

Condition) ¹	Description
0	Soft-annealed-The condition 0 can be assigned to products, for which the specifications required for the soft-annealed condition are obtained through hot-forming procedures.
H12	Cold-worked – 1/4 hard
H14/H13	Cold-worked – 1/2 hard
H16	Cold-worked – 3/4 hard
H18	Cold-worked – 4/4 hard (fully hardened)
H19	Cold-worked – extra hard
H111	Annealed and slightly cold-worked (less than H11) through subsequent operations; e.g. stretch-forming or trueing
H22	Cold-worked and re-annealed – 1/4 hard
H24	Cold-worked and re-annealed – 1/2 hard
H32	Cold-worked and stabilised – 1/4 hard
H34	Cold-worked and stabilised – 1/2 hard
H38	Cold-worked and stabilised – 4/4 hard (fully hardened)
T39	Solution-annealed and cold-formed to a certain degree in order to obtain the specified mechanical properties. Cold-forming can be performed before or after natural ageing.
T4	Solution-annealed and naturally aged
T6	Solution-annealed and artificially aged
T7	Solution-annealed and overcured (artificially aged)
T8	Solution-annealed, cold-formed and artificially aged
T89	Solution-annealed and cold-formed in order to obtain the specified mechanical properties; and artificially aged

¹ Other intermediate states and/or non-standard conditions are available upon customers' request.



... for joining technology



... for bending and shaping technology

Aluminium wire products today are indispensable in most industries. Alloys that have been used successfully for decades as well as developed or modified alloys have complemented the basic material in a way that offers virtually unlimited application options.



