

GRÄNGES EUROPE

Aluminium Alloys and Capabilities



GRÄNGES

A GLOBAL LEADER IN ROLLED ALUMINIUM PRODUCTS

At Gränges we specialize in engineering and producing rolled aluminium products for heat exchangers and selected niche applications. Our end customers are in the automotive industry, the stationary heat exchanger industry, and niche markets including transformers and food packaging.

Within the industry for rolled products for brazed heat exchangers, Gränges is the global leader with a market share of approximately 20 per cent. Headquartered in Stockholm, Sweden, we have operations in Europe, China and the United States.



SUSTAINABLE ALUMINIUM SOLUTIONS



GRÄNGES COMMITS TO CLIMATE NEUTRALITY BY 2040

Gränges has been a leader in innovative aluminium solutions for decades. Today, the company has a demonstrated industry-leading sustainability performance. EcoVadis, the largest independent provider of business sustainability ratings, has for example awarded Gränges a Platinum rating which ranks the company in the top 1% of companies assessed globally in the industry.



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APPLICATION AREAS – ROLLED PRODUCTS

- Automotive heat exchangers
- Automotive heat shields
- Stationary heat exchangers (HVAC)
- Transformer windings
- Semirigid containers
- Food packaging

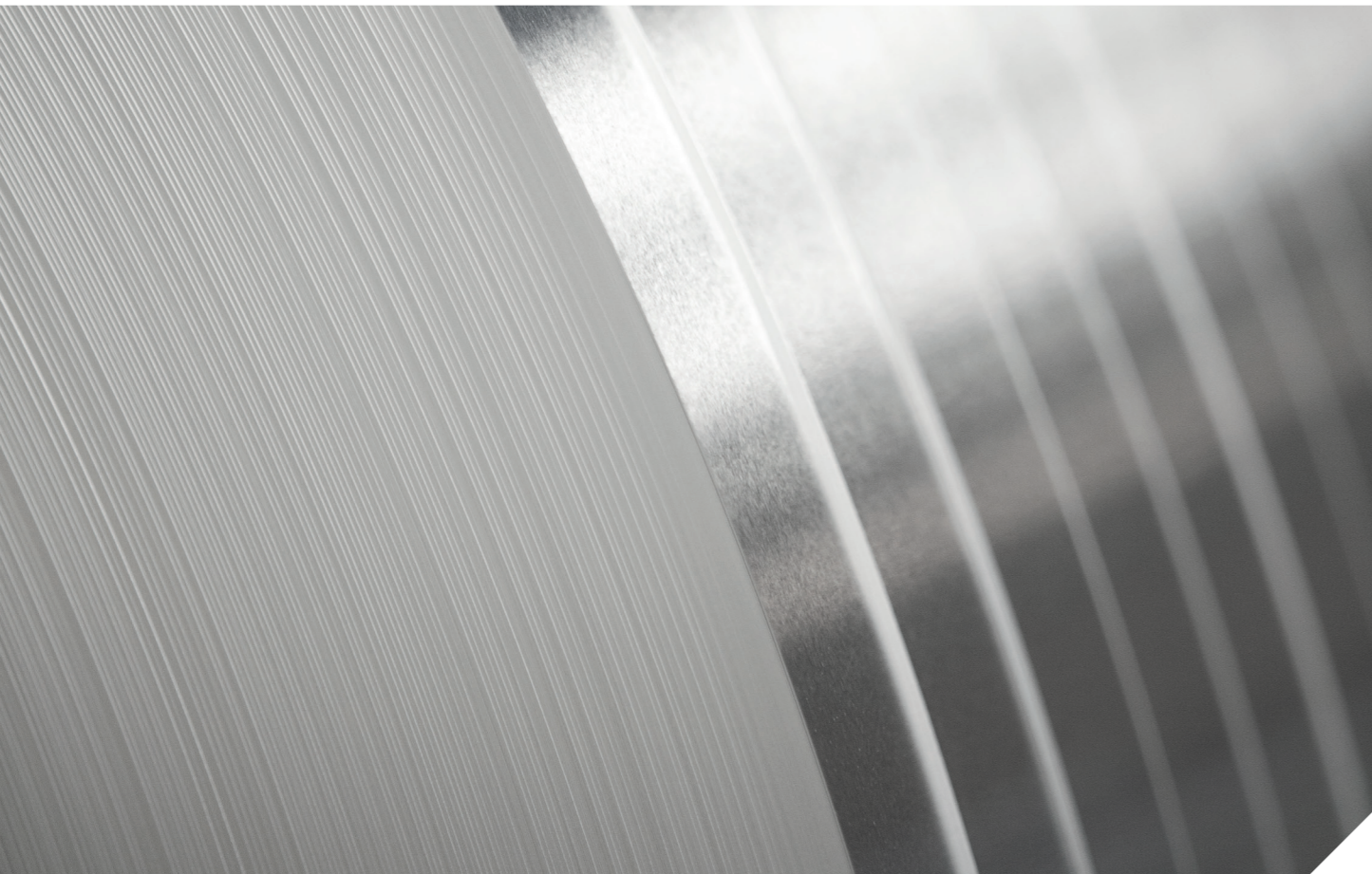
50%

EVERY SECOND CAR PRODUCED IN THE WORLD TODAY CONTAINS MATERIAL BY GRÄNGES

GENERAL COMMERCIAL OFFER

COLD-ROLLED SHEETS AND STRIPS

HOT-ROLLED SHEETS AND STRIPS



Aluminium alloys

SERIES	1XXX:	1050A	1100	1200	1350A					
SERIES	3XXX:	3003	3004	3005	3103	3104	3105A			
