

ALLOY 5554 WELD DATA SHEET

TYPICAL APPLICATIONS

- Welding Filler Wire

GENERAL INFORMATION

- Non-Heat treatable
- Similar to AlMg2.7Mn (Germany)
- ISO designation AlMg3Mn(A)
- Principle alloying elements: Magnesium, Manganese, Chromium, Titanium
- Applicable specification: AWS A5.10

WELDING APPROVALS

Canadian Welding Bureau

TYPICAL PROPERTIES

Melting range: 1155 - 1195°F
Density: .097 lbs/cu. in.

Resistance to corrosion: A (Gen) A (SCC)
Anodize Color: White

CHEMISTRY

<u>SILICON</u>	<u>IRON</u>	<u>COPPER</u>	<u>MANGANESE</u>	<u>MAGNESIUM</u>	<u>CHROMIUM</u>	<u>ZINC</u>	<u>TITANIUM</u>	<u>BERYLLIUM</u>	<u>OTHERS</u>		<u>ALUMINUM</u>
									<u>EACH</u>	<u>TOTAL</u>	<u>REM</u>
0.25	0.40	0.10	0.50-1.0	2.4-3.0	0.05-0.20	0.25	0.05-0.20	0.0003	0.05	0.15	

NOTE: SINGLE VALUES ARE MAXIMUM UNLESS OTHERWISE NOTED.

TYPICAL MECHANICAL PROPERTIES OF GMAW GROOVE JOINT WELDS

<u>BASE ALLOY</u>	<u>BASE ALLOY</u>			<u>AS WELDED</u>		
	<u>UTS(KSI)</u>	<u>UYS(KSI)</u>	<u>ELONG(%)</u>	<u>UTS(KSI)</u>	<u>UYS(KSI)</u>	<u>ELONG(%)</u>
5454-O	36	17	22	35	16	17

TYPICAL ULTIMATE TENSILE STRENGTHS AT SELECTED TEMPERATURES FOR GMAW GROOVE JOINT WELDS

<u>BASE</u>	<u>FILLER</u>	<u>-100°F</u>	<u>100°F</u>	<u>300°F</u>	<u>500°F</u>
5454	5554	32.0 KSI	31.0 KSI	26.0 KSI	15.0 KSI

AlcoTec Wire Corporation

ALLOY CHARACTERISTICS

ALLOY 5554 WAS DEVELOPED AS A FILLER ALLOY, PRIMARILY FOR ALLOY 5454 THAT IS WIDELY USED IN THE MANUFACTURE OF CHEMICAL STORAGE TANKS, AND IN PARTICULAR, THOSE THAT MAY BE SUBJECTED TO TEMPERATURES IN EXCESS OF 150° F. THIS COMBINATION OF ALLOYS DOES NOT BECOME SENSITIVE TO STRESS CORROSION CRACKING (SCC) AT ELEVATED TEMPERATURES.

Typical Semiautomatic GMA Procedures for Fillet and Lap Welding Aluminum

Wire Dia <u>Inches</u>	DC(EP) ³ Range		Base ¹ Thickness <u>Inches</u>	DC(EP) Suggested		Wire Feed <u>IPM</u>	Argon Gas Flow <u>CFH</u>	Approximate Consumption ² <u>Lbs/100Ft</u>
	<u>Amps</u>	<u>Volts</u>		<u>Amps</u>	<u>Volts</u>			
.030	100-130	18-22	.094	100	22	500	30	0.75
	125-150	20-24	.125	120	22	600	30	1
.035	85-120	20-23	.094	110	22	480	30	0.75
	125-150	20-24	.125	130	22	566	30	1
	170-190	21-26	.250	170	23	740	35	4
.047	125-150	20-24	.125	150	23	360	30	1
	180-210	22-26	.187	180	23	410	30	2.3
	170-240	24-28	.250	190	24	470	40	4
.062	190-260	21-26	.250	200	23	265	50	4
	240-300	22-27	.375	230	24	300	50	9
	260-310	22-27	.500	260	26	340	60	16
	280-320	24-28	.750	280	27	385	65	36
	290-340	26-30	1.000	300	28	420	70	64
.094	280-360	26-30	.750	320	29	170	60	36
	300-400	26-32	1.000	330	30	180	80	64

1. Metal thickness of 3/4" or greater for fillet welds sometimes employs a double vee bevel of 50 deg or greater included vee with 3/32 to 1/8 inch land thickness on the abutting member.
2. Electrode consumption given for weld on one side only and based on leg length equal to plate thickness.
3. For 5XXX series electrodes use a welding current in the high side of the range given and an arc voltage in the lower portion of the range. 1XXX, 2XXX, and 4XXX series electrodes would use the lower currents and higher arc voltages.

THIS INFORMATION IS BASED ON DATA DEVELOPED UNDER LABORATORY CONDITIONS AND IS DESIGNED AS A GUIDELINE ONLY. INDIVIDUAL CONDITIONS, WELDING EQUIPMENT AND ENVIRONMENT CAN AFFECT SUGGESTED SETTINGS.

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