

ULTRACORE® FC 308L

Stainless ▪ AWS E308T0-1, E308T0-4, E308LT0-1, E308LT0-4

KEY FEATURES

- Superior weld performance and enhanced operator appeal
- Q2 Lot® - Certificate showing actual deposit composition and ferrite number (FN) by ferrite scope available online
- ProTech® hermetically sealed packaging

WELDING POSITIONS

Flat & Horizontal

SHIELDING GAS

100% CO₂
75% Argon / 25% CO₂

CONFORMANCES

AWS A5.22/A5.22M: & ASME SFA-A5.22:	E308LT0-1, E308LT0-4, E308T0-1, E308T0-4
ABS:	E308LT0-1, E308LT0-4, E308T0-1, E308T0-4
CWB/CSA W48-06:	E308LT0-1, E308LT0-4

TYPICAL APPLICATIONS

- 304L and other common 18/8 stainless steels
- Nitrogen bearing 304LN and titanium stabilized 321
- General fabrication including piping, tanks and pressure vessels

DIAMETERS / PACKAGING

Diameter in (mm)	25 lb (11.3 kg) Plastic Spool (Vacuum Sealed Foil Bag)
0.045 (1.1) 1/16 (1.6)	ED033004 ED033005

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.22/A5.22M

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Ferrite Number
Requirements AWS E308T0-1, E308T0-4 AWS E308LT0-1, E308LT0-4	Not Specified Not Specified	520 (75) min 550 (80) min	35 min	Not Specified Not Specified
Typical Results⁽³⁾ - As-Welded with 100% CO ₂ with 75% Ar/25% CO ₂	405 (59) 440 (64)	580 (84) 605 (88)	43 37	7-11 8-11

⁽¹⁾Typical all weld metal, DC+. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾Requirement for E308T0-1 and E308T0-4 is 0.08% max. carbon. ⁽⁵⁾To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD. NOTE: Increase Voltage by 2V when using 100% CO₂

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.22/A5.22M

	%C ⁽⁴⁾	%Mn	%Si	%S	%P
Requirements - AWS E308LT0-1, E308LT0-4	0.04 max	0.5-2.5	1.0 max	0.03 max	0.04 max
Typical Results⁽³⁾ - As-Welded with 100% CO ₂ with 75% Ar/25% CO ₂	≤0.03 ≤0.03	1.2-1.3 1.2-1.3	0.60-0.70 0.68-0.77	≤0.02 ≤0.01	≤0.02 ≤0.02
	%Ni	%Cr	%Mo	%Cu	
Requirements - AWS E308LT0-1, E308LT0-4	9.0-11.0	18.0-21.0	0.5 max	0.5 max	
Typical Results⁽³⁾ - As-Welded with 100% CO ₂ with 75% Ar/25% CO ₂	9.3-9.7 9.3-9.7	18.2-18.5 18.7-18.9	≤0.27 ≤0.27	≤0.31 ≤0.27	

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD ⁽⁵⁾ mm (in)	Wire Feed Speed m/min (in/min)	Voltage (Volts)	Approx. Current (Amps)	Melt-Off Rate kg/hr (lb/hr)	Deposition Rate kg/hr (lb/hr)	Efficiency (%)
0.045 in (1.1 mm), DC+ 75% Ar/25% CO ₂	19 (3/4)	6.4 (250)	23-26	145	2.7 (5.9)	2.3 (5.2)	88
	19 (3/4)	8.9 (350)	24-27	170	3.7 (8.3)	3.3 (7.3)	88
	19 (3/4)	11.4 (450)	25-28	205	4.8 (10.6)	4.2 (9.3)	88
1/16 in (1.6 mm), DC+ 75% Ar/25% CO ₂	25 (1)	3.6 (140)	23-26	175	2.8 (6.3)	2.5 (5.4)	86
	25 (1)	6.4 (250)	24-27	260	5.1 (11.1)	4.4 (9.7)	87
	25 (1)	7.6 (300)	25-28	285	9.1 (20.0)	7.9 (17.4)	87

⁽¹⁾Typical all weld metal, DC+. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾Requirement for E308T0-1 and E308T0-4 is 0.08% max. carbon.
⁽⁵⁾To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD. NOTE: Increase Voltage by 2V when using 100% CO₂.

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.

BEFORE USE, READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.

ULTRACORE® FCP 308L

Stainless ▪ AWS E308LT1-1, E308LT1-4, E308T1-1, E308T1-4

KEY FEATURES

- Dual classified—meets 308/308L
- Q2 Lot® - Certificate showing actual deposit composition and ferrite number (FN) available online
- Stable and consistent with CO₂ and mixed gas
- Easy to control out of position
- ProTech® hermetically sealed packaging

CONFORMANCES

AWS A5.22/A5.22M: & ASME SFA-A5.22:	E308LT1-1, E308LT1-4, E308T1-1, E308T1-4
ABS:	E308LT1-1, E308LT1-4, E308T1-1, E308T1-4
CWB/CSA W48-06:	E308LT1-1, E308LT1-4

WELDING POSITIONS

All

SHIELDING GAS

100% CO₂
75% Argon / 25% CO₂

TYPICAL APPLICATIONS

- 304L and other common 18/8 stainless steels
- Nitrogen bearing 304LN and titanium stabilized 321
- General fabrication including piping, tanks, and pressure vessels

DIAMETERS / PACKAGING

Diameter in (mm)	25 lb (11.3 kg) Plastic Spool (Vacuum Sealed Foil Bag)
0.045 (1.1)	ED027949
1/16 (1.6)	ED027950

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.22/A5.22M

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Ferrite Number
Requirements AWS E308LT1-1, E308LT1-4 AWS E308T1-1, E308T1-4	Not Specified Not Specified	520 (75) min 550 (80) min	30 min	Not Specified Not Specified
Typical Results⁽³⁾ As-Welded with 100% CO ₂ As-Welded with 75% Ar/25% CO ₂	386 (56) 393 (57)	566 (82) 572 (83)	40 39	7-11 8-12

⁽¹⁾ Typical all weld metal, DC+. ⁽²⁾ Measured with 0.2% offset. ⁽³⁾ See test results disclaimer