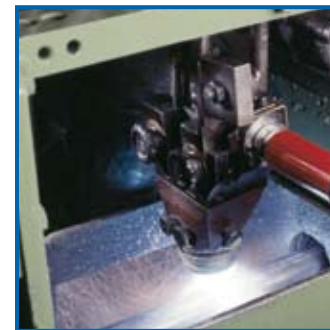
Unlimited possibilities



... as aluminium filler wire



... for vacuum metallisation technology



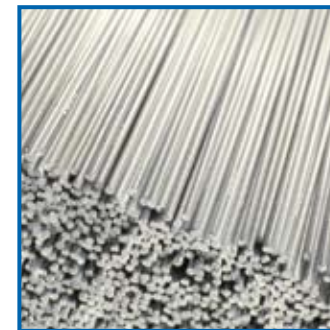
... for thermal injection



... for packaging technology



... for machining purposes



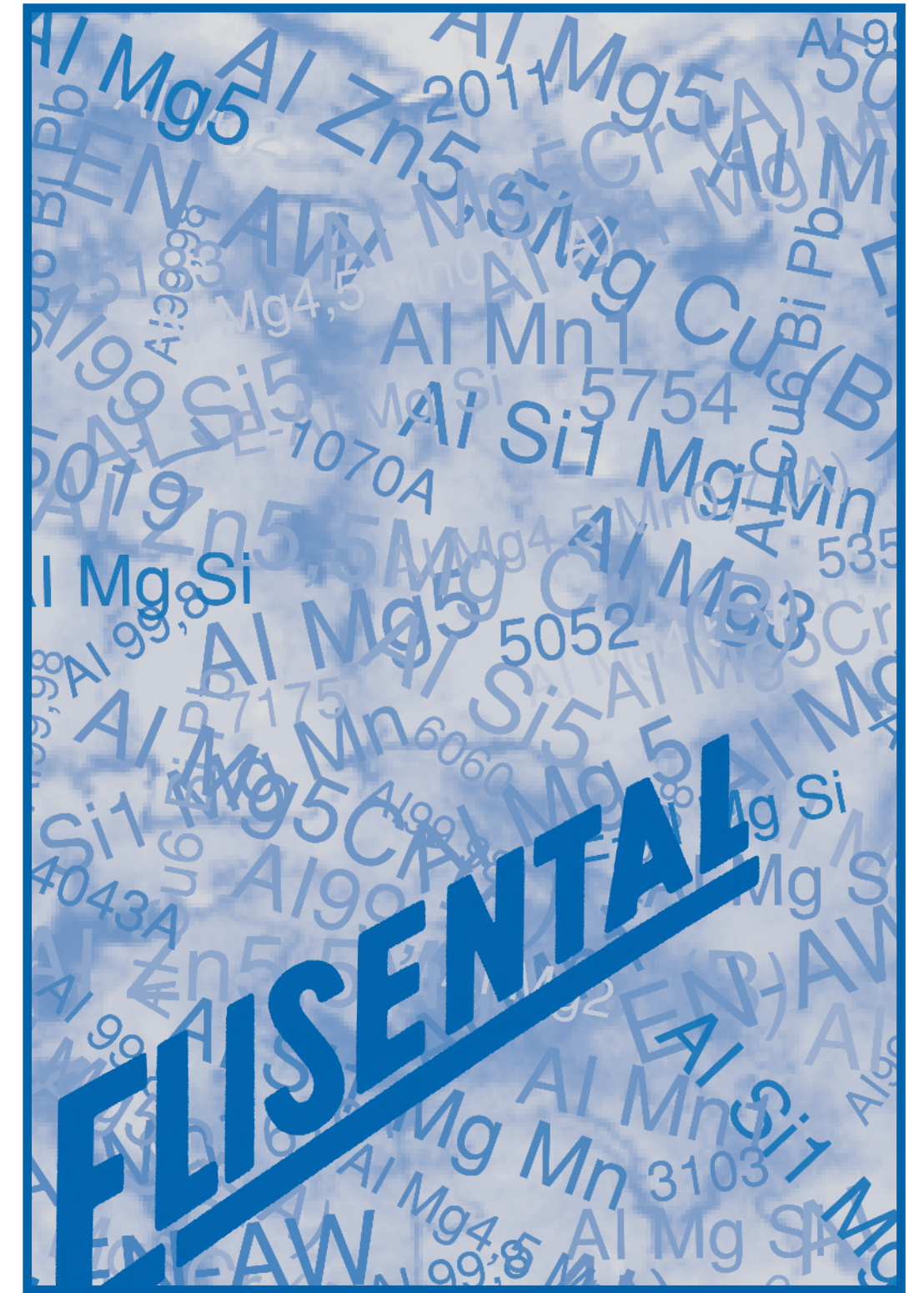
... in bars

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2009/09

Materials



Aluminium wire

Material designation		Chemical composition ⁸ (DIN EN 573-3, as of November 2007) ⁷										Wires (DIN EN 1301-2) ⁷				Bars (DIN EN 754-2) ⁷					
												Material delivery condition) ⁵		Rm MPa min. max.	Rpo,2 MPa typical	Ultimate strain A _{100mm} in % typical	Material delivery condition) ⁵		Available diameters d in mm		Rm MPa min. max.
numerical	chem. symbole	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Comments) ⁸					≤						
1000er Series																					
EN AW - 1050A	EN AW - Al99.5	0.25	0.40	0.05	0.05	0.05		0.07	0.05		0	H12 H14 H16 H18	95 130 100 120 140	95 130 95 115 135	35 7 5 3	H14 H16 H18	14 14 12	100 120 145	135 160 125	70 105 125	6 4 3
EN AW - 1070A	EN AW - Al99.7	0.20	0.25	0.03	0.03	0.03		0.07	0.03		0	H14 H18	85 95	35 90	35 5	H14 H18	14 12	95 125			
EN AW - 1080A	EN AW - Al99.8	0.15	0.15	0.03	0.02	0.02		0.06	0.02	0.03 Ga	0	H14 H18	80 90	35 120	35 3	H14 H18	14 12				
EN AW - 1090 EN AW - 1098	EN AW - Al99.90 EN AW - Al99.98	0.07 0.010	0.07 0.006	0.02 0.003	0.01	0.01		0.03 0.015	0.01 0.003	0.03 Ga; 0.05 V	s.EN AW - 1098	H14 H16 H18	70 85 100 115	25 80 2	25 2	H14 H16 H18	7 6 5	85 100 115			
EN AW - 1199	EN AW - Al99.99	0.006	0.006	0.006	0.002	0.006		0.006	0.002	0.005 Ga; 0.005 V	0	H14 H18	60 70 110	10 80 105	40 10	H14 H18	7 5	85 110	110		
	Al99.999	0.0003	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001		H14 H18	35 40									
EN AW - 1350A EN AW - 1370	EN AW - Al99.5 EN AW - Al99.7	0.25 0.10	0.40 0.25	0.02 0.02		0.05 0.02		0.05 0.04		0.03 Cr+Mn+Ti+V 0.03 Ga; 0.02 B; 0.02 V+Ti	s.EN AW - 1050A	H14 H18	85 95 125	35 5	35	H14 H18	14 12	95 125			
	Al99.5Ti0.6	0.25	0.40	0.05	0.05	0.05		0.07	0.55 - 0.65	nicht genormt	H14	95	90	5							
2000er Series																					
