

ARCTEC® STAINLESS STEEL ELECTRODES



ARCTEC® E308L-17 AWS A5.4 Class E308L-17

DESCRIPTION AND APPLICATION:

Arctec® E308L-17 produces a concave weld bead with minimum ripple and has a virtually self lifting slag. The excellent wetting action and very fine ripple minimize crevice corrosion and grinding time. The low carbon content of this filler metal reduces the risk of carbide precipitation and thus increases the resistance to intergranular corrosion.

For welding types 301, 302, 304 and 308 stainless. Primarily used for welding low carbon base materials of similar composition.

Typical Mechanical Properties:	Tensile Strength: 83,700 psi (557 Mpa)		Elongation 44 -52% - 2"		
Typical Deposit Analysis:	C	Cr	Ni	Mn	Si
%	.02	19.0	10.0	.70	.80

ARCTEC® E309L-17 AWS A5.4 Class E309L-17

DESCRIPTION AND APPLICATION:

Arctec® E309L-17 produces a concave weld bead with minimum ripple and has a virtually self lifting slag. The excellent wetting action and very fine ripple minimize crevice corrosion and grinding time. The low carbon content of this filler metal reduces the risk of carbide precipitation and thus increases the resistance to intergranular corrosion.

For joining and cladding steels of similar composition in wrought and cast form. Also used for welding dissimilar steels such as joining stainless to carbon steel.

Typical Mechanical Properties:	Tensile Strength: 85,500 psi (586 Mpa)		Elongation 35-45% - 2"		
Typical Deposit Analysis:	C	Cr	Ni	Mn	Si
%	.02	23.5	13.0	.70	.80

ARCTEC® E310-17 AWS A5.4 Class E310-17

DESCRIPTION AND APPLICATION:

Arctec® E310-17 is primarily intended for welding type 310 stainless steel. The deposit exhibits the same chemical and oxidation resistant qualities as the base metal. It is considered standard practice to weld types 410, 430 and 502 with type 310 or 309 where field welding is done and where it is not possible to preheat or anneal after welding.

Typical Mechanical Properties:	Tensile Strength: 85,000 to 95,000 psi (586 to 655 Mpa)		Elongation 35 to 45% - 2"		
Typical Deposit Analysis:	C	Cr	Ni	Mn	Si
%	.15	26.0	21.0	1.8	.40

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a quality welding alloy

ARCTEC® E316L-17 AWS A5.4 Class E316L-17

DESCRIPTION AND APPLICATION:

Arctec® E316L-17 produces a concave weld bead with minimum ripple and has a virtually self lifting slag. The excellent wetting action and very fine ripple minimize crevice corrosion and grinding time. The low carbon content of this filler metal reduces the risk of carbide precipitation and thus increases the resistance to intergranular corrosion. The addition of molybdenum increases the resistance to pitting corrosion caused by corrosive media such as sulfuric acids, chlorides and cellulose solutions. Primarily used for welding low carbon molybdenum bearing austenitic alloys.

Typical Mechanical Properties:	Tensile Strength: 77,500 psi (534 Mpa)					Elongation 45% - 2"
Typical Deposit Analysis:	C	Cr	Ni	Mn	Si	Mo
%	.02	18.0	12.0	.70	.75	2.80

ARCTEC® E317L-17 AWS A5.4 Class E317L-17

DESCRIPTION AND APPLICATION:

Arctec® E317L-17 is primarily used for welding alloys of similar composition and is utilized in severely corrosive environments where crevice and pitting corrosion are of concern. The low carbon content of this filler metal reduces the risk of carbide precipitation and thus increases the resistance to intergranular corrosion. The addition of molybdenum increases the resistance to pitting corrosion caused by corrosive media such as sulfuric acids, chlorides and cellulose solutions.

Typical Mechanical Properties:	Tensile Strength: 80,000 to 90,000 psi (552 to 621 Mpa)					Elongation 35-45% - 2"
Typical Deposit Analysis:	C	Cr	Ni	Mn	Si	Mo
%	.03	19.0	12.7	1.70	.50	3.50

ARCTEC® E385-17 AWS A5.4 Class E385-17

DESCRIPTION AND APPLICATION:

Arctec® E385-17 is primarily used for welding Type 904L materials or alloys of similar composition and is utilized in severely corrosive environments such as handling of sulfuric acid and many chloride-containing media. E385-17 can also be used for joining Type 904L base metal to other grades of stainless. In order to reduce the propensity for fissuring and hot cracking, the low melting constituents such as carbon, silicon and phosphorous are controlled to lower levels in this alloy.

Typical Mechanical Properties:	Tensile Strength: 86,500 psi (600 Mpa)					Elongation 36% - 2"				
Typical Deposit Analysis:	C	Cr	Ni	Mn	Si	Cu	Mo	S	P	N
%	.019	20.5	25.1	2.05	.35	1.6	4.6	.015	.014	.04

RECOMMENDED OPERATING PARAMETERS:

The following parameters may be used as a guideline for the stainless steel alloys listed herein.

WELDING PROCESS: SMAW

POLARITY: DC Reverse or AC

Diameter	1.5 mm 1/16"	2.0 mm 5/64"	2.50 mm 3/32"	3.25 mm 1/8"	4.0 mm 5/32"	5.0 mm 3/16"
Amperage	30-50	40-60	60-80	80-100	110-140	140-180

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a quality welding alloy

ARCTEC® E410 AWS A5.4 Class E410

DESCRIPTION AND APPLICATION:

Arctec® E410 is a 12 % chromium air hardening steel. This alloy is most commonly used for welding alloys of similar composition. Also used for overlays on carbon steel to resist corrosion, erosion, or abrasion. Preheat and postheat treatments are required to achieve welds of adequate ductility for many engineering purposes.

Typical Mechanical Properties:	Tensile Strength: 75,000 psi (520 Mpa)					Elongation: 20%
Typical Deposit Analysis:	C	Cr	Ni	Mn	Si	Mo
%	.12	13.0	.60	.60	.50	.75

ARCTEC® E410NiMo AWS A5.4 Class E410NiMo

DESCRIPTION AND APPLICATION:

Arctec® E410NiMo weld deposit is modified to contain less chromium and more nickel than the E410 deposit. The objective is to eliminate ferrite in the microstructure as ferrite has a deleterious effect on mechanical properties of this alloy. This alloy is most commonly used for welding ASTM (CA-6NM) castings or similar materials. Final postweld heat treatment should not exceed 1150°F (620°C)

Typical Mechanical Properties:	Tensile Strength: 110,000 psi (760 Mpa)					Elongation: 15%
Typical Deposit Analysis:	C	Cr	Ni	Mn	Si	Mo
%	.06	12.0	4.5	1.0	.80	.70

RECOMMENDED OPERATING PARAMETERS:

The following parameters may be used as a guideline for the stainless steel alloys listed herein.

WELDING PROCESS: SMAW

POLARITY: DC Reverse or AC

Diameter	2.50 mm 3/32"	3.25 mm 1/8"	4.0 mm 5/32"
Amperage	60-80	80-100	110-140

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Subject to change without notice

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