OUR WELDING MATERIALS
HAVE ATTESTATION AT:

impol

185 YEARS OF QUALITY

Our Welding and WELDING Filler Materials are produced according to the procedures of drawing and scalping, by means of which there are assured our welded materials – clean and bright wire surface on one hand, as well as faultless quality of welded joints, on the other.

Quality of our welding and filler materials is daily controlled in our own laboratories.

We are Manufacturing:

- Wire for Welding and Hard Soldering (Brazing)
- Rods for Welding and Hard Soldering (Brazing)
- Wire for Metallizing
- According to the Agreement we are producing also wires of dimensions not listed in this Prospectus

Welding wires and rods are packed in plastic foil – polyvinyl bags – with siccative medium added
Quality and the assortment of welding materials are marked within the packed unit by means of characteristic coloured label.

ALUMAT

ALUMAT

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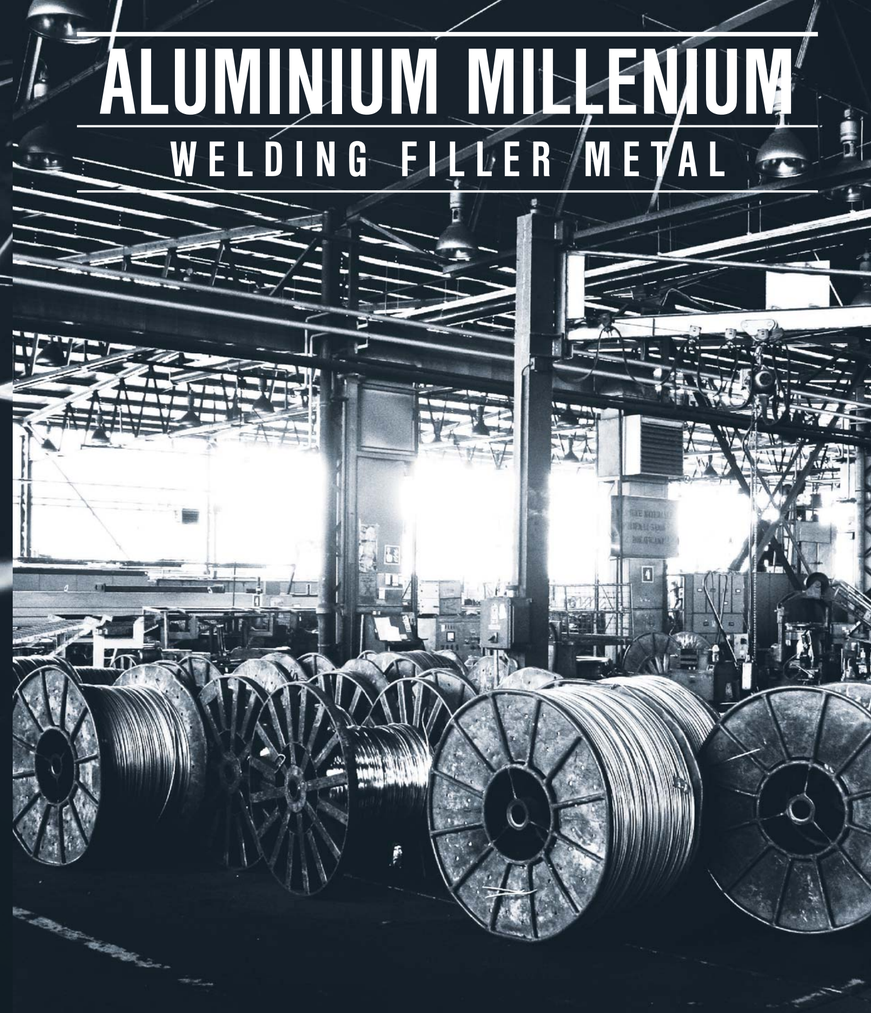
ALUMINIUM MILLENIUM

