Alloy Selector Guide and Welding Procedures

Cast Irons

Cronatron

Stick Electrodes

A	211	(84,000 PSI)
B	222	(65,000 PSI)
C	235	(60,000 PSI)
A	270	(84,000 PSI)

MIG Wires

A	211M-FC	(74,000 PSI)

TIG Wires

A	211T	(60,000 PSI)

Certanium®

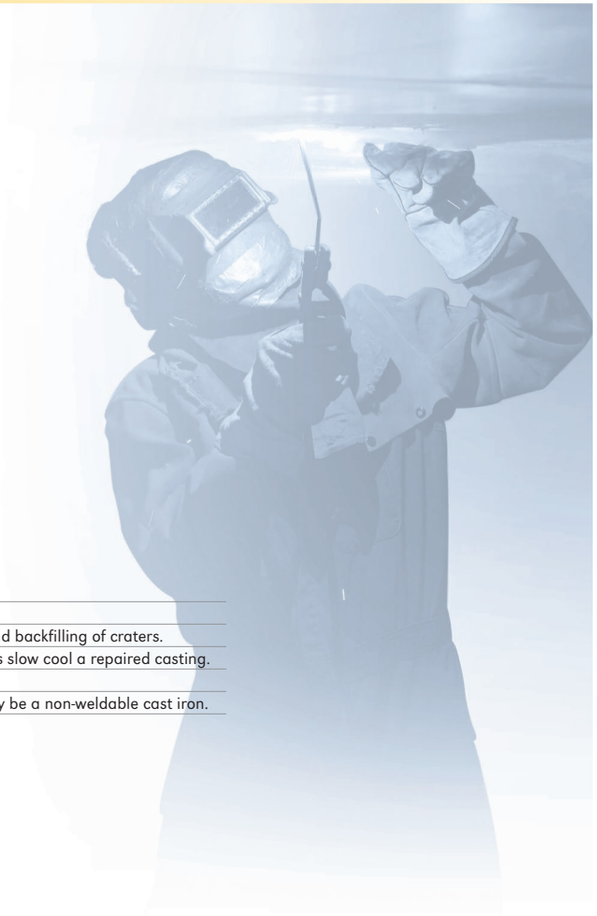
Stick Electrodes

A	889SP	(84,000 PSI)

TIG Wires

A	89T	(73,300 PSI)

T = TIG
M = MIG
FC = Flux Core



Bead Profiles and Techniques

Desired Bead Profile	Convex with good fusion minimizing dilution.
Technique	A back-step and/or skip technique with 1" to 3" stringer beads with routine peening and backfilling of craters.
Helpful Hints	For troublesome repairs, butter mating surfaces prior to joining. Don't forget to always slow cool a repaired casting.
Preheat	A higher preheat reduces HAZ hard spots and improves odds of success.
Base Metal ID	A cast iron is generally weldable if you can file it. If a file glides and won't dig in, it may be a non-weldable cast iron.

Group	Description	Common Metal Grades
A	Best General Cast Iron Repair	For (Gray, Ductile, Malleable) Cast Irons.
B	Machinable	Weld Deposit is Easily Machinable.
C	Iron Adding	For Contaminated, Rusty or Burned Out Castings.

Group	Thickness	Preheat °F	Postheat °F	Minimum Interpass °F	Maximum Interpass °F	Description
Group A – Joining or Repair of Gray, Ductile, Malleable Cast Irons	<1"	600	Depends	600	N/A	Most cast irons are generally weldable with the proper procedure and proper electrode. White or Ni-Hard castings are not weldable. After welding, a stress-relief can be used to improve ductility by heating casting to 1,200°F and holding for one hour per one inch of thickness. Always slow cool.
	1" – 2"	700	Depends	700	N/A	
	>2"	800	Depends	800	N/A	
Group B – Cast Irons with Machining	<1"	600	Depends	600	N/A	Higher preheats along with a slow cool will improve machinability.
	1" – 2"	700	Depends	700	N/A	
	>2"	800	Depends	800	N/A	
Group C – Iron Adding for Contaminated or Burned-Out Castings	<1"	600	Depends	600	N/A	When a casting is oily, contaminated or burned out, it helps to preheat and then weld with 235. The extra deoxidizers and cleansing agents will improve subsequent pass welding. This will help eliminate the contamination and add iron. It is best to weld the cover passes with a Group A or B product.
	1" – 2"	600	Depends	600	N/A	
	>2"	600	Depends	600	N/A	

For optimal operating parameters, refer to the product page.