

Table 3.3—Effect of Current Type and Polarity on Welding

Current Type and Polarity		Welding Application		Positive ion flow	Heat balance	Penetration	Metal deposition rate	Sensitivity to arc blow	Arc starting				
DC+	DC- Negative (Straight)	DC+ Positive (Reverse)	AC										
				More at electrode	More at work	Equal	Medium	Medium	High	Low	High	Good	Good
NOTE: Reverse polarity is a nonstandard term for DCFP and straight polarity is a nonstandard term for DCEN.													

For most electrodes, DC electrode positive (DCFP) is the preferred choice if the power source operates in this polarity. AC is beneficial, however, where arc blow is a problem. In addition, for iron powder electrodes like E7024, AC can increase the deposition rate over DC.

Current type and polarity for different electrodes are shown in Table 3.4.

Table 3.4—Settings for AWS Classified Electrodes

Current Type and Polarity	AWS Classification
DC+ only	EXX10
AC or DC+	EXX11
AC or DC- AC or DC±	EXX12 EXX13 EXX14
DC+ only AC or DC+	EXX15 EXX16 EXX18
AC or DC± AC or DC± AC or DC±	EXX24 EXX27 EXX28