SERIES	5XXX:	5005A	5006	5049	5052	5083	5086	5182	5251	5754
SERIES	8XXX:	8006	8011	8079						

It is possible to produce aluminium alloys of series 4xxx after previous agreement of technical requirements.

Tempers

F, O/H111, H12, H14, H16, H18, H19, H22, H24, H26, H28, H32, H34, H36, H38

General size range

	Thickness [mm]**	Width [mm]*	Length [mm]
STRIPS – COLD-ROLLED	0.06 – 2.00	12 – 1500	L
SHEETS – COLD-ROLLED	0.20 – 5.00	750 – 1500	500 – 6000
STRIPS – HOT-ROLLED	6.00 – 9.00	UP TO 1700	L

* The width according to the thickness.

** It is possible to produce other range of dimensions after previous agreement of technical requirements.

Additional treatment

	Strips [mm]	Sheets [mm]
Tension levelling	Thickness 0.10 – 2.00	Thickness 0.10 – 2.00
Surface degreasing	Thickness 0.15 – 2.00	Thickness 0.15 – 2.00
Conversion layer	Thickness 0.10 – 0.60	Thickness 0.10 – 0.60
Greasing / Lubricating	Thickness 0.07 – 0.40	–
One side PVC foil surface application	–	Thickness 0.50 – 3.00
Paper interleaving	–	Thickness 0.20 – 5.00

ALLOYS 1XXX SERIES

FEATURES

Alloys of the 1XXX series are characterized by very good corrosion resistance and, due to lower mechanical properties, very good ductility. The high Al content provides high thermal and electrical conductivity.

Chemical composition							
	Si [%]	Fe [%]	Cu [%]	Mn [%]	Mg [%]	Zn [%]	Al [%]
EN AW-1050A	0.25	0.40	0.05	0.05	0.05	0.07	99.50
EN AW-1100	0.95 Si + Fe		0.05÷0.20	0.05	0.03	0.10	99.00
EN AW-1200	1.00 Si + Fe		0.05	0.05	0.05	0.10	99.00
EN AW-1350A	0.25	0.40	0.02	–	0.05	0.05	99.50

It is possible to produce other alloys from this series, after previous agreement of technical requirements.

