

UNIBRAZE® 55

Specifications: AWS A5.15

Classification: ENiFe-CI

Description:

UNIBRAZE 55 is used for welding of cast irons to themselves as well as for joining cast irons to mild steels. It is also employed for the repair of castings. The welds are moderately hard and may require carbide tipped tools for machining. A preheat and interpass temperature of not less than 350°F is required during welding.

Typical Chemistry Analysis					
C	Mn	Si	S	Fe	Ni
2.0 max	2.5 max	4.0 max	0.03 max	Rem	45.0-60.0
Cu	Al	Other			
2.5 max	1.0 max	1.0 max			

Typical Mechanical Properties	
Tensile Strength	84,000 psi
Yield Strength	59,500 psi
Elongation % in 2"	8 %

UNIBRAZE® 99

Specifications: AWS A5.15

Classification: ENi-CI

Description:

UNIBRAZE 99 is designed for welding of gray iron castings to themselves as well as joining them to mild steels or stainless steels. It is also used extensively to repair castings. The welds are quite machinable. A preheat and interpass temperature of not less than 350°F is recommended during welding.

Typical Chemistry Analysis					
C	Mn	Si	S	Fe	Ni
2.0 max	2.5 max	4.0 max	0.03 max	8.0 max	85 min
Cu	Al	Other			
2.5 max	1.0 max	1.0 max			

Typical Mechanical Properties	
Tensile Strength	72,000 psi
Yield Strength	56,500 psi
Elongation % in 2"	5 %

UNIBRAZE® 112

Specifications: AWS 5.11

Classification: ENiCrMo-3

Description:

UNIBRAZE 112 is a covered electrode which is used to weld Ni-Cr-Mo alloys. It is also used extensively in overlay cladding where similar chemical composition is required on the clad side. Its applications include dissimilar joints between Ni-Cr-Mo alloys to either stainless steels, carbon, or low alloy steels. These electrodes are used in applications where the temperature ranges from cryogenic up to 1800°F.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.10 max	1.0 max	7.0 max	0.03 max	0.02 max	0.75 max
Cu	Ni	Cr	Nb(Cb)+Ta		Mo
0.50 max	55.0 min	20.0-23.0	3.15-4.15		8.0-10.0
Other					
0.50 max					

Typical Mechanical Properties	
Tensile Strength	114,500 psi
Yield Strength	89,500 psi
Elongation % in 2"	34 %

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UNIBRAZE® 117

Specifications: AWS A5.11

Classification: ENiCrCoMo-1

Description:

UNIBRAZE 117 is a covered electrode which is used for welding of Ni-Cr-Co-Mo alloys (UNS Number N06617). This electrode can also be used for overlay cladding where similar alloy is required. Weld metal provides optimum strength and oxidation resistance above 1500°up to 2100°F, especially when welding on base metals of Ni-Fe-Cr alloys.

Typical Chemistry Analysis						
C	Mn	Fe	P	S	Si	
0.05-0.15	0.3 - 2.5	5.0 max	0.03 max	0.015 max	0.75 max	
Cu	Ni	Co	Cr	Nb(Cb)+Ta		
0.50 max	Rem	9.0-15.0	21.0-26.0	1.0 max		
Mo	Other					
8.0-10.0	0.50 max					

Typical Mechanical Properties	
Tensile Strength	110,000 psi
Yield Strength	87,000 psi
Elongation % in 2"	26 %

UNIBRAZE® 122

Specifications: AWS 5.11

Classification: ENiCrMo-10

Description:

UNIBRAZE 122 electrodes are used for welding of Ni-Cr-Mo alloys as well as for overlay cladding on carbon, low alloy, or stainless steels. They are also used for dissimilar joints between Ni-Cr-Mo alloys and stainless, carbon, or low alloy steels. Typical specifications for the Ni-Cr-Mo base metals are ASTM, B574, B619, and B626—all of which have UNS Number N06022. UNIBRAZE 122 offers excellent corrosion resistance in oxidizing as well as reducing media in a wide variety of chemical process environments. It offers an outstanding resistance to stress corrosion cracking, pitting, and crevice corrosion.

Typical Chemistry Analysis						
C	Mn	Fe	P	S	Si	
0.02 max	1.0 max	2.0 - 6.0	0.03 max	0.015 max	0.2 max	
Cu	Ni	Co	Cr	Nb(Cb)+Ta		
0.50 max	Rem	2.5 max	20.0-22.5			
Mo	V	W	Other			
12.5-14.5	0.35 max	2.5 - 3.5	0.50 max			

Typical Mechanical Properties	
Tensile Strength	114,000 psi
Yield Strength	78,500 psi
Elongation % in 2"	36 %

UNIBRAZE® 135

Specifications:

Classification:

Description:

UNIBRAZE 135 is a covered electrode which is used for welding of Ni-Fe-Cr-Mo-Cu alloys. This electrode can be used to weld dissimilar joints between nickel alloys and stainless steels or low alloy steels as well as for overlay cladding where similar chemical composition is required.

