

MMA CONSUMABLES

STICK ELECTRODES

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MMA
CONSUMABLES
STICK
ELECTRODES

Lincoln® 6010

TOP FEATURES

- Used for root and hot passes as well as filling and capping up to X52 Grades
- Also used for root passes on higher-strength pipe steels, up to X80
- When root pass welding, negative polarity is recommended
- Excellent weldability in all positions

CLASSIFICATION

AWS A5.1 E 6010
EN ISO 2560-A E 38 3 C 21

CURRENT TYPE

DC+/DC-

WELDING POSITIONS

All positions

APPROVALS

ABS	LR	DNV	TÜV
+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si
0.1	0.6	0.2

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) -30°C
Typical values	AW	≥380	470-560	≥24	≥47

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	40-80
3.2 x 350	60-110
4.0 x 350	90-140
5.0 x 350	110-170

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CAN	555	9.0	627257
3.2 x 350	CAN	355	9.5	627258
5.0 x 350	CAN	158	9.5	627260

Fleetweld® 5P+

TOP FEATURES

- Deep arc penetration
- Light slag with minimal arc interference
- Excellent vertical and overhead capability

TYPICAL APPLICATIONS

- Cross country and in-plant pipe welding
- Steel with moderate surface contaminants
- Square edge butt welds
- Welding on galvanized and specially coated steels

CLASSIFICATION

AWS A5.1 E6010

CURRENT TYPE

DC+

WELDING POSITIONS

All positions

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si
0.20	0.56	0.17

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) -29°C/-30°C
Required: AWS A5.1	AW	min. 330	min. 430	min. 22	min. 27
EN ISO		min. 420	500-640	min. 20	min. 47
Typical values		471	586	24	56

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 300	40-70
3.2 x 350	65-130
4.0 x 350	90-175
5.0 x 350	140-225

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.4 x 300	CAN	-	22.7	ED010283, ED032564
3.2 x 350	CAN	-	22.7	ED010278, ED032565
4.0 x 350	CAN	-	22.7	ED010285, ED032566
4.8 x 350	CAN	-	22.7	ED010281

CUMULO

TOP FEATURES

- Excellent for pipe welding and construction work
- Smooth side wall wetting
- Good X-ray soundness

CLASSIFICATION

AWS A5.1 E 6013
EN ISO 2560-A E 38 0 R 12

CURRENT TYPE

AC/DC-

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	DNV	TÜV
+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si
0.08	0.6	0.4

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					0°C	10°C
Required: AWS A5.1		min. 330	min. 430	min. 17	not specified	
EN ISO		min. 380	470-600	min. 20	min. 47	
Typical values	AW	≥ 420	500-600	≥ 24	≥ 60	≥ 47

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	70-95
3.2 x 350	100-135
4.0 x 350	130-190

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOH	114	2.1	588601-1
3.2 x 350	CBOX	155	4.8	588602-1
4.0 x 350	CBOX	105	4.8	588603-1

NUMAL

TOP FEATURES

- Applicable for "clean" structural steel
- Smaller diameters excellent for hobby market
- Very suitable for low open circuit voltage transformers (min. OCV 42 V)

CLASSIFICATION

AWS A5.1 E 6013
EN ISO 2560-A E 38 0 R 11

CURRENT TYPE

AC/DC-

WELDING POSITIONS

All positions

APPROVALS

ABS	LR	BV	DNV
+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si
0.06	0.5	0.45

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) 0°C
Required: AWS A5.1		min. 331	min. 414	min. 17	not specified
EN ISO		min. 420	500-640	min. 20	min. 47
Typical values	AW	430	480	26	60

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	70-90
3.2 x 350	90-125
4.0 x 350	140-190

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.0 x 300	CBOX	405	4.2	609257
2.5 x 350	CBOH	110	2.1	609179-1
	CBOX	250	4.8	609175
3.2 x 350	CBOH	75	2.3	609180-1
	CBOX	175	5.3	609176

Omnia®

TOP FEATURES

- Excellent all positional operating characteristics, especially vertically-down and the arc characteristics ensures reliable penetration
- Good gap bridging and easy striking and restriking

CLASSIFICATION

AWS A5.1 E6013
EN ISO 2560-A E 38 0 RC 11

CURRENT TYPE

AC/DC-

WELDING POSITIONS

All positions

APPROVALS

ABS	LR	BV	DNV
+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S
0.08	0.5	0.3	≤ 0.03	≤ 0.03

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) +20°C
Required: AWS A5.1		min. 330	min. 430	min. 17	not specified
EN ISO		min. 380	470-600	min. 22	min. 60

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	60-85
3.2 x 350	90-130
4.0 x 350	140-180

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOH	127	2.1	588683-1
3.2 x 350	CBOX	156	4.4	588684-1
4.0 x 350	CBOX	105	4.5	588685-1

Omnia® 46

TOP FEATURES

- Suitable for general construction work
- Smaller diameters excellent for hobby market
- Very suitable for low open circuit voltage transformers (min. OCV 42 V)

CLASSIFICATION

AWS A5.1 E6013
EN ISO 2560-A E 42 0 R 11

CURRENT TYPE

AC/DC-

WELDING POSITIONS

All positions

APPROVALS

ABS	LR	BV	DNV	TÜV
+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si
0.06	0.5	0.45

