



麦格纳焊接

MWA 中国区总代理  
焊接修复技术应用

联系电话:

冯工: 166 0045 3638

徐工: 166 2205 4313



MWA  
Product Guide  
2nd Edition

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**MAC CAST E405**

Superior high quality fully machinable nickel electrode for joining and building up on cast irons. Builds up quickly and produces sound fully machinable deposits. Minimum base metal dilution. No undercut. For hot and cold welding of cast irons and for joining or building up on malleable iron, steels and copper or one to another. Ideal for foundry reclamation.

**Typical All Weld Metal Chemical Analysis (%)**

Mn	Ni
99.0	1.0

**Typical All Weld Metal Mechanical Properties**

**As Welded**

Tensile Strength	340 N/mm <sup>2</sup>
Elongation	15%
Hardness	170 Brinell

**Sizes Available and Recommended Amperages**

2.5mm	3.2mm	4.0mm	5.0mm
30-75	70-100	100-150	120-190

**Related Specification:**

AWS E Ni Ci

**Current:**

AC/DC (+)

**Storage:**

If allowed to become damp, the electrodes should be re-dried for one hour at 150°C before use.

**MAC CAST E406**

High quality general purpose nickel electrode designed for economical joining and surfacing of cast iron. Positive arc, fast build-up, easy slag detachability and fully machinable porosity free welds. May be used for hot or cold welding of cast irons and for surfacing and building up on malleable irons. It is suitable for joining mild steel to cast iron and is ideal for maintenance repair where sound welds are required.

**Typical All Weld Metal Chemical Analysis (%)**

Fe	Mn	Ni
1.0	2.0	97.0

**Typical All Weld Metal Mechanical Properties**

**As Welded**

Tensile Strength	415 N/mm <sup>2</sup>
Elongation	15%
Hardness	180 Brinell

**Sizes Available and Recommended Amperages**

2.5mm	3.2mm	4.0mm	5.0mm
50-80	80-100	120-170	170-200

**Related Specification:**

AWS E Ni Ci

**Current:**

AC/DC (+)

**Storage:**

If allowed to become damp, the electrodes should be re-dried for one hour at 150°C before use.

**MAC CAST E407**

High strength machinable electrode for joining and building up on cast irons. Low amperage, smooth arc, minimum spatter and high resistance to cracking. For the repair of grey, S.G., nodular or ductile irons where higher strength is required. Also suitable for joining cast iron to mild steel (in conjunction with Mac Groove), pressure vessels, etc.

**Typical All Weld Metal Chemical Analysis (%)**

Fe	Ni
45.0	55.0

**Typical All Weld Metal Mechanical Properties**

**As Welded**

Tensile Strength	448 N/mm <sup>2</sup>
Elongation	20%
Hardness	180 Brinell

**Sizes Available and Recommended Amperages**

2.5mm	3.2mm	4.0mm	5.0mm
40-70	70-110	110-150	130-170

**Related Specification:**  
AWS A5.25.69 E Ni Fe Ci

**Current:**  
AC/DC (+)

**Storage:**

If allowed to become damp, the electrodes should be re-dried for one hour at 150°C before use.

**MAC CAST E407 S**

Manufactured on a pure nickel core wire with an extruded basic flux containing both graphite and a high metallurgical grade of iron powder. Welds with a soft stable arc and ensures a metal recovery of 160% with respect to core wire. Designed for welding all grades of cast iron to steel. The advanced deoxidisation system ensures the maximum combination of weld strength, ductility and machinability. The design principle of the electrode prevents overheating and provides great resistance to porosity.

**Typical All Weld Metal Chemical Analysis (%)**

C	Fe	Mn	Ni	P	S	Si
0.90	44.0	1.10	54.0	0.009	0.010	0.60

**Typical All Weld Metal Mechanical Properties**

**As Welded**

Tensile Strength	410 N/mm <sup>2</sup>
0.2% Proof Stress	230 N/mm <sup>2</sup>
Elongation	15%
Hardness	240 HV

**Sizes Available and Recommended Amperages**

2.5mm	3.2mm	4.0mm	5.0mm
70-100	100-130	140-190	180-220

**Related Specification:**  
AWS A5.15 E Ni Fe Ci HR

**Current:**  
AC/DC (+/-)

**Storage:**

If allowed to become damp, the electrodes should be re-dried for one hour at 150°C before use.

**MAC CAST E409**

Fully machinable nickel based electrode with specially developed non-conductive coating for welding most cast irons. Specially designed for use where awkward and confined spaces cause arcing difficulties. May be used for hot or cold welding of most types of cast iron.

**Typical All Weld Metal Chemical Analysis (%)**

Mn	Ni
1.0	99.0

**Typical All Weld Metal Mechanical Properties**

**As Welded**

Tensile Strength	400 N/mm <sup>2</sup>
Elongation	15%
Hardness	180 Brinell

**Sizes Available and Recommended Amperages**

2.5mm	3.2mm	4.0mm	5.0mm
50-80	90-110	110-140	140-180

**Related Specification:**  
E Ni Ci Special Non-Conductive Coating

**Current:**  
AC/DC (+)

**Storage:**

If allowed to become damp, the electrodes should be re-dried for one hour at 150°C before use.

**MAC CAST E410**

Non-machinable electrode for cast iron repairs. Can be used on dirty and contaminated castings or any cast iron repair where machinability is unimportant. For best results castings should be preheated (maintained during welding) and slow cooled, to prevent possibility of cracking. Excellent colour match, will rust.

**Typical All Weld Metal Chemical Analysis (%)**

C	Ni	Si
3-3.5	1-1.5	0.6

**Sizes Available and Recommended Amperages**

2.5mm	3.2mm	4.0mm	5.0mm
60-80	90-110	110-140	140-180

**Related Specification:**

Cast Iron Special

**Current:**  
AC/DC (+)

**Storage:**

If allowed to become damp, the electrodes should be re-dried for one hour at 150°C before use.