WELDING FILLER METAL



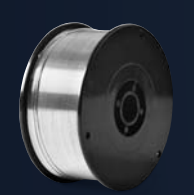
ALUMAT

PRODUCT CATALOGUE

1

ALUMINIUM MILLENIUM / WELDING FILLER METAL

SPOOL D 100



DIMENSIONS OF SPOOL:
outside diameter 100 mm
inside diameter 16 mm
width 42 mm

weight of coiling 0,5 kg
dimension of coiling
Ø 0,8 – 1,0 –1,2 –1,6 mm

SPOOL D 200

DIMENSIONS OF SPOOL:
outside diameter 200 mm
inside diameter 52 mm
width 55 mm

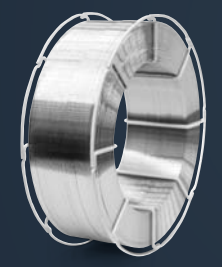
weight of coiling: 2,0 kg
dimension of coiling
Ø 0,8 – 1,0 –1,2 – 1,6 mm

SPOOL D 300

DIMENSIONS OF SPOOL:
outside diameter 300 mm
inside diameter 52 mm
width 100 mm

weight of coiling 6,0 kg
dimension of coiling
Ø 0,8 – 1,0 –1,2 – 1,6 – 2,4 mm

SPOOL K 300



DIMENSIONS OF SPOOL:
outside diameter 300 mm
inside diameter 190 mm
width 98 mm

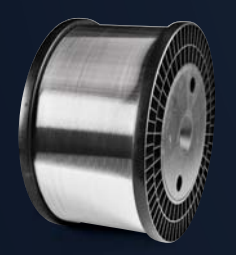
weight of coiling 7,0 kg
dimension of coiling
Ø 0,8 – 1,0 –1,2 –1,6 – 2,4 mm

SPOOL BS 300

DIMENSIONS OF SPOOL:
outside diameter 300 mm
inside diameter 190 mm
width 98 mm

weight of coiling 7,0 kg
dimension of coiling
Ø 0,8 – 1,0 –1,2 –1,6 – 2,4 mm

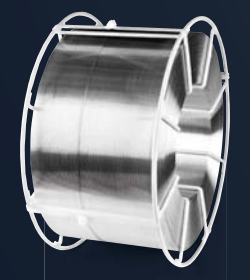
SPOOL K 350



DIMENSIONS OF SPOOL:
outside diameter 350 mm
inside diameter 52 mm
width 158 mm

weight of coiling 20 kg
dimension of coiling
Ø 1,2 –1,6 – 2,4 mm

SPOOL K 400



DIMENSIONS OF SPOOL:
outside diameter 400 mm
inside diameter 190 mm
width 200 mm

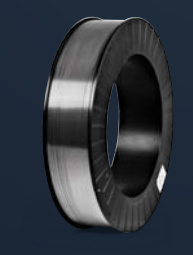
weight of coiling 40 kg
dimension of coiling
Ø 1,2 –1,6 – 2,4 mm

