



since 1970

ALUMINIUM • COPPER WELDING WIRE

Superior quality MIG wires & TIG rods from a Global quality Aluminium wire manufacturer

End customers in Aluminium welding fabrication around the world, appreciate the consistently high quality, high productivity and high reliability Aluminium welding wires and rods from Safra s.p.a in Travagliato / Italy, because of:

- **Trouble-free wire feeding,**
- **X-Ray quality weld capability,**
- **Robust attractive convenient packaging,**
- **Automation precision/productivity products,**
- **Consistent uniform welding parameters,**
- **Tightly controlled wire chemistries,**
- **The right product mix for local market needs,**
- **Readily accessible technical support**
- **Unrivalled customer satisfaction**

End customers who are using the Safra Aluminium welding wires and rods for their production increasing their profit from the beginning on, because of the trouble free products.



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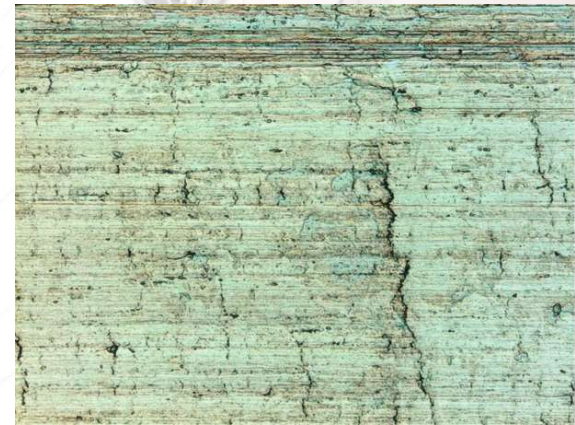
Trouble-free feeding, due to smooth wire surface, free from flaking or shaving regardless of liner or gun cable length.



Safra ER5356 1.2 mm, Mandrel test



Competitor ER 5356 1.2 mm, Mandrel test



Competitor ER 5356 1.2 mm

When you find such a welding wire surface like from our competitor, your productivity will dropping down dramatically due lots of shaving
Result: change of liner and contact tip frequently
Porosity will be an issue too, because of unstable arc, which will clock the liner soon or later totally.



Better is to use Safra wires.

We guarantee you, freedom from the above mentioned issues.



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X-Ray quality weld capability,

due of an excellent clean welding wire surface.

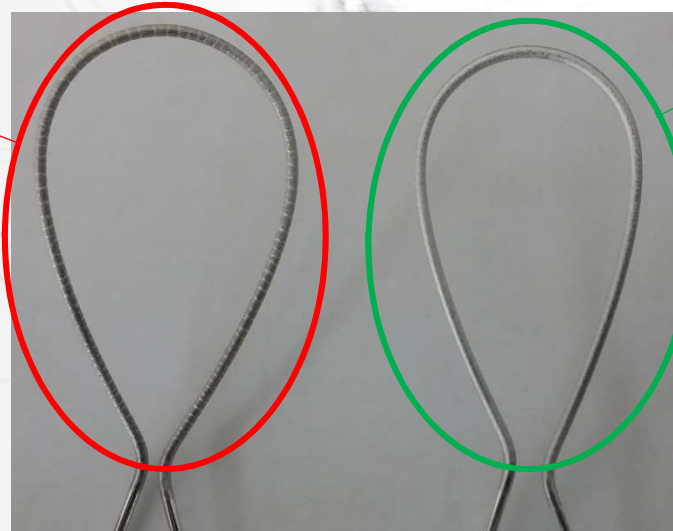
Results are no porosity
in the welding seams.

Independent the welding position.



Here is a nice comparison after a smoke test.

You can see at left
wire residue
of combustion.



The right wire is the Safra
quality.
Very clean wire surface.
No residue of combustion.
That means, no porosity in
your welds



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Robust attractive convenient packaging,

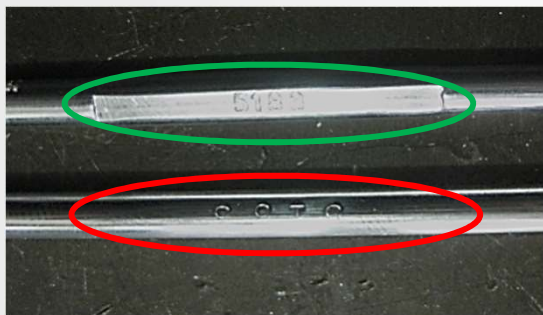
reliable and continuously spool in, in recyclable bulk drums for manual and automatic welding. The volumes starting from 40 kg until 250 kg for high productivity welding. This packaging, made out of hard carton is very rigid and excuse a tough treatment in the work shop.