Alloys usable features				
	Strength	Corrosion resistance	Weldability	Anodizing
EN AW-1050A	■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■
EN AW-1100	■ ■	■ ■ ■	■ ■ ■ ■	■ ■ ■ ■
EN AW-1200	■ ■	■ ■ ■	■ ■ ■ ■	■ ■ ■ ■
EN AW-1350A	■ ■	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■

■ ■ ■ ■ Very good ■ ■ ■ Good ■ ■ Sufficient ■ Not recommended

Tempers										
	O/H111	H12	H14	H16	H18	H19	H22	H24	H26	H28
EN AW-1050A	■	■	■	■	■	■	■	■	■	■
EN AW-1100	■					■				
EN AW-1200	■	■	■	■	■	■		■		
EN AW-1350A	■	■	■	■	■	■	■	■	■	■

It is possible to produce other tempers from the 1xxx series, after previous agreement of technical requirements.

Sheets			
	Thickness [mm]	Width [mm]	Length [mm]
COLD-ROLLED SHEETS	0.20÷0.40	750÷1500	500÷2500
	0.40÷2.00	800÷1500	1000÷6000
	2.00÷3.00	900÷1500	1000÷6000
	3.00÷5.00	1000÷1500	1400÷6000

Strips				
Thickness [mm]	Width [mm]	Id [mm]	Core*	Max. From [mm]
0.12÷0.40	12÷1500***	Ø 150 Ø 254 Ø 300 Ø 305 Ø 406 Ø 500	S, T, B T, A T, B A T, B T, B	1700
0.40÷0.60	25÷1500	Ø 150 Ø 254 Ø 406 Ø 500	S, T, B T, A T T, B	1300 / 1600**
0.61÷2.00	50÷1500***	Ø 500	B	1550

* S – steel core, T – cardboard core, A – aluminium core, B – without core. Application of inner core depends on thickness and width combination.

** Slit coil 1300, unslit coil 1600

*** The width according to the thickness

Patterned sheets					
		Tempers*	Thickness [mm]	Width [mm]	Length [mm]
Five bar sheets	EN AW-1050A	H144, H184, H244	2.00÷4.50	1000÷1500	1400÷6000
Stucco sheets	EN AW-1050A	H144, H184 H224, H244, H264	0.40÷0.80	1000÷1500	1000÷6000
		H144, H224, H244	0.81÷1.20	1000÷1500	1000÷6000

* It is possible to produce other tempers, after previous agreement of technical requirements.

Patterned strips				
		Tempers*	Thickness [mm]	Width [mm]
Stucco strips	EN AW-1050A	H144, H184 H224, H244, H264	0.40÷0.80	100÷1500
		H144, H224, H244	0.81÷1.20	100÷1500

Strips are delivered without core, ID 500 mm.

* It is possible to produce other tempers, after previous agreement of technical requirements.

ALLOYS 3XXX SERIES

FEATURES

Alloys of the 3XXX series contain manganese as the main alloying element, which (often in combination with magnesium) provides significantly higher strength properties compared to alloys of the 1XXX series. These properties are obtained with plasticity, very good corrosion resistance and susceptibility to joining by various welding and soldering methods.

Chemical composition							
	Si [%]	Fe [%]	Cu [%]	Mn [%]	Mg [%]	Zn [%]	Al [%]
EN AW-3003	0.60	0.70	0.05÷0.20	1.00÷1.50	0.05	0.10	rest
EN AW-3004	0.30	0.70	0.25	1.00÷1.50	0.80÷1.30	0.25	rest
EN AW-3005	0.60	0.70	0.30	1.00÷1.50	0.20÷0.60	0.25	rest
EN AW-3103	0.50	0.70	0.10	0.90÷1.50	0.30	0.20	rest
EN AW-3104	0.60	0.80	0.05÷0.25	0.80÷1.40	0.80÷1.30	0.25	rest
EN AW-3105A	0.60	0.70	0.30	0.30÷0.80	0.20÷0.80	0.25	rest

It is possible to produce other alloys from the 3xxx series, after previous agreement of technical requirements.