SPOOL SH 390 K

DIMENSIONS OF SPOOL:
outside diameter 390 mm
inside diameter 310 mm
width 79 mm

weight of coiling 7 kg
dimension of coiling
Ø1,2 –1,6 –2,0 - 2,4 – 3,2 mm

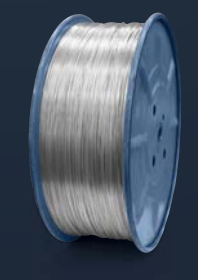
SPOOL SH 460



DIMENSIONS OF SPOOL:
outside diameter 460 mm
inside diameter 319 mm
width 91 mm

weight of coiling 18 kg
dimension of coiling
Ø1,2 –1,6 –2,0 - 2,4 – 3,2 mm

SPOOL TYPE 760



DIMENSIONS OF SPOOL:
outside diameter 760 mm
inside diameter 300 mm
width 270 mm

weight of coiling 120 -140 kg
dimension of coiling
Ø1,6 –2,5 – 3,17 – 4,0 mm

SQUARED DRUMS

DIMENSIONS OF SPOOL:
height 900 mm
width 500 mm

weight of coiling 140 kg
dimension of coiling
Ø1,0, 1,2 –1,6 mm

ROUND DRUMS

DIMENSIONS OF DRUM:
height 800 mm
width 500 mm

weight of coiling 80 kg
dimension of coiling
Ø1,0, 1,2 –1,6 mm

WELDING RODS

DIMENSIONS OF SPOOL:
weight of packaging
2,5 –5,0 - 5,0 – 10 kg

dimension of roads
Ø 0 1,6 –2,0 – 2,4 – 3,2 – 4,0
– 5,0 x 1000 mm

2

ALUMINIUM AND ALUMINIUM ALLOYS FOR WELDING ACCORDING TO MIG; TIG; METALLIZING AND FOR SOLDERING

STANDARD			CHEMICAL COMPOSITION LIMITS EN 18273 [%]																PROPERTIES OF WELDING MATERIAL			APPLICABILITY		
Standard EN 18273		Number of material	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Zr	Be	Each	Total					Melting range [°C]	Tensile strength [N/mm²]	Elongation L=5d [%]	Purpose of usage		Procedure of welding	
																						S	L	M	P	TIG	MIG
			max. 0,20	max. 0,25	max. 0,04	max. 0,03	max. 0,03	max. 0,10	max. 0,04	max. 0,03		0,0003	0,03	-					647 - 658	68 - 88	25 - 35					
			max. 0,15	max. 0,40	max. 0,03	max. 0,03	max. 0,02	max. 0,02	max. 0,06	0,10 do 0,20		0,0003	0,02	-					647 - 658	68 - 88	25 - 35					
			max. 0,15	max. 0,40	max. 0,05	max. 0,05	max. 0,05	max. 0,07	max. 0,20	Ti+Zr 0,10		0,0003	0,03	-					647 - 658	70 - 90	25 - 35					
			max. 0,3	max. 0,7	max. 0,10	0,05 do 1,5	0,5 do 1,5	max. 0,3	max. 0,20			0,0003	0,05	0,15					648 - 658	95 - 130	16 - 24					
			max. 0,40	max. 0,40	max. 0,10	max. 0,50	2,6 do 3,6	max. 0,30	max. 0,20	max. 0,15	Mn+Cr 0,1 do 0,6	0,0003	0,05	0,15					980 - 642	175 - 205	15 - 20					
			max. 0,25	max. 0,40	max. 0,10	0,05 do 1,0	4,5 do 5,5	0,05 do 0,20	max. 0,10	0,06 do 0,20		0,0003	0,05	0,15					962 - 633	240 - 300	15 - 25					
			max. 0,40	max. 0,40	max. 0,10	0,50 do 1,0	2,4 do 3,0	0,05 do 0,25	max. 0,25	0,05 do 0,20		0,0003	0,05	0,15					602 - 648	215 - 260	15 - 25					
			max. 0,25	max. 0,40	max. 0,10	0,50 do 1,0	4,7 do 5,5	0,05 do 0,20	max. 0,25	0,05 do 0,20		0,0003	0,05	0,15					574 - 638	275 - 330	15 - 25					
			max. 0,40	max. 0,40	max. 0,10	0,50 do 1,0	4,3 do 5,2	0,05 do 0,25	max. 0,15			0,0003	0,05	0,15					568 - 638	275 - 330	15 - 20					
			max. 0,25	max. 0,40	max. 0,05	0,7 do 1,1	4,5 do 5,2	0,05 do 0,25	max. 0,25		0,10 do 0,20	0,0003	0,05	0,15					568 - 638	275 - 335	15 - 20					
			4,5 do 6,5	max. 0,60	max. 0,30	max. 0,15	max. 0,20	max. 0,20	max. 0,15	max. 0,15		0,0003	0,05	0,15					573 - 625	120 - 190	10 - 18					
			11,0 do 13,0	max. 0,60	max. 0,30	max. 0,15	max. 0,10	max. 0,20	max. 0,15	max. 0,15		0,0003	0,05	0,15					575 - 590	160 - 190	10 - 15					
1070	Al 99,7	3,0259																								
1080	Al 99,8	3,0285																								
1450	Al 99,5Ti	3,0805																								
3103	AlMn1	3,0516																								
5754	AlMg3	3,3536																								
5356	AlMg5	3,3556																								
5554	AlMg2,7Mn	3,3536																								
5556	AlMg5Mn1Ti	3,3245																								
5183	AlMg4,5Mn	3,3548																								
5087	AlMg4,5MnZr	3,3546																								
4043	AlSi5	3,2245																								
4047	AlSi12	3,3585																								