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) 0°C
Required: AWS A5.1		min. 330	min. 430	min. 17	not specified
EN ISO		min. 420	500-640	min. 20	min. 47
Typical values	AW	460	540	27	65

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.0 x 300	50-60
2.5 x 350	70-90
3.2 x 350	90-125
3.2 x 450	100-135
4.0 x 350	140-190
4.0 x 450	150-200
5.0 x 450	180-240

Omnia® 46

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
1.6 x 250	LINCPACK	140	0.8	599993-1
2.0 x 300	LINCPACK	94	1.0	609068
	CBOX	374	4.0	609059-1
2.5 x 300	CBOX	250	4.2	609060-I
	LINCPACK	52	1.0	609070
2.5 x 350	CBOH	110	2.1	800358-1
	CBOX	250	4.8	609060
	LINCPACK	33	1.0	609093
3.2 x 350	CBOH	75	2.3	800372-1
	CBOX	175	5.3	609061
	CBOX	150	6.2	609062
4.0 x 350	CBOX	102	5.0	609063
4.0 x 450	CBOX	93	5.9	609064
5.0 x 450	CBOX	56	5.8	609065

MMA

Pantafix

TOP FEATURES

- Medium thick rutile-cellulosic coated MMA electrode for structural steelwork
- Suitable on primer painted and slightly rusted parts, as there is a high tolerance to impurities.
- Suitable for welding galvanised steel components.
- Excellent all positional operating characteristics, especially vertically-down and the arc characteristics ensures reliable penetration.
- Good gap bridging and easy striking and restriking

CLASSIFICATION

AWS A5.1 E6013
EN ISO 2560-A E 38 0 RC 11

CURRENT TYPE

AC/DC-

WELDING POSITIONS

All positions

APPROVALS

ABS	BV	DNV
+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S
0.08	0.5	0.3	≤ 0.03	≤ 0.03

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) +20 °C
Required: AWS A5.1		min. 330	min. 430	min. 17	not specified
EN ISO		min. 380	470-600	min. 22	min. 60

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	60-85
3.2 x 350	90-130
4.0 x 350	140-180

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOH	127	2.1	588691-1
3.2 x 350	CBOX	156	4.4	588692-1
4.0 x 350	CBOX	105	4.5	588693-1

Supra®

TOP FEATURES

- Excellent on painted or rustcovered steel
- Recommended for bridging wide gaps
- Weldable in all positions with one current setting

CLASSIFICATION

AWS A5.1 E 6012
EN ISO 2560-A E 38 0 RC 11

CURRENT TYPE

AC/DC-

WELDING POSITIONS

All positions

APPROVALS

LR	BV	DNV	TÜV	DB
+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si
0.12	0.5	0.6

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) 0°C
Required: AWS A5.1		min. 330	min. 430	min. 17	not specified
EN ISO		min. 380	470-600	min. 20	min. 47
Typical values	AW	470	550	23	56

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	70-90
3.2 x 350	95-130
4.0 x 350	130-170
5.0 x 350	170-250

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOH	110	2.1	588694-1
3.2 x 350	CBOX	165	4.8	588695-1
4.0 x 350	CBOX	115	4.9	588696-1
5.0 x 350	CBOX	74	4.9	588697-1

Universalis®

TOP FEATURES

- Self releasing slag
- Very smooth appearance
- Smaller sizes (2.0 & 2.5 mm) most versatile for thin plate material

CLASSIFICATION

AWS A5.1 E 6013
EN ISO 2560-A E 42 0 RR 12

CURRENT TYPE

AC/DC-

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	DNV	TÜV
+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si
0.08	0.6	0.45

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) 0°C
Required: AWS A5.1		min. 330	min. 430	min. 17	not specified
EN ISO		min. 420	500-640	min. 20	min. 47
Typical values	AW	480	560	26	50

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	65-90
3.2 x 350	100-140
3.2 x 450	100-140
4.0 x 450	150-195

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOH	105	2.1	588699-1
3.2 x 350	CBOX	125	4.3	588700-1
4.0 x 450	CBOX	78	5.6	588702-1

Ferrod® 135T

TOP FEATURES

- High welding speed
- Smooth weld appearance
- Self releasing slag

CLASSIFICATION

AWS A5.1 E7024
EN ISO 2560-A E 38 0 RR 53

CURRENT TYPE

AC/DC-

WELDING POSITIONS

Flat/Horizontal

APPROVALS

ABS	BV	TÜV
+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si
0.08	0.5	0.35

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) 0°C
Required: AWS A5.1		min. 400	min. 490	min. 17	not specified
EN ISO		min. 380	470-600	min. 20	47
Typical values	AW	460	530	25	54

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
3.2 x 450	130-150
4.0 x 450	180-200
5.0 x 450	275-300

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
4.0 x 450	CBOX	70	5.9	588677-1
5.0 x 450	CBOX	45	5.8	588678-1

Ferrod® 160T

TOP FEATURES

- Very high welding speed
- Smooth weld appearance, very good slag release
- High recovery (160% for 3.2 and 4.0 mm electrodes, and 180% for 5.0 mm electrodes)

CLASSIFICATION

AWS A5.1 E7024
EN ISO 2560-A E 42 0 RR 73

CURRENT TYPE

AC/DC-

WELDING POSITIONS

Flat/Horizontal

APPROVALS

ABS	BV	DNV	TÜV
+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si
0.1	0.9	0.45

