

Fill Metal Selection Guide



Aluminum Alloy Wire

Base Metal	319.0 333.0 354.0 355.0 380.0	356.0 357.0 359.0 413.0 444.0 443.0	511.0 512.0 513.0 514.0 535.0	7005 j 7018 7021 7029 7039 710.0 711.0 712.0	6070	6061 6062 6063 6101 6201 6151 6351 6951	5456	5454	5154 5254 a	5086	5083	5052 5652 a	5005 5050	3004	2219 2519	2014 2036	1100 3003	1060 1070 1080 1350
1060 1070 1080 1350	4145 c,i	4043 h,f	5356 c,e,h	5356 c,e,h	4043 h	4043 h	5356 c	4043 h	5356 c,e,h	5356 c	5356 c	4043 h	1100 c	4043	4145	4145	1100 c	1188 i
1100 3003	4145 c,h	4043 h,f	5356 c,e,h	5356 c,e,h	4043 h	4043 h	5356 c	4043 e,h	5356 c,e,h	5356 c	5356 c	4043 e,h	4043 e	4043 e	4145	4145	1100 c	
2014 2036	4145 g	4145			4145	4145									4145 g	4145 g		
2219 2519	4145 c,g,h	4145 c,h	4043 h	4043 h	4043 f,h	4043 f,h	4043	4043 h	4043 h	4043	4043	4043 h	4043	4043	2319 c,f,h			
3004	4043 h	4043 h	5654 b	5356 e	4043 e	4043 b	5356 e	5654 b	5654 b	5356 e	5356 e	5356 e,h	4043 e	4043 e				
5005 5050	4043 h	4043 h	5654 b	5356 e	4043 e	4043 e	5356 e	5654 b	5654 b	5356 e	5356 e	4043 e,h	4043 d,e					
5052 5652	4043 h	4043 b,h	5654 b	5356 e	5356 b,c	5356 b,c	5356 b	5654 b	5654 b	5356 e	5356 e	5654 a,b,c						
5083		5356 c,e,h	5356 e	5183 e	5356 e	5356 e	5183 b	5356 e	5356 e	5356 e	5356 e							
5086		5356 c,e,h	5656 e	5356 e	5356 e	5356 e	5356 e	5356 b	5356 b	5356 e								
5154 5254 a		4043 b,h	5654 b	5356 b	5356 b,c	5356 b,c	5356 b	5654 e	5654 a,b									
5454	4043 h	4043 b,h	5654 b	5356 b	5356 b,c	5356 b,c	5356 b	5554 c,e										
5456		5356 c,e,h	5356 e	5556 e	5356 e	5356 e	5556 b											
6061,6063 6082,6101 6151,6201 6351,6951	4145 c,h	4043 f,h	5356 b,c	5356 b,c,h	4043 b,h	4043 b,h												
6070	4145 c,h	4043 f,h	5356 c,e	5356 c,e,h	4043 e,h													
7005 k,7018 7021,7029 7039,710.0 711.0,712.0	4043 h	4043 b,h	5356 b	5356 b														
511.0 512.0 513.0 514.0		4043 b,h	5654 b,d															
356.0 357.0 359.0 413.0 443.0 444.0	4145 c,h	4043 d,h																
319.0 333.0 354.0 355.0 380.0	4145 c,d,h																	

Note: All filler materials are listed in AWS A5.10.

Additional guidelines:

- Service conditions such as immersion in fresh or salt water, exposure to specific chemicals, or exposure sustained high temperature (over 66.C) may limit the choice of filler metals. Filler alloy 5356, 5183, 5556 and 5654 are not recommended for sustained elevated temperature service.
- Guide lines in this table apply to gas shielded arc welding processes.
- Where no filler metal is listed, the base metal combination is not recommended for welding.
 - Base metal alloy 5652 and 5254 are used for hydrogen peroxide service, 5654 filler metal is used for welding both alloys for low temperature (over 66.C) service.
 - 5183, 5356, 5454, 5556 and 5654 may be used. In some case they provide improved color match after anodizing, highest welding ductility and higher weld strength. 5554 is suitable for elevated temperature service.
 - 4043 may be used for some applications.
 - Filler metal with the same analysis as the base metal is sometimes used.
 - 5183, 5356, or 5556 may be used.
 - 4145 may be used for some applications.
 - 2319 may be used for some applications.
 - 4047 may be used for some applications.
 - 1100 may be used for some applications.
 - This refers to 7005 extrusion only.