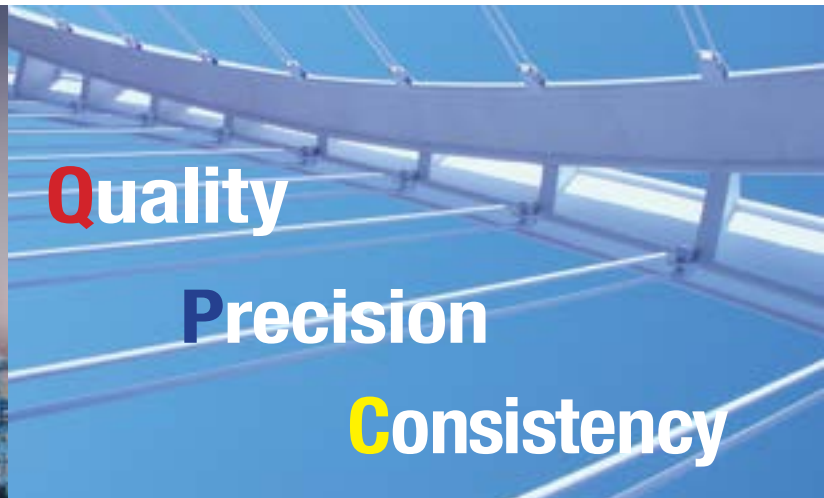




AMERICAN FILLER METALS

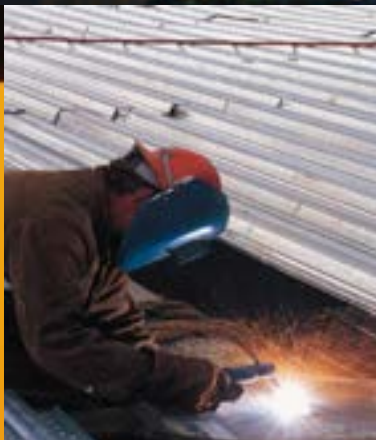
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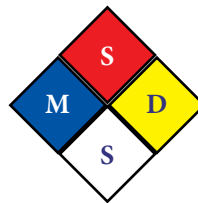
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AFM ER5183	AWS/SFA A5.10	ER5183	171
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AFM ER1100

AWS/SFA A5.10

AFM ER1100 wires and rods are generally recommended for welding 1100 and 3003 aluminum sheets, plates and shapes.

It can be used on:

- Window Frames Food Processing Equipment,
- Railroad Tank Cars Liquid Oxygen Containers,
- Storage Tanks Food Containers,
- Heat Exchangers Electrical Bus Bars,
- Pressure Vessels Plating Racks
- Chemical Processing Towers

AFM ER4043

AWS/SFA A5.10

AFM ER4043 wires and rods are generally recommended for welding 2014, 5052, 6061, and 6101 (in various conditions of heat treatment and 6063 sheets, plates and shapes).

It is typically used on:

- Truck Bodies
- Pressure Vessels
- Petroleum Distribution Equipment
- Structural Members
- Electrical Bus Bars

AFM ER4047

AWS/SFA A5.10

AFM ER4047 12% Silicon Aluminum brazing rod is recommended for torch brazing and dip or furnace brazing of the following grades of wrought aluminum: 1060, 1100, 3003, 5005, 6061, 6063, and cast alloys A612 and C612 for lap or tee joints, rather than butt joints when used with the proper aluminum brazing flux.

AFM ER5183

AWS/SFA A5.10

AFM ER5183 is the optimum wire and rod for both strength and ductility, stronger than AFM ER5356 with similar ductility, not quite as strong as AFM ER5556 but has better ductility.

AFM ER5183 is most frequently used on 5083 base plate.

It is also used to weld 6061, 6063, 5086, 7005 and 7039 alloys.

The most common applications are liquid oxygen and liquid nitrogen containers.



AFM ER5356

AWS/SFA A5.10

AFM ER5356 wires and rods are generally recommended for welding 5050, 5052, 5083, 5154, 5356, 6061, and 6063 aluminum alloys.

This wire is to be employed in all types of structural aluminum fabrication where post heat treatment is not feasible as a method of producing higher strength welded joints.

The tensile properties of the base materials of the aluminum-magnesium type are not as drastically affected by the heat of the welding arc as are the heat-treated high strength aluminum alloys.

Excellent for color match application.