The diameter of the drums are

Ø 520 mm (40 - 80 kg),

Ø 650 mm (100 – 200 kg),

Ø 750 mm (120 – 250 kg),



No confusion by reading the emboss
of the alloy from the Tig rods



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Robust attractive convenient packaging,

further we have a unique system decoiling system to run 40 kg wire basket.

This decoiling system has many benefits for users, like

- the Aluminium wire doesn't tangling, doesn't has twisting issues

NO DOWNTIME because of the above mentioned reasons in the production

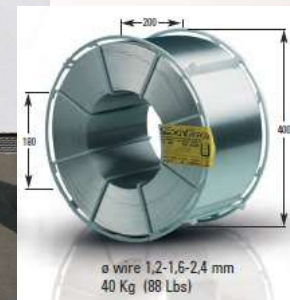
- well tempered Aluminium wire (no humidity inside the decoiling system)

- easy to install

- the wire will come always perfect straight out of the contact tip.

Very important for Laser welding / brazing applications and long longitudinal welding seams.

Many OEM in the transport segments like automotive, motorbike, railroad, aviation and trailer business using this system.





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Automation precision / productivity products, no rework due poor welding wire surface, which has the consequence of, of clogging the liner, unstable arc, porosity in the welds,
Cast diameter at the 5XXX series alloy is important. Is the cast too small (\varnothing 300-400 mm) an increased contact tip wear and an increased friction in the liner is predicted.

Safra recommends a diameter from 550 – 800 mm.

In summary - lots of downtime.

A customer complains is a foreign word for us. We deliver thousands of tons of material all over the globe, without any quality issue.



Competitor ER 5356 1.2 mm, Cast \varnothing 320 mm



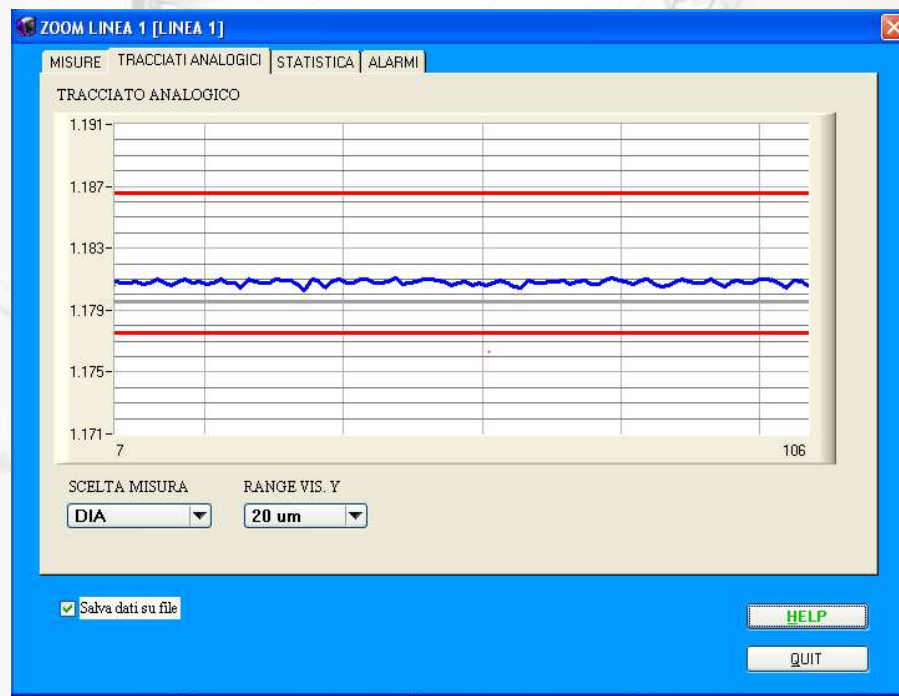
Safra ER5356 1.2 mm, Cast \varnothing > 640 - 800 mm



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Consistent uniform welding parameters,
because of In-line laser control of 100% of wire diameter.
Extremely tight tolerances.
This process runs while drawing.