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.22/A5.22M

	%C⁽⁴⁾	%Mn	%Si	%S	%P
Requirements - AWS E308LT1-1 & E308LT1-4	0.04 max	0.5-2.5	1.0 max	0.03 max	0.04 max
Typical Results⁽³⁾					
As-Welded with 100% CO ₂	≤ 0.03	1.2-1.3	0.6-0.7	≤ 0.01	≤ 0.02
As-Welded with 75% Ar/25% CO ₂	≤ 0.03	1.4-1.5	0.7-0.8	≤ 0.01	≤ 0.02
	%Ni	%Cr	%Mo	%Cu	%Bi
Requirements - AWS E308LT1-1 & E308LT1-4	9.0-11.0	18.0 - 21.0	0.75 max	0.75 max	-
Typical Results⁽³⁾					
As-Welded with 100% CO ₂	9.5-9.9	18.0 - 18.6	≤ 0.20	≤ 0.25	0.01-0.02
As-Welded with 75% Ar/25% CO ₂	9.7-9.9	18.5 - 19.0	≤ 0.20	≤ 0.25	0.01-0.02

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD⁽⁵⁾ mm (in)	Wire Feed Speed m/min (in/min)	Voltage (Volts)	Approx. Current (Amps)	Melt-Off Rate kg/hr (lb/hr)	Deposition Rate kg/hr (lb/hr)	Efficiency (%)
0.045 in (1.1 mm), DC+ 75% Ar/25% CO ₂	19 (3/4)	5.1 (200)	23-26	120	2.1 (4.7)	1.8 (4.0)	85
	19 (3/4)	7.6 (300)	25-28	155	3.2 (7.0)	2.7 (6.0)	86
	19 (3/4)	10.2 (400)	27-30	185	4.3 (9.4)	3.6 (7.9)	84
1/16 in (1.6 mm), DC+ 75% Ar/25% CO ₂	25 (1)	3.6 (140)	23-26	175	2.8 (6.2)	2.4 (5.3)	85
	25 (1)	5.1 (200)	24-27	210	4.0 (8.9)	3.4 (7.4)	83
	25 (1)	8.9 (350)	26-29	290	7.0 (15.5)	5.9 (13.0)	84

⁽¹⁾ Typical all weld metal, DC+. ⁽²⁾ Measured with 0.2% offset. ⁽³⁾ See test results disclaimer. ⁽⁴⁾ Requirement for E308T1-1, E308T1-4 maximum carbon 0.08%. Chart values for %C are for E308LT1-1, E308LT1-4. ⁽⁵⁾ To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD. NOTE: Increase Voltage by 2V when using 100% CO₂.

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.

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ULTRACORE® FC 309L

Stainless ▪ AWS E309T0-1, E309T0-4, E309LT0-1, E309LT0-4

KEY FEATURES

- Superior weld performance and enhanced operator appeal
- Q2 Lot® - Certificate showing actual deposit composition and ferrite number (FN) by ferrite scope available online
- ProTech® hermetically sealed packaging

CONFORMANCES

AWS A5.22/A5.22M: & ASME SFA-A5.22:	E309T0-1, E309T0-4, E309LT0-1, E309LT0-4
ABS:	E309T0-1, E309T0-4, E309LT0-1, E309LT0-4
CWB/CSA W48-06:	E309LT0-1, E309LT0-4

WELDING POSITIONS

Flat & Horizontal

TYPICAL APPLICATIONS

- Buffer layers and clad steels – overlays on CMn, mild steel or low alloy steels
- Dissimilar joints – stainless types 410, 304L, 321, and 316L to mild and low alloy steels

SHIELDING GAS

100% CO₂
75% Argon / 25% CO₂

DIAMETERS / PACKAGING

Diameter in (mm)	25 lb (11.3 kg) Plastic Spool (Vacuum Sealed Foil Bag)
0.045 (1.1)	ED033006
1/16 (1.6)	ED033007

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.22/A5.22M

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Ferrite Number
Requirements AWS E309LT0-1, E309LT0-4 AWS E309T0-1, E309T0-4	Not Specified Not Specified	520 (75) min 550 (80) min	30 min	Not Specified Not Specified
Typical Results⁽³⁾ As-Welded with 100% CO ₂ As-Welded with 75% Ar/25% CO ₂	440 (64) 435 (63)	570 (83) 580 (84)	36 37	15-21 15-21

⁽¹⁾Typical all weld metal, DC+. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.22/A5.22M

	%C⁽⁴⁾	%Mn	%Si	%S	%P
Requirements – AWS E309LTO-1 & E309LTO-4	0.04 max	0.5 - 2.5	1.0 max	0.03 max	0.04 max
Typical Results⁽³⁾ As-Welded with 100% CO ₂ As-Welded with 75% Ar/25% CO ₂	≤0.03 ≤0.03	1.3-1.5 1.2-1.5	0.65-0.75 0.72-0.78	≤0.01 ≤0.01	≤0.02 ≤0.02
	%Ni	%Cr	%Mo	%Cu	
Requirements – AWS E309LTO-1 & E309LTO-4	12.0 - 14.0	22.0 - 25.0	0.5 max.	0.5 max.	
Typical Results⁽³⁾ As-Welded with 100% CO ₂ As-Welded with 75% Ar/25% CO ₂	12.2-12.8 12.2-12.8	22.6 - 23.9 23.0 - 24.0	≤0.27 ≤0.23	≤0.31 ≤0.27	

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD⁽⁵⁾ mm (in)	Wire Feed Speed m/min (in/min)	Voltage (Volts)	Approx. Current (Amps)	Melt-Off Rate kg/hr (lb/hr)	Deposition Rate kg/hr (lb/hr)	Efficiency (%)
0.045 in (1.1 mm), DC+ 75% Ar/25% CO ₂	19 (3/4)	6.4 (250)	24-27	145	2.7 (5.9)	2.4 (5.2)	88
	19 (3/4)	8.9 (350)	25-28	180	3.8 (8.3)	3.3 (7.3)	88
	19 (3/4)	11.4 (450)	26-29	200	4.9 (10.7)	4.3 (9.4)	88
1/16 in (1.6 mm), DC+ 75% Ar/25% CO ₂	25 (1)	3.6 (140)	22-25	170	2.8 (6.3)	2.5 (5.5)	87
	25 (1)	6.4 (250)	24-27	245	5.1 (11.2)	4.4 (9.7)	87
	25 (1)	7.6 (300)	26-29	270	6.1 (13.4)	5.3 (11.6)	87

⁽¹⁾Typical all weld metal, DC+. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾Requirement for E309T1-1 and E309T1-4 is 0.10% max. carbon.
⁽⁵⁾To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD. NOTE: Increase Voltage by 2V when using 100% CO₂