Examples of applications which utilize ER5356:

- Diesel Engine Bases Gun Mount Bases
- Architectural Structures Cargo Tanks
- Truck Frames Ship Superstructures
- Armored Vehicles

AFM ER5556

AWS/SFA A5.10

AFM ER5556 wires and rods are generally recommended for welding 5083, 5086 and 5456 high tensile aluminum alloys.

This wire is to be employed in all types of structural aluminum fabrication where post heat treatment is not feasible as a method of producing higher strength welded joints.

The tensile properties of the base materials of the aluminum-magnesium type are not as drastically affected by the heat of the welding arc as are the heat treated high strength aluminum alloys.

Examples of applications which utilize ER5556:

- Diesel Engine Bases Gun Mount Bases
- Bridges Storage Tanks
- Truck Frames Ship Superstructures

Other Types of AFM Aluminum Available upon Request:

- 355.0
- 356.0
- 4145 (716)
- 2319
- 4047 (718)
- 5154
- 5554
- 5654



Base Metal	201.0, 206.0, 224.0	319.0, 333.0, 354.0, 355.0, C355.0	356.0, A356.0, 357.0, A357.0, 413.0, 443.0, A444.0	511.0, 512.0, 513.0, 514.0, 535.0	7004, 7005, 7039, 710.0, 712.0	6009, 6010, 6070	6005, 6061, 6063, 6101, 6151, 6201, 6351, 6951	5456	5454
1060, 1070, 1080, 1350	ER4145	ER4145	ER4043a,b	ER5356c,d	ER5356c,d	ER4043a,b	ER4043b	ER5356d	ER4043b,d
1100, 3003, Alc 3003	ER4145	ER4145	ER4043a,b	ER5356c,d	ER5356c,d	ER4043a,b	ER4043b	ER5356d	ER4043b,d
2014, 2036	ER4145c	ER4145c	ER4145	-	-	ER4145	ER4145	-	-
2219	ER2319a	ER4145c	ER4145b,c	ER4043	ER4043	ER4043a,	ER4043a,b	-	ER4043b
3004, Alc. 3004	-	ER4043b	ER4043b	ER5356f	ER5356f	ER4043b	ER4043b,f	ER5356d	ER5356f
5005, 5050	-	ER4043b	ER4043b	ER5356f	ER5356f	ER4043b	ER4043b,f	ER5356d	ER5356f
5052, 5652i	-	ER4043b	ER4043f	ER5356f	ER5356f	ER4043b	ER5356c,f	ER5356f	ER5356f
5083	-	-	ER5356c,d	ER5356d	ER5183d	-	ER5356d	ER5183d	ER5356d
5086	-	-	ER5356c,d	ER5356d	ER5356d	-	ER5356d	ER5356d	ER5356d
5154, 5254i	-	-	ER4043f	ER5356f	ER5356f	-	ER5356f	ER5356f	ER5356f
5454	-	ER4043b	ER4043f	ER5356f	ER5356f	ER4043b	ER5356c,f	ER5356f	ER5554c,f
5456	-	-	ER5356c,d	ER5356d	ER5556d	-	ER5356d	ER5556d	
6005, 6061, 6063, 6101, 6151, 6201, 6351, 6951	ER4145	ER4145b,c	ER4043b,f,g	ER5356c,f	ER5356c,f	ER4043a,b,g	ER4043b,f,g		
6009, 6010, 6070	ER4145	ER4145b,c	ER4043a,b,g	ER4043	ER4043	ER4043a,b,g			
7004, 7005, 7039, 710.0, 712.0	-	ER4043b	ER4043b,f	ER5356f	ER5356d				
511.0, 512.0, 513.0, 514.0, 535.0	-	-	ER4043f	ER5356f					
356.0, A356.0, 357.0, A357.0, 413.0, 443.0, 444.0	ER4145	ER4145b,c	ER4043b,h						
319.0, 333.0, 354.0, 355.0, C355.0	ER4145c	ER4145b,c,h							
201.0, 206.0, 224.0	ER2319a,h								

Base Metal	5154, 5254i	5086	5083	5052, 5652i	5005, 5050	3004, Alc. 3004	2219	2014, 2036	1100 3003 Alc. 3003	1060, 1070, 1080, 1350
1060, 1070, 1080, 1350	ER5356c,d	ER5356d	ER5356d	ER4043b,d	ER1100b,c	ER4043b,d	ER4145b,c	ER4145	ER1100b,c	ER1188b,c,h,j
1100, 3003, Alc. 3003	ER5356c,d	ER5356d	ER5356d	ER4043b,d	ER1100b,c	ER4043b,d	ER4145b,c	ER4145	ER1100b,c	
2014, 2036	-	-	-	-	ER4145	ER4145	ER4145e	ER4145e		
2219	ER4043	-	-	ER4043b	ER4043a,b	ER4043a,b	ER2319a			
3004, Alc. 3004	ER5356f	ER5356d	ER5356d	ER5356c,f	ER5356c,f	ER5356c,f				
5005, 5050	ER5356f	ER5356d	ER5356d	ER5356c,d	ER5356c,f					
5052, 5652i	ER5356f	ER5356d	ER5356d	ER5654c,f,i						
5083	ER5356d	ER5356d	ER5183d							
5086	ER5356d	ER5356d								
5154, 5254i	ER5654f,i									