Typical Chemistry Analysis						
C	Mn	Fe	P	S	Si	
0.02	2.10	27.4	0.009	0.005	0.40	
Cu	Ni	Mo	Cr			
1.8	35.2	3.2	29.3			

Typical Mechanical Properties	
Tensile Strength	87,000 psi
Yield Strength	71,000 psi
Elongation % in 2"	33 %

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UNIBRAZE® 141

Specifications: AWS 5.11

Classification: ENi-1

Description:

UNIBRAZE 141 is used for welding of cast and wrought forms of commercially pure nickel. These electrodes can also be used for surfacing as well as dissimilar welding between nickel and steel or stainless steel. The weld metal of this electrode has excellent corrosion resistance to caustic alkalies such as caustic soda and caustic potash.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.10 max	0.75 max	0.75 max	0.03 max	0.02 max	1.25 max
Cu	Ni	Al	Ti	Other	
0.25 max	92.0 min	1.0 max	1.0-4.0	0.50 max	

Typical Mechanical Properties	
Tensile Strength	64,500 psi
Yield Strength	58,500 psi
Elongation % in 2"	26 %

UNIBRAZE® 182

Specifications: AWS 5.11

Classification: ENiCrFe-3

Description:

UNIBRAZE182 electrodes are used for welding of Ni-Cr-Fe alloys to themselves, and for dissimilar welding between Ni-Cr-Fe alloys and steels or stainless steels. The applications include surfacing as well as clad-side welding. The high manganese of this weld deposit reduces the possibility of micro fissures. High manganese reduces creep strength, which limits its usage up to 900°F.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.10 max	5.0-9.5	10.0 max	0.03 max	0.015 max	1.0 max
Cu	Ni	Ti	Cr	Nb(Cb)+Ta	
0.50 max	59.0 min	1.0 max	13.0-17.0	1.0 - 2.5	
Other					
0.50 max					

Typical Mechanical Properties	
Tensile Strength	84,500 psi
Yield Strength	53,500 psi
Elongation % in 2"	36 %

UNIBRAZE® 187

Specifications: AWS 5.6

Classification: ECuNi

Description:

UNIBRAZE 187 is a copper-nickel, all-position electrode for shielded metal arc welding of wrought or cast alloys of similar composition as well as 80 Cu + 20 Ni and 90 Cu + 10 Ni alloys. It is also used for the clad side of copper-nickel clad steels. This filler metal is widely used in marine applications because of its good resistance to the corrosive effects of sea water.

Typical Chemistry Analysis					
Cu (incl Ag)	Mn	Fe	Si	Ni	
Rem	1.00-2.50	0.40-0.75	0.50 max	29.0-33.0	
P	Pb	Ti	Other (incl Zn & Sn)		
0.020 max	0.02 max	0.50 max	0.50 max		

Typical Mechanical Properties	
Tensile Strength	54,500 psi
Yield Strength	37,500 psi
Elongation % in 2"	28 %

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UNIBRAZE® 190

Specifications: AWS 5.11

Classification: ENiCu-7

Description:

UNIBRAZE 190 is used for welding materials of Ni-Cu alloys to themselves (such as ASTM, B126, B163, B164, B165--all of which have UNS Number N04400). They also can be used for overlay welding as well as for welding of clad steels where Ni-Cu surfacing is required. Dissimilar welding applications include joining nickel 200 and Cu-Nil alloys. This filler metal is widely used in marine applications because of its excellent resistance to the corrosive effects of seawater.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.15 max	4.0 max	2.5 max	0.02 max	0.015 max	1.5 max
Cu	Ni	Al	Ti	Other	
Rem	62.0-69.0	0.75 max	1.0 max	0.50 max	

Typical Mechanical Properties	
Tensile Strength	75,500 psi
Yield Strength	52,000 psi
Elongation % in 2"	39 %

UNIBRAZE® WELD A

Specifications: AWS A5.11

Classification: ENiCrFe-2

Description:

UNIBRAZE Weld A electrodes are used for welding of Ni-Cr-Fe alloys to themselves as well as for dissimilar welding between various nickel alloys and carbon or stainless steels. These electrodes can also be used for overlay cladding where similar alloy is needed. These electrodes have wide applications ranging from cryogenic temperatures up to 1500°F.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.10 max	1.0 - 3.5	12.0 max	0.03 max	0.02 max	0.75 max
Cu	Ni	Mo	Cr	Nb(Co)+Ta	
0.50 max	62.0 min	0.5 - 2.5	13.0 - 17.0	0.5 - 3.0	
Other					
0.50 max					

Typical Mechanical Properties	
Tensile Strength	89,000 psi
Yield Strength	72,000 psi
Elongation % in 2"	36 %

UNIBRAZE® C276

Specifications: AWS 5.11

Classification: ENiCrMo-4

Description:

UNIBRAZE C276 is used for welding materials of similar composition. This low carbon Ni-Cr-Mo filler metal can also be used for dissimilar welding between Nil base alloys and stainless steels, or low alloy steels. This electrode is used for overlay cladding to withstand process corrosion. The weld metal is capable of withstanding cryogenic temperatures. Due to high Mo content this alloy offers excellent resistance to stress corrosion cracking and pitting and crevice corrosion.

Typical Chemistry Analysis					
C	Mn	Fe	P	S	Si
0.02 max	1.0 max	4.0 - 7.0	0.04 max	0.03 max	0.2 max
Cu	Ni	Co	Cr	Mo	V
0.50 max	Rem	2.5 max	14.5-16.5	15.0 - 17.0	0.35 max
W	Other				
3.0 - 4.5	0.50 max				

Typical Mechanical Properties	
Tensile Strength	106,000 psi
Yield Strength	78,500 psi
Elongation % in 2"	39 %

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