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

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ULTRACORE® FCP 309L

Stainless ▪ AWS E309LT1-1, E309LT1-4, E309T1-1, E309T1-4

KEY FEATURES

- Dual classified- meets 309/309L
- Q2 Lot® - Certificate showing actual deposit composition and ferrite number (FN) available online
- Stable and consistent CO₂ and mixed gas
- Easy to control out of position
- ProTech® hermetically sealed packaging

WELDING POSITIONS

All

CONFORMANCES

- AWS A5.22/A5.22M:
& ASME SFA-A5.22:** E309LT1-1, E309LT1-4,
E309T1-1, E309T1-4
- ABS:** E309LT1-1, E309LT1-4,
E309T1-1, E309T1-4
- CWB/CSA W48-06:** E309LT1-1, E309LT1-4

TYPICAL APPLICATIONS

- Buffer layers and clad steels - overlays on CMn, mild steel or low alloy steels
- Dissimilar joints - stainless types 410, 304L, 321, and 316L to mild and low alloy steels

SHIELDING GAS

- 100% CO₂
- 75% Argon / 25% CO₂

DIAMETERS / PACKAGING

Diameter in (mm)	25 lb (11.3 kg) Plastic Spool (Vacuum Sealed Foil Bag)
0.045 (1.1)	ED033010
1/16 (1.6)	ED033011

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.22/A5.22M

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Ferrite Number
Requirements AWS E309LT1-1, E309LT1-4 AWS E309T1-1, E309T1-4	Not Specified Not Specified	520 (75) min 550 (80) min	30 min	Not Specified Not Specified
Typical Results⁽³⁾ As-Welded with 100% CO ₂ As-Welded with 75% Ar/25% CO ₂	434 (63) 450 (65)	565 (82) 593 (86)	33 33	20-22 22-27

⁽¹⁾Typical all weld metal, DC+. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.22/A5.22M

	%C⁽⁴⁾	%Mn	%Si	%S	%P
Requirements - AWS E309LT1-1 & E309LT1-4	0.04 max	0.5-2.5	1.0 max	0.03 max	0.04 max
Typical Results⁽³⁾					
As-Welded with 100% CO ₂	≤0.03	1.0	0.8	≤ 0.01	≤ 0.02
As-Welded with 75% Ar/25% CO ₂	≤0.03	1.0	0.9	≤ 0.01	≤ 0.02
	%Ni	%Cr	%Mo	%Cu	%Bi
Requirements - AWS E309LT1-1 & E309LT1-4	12.0 - 14.0	22.0 - 25.0	0.75 max	0.75 max	-
Typical Results⁽³⁾					
As-Welded with 100% CO ₂	12.8-13.2	23.6-23.9	≤ 0.20	≤ 0.25	0.01-0.02
As-Welded with 75% Ar/25% CO ₂	12.9-13.3	23.9-24.1	≤ 0.20	≤ 0.25	0.01-0.02

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD⁽⁵⁾ mm (in)	Wire Feed Speed m/min (in/min)	Voltage (Volts)	Approx. Current (Amps)	Melt-Off Rate kg/hr (lb/hr)	Deposition Rate kg/hr (lb/hr)	Efficiency (%)
0.045 in (1.1 mm), DC+ 75% Ar/25% CO ₂	19 (3/4)	5.1 (200)	24-27	130	2.1 (4.6)	1.8 (3.9)	85
	19 (3/4)	7.6 (300)	25-28	155	3.2 (7.0)	2.6 (5.8)	83
	19 (3/4)	10.2 (400)	26-29	190	4.2 (9.3)	3.5 (7.8)	84
1/16 in (1.6 mm), DC+ 75% Ar/25% CO ₂	25 (1)	3.6 (140)	23-26	170	2.8 (6.1)	2.3 (5.0)	82
	25 (1)	5.1 (200)	25-28	210	3.9 (8.7)	3.2 (7.1)	82
	25 (1)	8.9 (350)	26-29	290	6.9 (15.1)	5.7 (12.5)	83

⁽¹⁾Typical all weld metal, DC+. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾Requirement for E309T1-1, E309T1-4 maximum carbon 0.08%. Chart values for %C are for E309LT1-1, E309LT1-4. ⁽⁵⁾To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD. NOTE: Increase Voltage by 2V when using 100% CO₂.

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.

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ULTRACORE® FC 316L

Stainless ▪ AWS E316T0-1, E316T0-4, E316LT0-1, E316LT0-4

KEY FEATURES

- Superior weld performance and enhanced operator appeal
- Q2 Lot® - Certificate showing actual deposit composition and ferrite number (FN) by ferrite scope available online
- ProTech® hermetically sealed packaging

CONFORMANCES

- AWS A5.22/A5.22M:
& ASME SFA-A5.22:** E316LT0-1, E316LT0-4,
E316T0-1, E316T0-4
- ABS:** E316LT0-1, E316LT0-4,
E316T0-1, E316T0-4
- CWB/CSA W48-06:** E316LT0-1, E316LT0-4

WELDING POSITIONS

Flat & Horizontal

TYPICAL APPLICATIONS

- 1.5 – 3% Mo austenitic stainless steel
- Suitable for Ti or Nb stabilized and nitrogen-bearing versions of the above alloys
- Applications requiring good resistance to pitting and general corrosion

SHIELDING GAS

- 100% CO₂
- 75% Argon / 25% CO₂

DIAMETERS / PACKAGING

Diameter in (mm)	25 lb (11.3 kg) Plastic Spool (Vacuum Sealed Foil Bag)
0.045 (1.1)	ED033008
1/16 (1.6)	ED033009

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.22/A5.22M

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Ferrite Number
Requirements AWS E316T0-1, E316T0-4 AWS E316LT0-1, E316LT0-4	Not Specified Not Specified	520 (75) min 550 (80) min	30 min	Not Specified Not Specified
Typical Results⁽³⁾ As-Welded with 100% CO ₂ As-Welded with 75% Ar/25% CO ₂	435 (63) 430 (62)	570 (83) 580 (84)	35 37	6-9 7-9

⁽¹⁾Typical all weld metal, DC+. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.22/A5.22M