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) 0°C
Required: AWS A5.1		min. 400	min. 490	min. 17	not specified
EN ISO		min. 420	500-640	min. 20	min. 47
Typical values	AW	≥ 420	510-610	≥ 22	≥ 47

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
3.2 x 450	105-140
4.0 x 450	160-220
5.0 x 450	240-320

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
3.2 x 450	CBOX	76	5.4	588679-1
4.0 x 450	CBOX	51	5.5	588680-1
5.0 x 450	CBOX	39	5.8	588681-1

Ferrod® 165A

TOP FEATURES

- 160% recovery, high welding speed
- Good X-ray soundness
- Even in narrow gaps and rusty materials easy slag release

CLASSIFICATION

AWS A5.1 E7024-1
EN ISO 2560-A E 42 2 RA 73

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

Flat/Horizontal

APPROVALS

ABS	LR	DNV	TÜV
+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si
0.07	0.95	0.3

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					-10°C	-18°C/-20°C
Required: AWS A5.1		min.400	min. 490	min. 22		min. 27
EN ISO		min.420	500-640	min. 20		min. 47
Typical values	AW	475	520	26	70	67

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
3.2 x 450	125-155
4.0 x 450	140-235
5.0 x 450	210-330

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
3.2 x 450	CBOX	90	4.7	599534-1
4.0 x 450	CBOX	60	6.0	599541-1
5.0 x 450	CBOX	40	5.9	599596-1

BASIC 7018

TOP FEATURES

- Recovery 120%
- Excellent weldability even in positional welding
- Good impact values down to -40°C

CLASSIFICATION

AWS A5.1 E 7018
EN ISO 2560-A E 42 4 B 42 H5

CURRENT TYPE

DC+; DC-

WELDING POSITIONS

All position, except vertical down

APPROVALS

LR	BV	DNV	TÜV	DB
+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	HDM
0.08	1.1	0.45	≤ 0.025	≤ 0.015	4 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) -40°C
Required: AWS A5.1		min. 400	min. 490	min. 22	
EN ISO		min. 420	500-640	min. 20	min. 47
Typical values	AW	≥ 430	510-610	≥ 24	≥ 70
	600°Cx1h	≥ 420	500-600	≥ 22	≥ 70

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	65-90
3.2 x 350	120-140
3.2 x 450	120-140
4.0 x 350	160-190
4.0 x 450	160-190
5.0 x 450	210-230

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOX	180	4.0	588655-1
3.2 x 350	CBOX	112	4.0	588656-1
3.2 x 450	CBOX	117	5.5	588657-1
4.0 x 350	CBOX	79	4.0	588658-1
4.0 x 450	CBOX	81	5.5	588659-1
5.0 x 450	CBOX	55	5.5	588660-1

BASIC 7018P

TOP FEATURES

- High quality welding and 120% recovery deliver high productivity
- Excellent weldability, suitable for positional welding
- Good impact values down to -40°C

CLASSIFICATION

AWS A5.1 E 7018 H4
EN ISO 2560-A E 42 4 B 4 2 H5

CURRENT TYPE

DC+; AC

WELDING POSITIONS

All position, except vertical down

APPROVALS

DNV

+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S
0.06	1.5	0.3	≤0.025	≤0.025

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) -50°C
Typical values	AW	≥430	490-550	≥24	≥47

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	65-90
3.2 x 350	100-140
3.2 x 450	100-140
4.0 x 350	140-190
4.0 x 450	140-190
5.0 x 450	190-250
5.0 x 450	190-250

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOX	185	4.1	629400
3.2 x 350	CBOX	120	4.2	629401
3.2 x 450	CBOX	120	5.5	629402
4.0 x 350	CBOX	85	4.3	629403
4.0 x 450	CBOX	85	5.8	629404
5.0 x 350	CBOX	55	4.3	629406
5.0 x 450	CBOX	55	5.5	629405

Baso® 120

TOP FEATURES

- Recovery 120%
- Excellent weldability even on AC in all positions
- Good impact values down to -30°C

CLASSIFICATION

AWS A5.1 E7018 H4R
EN ISO 2560-A E 42 3 B 12 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	DNV	TÜV
+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	HDM
0.06	1.4	0.3	0.015	0.010	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					-20°C	-50°C	-46°/-50°C
Required: AWS A5.1		min. 400	min. 490	min. 22			min. 27
EN ISO		min. 460	530-680	min. 20		min. 47	
Typical values	AW	480	580	28	200	170	100

AW = As welded

Suitable for both As Welded and Stress Relieve (PWHT) conditions

CTOD value at -10°C > 0.25mm

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	60-90
3.2 x 350	90-140
3.2 x 450	90-140
4.0 x 350	120-160
4.0 x 450	120-160
5.0 x 450	160-240
5.0 x 450	160-240

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOH	110	2.0	570496-1
	VPMD	110	2.0	570496-2
3.2 x 350	VPMD	53	2.0	570526-2
	CBOX	108	4.0	570526-1
3.2 x 450	CBOH	52	2.5	587920-1
	CBOX	108	5.2	570519-1
4.0 x 350	VPMD	37	2.0	570625-2
	CBOH	37	2.6	587937-1
4.0 x 450	VPMD	37	2.6	587937-2
	CBOX	50	5.3	570748-1

Baso® 48SP

TOP FEATURES

- Excellent welding performance and highly stable and directional arc
- Very good gap bridging and ideally suited for root passes and positional welding
- Weldable on AC and DC
- Stable arc, also at low amperage
- Popular at welding schools