EN AW - 2007	EN AW - AlCu4PbMgMn	0.8	0.8	3.3-4.6	0.50-1.0	0.40-1.8	0.10	0.8	0.20	0.20 Bi; 0.8-1.5 Pb; 0.20 Sn	H12 T39	150 350	60 340	35 12	H111 T351	8 8	370 370	330 330	2 5		
EN AW - 2011	EN AW - AlCu6BiPb	0.40	0.7	5.0-6.0				0.30		0.20-0.6 Bi; 0.20-0.6 Pb ⁹	H13 H14 H18 T3 T39 (jumbo coil) T39 (production coil) T8 (jumbo coil)	155 170 240 310 340 370 370	225 240	7 6 4	H111 T3 T39 T351	12 11 11	320 370 320	270 290 270	10 3 8		
EN AW - 2014	EN AW - AlCu4SiMg	0.50-1.2	0.7	3.9-5.0	0.40-1.2	0.20-0.8	0.10	0.25	0.15		H12 H13 T39 T4	190 210 440 380	260 280 420 255	180 190 5 18	H111 T351	8 8	450 380	380 290	2 6		
EN AW - 2017A	EN AW - AlCu4MgSi	0.20-0.8	0.7	3.5-4.5	0.40-1.0	0.40-1.0	0.10	0.25		0.25 Zr+Ti	H12 H13 T4	190 210 380	280 300 255	180 190 5	H111 T351	14 14	420 400	290 250	3 6		
EN AW - 2024	EN AW - AlCu4Mg1	0.50	0.50	3.8-4.9	0.30-0.9	1.2-1.8	0.10	0.25	0.15		0	H12 H13 T4	210 230 420	245 300 315	20 5 18	H111 T351	14 14	450 425	400 310	2 6	
EN AW - 2117	EN AW - AlCu2.5Mg	0.8	0.7	2.2-3.0	0.20	0.20-0.50	0.10	0.25			H12 H13 T4	150 170 260	220 240 160	100 110 20	H111 T351	7	290	340	8		
3000er Series																					
EN AW - 3103	EN AW - AlMn1	0.50	0.7	0.10	0.9-1.5	0.30	0.10	0.20		0.10 Zr+Ti	0	H14 H16 H18	130 180 170	60 120 140	35 5	H111 H12 H14 H16 H18	13 13 12 10 8	95 100 165 195 180	130 140 110 130 145	35 8 6 4 3	
5000er Series																					
EN AW - 5005A	EN AW - AlMg1	0.30	0.45	0.05	0.15	0.7-1.1	0.10	0.20			0	H14 H16 H18 H32 H34 H36	150 180 200 125 145 170	50 200 205 170 190 210	25 5 3 10 8 6	H14 H18	14 10	140 185	200 155	110 155	6 4
EN AW - 5019	EN AW - AlMg5	0.40	0.50	0.10	0.10-0.6	4.5-5.6	0.20	0.20	0.20	0.10-0.6 Mn+Cr	0	H12 H14 H16 H18 H19 H26 H32 H34 H38	295 325 350 390 420 380 280 310 360	150 255 330 360 400 300 340 370 320	17 6 3 2 1 4 11 8 4	H111 H12 H14 H18 H19 H38	14 14 14 10 8 10	280 270 300 350 390 360	340 350 380	16 8 4 2 1 3	
EN AW - 5050	EN AW - AlMg1.5	0.40	0.7	0.20	0.10	1.1-1.8	0.10	0.25			0	H12 H14 H18	160 185 235	75 145 190	16 7 4						
EN AW - 5051A	EN AW - AlMg2	0.30	0.45	0.05	0.25	1.4-2.1	0.30	0.20	0.10		0	H12 H14 H18 H19	170 195 245 260	220 245 220 240	15 6 3 2	H14	7	200	150	4	