	%C⁽⁴⁾	%Mn	%Si	%S	%P
Requirements - AWS E316LT0-1 & E316LT0-4	0.04 max	0.5-2.5	1.0 max	0.03 max	0.04 max
Typical Results⁽³⁾ As-Welded with 100% CO ₂ As-Welded with 75% Ar/25% CO ₂	≤0.03 ≤0.03	1.2-1.3 1.1-1.4	0.60 - 0.70 0.70 - 0.73	≤0.01 ≤0.01	≤0.02 ≤0.02
	%Ni	%Cr	%Mo	%Cu	
Requirements - AWS E316LT0-1 & E316LT0-4	11.0 - 14.0	17.0 - 20.0	2.0 - 3.0	0.5 max	
Typical Results⁽³⁾ As-Welded with 100% CO ₂ As-Welded with 75% Ar/25% CO ₂	11.3-12.2 11.2-11.6	17.7-18.3 17.7-18.3	≤2.87 ≤2.66	≤0.35 ≤0.27	

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD⁽⁵⁾ mm (in)	Wire Feed Speed m/min (in/min)	Voltage (Volts)	Approx. Current (Amps)	Melt-Off Rate kg/hr (lb/hr)	Deposition Rate kg/hr (lb/hr)	Efficiency (%)
0.045 in (1.1 mm), DC+ 75% Ar/25% CO ₂	19 (3/4)	6.4 (250)	23-26	140	2.7 (5.9)	2.3 (5.1)	86
	19 (3/4)	8.9 (350)	24-27	170	3.8 (8.3)	3.2 (7.1)	86
	19 (3/4)	11.4 (450)	25-28	200	4.8 (10.7)	4.2 (9.3)	87
1/16 in (1.6 mm), DC+ 75% Ar/25% CO ₂	25 (1)	3.6 (140)	25-29	155	2.8 (6.2)	2.4 (5.3)	85
	25 (1)	6.4 (250)	27-31	250	5.0 (11.0)	4.2 (9.3)	85
	25 (1)	7.6 (300)	28-32	285	6.0 (13.2)	5.2 (11.4)	86

⁽¹⁾Typical all weld metal, DC+. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾Requirement for E316T1-1 and E316T1-4 is 0.08% max. carbon. ⁽⁵⁾To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD.
NOTE: Increase Voltage by 2V when using 100% CO₂

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.

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ULTRACORE® FCP 316L

Stainless ▪ AWS E316LT1-1, E316LT1-4, E316T1-1, E316T1-4

KEY FEATURES

- Dual classified-meets 316/316L
- Q2 Lot® - Certificate showing actual deposit composition and ferrite number (FN) available online
- Stable and consistent with CO₂ and mixed gas
- Easy to control out of position
- ProTech® hermetically sealed packaging

WELDING POSITIONS

All

CONFORMANCES

AWS A5.22/A5.22M: & ASME SFA-A5.22:	E316LT1-1, E316LT1-4, E316T1-1, E316T1-4
ABS:	E316LT1-1, E316LT1-4, E316T1-1, E316T1-4
CWB/CSA W48-06:	E316LT1-1, E316LT1-4

TYPICAL APPLICATIONS

- 1.5 - 3.0% Mo austenitic stainless steel
- Applications requiring good resistance to pitting and general corrosion

SHIELDING GAS

100% CO₂
75% Argon / 25% CO₂

DIAMETERS / PACKAGING

Diameter in (mm)	25 lb (11.3 kg) Plastic Spool (Vacuum Sealed Foil Bag)
0.045 (1.1)	ED033012
1/16 (1.6)	ED033013

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.22/A5.22M

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Ferrite Number
Requirements AWS E316LT1-1, E316LT1-4 AWS E316T1-1, E316T1-4	Not Specified Not Specified	520 (75) min 550 (80) min	30 min	Not Specified Not Specified
Typical Results⁽³⁾ As-Welded with 100% CO ₂ As-Welded with 75% Ar/25% CO ₂	414 (60) 421 (65)	552 (80) 565 (82)	34 34	6-8 8-11

⁽¹⁾Typical all weld metal, DC+. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.22/A5.22M

	%C⁽⁴⁾	%Mn	%Si	%S	%P
Requirements – AWS E316LT1-1 & E316LT1-4	0.04 max	0.5-2.5	1.0 max	0.03 max	0.04 max
Typical Results⁽³⁾ As-Welded with 100% CO ₂ As-Welded with 75% Ar/25% CO ₂	≤ 0.03 ≤ 0.03	1.0 1.1	0.6 0.7	≤ 0.01 ≤ 0.01	≤ 0.02 ≤ 0.02
	%Ni	%Cr	%Mo	%Cu	%Bi
Requirements – AWS E316LT1-1 & E316LT1-4	11.0-14.0	17.0-20.0	2.0 - 3.0	0.75 max	-
Typical Results⁽³⁾ As-Welded with 100% CO ₂ As-Welded with 75% Ar/25% CO ₂	12.3-12.5 12.3-12.5	18.0-18.5 18.5-19.0	2.5 - 2.8 2.5 - 2.8	≤ 0.25 ≤ 0.25	0.02-0.03 0.02-0.03

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD⁽⁵⁾ mm (in)	Wire Feed Speed m/min (in/min)	Voltage (Volts)	Approx. Current (Amps)	Melt-Off Rate kg/hr (lb/hr)	Deposition Rate kg/hr (lb/hr)	Efficiency (%)
0.045 in (1.1 mm), DC+ 75% Ar/25% CO ₂	19 (3/4)	5.1 (200)	22-25	130	2.1 (4.7)	1.8 (4.0)	85
	19 (3/4)	7.6 (300)	23-26	165	3.2 (7.1)	2.7 (5.9)	83
	19 (3/4)	10.2 (400)	24-27	190	4.3 (9.4)	3.6 (7.9)	84
1/16 in (1.6 mm), DC+ 75% Ar/25% CO ₂	25 (1)	3.6 (140)	23-26	170	2.8 (6.2)	2.3 (5.1)	82
	25 (1)	5.1 (200)	24-27	205	4.0 (8.8)	3.3 (7.2)	82
	25 (1)	8.9 (350)	25-28	290	7.0 (15.3)	5.6 (12.4)	81

⁽¹⁾Typical all weld metal, DC+. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾Requirement for E316T1-1, E316T1-4 maximum carbon 0.08%. Chart values for %C are for E316LT1-1, E316LT1-4.
⁽⁵⁾To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD. NOTE: Increase Voltage by 2V when using 100% CO₂

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.

BEFORE USE, READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.

