-	1	± 0.02
1	3	± 0.03
3	6	± 0.04
6	10	± 0.05
10	15	± 0.07
15	20	± 0.11

## DIMENSIONAL TOLERANCES RECTANGULAR WIRE

Width or thickness		Tolerance	
From	To	Thickness	Width
-	1	± 0.03	± 0.04
1	3	± 0.04	± 0.05
3	6	± 0.05	± 0.07
6	10	± 0.07	± 0.1
10	15	± 0.1	± 0.14
15	20	± 0.14	± 0.18

## STANDARD LENGTH TOLERANCES

NOMINAL LENGTH	TOLERANCE
L ≤ 1000 mm.	+/- 1 mm.
1000 < L ≤ 4000	- 0mm. / +3 mm.