P - Gas welding
TIG - Shielded Arc welding – Inert gas by means of infusible tungsten electrode
MIG - Shielded Arc welding – Inert gas – by means of sulible electrode
S - For welding
L - For hard soldering
M - For metallizing

Purpose of usage of welded material
Recommended usage
Usage is still possible

3

SELECTION OF ALUMINIUM WELDING FILLER MATERIALS AT WELDING OF ALUMINIUM AND ALUMINIUM ALLOYS FOR WARIOUS COMBINATIONS OF BASIC MATERIALS

Base alloys A / Base alloys B	EN AW-Al 99,9 EN AW-Al 99,8 EN AW-Al 99,7	EN AW-Al 99,5 EN AW-Al 99,0	EN AW-AlMn1 EN AW-AlMn1 Cu	EN AW-AlMg1(C) EN AW-AlMg1,5 EN AW-AlMg (B) EN AW-AlMg2,5	EN AW AlMg3 EN AW-AlMg3	EN AW AlMg3Mn EN AW-AlMg2 EN AW-AlMg2Mn0,8	EN AW-AlMg4 EN AW-AlMg4,5Mn0,7	EN AW-AlMgSi EN AW-AlSi(MgA) EN AW-AlSiMgMn EN AW-AlSiMgSiCu	AlZn4,5Mg1	Fusion Alloys AlSiMg Fusion Alloys with Si <7%	Fusion Alloys AlSiMg Fusion Alloys with Si>7	Fusion Alloys AlMg
EN AW-Al 99,9 EN AW-Al 99,8 EN AW-Al 99,7	S-Al 99,8											
EN AW-Al 99,5 EN AW-Al 99,0	S-Al 99,5 S-Al 99,5Ti	S-Al 99,5 S-Al 99,5 Ti										
EN AW-AlMn1 EN AW-AlMn1 Cu	S-Al 99,5 Ti	S-Al 99,5 Ti										
EN AW -AlMg1(C) EN AW-AlMg1,5 EN AW AlMg (B) EN AW-AlMg2,5	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5								
EN AW AlMg3 EN AW-AlMg3	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5 S-AlMg3 S-AlMg2,7Mn							
EN AW AlMg3Mn EN AW-AlMg2 EN AW-AlMg2Mn0,8	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5 S-AlMg3 S-AlMg2,7Mn	S-AlMg5						
EN AW-AlMg4 EN AW- AlMg4,5Mn0,7	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5 S-AlMg3 S-AlMg2,7Mn	S-AlMg5	S-AlMg5 S-AlMg4,5Mn S-AlMg5Mn1Ti S-AlMg4,5Mn2r					
EN AW-AlMgSi EN AW-AlSi(MgA) EN AW-AlSiMgMn EN AW-AlSiMgSiCu	S-AlMg5 S-AlSi5	S-AlMg5 S-AlSi5	S-AlMg5 S-AlSi5	S-AlMg5	S-AlMg5 S-AlMg3 S-AlMg2,7Mn	S-AlMg5	S-AlMg5 S-AlMg4,5Mn S-AlMg4,5Mn2r	S-AlMg5 S-AlSi5				
AlZn4,5Mg1	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5 S-AlMg3 S-AlMg2,7Mn	S-AlMg5	S-AlMg5 S-AlMg4,5Mn S-AlMg5Mn1Ti S-AlMg4,5Mn2r	S-AlMg5 S-AlMg4,5Mn S-AlMg5Mn1Ti S-AlMg4,5Mn2r	S-AlMg5 S-AlSi12			
Fusion Alloys AlSiMg Fusion Alloys with Si <7%	S-AlSi5	S-AlSi5	S-AlSi5	S-AlSi5	S-AlSi5	S-AlSi5	S-AlSi5	S-AlSi5	S-AlSi6	S-AlSi5		
Fusion Alloys AlSiMg Fusion Alloys with Si>7	S-AlSi12	S-AlSi12	S-AlSi12	S-AlSi12	S-AlSi12	S-AlSi12	S-AlSi12	S-AlSi12	S-AlSi12	S-AlSi5 S-AlSi12	S-AlSi12	
Fusion Alloys AlMg	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5	S-AlMg5	S-AlSi5	S-AlSi6	S-AlMg5