SUPERCORE® 308LCF

Stainless ▪ AWS E308LT1-1/4 J

KEY FEATURES

- Controlled Low Ferrite (Range 3-6)
- Charpy V-Notch test results capable of exceeding 27 J (20 ft•lbf) @ -196°C (-320°F)
- Exceeds 15 mils (0.38 mm) of lateral expansion @ -196°C (-320°F)
- Q2 Lot® - Certificates showing deposit composition, ferrite number, and charpy impact properties tested @ -196°C (-320°F)
- Batch Managed Inventory

WELDING POSITIONS

All

CONFORMANCES

AWS 5.22: E308LT1-1/4 J
ASME SFA 5.22: E308LT1-1/4 J

TYPICAL APPLICATIONS

- LNG Storage
- Cryogenic Vessels and Piping

TYPICAL BASE METALS

- 304L stainless steel
- 18/8 steels with service temperatures down to -196°C (-320°F)

SHIELDING GAS

80% Argon / 20% CO₂ or 100% CO₂

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Spool
0.045 (1.2)	ED034815

MECHANICAL PROPERTIES⁽¹⁾

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lb) -196°C (-320°F)	Lateral Expansion mm (mils) -196°C (-320°F)
Requirements AWS A5.22: E308LT1-1/4 J As-Welded with 80% Ar/20% CO ₂	Not Specified	520 (75) min	30 min	Not Specified	0.38 (15)
Typical Results⁽³⁾ As-Welded with 80% Ar/20% CO ₂	400 (58)	540 (78)	50	36 (27)	0.70 (28)

DEPOSIT COMPOSITION⁽¹⁾

	%C	%Mn	%Si	%S	%P
Requirements As-Welded with 80% Ar/20% CO ₂	0.04 max	0.5 - 2.5	1.0 max	0.03 max	0.04 max
Typical Results⁽³⁾	0.03	1.4	0.6	0.01	0.02
	%Cr	%Ni	%Mo	%Cu	%FN
Requirements As-Welded with 80% Ar/20% CO ₂	18.0-21.0	9.0-11.0	0.75	0.75	Not Specified
Typical Results⁽³⁾	18.6	10.5	0.1	0.1	3

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD ⁽⁵⁾ mm (in)	Wire Feed Speed m/min (in/min)	Voltage (Volts)	Approx. Current (Amps)	Melt-Off Rate kg/hr (lb/hr)	Deposition Rate kg/hr (lb/hr)	Efficiency (%)
0.045 in (1.1 mm), DC+ 75% Ar/25% CO ₂	19 (3/4)	5.1 (200)	23-26	120	2.1 (4.7)	1.8 (4.0)	85
	19 (3/4)	7.6 (300)	25-28	155	3.2 (7.0)	2.7 (6.0)	86
	19 (3/4)	10.2 (400)	27-30	185	4.3 (9.4)	3.6 (7.9)	84

⁽¹⁾Typical all weld metal ⁽²⁾Measured with 0.2% offset ⁽³⁾See test results disclaimer

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.

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SUPERCORE® 316LCF

Stainless ▪ AWS E316LT1-1/4 J

KEY FEATURES

- Controlled Low Ferrite (Range 3-5)
- Charpy V-Notch test results capable of exceeding 27 J (20 ft•lbf) @ -196°C (-320°F)
- Exceeds 15 mils (0.38 mm) of lateral expansion @ -196°C (-320°F)
- Q2 Lot® - Certificates showing deposit composition, ferrite number, and charpy impact properties tested @ -196°C (-320°F)
- Batch Managed Inventory

WELDING POSITIONS

All

CONFORMANCES

AWS 5.22: E316LT1-1/4 J
ASME SFA 5.22: E316LT1-1/4 J

TYPICAL APPLICATIONS

- LNG Storage
- Cryogenic Vessels and Piping

TYPICAL BASE METALS

316L stainless steel

SHIELDING GAS

80% Argon/20% CO₂ or 100% CO₂

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Spool
0.045 (1.2)	ED034816

MECHANICAL PROPERTIES⁽¹⁾

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lb) -196°C (-320°F)	Lateral Expansion mm (mils) -196°C (-320°F)
Requirements AWS E316LT1-1/4 J As-Welded with 80% Ar/20% CO ₂	Not Specified	485 (70) min	30 min	Not Specified	0.38 (15)
Typical Results⁽³⁾ As-Welded with 80% Ar/20% CO ₂	410 (69)	550 (80)	40	34 (25)	0.55 (22)

DEPOSIT COMPOSITION⁽¹⁾

	%C	%Mn	%Si	%S	%P
Requirements As-Welded with 80% Ar/20% CO ₂	0.04 max	0.5-2.5	1.0 max	0.03 max	0.04 max
Typical Results⁽³⁾	0.03	1.4	0.6	0.01	0.02
	%Cr	%Ni	%Mo	%Cu	%FN
Requirements As-Welded with 80% Ar/20% CO ₂	17.0-20.0	11.0-14.0	2.0-3.0	0.75	Not Specified
Typical Results⁽³⁾	18.0	12.4	2.2	0.1	3

TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD ⁽⁵⁾ mm (in)	Wire Feed Speed m/min (in/min)	Voltage (Volts)	Approx. Current (Amps)	Melt-Off Rate kg/hr (lb/hr)	Deposition Rate kg/hr (lb/hr)	Efficiency (%)
0.045 in (1.1 mm), DC+ 75% Ar/25% CO ₂	19 (3/4)	5.1 (200)	23-26	120	2.1 (4.7)	1.8 (4.0)	85
	19 (3/4)	7.6 (300)	25-28	155	3.2 (7.0)	2.7 (6.0)	86
	19 (3/4)	10.2 (400)	27-30	185	4.3 (9.4)	3.6 (7.9)	84

⁽¹⁾Typical all weld metal ⁽²⁾Measured with 0.2% offset ⁽³⁾See test results disclaimer

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.

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SUPERCORE® 347

Stainless ▪ AWS E347T0-1/4

KEY FEATURES

- High deposition flat / horizontal wire
- Improved bead appearance
- Q2 Lot® - Certificate showing deposit composition, ferrite number, and Charpy impact properties tested @ -196°C (-320°F)

WELDING POSITIONS

Flat and horizontal

SHIELDING GAS

75-80% Argon / Balance CO₂
100% CO₂

CONFORMANCES

AWS A5.22 E347T0-1/4
BS EN ISO 17633-A T19 9 Nb R C/M 3
BS EN ISO 17633-B TS347-FB0

TYPICAL APPLICATIONS

- Food
- Brewery
- Pharmaceutical Equipment
- Architectural
- General Fabrication

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Spool
0.045 (1.2)	ED034129, SC347-12*

*The Metrode part number will be replacing the current EDO numbers after the inventory has been depleted.