CLASSIFICATION

AWS A5.1 E7016-H8
EN ISO 2560-A E 38 3 B 12 H10

CURRENT TYPE

AC/DC+

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	DNV	TÜV
+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S
0.06	0.9	0.7	≤ 0.020	≤ 0.015

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					+20 °C	-30 °C
Typical values	AW	≥ 380	470-600	25	150	60

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	55-95
3.2 x 350	80-150
3.2 x 450	95-150
4.0 x 350	120-190
4.0 x 450	120-190

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	44	0.9	571837-2
	CBOH	100	2.0	570977-1
3.2 x 350	SRP	51	1.7	571844-2
	CBOH	55	1.8	570984-1
3.2 x 450	CBOH	55	2.3	570991-1
4.0 x 350	SRP	27	1.4	571851-2
	CBOH	40	2.0	571857-1
4.0 x 450	CBOH	40	2.6	571004-1

Baso® G

TOP FEATURES

- Designed for works highly strained at static and dynamic loadings and service temperature down to -50°C
- Excellent welding characteristics in all positions except vertical down position.
- Very low spatter in both DC and AC, with a high deposition rate
- Low moisture absorption properties ensure extra low diffusible hydrogen level in the weld metal (< 4ml/100g).
- Good slag release and flat bead appearance

CLASSIFICATION

AWS A5.1 E7018-1 H4R
EN ISO 2560-A E 42 5 B 32 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	DNV	RINA	TÜV	DB
+	+	+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	HDM
0.07	1.2	0.4	≤0.020	≤0.010	<4 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					+20°C	-47°C	-50°C
Required: AWS A5.1		min. 400	min. 490	min. 22		min. 27	
EN ISO		min. 420	500-640	min. 20			min. 47
Typical values	AW	≥430	575	≥24	200		≥90
	620°C x 1h	≥420	565	≥22	200		≥90

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.0 x 300	35-55
2.5 x 350	55-90
3.2 x 350	75-120
3.2 x 450	75-120
4.0 x 350	120-180
4.0 x 450	120-180
5.0 x 450	160-240

Baso® G

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	60	1.4	511819-1
	CBOH	86	2.0	570823-1
	VPMD	86	2.0	521819
3.2 x 350	SRP	50	1.8	511918-1
	VPMD	52	1.9	521918
	CBOX	110	4.0	570762-1
3.2 x 450	SRP	50	2.4	511925-1
	VPMD	52	2.5	521919
	VPMD	116	5.5	570763-1
4.0 x 350	SRP	28	1.5	511901-1
	CBOX	81	4.2	570779-1
4.0 x 450	VPMD	37	2.5	521888
	CBOX	81	5.5	570816-1
5.0 x 450	SRP	21	2.1	511857-1
	CBOX	56	5.5	570786-1

MMA

Conarc® 48

TOP FEATURES

- Recovery 130%
- Excellent weldability on DC+ in all positions, especially overhead and vertical up
- Excellent impact toughness down to -40°C
- Excellent X-ray soundness

CLASSIFICATION

AWS A5.1 E7018-1 H4R
EN ISO 2590-A E 46 4 B 42 H5

CURRENT TYPE

DC+

WELDING POSITIONS

All position, except vertical down

APPROVALS

DNV

+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	HDM
0.06	1.4	0.3	0.015	0.010	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					-20°C	-50°C	-46°/-50°C
Required: AWS A5.1		min. 400	min. 490	min. 22			min. 27
EN ISO		min. 460	530-680	min. 20		min. 47	
Typical values	AW	480	580	28	200	170	100

AW = As welded

Suitable for both As Welded and Stress Relieve (PWHT) conditions

CTOD value at -10°C > 0.25mm

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.0 x 300	50-80
2.5 x 350	60-90
3.2 x 450	80-130
4.0 x 450	120-160
5.0 x 450	190-270

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.0x300	VPMD	130	1.6	503609-3
2.5 x 350	VPMD	86	2.0	503616-3
3.2 x 450	VPMD	52	2.5	503630-3
4.0 x 450	VPMD	37	2.6	503652-3
5.0 x 450	VPMD	25	2.7	503661-3

Conarc® 49

TOP FEATURES

- Almost no spatter, nice wetting and full weld pool control
- One current setting for all positions possible
- Perfect welding and 120% recovery contributes to high productivity

CLASSIFICATION

AWS A5.1 E7018 H4
EN ISO 2560-A E 46 3 B 42 H5

CURRENT TYPE

DC+

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	DNV	RINA	TÜV
+	+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	HDM
0.09	1.1	0.6	0.015	0.010	4 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					-20 °C	-30 °C	-40 °C
Required: AWS A5.1		min. 400	min. 483	min. 22		min. 27	27
EN ISO		min. 460	530-680	min. 20		min. 47	
Typical values	AW	480	560	28	140	120	80

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	70-80
3.2 x 350	110-130
4.0 x 450	140-180
5.0 x 450	160-240

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	VPMD	90	2.0	609271-1
	CBOX	190	4.1	609266-1
3.2 x 350	VPMD	55	2.0	609272-1
	CBOX	118	4.3	609267-1
3.2 x 450	VPMD	55	2.4	609277-1
4.0 x 350	VPMD	40	2.1	609273-1
	CBOX	85	4.6	609268-1
4.0 x 450	VPMD	40	2.7	609274-1
	CBOX	85	5.8	609269-1
5.0 x 450	CBOX	55	5.7	609270-1

