Base Alloys	Filler Alloys	1060, 1070, 1080, 1350	1100	2014, 2036	2219	3003, ALCLAD 3003	3004	ALCLAD 3004	5005, 5050	5052, 5652
Characteristics		W S D C T M	W S D C T M	W S D C T M	W S D C T M	W S D C T M	W S D C T M	W S D C T M	W S D C T M	W S D C T M
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1060, 1070, 1080, 1350	1100 1188 4043	B B A A A B C C A A A A A A B A A	1100 1188 4043							

Aluminum Filler Alloy Chart

AlcoTec

A Subsidiary of The ESAB Group, Inc.

Aluminum Filler Alloy Chart

5083, 5456	5086, 5056	511.0, 512.0, 513.0, 514.0, 535.0, 5154, 5254	5454	6005, 6063, 6101, 6151, 6201, 6351, 6951	6061, 6070	7005, 7021, 7039, 7046, 7146, 710.0, 711.0	413.0, 443.0, 444.0, 356.0, A356.0, 357.0, 359.0	319.0, 333.0, 354.0, 355.0, C355.0, 380.0	
W S D C T M	W S D C T M	W S D C T M	W S D C T M	W S D C T M	W S D C T M	W S D C T M	W S D C T M	W S D C T M	W S D C T M
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4043 5183 5356 5554 5556 5654									

How to Use

1. Select base alloys to be joined (one from the side blue column, the other from the top blue row).
2. Find the block where the column and row intersect.
3. This block contains horizontal rows of letters (A, B, C or D) representative of the alloy directly across from them in the filler alloy box at the end of each row. The letters in each line give the A-to-D rating of the characteristics listed at the top of each column – W, S, D, C, T and M (see Legend at right for explanation of each letter).
4. Analyze the weld characteristics afforded by each filler alloy. You will find that you can "trade off" one characteristic for another until you find the filler that best meets your needs.

Example

When joining base alloys 3003 and 1100, find the intersecting block. Now, note that filler alloy 1100 provides excellent ductility (D), corrosion resistance (C), performance at elevated temperatures (T) and color match after anodizing (M), with good ease of welding (W) and strength (S). However, if ease of welding and shear strength are UTMOST in importance, and ductility and color match can be sacrificed slightly, filler alloy 4043 can be used advantageously.

Symbol	Characteristics
W	Ease of welding (relative freedom from weld cracking).
S	Strength of welded joint (as-welded condition). (Rating applies particularly to fillet welds. All rods & electrodes rated will develope presently specified minimum strengths for butt welds).
D	Ductility. (Rating is based upon the free bend elongation of the weld).
C	Corrosion resistance in continuous or alternate immersion in fresh or salt water.
T	Recommended for service at sustained temperatures above 150 F (65.5 C).
M	Color match after anodizing.
A, B, C & D are relative ratings in decreasing order of merit. The ratings have relative meaning only within a given block.	

NOTE: Combinations having no rating are not usually recommended. Ratings do not apply to these alloys when heat treated after welding.

(1) 4643 is a heat-treatable filler alloy and gives higher strength in thick 6xxx series weldments after postweld solution heat treatment and aging.

(2) An “A” rating for alloy 5083 to 5083. No rating for alloy 5456 to 5456.

4047 can be used in lieu of 4043 for thin section sheet due to the lower melting point of 4047.

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