MECHANICAL PROPERTIES⁽¹⁾ - As Required per AWS A5.22

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft·lbf) @ 20°C (68°F)
Requirements AWS E347T0-1/4	Not Specified	520 (75)	30 min	-
Typical Results⁽³⁾ As-Welded	435 (63)	600 (87)	47	90 (67)

DEPOSIT COMPOSITION⁽¹⁾ - As Required per AWS A5.22

	%C	%Mn	%Si	%S	%P	%Cr
Requirements AWS E347T0-1/4	0.08 max	0.5-2.5	1.0 max	0.03 max	0.04 max	18.0-21.0
Typical Results⁽³⁾	0.03	1.2	0.4	0.01	0.02	19
	%Ni	%Mo	%Nb	%Cu	FN	
Requirements AWS E347T0-1/4	9.0-11.0	0.75 max	8 x C min - 1.0 max	0.75 max	4 - 12	
Typical Results⁽³⁾	10.5	0.1	0.5	0.1	8.0	

TYPICAL OPERATING PROCEDURES

Diameter mm (in)	Amp-Volt Range	Typical	Stickout mm (in)
1.2 (0.045) DC+	120-280A 22-34V	180A, 29V	15 - 20 (5/8 - 1)

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer
NOTE: Additional test data available upon request.

<p>IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED</p> <p>Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.</p> <p>BEFORE USE, READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.</p>
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SUPERCORE® 2205P

Stainless ▪ AWS E2209T1-1/4

KEY FEATURES

- Smooth all position weldability
- Vacuum sealed pack
- Excellent slag removal
- Q2 Lot® - Certificate showing deposit composition, ferrite number, and charpy impact properties tested @ -196 °C (-320 °F)

WELDING POSITIONS

All

SHIELDING GAS

80% Argon / 20%CO₂
100% CO₂

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Spool
0.045 (1.2)	ED033462, SC2205P-12*

*The Metrode part number will be replacing the current EDO numbers after the inventory has been depleted.

MECHANICAL PROPERTIES⁽¹⁾ - As Required per AWS A5.22

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft·lbf)			Hardness HV ₁₀ ⁽⁴⁾
				@ -20 °C (-40 °F)	@ -50 °C (-58 °F)	@ -75 °C (-103 °F)	
Requirements AWS E2209T1-1/4	Not Specified	690 (100)	20 min	-	-	-	-
Typical Results⁽³⁾ As-Welded	630 (91)	800 (116)	32	65 (48)	55 (41)	30 (22)	270

DEPOSIT COMPOSITION⁽¹⁾ - As Required per AWS A5.22

	%C	%Mn	%Si	%S	%P	%Cr
Requirements AWS E2209T1-1/4	0.04 max	0.5-2.0	1.0 max	0.03 max	0.04 max	21.0 - 24.0
Typical Results⁽³⁾	0.03	1.2	0.7	<0.01	0.02	23
	%Ni	%Mo	%Cu	%N	PRE ⁽⁵⁾	
Requirements AWS E2209T1-1/4	7.5-10.0	2.5-4.0	0.75 max	0.08-0.20	Not Specified	
Typical Results⁽³⁾	9.2	3.1	0.1	0.12	35.0	

TYPICAL OPERATING PROCEDURES

Diameter mm (in)	Amp-Volt Range	Typical	Stickout mm (in)
1.2 (0.045) DC+	130-250A, 20 - 34V	140A, 23V	15-20 (5/8 - 1)

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer. ⁽⁴⁾Industry specific data, not required by AWS. ⁽⁵⁾PRE (Pitting Resistance Equivalent)= Cr + 3.3Mo+16N.
NOTE: Additional test data available upon request.

<p>IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED</p> <p>Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.</p> <p>BEFORE USE, READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.</p>
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SUPERCORE[®] 2507

Stainless ▪ AWS E2594T0-4

KEY FEATURES

- Exceptional bead appearance
- High deposition rates
- Vacuum sealed pack
- Q2 Lot[®] - Certificate showing deposit composition, ferrite number, and charpy impact properties tested @ -196°C (-320°F)
- High resistance to chloride infused stress corrosion cracking

WELDING POSITIONS

Flat and Horizontal

CONFORMANCES

AWS A5.22: E2594T0-4
EN ISO 17633-A: T25 9 4 N L R M21 3

TYPICAL INDUSTRY SEGMENTS

- Duplex Stainless Steel Pipe, Plate, Fittings and Forgings
- Offshore
- Chemical / Petrochemical

SHIELDING GAS

80% Argon / 20%CO₂

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Spool
0.045 (1.2)	EDO33529

MECHANICAL PROPERTIES⁽¹⁾

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %		Charpy V-Notch J (ft-lbf)			Hardness HV ₁₀ ⁽⁴⁾
			4.0 dia	5.0 dia	@ -20°C (-40°F)	@ -50°C (-58°F)	@ 20°C (68°F)	
Requirements AWS E2594T0-4	Not Specified	760 min (110)	15 min	18 min	-	-	-	-
Typical Results⁽³⁾ As-Welded	660 (96)	870 (126)	30	29	35 (26)	30 (22)	45 (35)	300

DEPOSIT COMPOSITION⁽¹⁾

	%C	%Mn	%Si	%S	%P	%Cr
Requirements AWS E2594T0-4	0.04 max	0.5-2.5	1.0 max	0.03 max	0.04 max	24.0-27.0
Typical Results⁽³⁾	0.03	1.0	0.50	0.01	0.02	24.5
	%Ni	%Mo	%Cu	%W	%N	PRE ⁽⁵⁾
Requirements AWS E2594T0-4	8.0-10.5	2.5-4.5	1.5 max	1.0 max	0.20-0.30	Not Specified
Typical Results⁽³⁾	9.3	3.8	0.05	0.05	0.23	41

TYPICAL OPERATING PROCEDURES

Diameter mm (in)	Amp-Volt Range	Typical	Stickout mm (in)
1.2 (0.045) DC+	120-280A, 22-34V	180A, 29V	15-20 (5/8-1)

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾Industry specific data, not required by AWS. ⁽⁵⁾PRE (Pitting Resistance Equivalent = Cr + 3.3Mo + 16N).
 NOTE: Additional test data available upon request.