How to use

1. Select base alloys to be joined from vertical column and blue horizontal column
2. Find the block where the two columns intersect

Example

a) When joining base alloys EN AW-AlMg3 and EN AW-AlMg2 find the intersecting block, you can use S-AlMg5 filler alloy.
b) When joining base alloys EN AW-AlMg3 and EN AW-AlMg5 find the intersecting block, you can use S-AlMg5 or S-AlMg5 filler alloys.

N.B.

- If a block states 2 or 3 filler metals, it'd be better to use filler metal stated at the top of the block.
- When it's suggested the use of S-AlMg5 filler metal, you can also S-AlMg4,5Mn filler metal

WELDING BY MEANS OF MIG - PROCEDURE

AMPERAGE/WIRE Ø[MM]	0,80	1,00	1,20	1,60	2,40
S-Al 99,7	60 -170	70 -180	140 - 260	190 - 350	280 - 400
S-Al 99,8	60 -170	70 -180	140 - 260	190 - 350	280 - 400
S-Al 99,5Ti	60 -170	70 -180	140 - 260	190 - 350	280 - 400
S-AlMg3	60 -170	70 -180	140 - 260	190 - 350	280 - 400
S-AlMg5	60 -170	70 -180	140 - 260	190 - 350	280 - 400
S-AlMg2,7Mn	60 -170	70 -180	140 - 260	190 - 350	280 - 400
S-AlMg5Mn1Ti	60 -170	70 -180	140 - 260	190 - 350	280 - 400
S-AlMg4,5Mn	60 -170	70 -180	140 - 260	190 - 350	280 - 400
S-AlMg4,5MnZr	60 -170	70 -180	140 - 260	190 - 350	280 - 400
S-AlSi5	60 -170	70 -180	140 - 260	190 - 350	280 - 400
S-AlSi12	60 -170	70 -180	140 - 260	190 - 350	280 - 400

Recommendable Amperage for Various Filler materials

WELDING BY MEANS OF TIG/WIG PROCEDURES – USAGE OF TUNGSTEN ELECTRODE

Amperage/Wire Ø[mm]	1,60	2,40	3,20	4,00	5,00
S-Al 99,7	190 - 350	280-400	280-400	280-400	280-400
S-Al 99,5Ti	190 - 350	280-400	280-400	280-400	280-400
S-AlMg3	190 - 350	280-400	280-400	280-400	280-400
S-AlMg5	190 - 350	280-400	280-400	280-400	280-400
S-AlMg2,7Mn	190 - 350	280-400	280-400	280-400	280-400
S-AlMg5Mn1Ti	190 - 350	280-400	280-400	280-400	280-400
S-AlMg4,5Mn	190 - 350	280-400	280-400	280-400	280-400
S-AlMg4,5MnZr	190 - 350	280-400	280-400	280-400	280-400
S-AlSi5	190 - 350	280-400	280-400	280-400	280-400
S-AlSi12	190 - 350	280-400	280-400	280-400	280-400

Recommendable Amperage for Various Filler materials