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Tightly controlled wire chemistries,

Results of our material specifications are always high mechanical values in tensile and yield strength as well as in elongation

Parent Material 5083 H111

Filler Material ER 5183 1,6 mm

N° Campione Sample nr.	DESCRIZIONE MATERIALE Material designation									
2014-0860/5	<i>Saggio n° 5/sample nr.5: giunto testa a testa su lamiera, saldato in piano da un solo lato (Flat Position)</i> <i>Metallo base/base metal: lamiera sp. 10 mm, in lega AlMg 4,5Mn – 5083 H111</i> <i>Metallo d'apporto/filler metal: filo Ø 1,60 mm, AWS ER 5183 – AlMg4,5Mn colata 51M002114</i> <i>Specifica di saldatura/Welding procedure specification: WPS 105-2014</i>									
2014-0860/5/1-2	N° 2 provette di trazione trasversali alla saldatura									
2014-0860/5/3-4	N° 2 provette di piega trasversale al diritto della saldatura (FBB)									
2014-0860/5/5-6	N° 2 provette di piega trasversale al rovescio della saldatura (RBB)									
PROVE MECCANICHE / Mechanical tests										
PROVETTA Sample			TRAZIONE Tensile test				RESILIENZA Impact test		PIEGA (con mandrino) Bending test	
NUMERO Number	DIMENSIONI/Dimensions		R	Rm	A	T	K	T	Angolo/angle: 180° l = d+3a, d = 6a	T
	Ø/a x b mm	So mm²								
Requisiti	-	-	-	≥275	-	-	-	-	Accettabile	-
2014-0860/5/1	8,24x39,97	329,4	-	302 ⁽¹⁾	-	23	-	-	-	-
2014-0860/5/2	8,20x39,99	327,9	-	305 ⁽¹⁾	-	23	-	-	-	-
2014-0860/5/3-4	10x20	-	-	-	-	-	-	-	Accettabile	23
2014-0860/5/5-6	10x20	-	-	-	-	-	-	-	Accettabile	23

The right product mix for local market needs,

We have a complete range of filler alloys and accessories to assist you in your daily business.



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Unrivalled customer satisfaction

Automotive companies

- BMW
 - Daimler AG
 - Seat
 - VW
 - Audi
 - Skoda
 - PSA Group
 - Fiat (FCA)
 - Ferrari
 - Maserati
 - Benteler
 - Honda
 - Ford
 - Alfa Romeo
 - General Motors
 - Opel
 - Evo Bus
 - Hydac
 - SAG
 - Benteler
- AKG
 - Constellium

High-speed trains and rolling stock

- Bombardier
- Stadler Rail
- Ansaldo Breda
- Tenconi
- Alstom
- CAF
- Talgo
- Siemens
- CSR Zhuzhou
- CSR Sifang
- Tangshan Rolling Stock
- Changchung Rolling Stock
- Nanjing Puzheng Rolling Stock
- Zhuzhou Electric Locomotive
- Bombardier Sifang

Container production

- Maersk Container
- CIMC Qingdao
- CIMC Shanghai

Tanks / Silos / Cryogenic

- Linde Gas
- IHI
- Jansen + Dieperink
- P+W Metallbau
- Zeppelin
- Many others

*The above customers are supplied either directly or through distributor. Products may be OEM branded.
We are delivering to much more customers over our distribution channels world wide.*



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Unrivalled customer satisfaction

Shipyards

Italy:

- Perini Navi
- Cantieri Navali Vittoria
- Cantieri Navali Rossi
- Fincantieri
- Cantieri Navali
- Rodriquez
- Azimut
- Codecasa
- Cantieri Benetti
- Tecnomar
- Cantieri Navali Pesaro

Europe:

- Lürssen Shipyards
- Chantiers de L'Atlantique
- Abeking & Rasmussen
- Peene Shipyards
- Royal Huisman
- Kvaerner / Masa Yard
- 70% Turkish Shipyards

Egypt:

- MAPSO Egypt

Saudi Arabia:

- ERAF Industrial Company

Brazil:

- Fittipaldi Yachts
- TWB S/A
- Seasafe Barcos
- Arpoador Engenharia
- ETP Engenharia
- Detroit Shipyard

ASIA:

- AFAI Shipyard
- Special Chinese projects
- Harwood Marine

Japan:

- IHI
- Mitsui
- Refer to our Distributor

Australia:

- Austal Shipyards
- Other minor shipyards through distributors

Vietnam/Thailand:

- Shipyards served through distributors.

