



6013

AWS E6013

REPLACES: 060116

100-D, INDEX: 100501

DESCRIPTION:

6013 is an all-purpose electrode that can be used with either AC or DC operation. Originally developed for light gage metal, it offers sufficient penetration for welding on heavier assemblies.

APPLICATIONS:

Ideal for general purpose fabrication, machine parts, metal buildings and structures, and shaft build-up.

FEATURES	BENEFITS
<ul style="list-style-type: none">• All-Position• Slag removes easily• Excellent arc stability• Fast-freeze	<ul style="list-style-type: none">• Welds in flat, horizontal, vertical, and overhead positions• Quick clean-up• Welding accuracy and efficiency• Excellent for poor fit-up

TYPICAL WELD METAL PROPERTIES*(CHEM PAD):

WELD METAL ANALYSIS		AWS Spec
Carbon (C)	0.10	Not required
Manganese (Mn)	0.28	Not required
Phosphorus (P)	0.012	Not required
Sulphur (S)	0.016	Not required
Silicon (Si)	0.27	Not required

TYPICAL MECHANICAL PROPERTIES*(AS WELDED):

		AWS Spec
Tensile Strength	72,600 psi (501 MPa)	60,000 psi
Yield Strength	61,300 psi (423 MPa)	48,000 psi
Elongation % in 2"	26.5%	17.0%
Reduction of Area	25% to 55%	Not required

TYPICAL CHARPY V-NOTCH IMPACT VALUES*(AS WELDED):

Not applicable

CONFORMANCES AND APPROVALS:

- AWS Spec A5.1, Class E6013
- ASME SFA5.1, F2, A-1, Class E6013
- ABS

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RECOMMENDED WELDING PROCEDURES:

- GENERAL:** AC; electrode negative, work positive (DCEN); or electrode positive, work negative (DCEP)
- ARC LENGTH:** Average length (1/8" to 1/4")
- FLAT:** Angle electrodes 10-15° from 90° with higher heat than E6011 electrodes
- VERTICAL-UP:** Reduce amperage from flat position
- VERTICAL DOWN:** Use higher amperage and faster travel, staying ahead of puddle
- OVERHEAD:** Use slight whipping motion, multi-pass for build-up
- STORAGE:** 110°F to 130°F, humidity below 50% should be avoided; at no time should this type of electrode be stored in an oven above 130°F
- RECONDITIONING:** 250°F to 300°F for one hour

RECOMMENDED OPERATING PARAMETERS:

DIAMETER		TYPE OF POWER	MINIMUM AMPS	OPTIMUM* AMPS	MAXIMUM AMPS
INCHES	MM				
3/32	2.4	AC, DCEN or DCEP	40	70	80
1/8	3.2	AC, DCEN or DCEP	70	100	120
5/32	4.0	AC, DCEN or DCEP	130	150	160
3/16	4.8	AC, DCEN or DCEP	140	190	220

*For out of position welding, reduce amperages shown by 15%.

TYPICAL DEPOSITION DATA (AT OPTIMUM):

DIAMETER		TYPE OF POWER	AMPS	VOLTS	DEPOSITION RATE LBS/HR	DEPOSITION EFFICIENCY*%
INCHES	MM					
3/32	2.4	AC	70	19-24	1.35	63.7
1/8	3.2	AC	100	18.5-22.5	1.85	66.1
5/32	4.0	AC	150	20-24	2.67	61.6
3/16	4.8	AC	220	20-22.5	4.22	62.7

*Allowance made for 2" stub loss included.

AVAILABLE DIAMETERS AND PACKAGES:

DIAMETER		LENGTH		50-LB. CARTON
INCHES	MM	INCHES	MM	
3/32	2.4	14	355	S117132-Z31
1/8	3.2	14	355	S117144-Z31
5/32	4.0	14	355	S117151-Z31
3/16	4.8	14	355	S117158-Z31

Material Safety Data Sheets on any McKay product may be obtained from McKay Customer Service.

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