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.

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SUPERCORE® 2507P

Stainless ▪ AWS E2594T1-4

KEY FEATURES

- Use on 25% Cr super duplex stainless
- Exceptional bead appearance
- High deposition rates
- Vacuum sealed pack
- High resistance to chloride induced stress corrosion cracking
- Q2 Lot® - Certificate showing deposit composition, ferrite number, and charpy impact properties tested @ -196°C (-320°F)

CONFORMANCES

AWS A5.22: E2594T1-4
EN ISO 17633-A: T25 9 4 N L R M21 2

TYPICAL INDUSTRY SEGMENTS

- Duplex Stainless Steel Plates and Vessels
- Duplex Stainless Steel Pipe and Fittings

SHIELDING GAS

80% Argon / 20% CO₂

WELDING POSITIONS

All

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Spool
0.045 (1.2)	ED033530, SC2507P-12*

*The Metrode part number will be replacing the current EDO numbers after the inventory has been depleted.

MECHANICAL PROPERTIES⁽¹⁾

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft·lbf)		
				@ 20°C (68°F)	@ -20°C (-40°F)	@ -50°C (-58°F)
Requirements AWS E2594T1-4	Not Specified	760 (110) min	15 min	-	-	-
Typical Results⁽³⁾ As-Welded	660 (96)	870 (126)	30	60 (44)	45 (33)	35 (26)

DEPOSIT COMPOSITION⁽¹⁾

	%C	%Mn	%Si	%S	%P	%Cr
Requirements AWS E2594T1-4	0.04 max	0.5-2.5	1.0 max	0.03 max	0.04 max	24.0-27.0
Typical Results⁽³⁾	0.03	1.0	0.50	0.01	0.02	24.5
	%Ni	%Mo	%Cu	%W	%N	PRE ⁽⁵⁾
Requirements AWS E2594T1-4	8.0-10.5	2.5-4.5	1.5 max	1.0 max	0.20-0.30	40 min
Typical Results⁽³⁾	9.3	3.8	0.05	0.05	0.23	41

TYPICAL OPERATING PROCEDURES

Diameter mm (in)	Amp-Volt Range	Typical	Stickout mm (in)
1.2 (0.045) DC+	120-250A, 22-32V	150A, 25V	15-20 (5/8-1)

⁽¹⁾Typical all weld metal. ⁽²⁾Measured with 0.2% offset. ⁽³⁾See test results disclaimer ⁽⁴⁾Industry specific data, not required by AWS. ⁽⁵⁾PRE (pitting resistance equivalent) = Cr + 3.3Mo + 16N.
 NOTE: Additional test data available upon request.

<p>IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED</p> <p>Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.</p> <p>BEFORE USE, READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.</p>

SUPERCORE™ 308HP

Stainless ▪ AWS E308HT1 - 1/4

KEY FEATURES

- Designed for strength and resistance to corrosion
- Used for joining austenitic stainless steels used at elevated temperatures
- Enhanced carbon electrode for high temperature applications

WELDING POSITIONS

All

SHIELDING GAS

80% Argon / 20% CO₂
100% CO₂

CONFORMANCES

AWS 5.22 E308HT1 - 1/4
EN ISO 17633-B TS308H-FB1

TYPICAL APPLICATIONS

- Marine
- Chemical process
- Papermaking
- Food processing
- Petrochemical

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Spool
0.045 (1.2)	SC308HP-12

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.22/5.22M

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf)	
				@-20 °C (-4 °F)	@-50 °C (-58 °F)
Requirements AWS E308HT1-1/4 As-Welded	-	550 (80)	30 min	-	-
Typical Results⁽³⁾ As-Welded	420 (61)	620 (90)	40	100 (74)	

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.22/5.22M

	%C	%Mn	%Si	%S	%P
Requirements AWS E308HT1-1/4	0.04-0.08	0.5 - 2.5	1.0 max	0.03 max	0.04 max
Typical Results⁽³⁾	0.05	1.3	0.5	0.01	0.02
	%Cr	%Ni	%Mo	%Cu	FN
Requirements AWS E308HT1-1/4	18.0 - 21.0	9.0-11.0	0.75 max	0.75 max	Not Specified
Typical Results⁽³⁾	18.8	9.5	0.1	0.1	5

TYPICAL OPERATING PROCEDURES

Diameter mm (in)	Amp Range	Volt Range	Stickout mm (in)
1.2 (0.045) DC+	120-250	22-32	12 - 20 (1/2-1)

⁽¹⁾ Typical all weld metal ⁽²⁾ Measured with 0.2% offset ⁽³⁾ See test results disclaimer

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.

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SUPERCORE™ 317LP

Stainless ▪ AWS E317LT1-1/4

KEY FEATURES

- Used to weld 317/317L stainless steels
- Improved resistance to pitting in high chloride environments

WELDING POSITIONS

All

SHIELDING GAS

80% Argon / 20% CO₂
100% CO₂

CONFORMANCES

AWS 5.22 E317LT1-1/4
EN ISO 17633-B TS317L-FB1

TYPICAL APPLICATIONS

- Marine
- Chemical process
- Papermaking
- Food processing

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Spool
0.045 (1.2)	SC317LP-12

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.22/5.22M

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft·lbf)		Hardness HV ₁₀
				@20 °C (68 °F)	@-50 °C (-58 °F)	
Requirements AWS E317LT1-1/4 As-Welded	Not Specified	520 (75)	20 min	-	-	-
Typical Results⁽³⁾ As-Welded	440 (64)	570 (83)	27	30 (22)	55 (41)	220

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.22/5.22M

	%C	%Mn	%Si	%S	%P	%Cr
Requirements AWS E317LT1-1/4	0.04 max	0.5-2.5	1.0 max	0.3 max	0.04 max	18.0-21.0
Typical Results⁽³⁾	0.03	1.0	0.6	0.02	0.02	19.0
	%Ni	%Mo	%Cu	%N	FN	
Requirements AWS E317LT1-1/4	12.0-14.0	3.0-4.0	0.75 max	Not Specified	Not specified	
Typical Results⁽³⁾	13	3.5	0.1	0.07	6	

TYPICAL OPERATING PROCEDURES

Diameter mm (in)	Amp Range	Volt Range	Stickout mm (in)
1.2 (0.045) DC+	120-280	22-34	15-20 (5/8-1)