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Readily accessible technical support,

We are there where you are. We will assist you while your application until you are satisfied.



from here

till there



In questions of approvals and certificates,

We have a comprehensive amount of approvals for our customers worldwide.

We have the VdTÜV Approval for alloy 5183 - Fit for cryogen applications till – **269°C**





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Speed Pac – the cost saving clearly represented

The Safra Bulk package are made to allow users to get the maximum return of their money in manual, mechanized and robotized welding. The table on the next page, gives you an overview of real cost savings when comparing different bulk packages with 7kg, 20 kg or 40 kg Aluminium wire spools.

Welding station downtime for spool exchange depends on several different factors as the set up (reachability of the wire feeding system), liner / torch length and distance to the place where the spools and bulk packages are stored. The wire exchange time is at every product different due the different set up. Stable feeding and straight wire delivered from a bulk package delivers a good positioning, good penetration, less spatters, good appearance and less post weld repair. Further, no unfinished work pieces or rejects due to abrupt spool wire ends are largely avoided with bulk packages from Safra. All this results together reduce manual rework effort and repair work costs.





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Cost comparison in between Standard Spools of 7 kg, 20 kg Spool, 40 kg Spool, Speed Pac "Nano" 40 kg until Speed Pac "Grande" - 200 kg

Type of Packaging:	Spool B300-7 kg	Big Spool B350-20 kg	Big Spool* B400-40 kg	Speed Pac 52 "Bambino"	Speed Pac 65 "Piccolo"	Speed Pac 52 "Standard"	Speed Pac 65 "Grande"
Weight of wire per packaging [kg]	7 kg	20 kg	40 kg	40 kg	100 kg	80 kg	200 kg
Weld wire consumption per year [kg]	10.000 kg						
Number of spool replacements per year [units]	1429	500	250	250	100	125	50
Time of replacement per type of packaging [min]	13	13	15	15	15	15	15
Time of replacement per year [min] for a yearly consumption of 10.000 kg	18.571,43	6.500,00	3.750,00	3.750,00	1.500,00	1.875,00	750,00
Total spool-change time [h] for	309,52	108,33	62,50	62,50	25,00	31,25	12,50
1.Costs related to spool replacements :							
Operational costs for robot and operator [€/h]	65,00 €						
Costs for spool replacement per year	20.119,05 €	7.041,67 €	4.062,50 €	4.062,50 €	1.625,00 €	2.031,25 €	812,50 €
2.Additional costs related to the use of Marathon Pac™ :							
Purchasing price [€ / kg]	10,50 €	10,60 €	10,70 €	10,80 €	10,80 €	10,85 €	10,90 €
Welding wire costs per year [€ / year]	105.000,00 €	106.000,00 €	107.000,00 €	108.000,00 €	108.000,00 €	108.500,00 €	109.000,00 €
Total cost per year (Welding wire cost + spool replacement cost)	125.119,05 €	113.041,67 €	111.062,50 €	112.062,50 €	109.625,00 €	110.531,25 €	109.812,50 €
3.Quality / Using grade							
Cost per hour for manual repair work	36 €						
Manual re-work quantity [%]	3,00%	1,50%	0,10%	0,20%	0,20%	0,20%	0,20%
Cost for repair work per year	1.728,00 €	864,00 €	57,60 €	115,20 €	115,20 €	115,20 €	115,20 €
Total Costs (1+2+3)	126.847,05 €	113.905,67 €	111.120,10 €	112.177,70 €	109.740,20 €	110.646,45 €	109.927,70 €
Cost-savings with the use of 20 kg Spool, 40 kg Spool, Speed Pac Bambini 40 kg until Speed Pac Grande 180 kg compared to 7 kg Spools		12.941,38 €	15.726,95 €	14.669,35 €	17.106,85 €	16.200,60 €	16.919,35 €
For a yearly consumption of		10.000 kg					

Remark

* Big spool B400-40 kg

You need for that kind of package, a special uncoil equipment This requires an investment of ca. 9.000 EUR and an additional cost for whose maintenance. The big advantage of the BS400 Spool is from beginning on, a continuously straight wire for long straight welds with no tangling or twisting issues.