Alloys usable features				
	Strength	Corrosion resistance	Weldability	Anodizing
EN AW-3003	■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■ ■	■ ■
EN AW-3004	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■
EN AW-3005	■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■
EN AW-3103	■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■
EN AW-3104	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■
EN AW-3105A	■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■

■ ■ ■ ■ Very good
 ■ ■ ■ Good
 ■ ■ Sufficient
 ■ Not recommended

Tempers										
	O/H111	H12	H14	H16	H18	H19	H22	H24	H26	H28
EN AW-3003	■	■	■	■	■		■	■	■	■
EN AW-3004	■				■	■	■	■		
EN AW-3005	■	■	■	■	■	■	■	■	■	■
EN AW-3103	■		■	■	■			■	■	
EN AW-3104	■							■		
EN AW-3105A	■	■	■	■	■	■	■	■	■	■

It is possible to produce other tempers from the 3xxx series, after previous agreement of technical requirements.

Sheets			
	Thickness [mm]	Width [mm]	Length [mm]
COLD-ROLLED SHEETS	0.20÷0.40	750÷1500	500÷2500
	0.40÷2.00	800÷1500	1000÷6000
	2.00÷3.00	900÷1500	1000÷6000
	3.00÷5.00	1000÷1500	1400÷6000

Strips				
Thickness [mm]	Width [mm]	Id [mm]	Core*	Max. From [mm]
0.06÷0.40	12÷1500***	Ø 150 Ø 254 Ø 300 Ø 305 Ø 406 Ø 500	S, T, B A, T T, B A T, B T, B	1700
0.40÷0.60	25÷1500	Ø 150 Ø 254 Ø 406 Ø 500	S, T, B A, T T T, B	1300 / 1600**
0.61÷2.00	50÷1500***	Ø 500	B	1550

* S – steel core, T – cardboard core, A – aluminium core, B – without core. Application of inner core depends on thickness and width combination.

** Slit coil 1300, slit coil 1600

*** The width according to the thickness

ALLOYS 5XXX SERIES

FEATURES

The 5XXX series contains magnesium as the main component. Other additives such as chromium, manganese are often introduced to improve the properties of the alloys. The 5XXX series has high strength properties, they are easily welded so they are readily used as a construction material. Despite their high mechanical properties, these alloys have good ductility especially in soft states and excellent corrosion resistance also in seawater environment.

Chemical composition								
	Si [%]	Fe [%]	Cu [%]	Mn [%]	Mg [%]	Zn [%]	Cr [%]	Al [%]
EN AW-5005A	0.30	0.45	0.05	0.25	0.70 – 1.10	0.20	0.10	rest
EN AW-5006	0.40	0.80	0.10	0.40 – 0.80	0.80 – 1.30	0.25	0.10	rest
EN AW-5049	0.40	0.50	0.10	0.50 – 1.10	1.60 – 2.50	0.20	0.30	rest
EN AW-5449A	0.60	1.20	0.30	0.60 – 1.10	1.60 – 2.60	0.30	0.30	rest
EN AW-5052	0.25	0.40	0.10	0.10	2.20 – 2.80	0.10	0.15 – 0.35	rest
EN AW-5083	0.40	0.40	0.10	0.40 – 1.00	4.00 – 4.90	0.25	0.05 – 0.25	rest
EN AW-5086	0.40	0.50	0.10	0.20 – 0.70	3.50 – 4.50	0.25	0.05 – 0.25	rest
EN AW-5182	0.20	0.35	0.15	0.20 – 0.50	4.00 – 5.00	0.25	0.10	rest
EN AW-5251	0.40	0.50	0.15	0.10 – 0.50	1.70 – 2.40	0.15	0.15	rest
EN AW-5754	0.40	0.40	0.10	0.50	2.60 – 3.60	0.20	0.30	rest

It is possible to produce other alloys from the 5xxx series after previous agreement of technical requirements.