⁽¹⁾ Typical all weld metal ⁽²⁾ Measured with 0.2% offset ⁽³⁾ See test results disclaimer

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

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SUPERCORE™ 410NiMo

Martensitic Stainless ■ AWS E410NiMoT1-1/4

KEY FEATURES

- Developed for joining 410NiMo martensitic stainless steels
- Designed for sub-zero toughness and high strength with an improved resistance to corrosion and hydro-cavitation
- Smooth arc performance in all positions

WELDING POSITIONS

All

SHIELDING GAS

80% Argon / 20% CO₂ or 100% CO₂

CONFORMANCES

AWS 5.22	E410NiMoT1-1/4
BS EN ISO 17633-A	T 13 4 P C/M 2
BS EN ISO 17633-B	TS410NiMo-FB1

TYPICAL APPLICATIONS

- Power Generation
- Compressor Cones
- High Pressure Piping
- Offshore Oil
- Petrochemical & Chemical Industries

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Spool
0.045 (1.2)	SC410NIMO-12
1/16 (1.6)	SC410NIMO-16

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.22

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft-lbf)		Hardness HV
				@20°C (68°F)	@-40°C (-40°F)	
Requirements AWS E410NiMoT1-1/4	Not specified	760 (110) min	15 min	-	-	-
Typical Results⁽³⁾ After 1 hour PWHT at 610°C (1130°F)	850 (123)	940 (136)	20	45 (23)	30 (22)	330

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.22

	%C	%Mn	%Si	%S	%P
Requirements AWS E410NiMoT1-1/4	0.06 max	1.0 max	1.0 max	0.03 max	0.04 max
Typical Results⁽³⁾	0.03	0.7	0.4	0.005	0.017
	%Cr	%Ni	%Mo	%Cu	%Co
Requirements AWS E410NiMoT1-1/4	11.0-12.5	4.0-5.0	0.40 - 0.70	0.75 max	Not Specified
Typical Results⁽³⁾	11.8	4.5	0.5	0.03	0.03

TYPICAL OPERATING PROCEDURES

Diameter mm (in)	Polarity	Amp Range	Volt Range	Typical	Stickout mm (in)
1.2 (0.045)	DC+	150-280A	25-32V	180A, 29V	15-25 (5/8-1)
1.6 (1/16)	DC+	200-350A	26-34V	260A, 30V	15-25 (5/8-1)

⁽¹⁾ Typical all weld metal ⁽²⁾ Measured with 0.2% offset ⁽³⁾ See test results disclaimer ⁽⁴⁾ Preferred polarity is listed first.

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SUPERCORE™ 16.8.2P

Stainless

KEY FEATURES

- Suited to the most demanding vertical and overhead welding applications, including fixed pipework for ASME

WELDING POSITIONS

All

SHIELDING GAS

80% Argon / 20% CO₂

CONFORMANCES

BS EN ISO 17633-B
(Nearest TS16-8-2-FM1)

TYPICAL APPLICATIONS

- Furnace parts
- Gas and steam turbine
- Petrochemical
- Chemical process plants
- Power generation industries

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Spool
0.045 (1.2)	SC1682P-12

MECHANICAL PROPERTIES⁽¹⁾

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %		Charpy V-Notch J (ft-lbf)		Hardness HV ₁₀
			4.0 dia	5.0 dia	@-20°C (-4°F)	@-196°C (-320°F)	
Typical Results ⁽³⁾ As-Welded	410 (59)	620 (90)	42	42	100 (74)	45 (33)	-

DEPOSIT COMPOSITION⁽¹⁾

	%C	%Mn	%Si	%S	%P
Typical Results ⁽³⁾	0.05	1.2	0.5	0.01	0.02
	%Cr	%Ni	%Mo	%Cu	FN
Typical Results ⁽³⁾	16.2	9.2	1.1	0.1	4

TYPICAL OPERATING PROCEDURES

Diameter mm (in)	Amp-Volt Range	Volt Range	Typical	Stickout mm (in)
1.2 (0.045) DC+	120-280A	22-34V	180A, 29V	15-20 (5/8-1)

⁽¹⁾ Typical all weld metal ⁽²⁾ Measured with 0.2% offset ⁽³⁾ See test results disclaimer

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

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SUPERCORE™ Z100XP

Stainless ▪ AWS E2594T1-4

KEY FEATURES

- Designed for strength and resistance to corrosion
- Used for joining supermartensitic stainless steels
- Superior resistance to stress corrosion cracking (SCC) and pitting corrosion
- The addition of Au and W provides superior resistance to sulphuric and hydrochloric acids compared to similar alloys without these metals

WELDING POSITIONS

All

SHIELDING GAS

80% Argon / 20% CO₂

DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Spool
0.045 (1.2)	SCZ100XP-12

MECHANICAL PROPERTIES⁽¹⁾ – As Required per AWS A5.22/5.22M

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft·lbf)		Hardness HV _{0.05}
				@-20 °C (-4 °F)	@-50 °C (-58 °F)	
Requirements AWS E2594T1-4	Not specified	760 (110) min	15 min	-	-	-
Typical Results⁽³⁾	690	880	25	40 (30)	32 (24)	280

DEPOSIT COMPOSITION⁽¹⁾ – As Required per AWS A5.22/5.22M

	%C	%Mn	%Si	%S	%P	%Cr
Requirements AWS E2594T1-4	0.04 max	0.5-2.5	1.0 max	0.03 max	0.04 max	24.0-27.0
Typical Results⁽³⁾	0.03	1.0	0.5	0.005	0.02	24.5
	%Ni	%Mo	%Cu	%N	%W	PRE ⁽⁴⁾
Requirements AWS E2594T1-4	8.0-10.5	2.5-4.5	1.5 max	0.20-0.30	1.0 max	Not specified
Typical Results⁽³⁾	9.1	3.7	0.6	0.22	0.6	41

TYPICAL OPERATING PROCEDURES

Diameter mm (in)	Amp Range	Volt Range	Stickout mm (in)
1.2 (0.045) DC+	120-250	22-34	15-20 (5/8-1)

⁽¹⁾ Typical all weld metal ⁽²⁾ Measured with 0.2% offset ⁽³⁾ See test results disclaimer ⁽⁴⁾ PRE (Pitting Resistance Equivalent)= Cr + 3.3Mo+16N.

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