Notes:

1. Service conditions such as immersion in fresh or salt water, exposure to specific chemicals, or a sustained high temperature (over 150°F (66°C)) may limit the choice of filler metals. **AFM ER5183, ER5356, ER5556, and ER5654** are not recommended for sustained elevated temperature service.
2. Recommendations in this table apply to gas shielded arc welding processes. For oxyfuel gas welding, only **AFM ER1188, ER1100, ER4043, ER4047, and ER4145** filler metals are ordinarily used.
3. Where no filler metal is listed, the base metal combination is not recommended for welding.
 - a. **AFM ER4145** may be used for some applications.
 - b. **AFM ER4047** may be used for some applications.
 - c. **AFM ER4043** may be used for some applications.
 - d. **AFM ER5183, ER5356, or ER5556** may be used.
 - e. **AFM ER2319** may be used for some applications. It can supply high strength when the weldment is postweld solution heat treated and aged.
 - f. **AFM ER5183, ER5356, ER5554, and ER5654** may be used. In some cases, they provide (1) improved color match after anodizing treatment, (2) highest weld ductility, and (3) higher weld strength. **AFM ER5554** is suitable for sustained elevated temperature service.
 - g. **AFM ER4643** will provide high strength in 1/2 in. (12mm) and thicker groove welds in 6XXX base alloys when postweld solution heat treated and aged.
 - h. Filler metal with the same analysis as the base metal is sometimes used. The following wrought filler metals possess the same chemical composition limits as cast filler alloys: ER4009 and R4009 as RC355.0; ER4010 and R4010 as R-A356.0; and R4011 as R-A357.0.
 - i. Base metal alloys 5254 and 5652 are used for hydrogen peroxide service. **AFM ER5654** filler metal is used for welding both alloys for service temperatures below 150°F (66°C).
 - j. **AFM ER1100** may be used for some applications.

Aluminum Welding Wires Chemical Compositions

Alloy	Al	Mg	Fe + Si	Fe	Si	Cu	Mn	Zn	Ti	Cr	Be
1100	99.0 Min.	-	0.095 Max	-	-	0.05 ~ 0.20	0.05	0.10	-	-	-
2319	Rem	0.02	-	0.30	0.20	5.80 ~ 6.80	0.20 ~ 0.40	0.10	0.10 ~ 0.20	-	-
4043	Rem	0.05	-	0.80	4.50 ~ 6.00	0.30	0.05	0.10	0.20	-	-
4047	Rem	0.10	-	0.80	11.00 ~ 13.00	0.30	0.15	-	-	-	-
5356	Rem	4.50 ~ 5.50	-	0.40	0.25	0.10	0.05 ~ 0.20	0.10	0.06 ~ 0.20	0.05 ~ 0.20	-
5183	Rem	4.30 ~ 5.20	-	0.40	0.40	0.10	0.50 ~ 1.00	0.25	0.15	0.05 ~ 0.25	-
5554	Rem	2.4 ~ 3.0	-	0.40	0.25	0.10	0.50 ~ 1.00	0.25	0.05 ~ 0.20	0.05 ~ 0.20	-
5556	Rem	4.70 ~ 5.50	-	0.40	0.25	0.10	0.50 ~ 1.00	0.25	0.05 ~ 0.20	0.05 ~ 0.20	-
4145	Rem	0.15	-	0.80	9.0 ~ 10.70	3.30 ~ 4.70	0.15	0.20	-	0.15	-

Standard Diameters & Packages

Package	0.030" (0.8 mm)	0.035" (0.9 mm)	3/64" (1.2 mm)	1/16" (1.6 mm)	3/32" (2.4 mm)	1/8" (3.2 mm)	5/32" (4.0 mm)
1 Lb Spool							
16 Lb Spool							
10 Lb Tube (36")							

44 Lb Spools, 88 Lb Reels & 15 Lb Coils are also available upon request.