Alloys usable features				
	Strength	Corrosion resistance	Weldability	Anodizing
EN AW-5005A	■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■	■ ■ ■ ■ ■
EN AW-5006	■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■	■ ■
EN AW-5049	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■	■ ■
EN AW-5449A	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■	■ ■
EN AW-5052	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■	■ ■ ■
EN AW-5083	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■	■ ■
EN AW-5086	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■	■ ■
EN AW-5182	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■	■ ■
EN AW-5251	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■	■ ■ ■
EN AW-5754	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■	■ ■ ■

■ ■ ■ ■ Very good ■ ■ ■ Good ■ ■ Sufficient ■ Not recommended

Tempers										
	O/H111	H12	H14	H16	H18	H19	H22	H24	H26	H28
EN AW-5005A	■	■	■		■		■	■	■	
EN AW-5049	■				■		■	■	■	
EN AW-5449A	■				■		■	■	■	
EN AW-5052	■	■	■		■	■	■	■		
EN AW-5083	■	■	■				■	■		
EN AW-5086	■					■				
EN AW-5182	■					■				
EN AW-5251*	■		■		■		■	■	■	■
EN AW-5754	■	■	■	■	■		■	■	■	■

It is possible to produce 5xxx series alloys in other tempers, after previous agreement of technical requirements between a customer and a manufacturer.
* In another range of tempers after previous agreement of technical requirements.

Sheets			
	Thickness [mm]	Width [mm]	Length [mm]
COLD-ROLLED SHEETS	0.20÷0.40	750÷1500	500÷2500
	0.40÷2.00	800÷1500	1000÷6000
	2.00÷3.00	900÷1500	1000÷6000
	3.00÷5.00	1000÷1500	1400÷6000

Strips				
Thickness [mm]	Width [mm]	Id [mm]	Core*	Max. OD [mm]
0.20÷0.40	12÷1500***	Ø 150 Ø 254 Ø 300 Ø 305 Ø 406 Ø 500	S, T, B A, T T, B A T, B T, B	1700
0.40÷0.60	25÷1500	Ø 150 Ø 254 Ø 406 Ø 500	S, T, B A, T T T, B	1300 / 1600**
0.61÷2.00	50÷1500***	Ø 500	B	1550

* S – steel core, T – cardboard core, A – aluminium core, B – without core. Application of inner core depends on thickness and width combination.
** Slit coil 1300, unslit coil 1600
*** The width according to the thickness

SPECIAL OFFER FOR SERIES 5XXX

Patterned sheets					
		Tempers*	Thickness [mm]	Width [mm]	Length [mm]
Five bar sheets	EN AW-5005A EN AW-5049 EN AW-5052 EN AW-5251 EN AW-5754	H114, H144, H184, H244	2.50÷4.00	1000÷1500	1400÷6000
	EN AW-5005A EN AW-5049 EN AW-5052 EN AW-5251 EN AW-5754	H114, H144, H184 H224, H244, H264	0.40÷0.80	1000÷1500	1000÷6000
Stucco sheets	EN AW-5005A EN AW-5049 EN AW-5052 EN AW-5251 EN AW-5754	H114, H144 H224, H244	0.81÷1.00	1000÷1250	1000÷6000

Patterned strips				
		Tempers*	Thickness [mm]	Width [mm]
Stucco strips	EN AW-5005A EN AW-5049 EN AW-5052 EN AW-5251 EN AW-5754	H114, H144, H184 H224, H244, H264	0.40÷0.80	100÷1500
	EN AW-5005A EN AW-5049 EN AW-5052 EN AW-5251 EN AW-5754	H114, H144 H224, H244	0.81÷1.00	100÷1250

* After agreement the strip can be provided on a cardboard core Ø 500 mm.

Plates			
	Thickness [mm]	Width [mm]	Length [mm]
EN AW-5083 EN AW-5086 EN AW-5182 EN AW-5754	20÷300	1020	3000÷6000 (variety of sizes up to 500 mm)
		1090	
		1150	
		1280	
		1340	
		1400	
		1480	
		1560	
		1650	

Deviation shape along of the length: bending side: max 6.0 mm. The maximum weight of a single plate: 3000 kg

* Production of plates with dimensions outside this range is possible only after previous agreement of technical requirements

Product description		
EN AW-5083 EN AW-5086 EN AW-5182 EN AW-5754	FORM OF PRODUCT	Plates cut from blocks of aluminum alloy en aw-series 5xxx from semi-continuous casting.
	SURFACE	The surface resulting from the cutting process tape - untreated, without additional treatment smoothing; surface roughness r_a max 25 μ m.
	MATERIAL STRUCTURE	The structure of the casting material, after the solution annealing process the initial.
	CHEMICAL COMPOSITION	According to pn en 573-3.