Conarc® 49C

TOP FEATURES

- Reliable impact toughness -40°C, good CTOD at -10°C
- The off-shore electrode when Ni-alloying is not allowed
- 100 - 120% recovery

CLASSIFICATION

AWS A5.1 E7018-1 H4R
EN ISO 2560-A E 46 4 B 32 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	DNV	TÜV	DB
+	+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	HDM
0.06	1.4	0.3	0.015	0.010	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					-20°C	-50°C	-46°/-50°C
Required: AWS A5.1		min. 400	min. 490	min. 22			min. 27
EN ISO		min. 460	530-680	min. 20		min. 47	
Typical values	AW	480	580	28	200	170	100

AW = As welded

Suitable for both As Welded and Stress Relieve (PWHT) conditions. CTOD value at -10°C > 0.25mm

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	55-80
3.0 x 350	70-110
3.2 x 350	80-130
4.0 x 350	120-160
4.0 x 450	120-160
5.0 x 450	180-240

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	70	1.3	511420-1
	CBOH	110	2.0	509236-1
3.2 x 350	SRP	50	1.9	511437-1
	CBOX	108	4.0	509243-1
3.2 x 450	SRP	50	2.4	511475-1
	CBOX	108	5.2	509250-1
4.0 x 350	SRP	28	1.5	511505-1
	CBOX	80	4.3	509359-1
4.0 x 450	SRP	28	2.0	511536-1
	CBOX	80	5.6	509366-1
5.0 x 450	SRP	23	2.4	511529-1
	CBOX	50	5.3	509465-1

Conarc® 50

TOP FEATURES

- Good impact values down to -50°C
- Basic very low hydrogen electrode
- Excellent for general purpose welding

CLASSIFICATION

AWS A5.1 E7018-1 H4R
EN ISO 2560-A E 46 5 B 3 2 H5

CURRENT TYPE

AC/DC+

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV
+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S
0.07	1.2	0.4	≤0.020	≤0.010

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) -50°C
Typical values	AW	480	580	28	150
	SR:1h/620°C	≥420	500-590	≥22	≥90

AW = As welded; SR = Stress relieved

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	65-90
3.2 x 350	120-140
3.2 x 450	120-140
4.0 x 350	160-190
4.0 x 450	160-190
5.0 x 450	180-230

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	VPMD	100	2.0	619260
	CBOX	203	4.0	619241
3.2 x 350	VPMD	55	1.9	629261
3.2 x 450	VPMD	52	2.4	629263
4.0 x 450	VPMD	35	2.3	629264
	CBOX	83	5.5	619245
5.0 x 450	VPMD	22	2.3	629265

Conarc® ONE

TOP FEATURES

- Reliable impact toughness -40°C, good CTOD at -10°C
- The off-shore electrode when Ni-alloying is not allowed
- 115 - 120% recovery

CLASSIFICATION

AWS A5.1 E7018-1 H4R
EN ISO 2560-A E 42 5 B 32 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	DNV	RINA
+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	HDM
0.05	1.3	0.4	0.015	0.010	3 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)			
					-20°C	-40°C	-46°C	-50°C
Required: AWS A5.1		min. 400	min. 490	min. 22			min. 27	
EN ISO		min. 420	500-640	min. 20		min. 47		
Typical values	AW	480	575	28	200	120	100	80

AW = As welded

CTOD value at -10°C > 0.25mm

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	60-100
3.2 x 450	90-145
4.0 x 450	110-160
5.0 x 450	160-250

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	VPMD	90	2.1	573574-1
	CBOX	180	4.3	573536-1
3.2 x 450	VPMD	55	2.6	573581-1
	CBOX	115	5.5	573543-1
4.0 x 450	VPMD	40	2.7	573598-1
	CBOX	80	5.4	573550-1
5.0 x 450	VPMD	25	2.6	573605-1
	CBOX	55	5.6	573567-1

HYROD 7018

TOP FEATURES

- Almost no spatter, nice wetting and full weld pool control
- One current setting for all positions possible
- Perfect welding and 120% recovery contributes to high productivity

CLASSIFICATION

AWS E7018 H8
EN ISO 2560-A E 42 3 B 32 H10

WELDING POSITIONS

All position, except vertical down

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	HDM
0.09	1.1	0.6	0.015	0.010	4 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					-20 °C	-30 °C	-40 °C
Required: AWS A5.1		min. 400	min. 483	min. 22		min. 27	27
EN ISO		min. 460	530-680	min. 20		min. 47	
Typical values	AW	480	560	28	140	120	80

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	60-95
3.2 x 450	110-130
4.0 x 450	140-180
5.0 x 450	160-240

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOX	190	4.1	599206-1
3.2 x 450	CBOX	118	5.2	599213-1
4.0 x 450	CBOX	85	5.8	599220-1
5.0 x 450	CBOX	55	5.7	599237-1

HYROD 7018LT

TOP FEATURES

- The weld metal diffusible hydrogen content conforms to low hydrogen, < 5 ml/100g deposited weld metal.
- Impact toughness down to -40 °C.
- Weld metal recovery:~120%.