EN AW - 5052	EN AW - AlMg2.5	0.25	0.40	0.10	0.10	2.2-2.8	0.15-0.35	0.10			0	H12 H14 H16 H18 H32 H34 H38	215 225 240 275 190 215 260	265 275 230 275 240 265 320	15 8 4 3 11 8 4	H111 H12 H14 H18	14 14 10	170 210 270	230 160 220	65 7 5 2	
AA 5056	AlMg5	0.30	0.40	0.10	0.05 - 0.20	4.5-5.6	0.05-0.20	0.10			0	H12 H14 H16 H18 H32 H34 H38	280 310 340 380 270 300 350	320 340 370 350 330 360 310	20 10 5 3 12 9 5						
EN AW - 5087 EN AW - 5154A	EN AW - AlMg4.5MnZr EN AW - AlMg3.5	0.25 0.50	0.40 0.50	0.05 0.10	0.7-1.1 0.50	4.5-5.2 3.1-3.9	0.05-0.25 0.25	0.25 0.20	0.15 0.20	0.10-0.20 Zr 0.10-0.50 Mn+Cr	H19	440	430	1	H14 H18	7 5	260 310	320 240	200 240	5 3	
EN AW - 5183	EN AW - AlMg4.5Mn0.7	0.40	0.40	0.10	0.50-1.0	4.3-5.2	0.05-0.25	0.25	0.15		H14	335	395	325	3	H111 H12 H14 H18	6 8 7 5	270 280 300 360	110 200 235 280	16 6 4 1	
EN AW - 5186	EN AW - AlMg4Mn0.4	0.40	0.45	0.25	0.20-0.50	3.8-4.8	0.15	0.40	0.15	0.05 Zr	0	H111 H32 H34	310 270 300	115 130 205	22 14 12						
EN AW - 5249	EN AW - AlMg2Mn0.8 Zr	0.25	0.40	0.05	0.50-1.1	1.6-2.5	0.30	0.20	0.15	0.10-0.20 Zr	H12 H14 H16 H18	230 245 260 285	285 310 245 275	8 4 3 1							
EN AW - 5556A	EN AW - AlMg5Mn	0.25	0.40	0.10	0.6-1.0	5.0-5.5	0.05-0.20	0.20	0.05-0.20		0	H12 H14 H18 H19	340 390 430 460	400 450 400 440	17 6 3 2						
EN AW - 5754	EN AW - AlMg3	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	H12 H14 H16 H18 H19 H32 H34 H38	230 255 280 305 320 220 245 290	280 305 330 300 310 270 295 260	16 6 3 2 2 11 8 4	H14 H24 34 H16 H18 H28 H38 H19	14 12 10 8	240 260 280 320	180 200 240 300	4 3 3 2	
6000er Series																					
EN AW - 6012 EN AW - 6056	EN AW - AlMgSiPb EN AW - AlSi1MgCuMn	0.6-1.4 0.7-1.3	0.50 0.50	0.10 0.50-1.1	0.40-1.0 0.40-1.0	0.6-1.2 0.6-1.2	0.30 0.25	0.30 0.10-0.7	0.20	0.7 Bi; 0.40-2.0 Pb 0.20 max. Zr+Ti	T39 0	310 185	370 85	300 20	4	T39 H13 T39 T651	8 14 14 14	310 175 360 380	260 180 320 350	6 4 2 6	
EN AW - 6060	EN AW - AlMgSi	0.30-0.6	0.10-0.30	0.10	0.10	0.35-0.6	0.05	0.15	0.10		H11/H111 H12/H13 ² H14 H16 T39 (production coil) T39 (jumbo coil) T4 T6 (production coil)	150 160 180 200 400 360 300 380	190 200 220 240 350 320 160 340	4 4 3 3 1 1 13 10							