ALLOYS 8XXX SERIES

FEATURES

The 8XXX series alloys are characterized by very good ductility due to their fine-grained structure. The main alloying elements are iron and silicon, which increase the strength properties relative to pure aluminum while maintaining very good ductility.

Chemical composition							
	Si [%]	Fe [%]	Cu [%]	Mn [%]	Mg [%]	Zn [%]	Al [%]
EN AW-8006	0.40	1.20 – 2.00	0.30	0.30 – 1.00	0.10	0.10	rest
EN AW-8011A	0.40 – 0.80	0.50 – 1.00	0.10	0.10	0.10	0.10	rest
EN AW-8079	0.05 – 0.30	0.70 – 1.30	0.05	0.05	0.05	0.10	rest

Alloys usable features				
	Strength	Corrosion resistance	Weldability	Anodizing
EN AW-8006	■ ■	■ ■ ■	■ ■ ■	■ ■
EN AW-8011A	■ ■	■ ■ ■	■ ■ ■	■ ■
EN AW-8079	■ ■	■ ■ ■	■ ■ ■	■ ■

■ ■ ■ ■ Very good ■ ■ ■ Good ■ ■ Sufficient ■ Not recommended

Tempers										
	O/H111	H12	H14	H16	H18	H19	H22	H24	H26	H28
EN AW-8006	■						■	■		
EN AW-8011A	■		■					■		
EN AW-8079	■		■		■					

It is possible to produce 8xxx series alloys with other tempers, after previous agreement of technical requirements.

Sheets			
	Thickness [mm]	Width [mm]	Length [mm]
COLD-ROLLED SHEETS	0.20÷0.50	750÷1500	500÷2500

It is possible alloys modification after previous agreement of technical requirements.

Strips				
Thickness [mm]	Width [mm]	Id [mm]	Core*	Max. From [mm]
0.06÷0.40	12÷1500***	Ø 150 Ø 254 Ø 300 Ø 305 Ø 406 Ø 500	S, T, B A, T T, B A T, B T, B	1700
0.40÷0.60	25÷1500	Ø 150 Ø 254 Ø 406 Ø 500	S, T, B A, T T T, B	1300 / 1600**
0.61÷2.00	50÷1500***	Ø 500	B	1550

* S – steel core, T – cardboard core, A – aluminium core, B – without core. Application of inner core depends on thickness and width combination.
 ** Slit coil 1300, unslit coil 1600
 *** The width according to the thickness

TEMPERS DESCRIPTION ACCORDING TO EUROPEAN STANDARDS

	Symbol according to standards Current	Term		
Raw	F	(raw) - applies to shaped articles in processes, in which there is no special control of thermal and mechanical conditions		
	0	annealed - for products getting fixed properties after hot-rolling process		
	01	heat treated in the recommended time and temperature for products oversaturated and slowly cooled to room temperature		
	02	treated thermo-plastically to improve formability		
Strengthened cold rolling	03	homogenized		
	H11	slightly strengthened		
	H12	strengthened cold rolling	1/4	hard
	H14		1/2	
	H16		3/4	
	H18		4/4	
	H19		-	
	H22	strengthened and partially annealed	1/4	hard
	H24		1/2	
	H26		3/4	
	H28		4/4	
	H32	strengthened and stabilized	1/4	hard
	H34		1/2	
	H36		3/4	
	H38		4/4	
	Sated	H42	strengthened and painted or lacquered	1/4
H44		1/2		
H46		3/4		
H48		4/4		