CLASSIFICATION

AWS E7018-1 H4R
EN ISO 2560-A E 46 4 B 32 H5

WELDING POSITIONS

All position, except vertical down

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	HDM
0.06	1.4	0.3	0.015	0.010	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					-20 °C	-50 °C	-46 °/-50 °C
Required: AWS A5.1		min. 400	min. 490	min. 22			min. 27
EN ISO		min. 460	530-680	min. 20		min. 47	
Typical values	AW	480	580	28	200	170	100

AW = As welded

Suitable for both As Welded and Stress Relieve (PWHT) conditions

CTOD value at -10 °C > 0.25mm

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
3.2 x 450	80-130
4.0 x 450	120-160

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
4.0 x 450	CBOX	80	5.6	597530-1

KARDO

TOP FEATURES

- Low yield and ultimate tensile strength, high impact toughness
- Buffer layer electrode for internally clad stainless steel
- HDM < 3 ml/100g

CLASSIFICATION

AWS A5.1 E 6018 *
EN ISO 2560-A E 35 2 B 32 H5

* According to classification 1966

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	HDM
0.03	0.4	0.25	0.015	0.010	3 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) -18°C/-20°C
Required: AWS A5.1		min. 331	min. 414	min. 22	min. 27
EN ISO		min. 355	440-570	min. 22	
Typical values	AW	390	450	28	>200

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	60-80
3.2 x 350	90-120
4.0 x 350	120-160

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	23	0.4	541762-1
3.2 x 350	SRP	17	0.6	541779-1
4.0 x 350	SRP	28	1.5	541755-1

LINCOLN 7018-1

TOP FEATURES

- Excellent for general purpose welding
- Good impact values down to -46°C
- Shall be welded in AC and DC+/- mode.

CLASSIFICATION

AWS A5.1 E7018-1 H4
EN ISO 2560-A E 42 4 B 32 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV
+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S
0.06	1.3	0.30	0.025	0.025

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) -50°C
Typical values	AW	≥430	490-550	≥24	≥47

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	65-95
3.2 x 350	100-135
3.2 x 450	85-135
4.0 x 350	110-210
4.0 x 450	110-210
5.0 x 450	170-240

LINCOLN 7018-1

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	BOX	90	2.0	629181
	VPMD	90	2.0	619181
	CBOX	185	4.1	619036, 629036
3.2 x 350	BOX	55	1.9	629182
	VPMD	55	1.9	619182
	CBOX	120	4.2	619038, 629038
3.2 x 450	BOX	55	2.5	629225
	CBOX	120	5.5	619040, 629040
4.0 x 350	BOX	40	2.0	629183
	VPMD	40	2.0	619183
	CBOX	85	4.3	619044, 629044
4.0 x 450	BOX	40	2.7	629226
	VPMD	40	2.7	619226
	CBOX	85	5.8	619045, 629045
5.0 x 450	CBOX	55	5.5	619049, 629049

MMA

VANDAL

TOP FEATURES

- Smooth and stable arc.
- Well suited for positional welding (particularly vertical and overhead).
- Good slag removal even in narrow gaps.

CLASSIFICATION

AWS A5.1 E 7018-1 H4
EN ISO 2560-A E 42 4 B 32 H5

CURRENT TYPE

AC/DC+

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	RINA
+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S
0.08	1.2	0.4	≤0.020	≤0.015

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) -50°C
Typical values	AW	≥420	510-610	≥24	≥90

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	65-95
3.2 x 450	85-135
4.0 x 450	110-210
5.0 x 450	170-240

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOH	90	1.9	619167
	VPMD	90	1.9	619184
3.2 x 350	CBOH	55	1.9	619168
	VPMD	55	1.9	619300
3.2 x 450	CBOH	55	2.4	619169
	VPMD	55	2.4	619207
4.0 x 450	CBOH	40	2.7	619171
	VPMD	40	2.7	619208
5.0 x 450	CBOH	25	2.6	619172

Conarc® L150

TOP FEATURES

- Self releasing slag
- Suitable for welding primer painted components
- ~165% recovery
- Excellent weldability on AC and DC
- Free of cracks and good X-ray quality
- ISO-V toughness down to -40°C.

TYPICAL APPLICATIONS

- Shipyards

CLASSIFICATION

AWS A5.1 E7028 H4
EN ISO 2560-A E 42 4 B 53 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

Flat/Horizontal

APPROVALS

ABS	BV	DNV	TÜV	DB
+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S
0.1	1.1	0.6	≤0.025	≤0.015

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) -18°C/-20°C
Required: AWS A5.1		min. 400	min. 490	min. 22	min. 27
EN ISO		min. 420	500-610	min. 20	min. 47
Typical values	AW	≥420	510-610	≥26	
	600°C x 2h	≥420	500-600	≥26	

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
3.2 x 450	140-160
4.0 x 450	175-220

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
3.2 x 450	SRP	30	1.9	554557-1
4.0 x 450	SRP	23	2.3	554509-1

HYROD 7028

TOP FEATURES

- Self releasing slag
- Suitable for welding primer painted components
- ~165% recovery
- Excellent weldability on AC and DC
- Free of cracks and good X-ray quality
- ISO-V toughness down to -40°C

CLASSIFICATION

AWS E 7028 H4
EN ISO 2560-A E 42 4 B 53 H5

WELDING POSITIONS

Flat/Horizontal

TYPICAL APPLICATIONS

- Shipyard

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S
0.1	1.1	0.6	≤0.025	≤0.015

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					-18°C/-20°C	-40°C
Required: AWS A5.1		min. 400	min. 490	min. 22	min. 27	
EN ISO		min. 420	500-610	min. 20	min. 47	
Typical values	AW	≥420	510-610	≥26		≥80
	600°C x 2h	≥420	500-600	≥26		≥80