EN AW - 6061	EN AW - AlMg1SiCu	0.40-0.8	0.70	0.15-0.40	0.15	0.8-1.2	0.04-0.35	0.25	0.15		0	H14 H14 T39 T4 T89	145 190 220 270 140 260	50 180 200 250 90 210	25 4 3 2 13 6	T39 T39 T651	10 6 14	220 270 215	140 200 160	6 4 10	
EN AW - 6061	EN AW - AlMg1SiCu	0.40-0.8	0.70	0.15-0.40	0.15	0.8-1.2	0.04-0.35	0.25	0.15		H13 H14 T39 T4	150 170 310 205	210 230 295 135	120 2 6 13	T39 T651	14 14	260 310	210 260	6 6		
EN AW - 6082	EN AW - AlSi1MgMn	0.7-1.3	0.50	0.10	0.40-1.0	0.6-1.2	0.25	0.20	0.10		0	H13 ² H14 H18 T39 (jumbo coil) T39 (production coil) T4 T6 (jumbo coil)	165 170 220 280 310 205 310	225 230 200 285 285 135 270	4 4 2 13 10	T39 T451 T651	14 14 14	310 205 310	270 110 255	5 12 8	
EN AW - 6101	EN AW - AlMgSi	0.30-0.7	0.50	0.10	0.03	0.35-0.8	0.03	0.10		0.06 B	T39 T39 T89	220 270 260	200 250 210	3 6							
¹⁾	Almelec/Aldrey	0.35-0.62	0.32	0.035	0.01	0.40-0.60	0.007	0.05	0.02	max. 0.007 V	¹⁾										
7000er Series																					
EN AW - 7050 AA 7068 EN AW - 7075	EN AW - AlZn6CuMgZr AlZn7.5Mg2.5Cu2 EN AW - AlZn5.5MgCu	0.12 0.12 0.40	0.15 0.15 0.50	2.0-2.6 1.6-2.4 1.2-2.0	0.10 0.10 0.30	1.9-2.6 2.2-3.0 2.1-2.9	0.04 0.05 0.18-0.28	5.7-6.7 7.3-8.3 5.1-6.1	0.06 0.10 0.20	0.08-0.15 Zr 0.05-0.15 Zr	H14 H12 0	215 200 275	295 270 110	240 190 13	3	T7651 H111 T651 T7351	10 14 10 10	580 275 540 455	500 165	4 10 4 6	
8000er Series																					
AA 8076A) ⁴	AlFe0.6Mg0.2	0.10	0.40-0.8	0.04	0.02	0.06-0.25	0.02	0.05	0.02		H14	120	90	5							

¹⁾ Similar to EN AW-6101, but with limited analysis. Mechanical and electrical properties as agreed with the customer.

²⁾ No proof of T6 conditions is required for thermo mechanically treated wires identified with the TB or H Index.

³⁾ Measuring length 5.65 \ SO (applicable for wire diameters of 4.00 mm and above.)

⁴⁾ Alloys for sophisticated technical applications. Mechanical and electrical properties as agreed with the customer.

⁵⁾ Other intermediate states and/or non-standard conditions are available upon request.

⁶⁾ Also available modified according to the scrap car guideline with Pb <0.40%.

⁷⁾ Unless specified otherwise.

⁸⁾ Maximum values unless specified otherwise.