SYMBOLS OF ALUMINIUM AND ALUMINIUM ALLOYS

EN	EN	ASTM	GOST	DIN
Series al (1000)				
EN AW-1100	Al 99.0Cu	1100	A/A0	Al 99
EN AW-1350A	EAl 99.5(A)	-	-	-
EN AW-1050A	Al 99.5	1050	A5	Al 99.5
EN AW-1200	Al 99.0	-	A/A0	Al 99
Series al-mn (3000)				
EN AW-3003	Al Mn1Cu	3003	AMc	Al MnCu
EN AW-3103	Al Mn1	3004	-	Al Mn1
EN AW-3004	Al Mn1Mg1	-	-	Al Mn1Mg0.5
EN AW-3005	Al Mn1Mg0.5	3005	-	-
EN AW-3105	Al Mn0.5Mg0.5	3105	-	Al Mn0.5Mg0.5
Series al-mg (5000)				
EN AW-5005A	Al Mg1	5005	AMg1	Al Mg1
EN AW-5251	Al Mg2	-	AMg2	Al Mg2Mn0.3
EN AW-5052	Al Mg2.5	5052	-	Al Mg2.5
EN AW-5754	AlMg3	5754	AMg3	Al Mg3
EN AW-5049	Al Mg2Mn0.8	-	-	Al Mg2Mn0.8
EN AW-5083	Al Mg4.5Mn0.7	5083	-	Al Mg4.5Mn
EN AW-5086	Al Mg4	5086	AMg4	Al Mg4Mn
Series al-fe (8000)				
EN AW-8006	Al Fe1.5Mn	-	-	Al Fe1.5Mn
EN AW-8011A	Al FeSi(A)	-	-	Al FeSi(A)
EN AW-8079	Al Fe1Si	-	-	Al Fe1Si

A LIST OF EUROPEAN STANDARDS IN ALUMINIUM AND ALUMINIUM ALLOYS

Chemical composition	
EN 515	Aluminium and aluminium alloys. Wrought products. Temper designations.
EN 573-1	Aluminium and aluminium alloys. Chemical composition and the kind of wrought products. Part 1: Numerical designation system.
EN 573-2	Aluminium and aluminium alloys. Chemical composition and the kind of wrought products. Part 2: Chemical symbol based designation system.
EN 573-3	Aluminium and aluminium alloys. Chemical composition and the kind of wrought products. Part 3: Chemical composition.
EN 573-4	Aluminium and aluminium alloys. Chemical composition and the kind of wrought products. Part 4: Forms of products.
EN 602	Aluminum and aluminum alloys. Wrought products. The chemical composition of semi-products used for production of articles intended for contact with food.

Sheets, strips, plates	
EN 485-1	Aluminium and aluminium alloys. Sheet, strip and plate. Part 1: Technical conditions for inspection and delivery.
EN 485-2	Aluminium and aluminium alloys. Sheet, strip and plate. Part 2: Mechanical properties.
EN 485-3	Aluminium and aluminium alloys. Sheet, strip and plate. Part 3: Tolerances on dimensions and shape for hot-rolled product.
EN 485-4	Aluminium and aluminium alloys. Sheet, strip and plate. Part 4: Tolerances on dimensions and shape for cold-rolled product.
EN 541	Aluminum and aluminum alloys. Rolled products for cans, closures and lids. Technical Specifications.
EN 546-1	Aluminium and aluminium alloys. Foil. Part 1: Technical conditions for inspection and delivery.
EN 546-2	Aluminium and aluminium alloys. Foil. Part 2: Mechanical properties.
EN 546-3	Aluminium and aluminium alloys. Foil. Part 3: Tolerances on dimensions.
EN 546-4	Aluminium and aluminium alloys. Foil. Part 4: Special property requirements.
EN 683-1	Aluminium and aluminium alloys. Finstock. Part 1: Technical conditions for inspection and delivery.
EN 683-2	Aluminium and aluminium alloys. Finstock. Part 2: Mechanical properties.
EN 683-3	Aluminium and aluminium alloys. Finstock. Part 3: Tolerances on dimensions and form.
EN 1386	Aluminium and aluminium alloys. Tread plate. Specifications.
EN 1396	Aluminium and aluminium alloys. Coil coated sheet and strip for general applications. Specifications.

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