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
3.2 x 350	140-160
4.0 x 450	175-220

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
3.2 x 350	SRP	30	1.5	597066-1
4.0 x 450	SRP	23	2.3	597073-1

Lincoln® 7016 DR

TOP FEATURES

- Excellent welding performance and highly stable and directional arc
- Very good gap bridging and ideally suited for root passes and positional welding
- Weldable on AC and DC
- Stable arc, also at low amperage
- Popular at welding schools

CLASSIFICATION

AWS A5.1 E7016-H8
EN ISO 2560-A E 42 2 B 1 2 H10

CURRENT TYPE

AC/DC+

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS

+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	HDM
0.08	1.2	0.6	5 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					+20 °C	-30 °C
Typical values	AW	≥ 380	470-600	26	≥ 150	≥ 60

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	60-90
3.2 x 350	95-150
3.2 x 450	95-150
4.0 x 350	140-190

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	66	1.3	839275
	CBOX	200	3.9	829275
3.2 x 350	SRP	51	1.7	839276
	CBOX	125	4.1	829276
3.2 x 450	CBOX	125	5.3	829277
4.0 x 450	CBOX	80	5.2	829278

Pipelinor® 16P

TOP FEATURES

- DC- (DCEN) is the recommended polarity for root pass welding on pipe

CLASSIFICATION

AWS A5.1 E7016-H4, E7016-1 H4

CURRENT TYPE

AC/DC+

WELDING POSITIONS

All position, except vertical down

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S
0.06	1.3	0.5	0.013	0.009

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					-29 °C / -30 °C	-40 °C
Required: AWS A5.1		min. 400	min. 490	min. 22	min. 27	
Typical values	AW	470	590	26	120	90

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	55-105
3.2 x 350	75-135
4.0 x 350	120-170

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CAN	-	4.5	ED033835
	CAN	-	22.7	ED030916
3.2 x 350	CAN	-	4.5	ED033836
	CAN	-	22.7	ED030917

Baso® 100

TOP FEATURES

- Designed for pipe welding in position, excellent for general purpose welding
- Very thin coating to improve joint access when root pass welding
- Good side wall wetting
- Impact toughness down to -50°C
- Popular at welding schools

CLASSIFICATION

AWS A5.1 E7016-1 H4
EN ISO 2560-A E 42 5 B 12 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	DNV	TÜV
+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S
0.06	1.2	0.5	≤0.02	≤0.02

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) -29°/-30°C
Required: AWS A5.1		min. 400	min. 490	min. 22	min. 27
EN ISO		min. 420	500-640	min. 20	min. 47
Typical values	AW	≥420	500-640	26	≥110
	620°C x 1h	≥390	500-620	≥22	≥110

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	60-90
3.2 x 350	80-130
4.0 x 350	125-170

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOH	110	2.1	570175-1
3.2 x 350	CBOX	140	4.4	570182-1
4.0 x 350	CBOX	95	4.4	570298-1

Conarc® 51

TOP FEATURES

- Designed for pipe welding in position with very thin coating to improve joint access when root pass welding
- Outstanding penetration and stable arc
- Excellent impact at -50°C
- Matching NACE requirements
- Efficiency 100%

CLASSIFICATION

AWS A5.1 E7016-1 H4
EN ISO 2560-A E 42 5 B 12 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	DNV	TÜV
+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S
0.06	1.2	0.5	≤0.02	≤0.02

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) -29°/-30°C
Required: AWS A5.1		min. 400	min. 490	min. 22	min. 27
EN ISO		min. 420	500-640	min. 20	min. 47
Typical values	AW	≥420	500-640	26	≥110
	620°C x 1h	≥390	500-620	≥22	≥110

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	60-90
3.2 x 350	80-130
3.2 x 450	80-120
4.0 x 350	125-170
4.0 x 450	125-170
5.0 x 450	170-240

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	69	1.3	511567-1
3.2 x 350	SRP	56	1.7	511581-1
3.2 x 450	SRP	56	2.2	509892-1
4.0 x 450	SRP	28	1.6	509908-1
5.0 x 450	SRP	25	2.2	511628-1

LINCOLN® 7010

TOP FEATURES

- Used for root and hot passes as well as filling and capping up to X60 grades
- When root pass welding, negative polarity is recommended
- Excellent weldability in all positions

CLASSIFICATION

AWS A5.5 E 7010-P1
EN ISO 2560-A E 42 3 Mo C 21

CURRENT TYPE

DC+/DC-

WELDING POSITIONS

All positions

APPROVALS

ABS	LR	DNV	TÜV
+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Mo
0.1	0.7	0.2	0.5

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) +20°C
Typical values	AW	≥420	500-640	≥22	≥60

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	40-80
3.2 x 350	60-110
4.0 x 350	90-140
5.0 x 350	110-170

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CAN	555	9.0	627261
3.2 x 350	CAN	355	9.5	627262
4.0 x 350	CAN	237	9.5	627263
5.0 x 350	CAN	158	9.5	627264

LINCOLN® 8010

TOP FEATURES

- Used for root and hot passes as well as filling and capping up to X70 grades
- Clearly visible weld puddle for improved control and weldability
- Excellent weldability in all positions

CLASSIFICATION

AWS A5.1 E 8010-G
EN ISO 2560-A E 46 3 1NiMo C 21

CURRENT TYPE

DC+

WELDING POSITIONS

All positions

APPROVALS

ABS	LR	DNV	TÜV
+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Ni	Mo
0.1	0.8	0.2	0.7	0.3

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) +20°C
Typical values	AW	≥485	570-680	≥22	≥60

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
3.2 x 350	60-110
4.0 x 350	90-140
5.0 x 350	110-170

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
3.2 x 350	CAN	355	9.5	627266
4.0 x 350	CAN	238	9.5	627267
5.0 x 350	CAN	156	9.5	627268

Pipeliner® 7P+

TOP FEATURES

- Root pass welding of up to X80 grade pipe
- Hot, fill and cap pass of up to X65 grade pipe
- Vertical down welding
- Meets NACE MR0175 for sour gas applications
- Test data available for SSC (NACE TM0177)
- Cellulosic electrode

CLASSIFICATION

AWS A5.1 E7010-P1, also meets E7010-G

CURRENT TYPE

DC+

WELDING POSITIONS

All positions

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	Ni	Mo
0.15	0.6	0.1	0.015	0.015	0.85	0.1

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					-29°C	-40°C
Required: AWS A5.1		min. 415	min. 490	min. 22	27	
Typical values	AW	470	570	24	80	70

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
3.2 x 350	65-130
4.0 x 350	100-165
5.0 x 450	130-210

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
3.2 x 350	CAN	-	22.7	ED031611
4.0 x 350	CAN	-	22.7	ED031612

Pipeliner® 8P+

TOP FEATURES

- High productivity in vertical down and out-of-position pipe welding
- Deep penetration
- Clean, visible weld puddle
- Meets NACE MR0175 for sour gas applications
- Test data available for SSC (NACE TM0177)
- Cellulosic electrode

CLASSIFICATION

AWS A5.5 E8010-G, E8010-P1

CURRENT TYPE

DC+

WELDING POSITIONS

All positions

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Ni	Mo	P	S
0.17	0.7	0.25	0.8	0.2	0.01	0.01

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					-29°C	-40°C	-46°C
Required: AWS A5.5		min. 460	min. 550	min. 19	min. 27		
Typical values	AW	495	590	24	80	60	50

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
3.2 x 350	65-120
4.0 x 350	100-165
5.0 x 350	130-210

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
3.2 x 350	CAN	-	22.7	ED030826
4.0 x 350	CAN	-	22.7	ED030827
5.0 x 350	CAN	-	22.7	ED030828

Shield-Arc® 70+

TOP FEATURES

- Light slag for minimal arc interference
- Deep penetration
- Clean, visible weld puddle
- Superior puddle control

CLASSIFICATION

AWS A5.5 E8010-P1, E8010-G

CURRENT TYPE

DC+

WELDING POSITIONS

All positions

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Ni	Cr	Mo	V
0.13-0.17	0.6-1.2	0.05-0.3	0.75-0.97	0.01-0.2	0.05-0.15	0.02-0.04

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					-29 °C	-40 °C	-46 °C
Required: AWS A5.5		min. 460	min. 550	min. 19			
Typical values	AW	460-620	585-680	24	75		60

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
3.2 x 355	75-130
4.0 x 355	90-185
4.8 x 355	140-225

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
3.2 x 350	CAN	-	22.7	ED012841
4.0 x 350	CAN	-	22.7	ED012849
4.8 x 350	CAN	-	22.7	ED012845

Shield-Arc® HYP+

TOP FEATURES

- Light slag for minimal arc interference
- Deep penetration
- Clean, visible weld puddle
- Superior puddle control

CLASSIFICATION

AWS A5.5 E7010-P1, E7010-G

CURRENT TYPE

DC+

WELDING POSITIONS

All positions

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Mo	V
0.13-0.17	0.49-0.63	0.08-0.18	0.27-0.31	<0.01

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					-20°C	-29°C
Required: AWS A5.5		min. 415	min. 490	min. 22		min. 27
Typical values	AW	435-525	525-635	24		50

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
3.2 x 355	75-130
4.0 x 355	90-185
4.8 x 355	140-225

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
3.2 x 350	CAN	-	22.7	ED029511
4.0 x 350	CAN	-	22.7	ED029513
4.8 x 350	CAN	-	22.7	ED029509

Conarc® 60G

TOP FEATURES

- Good impact values down to -51°C
- DC welding preferred
- 115 - 120% recovery

CLASSIFICATION

AWS A5.5 E9018M-H4
EN ISO 18275-A E 55 4 Z B 32 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	DNV	TÜV
+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	Ni	Mo	HDM
0.06	1.0	0.4	0.015	0.010	1.6	0.3	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					-20°C	-40°C	-51°C
Required: AWS A5.5		540-620*	min. 620	min. 24			min. 27
EN ISO		min. 550	610-780	min. 18		min. 47	
Typical values	AW	600	670	25		98	
	SR:1h/620°C	550	640	24	90		40

AW = As welded; SR = Stress relieved

* Diameter 2.5 mm max 655 MPa

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	60-100
3.2 x 350	80-130
4.0 x 350	120-180
5.0 x 450	160-240

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	62	1.4	523614-1
3.2 x 350	SRP	50	1.9	523652-1
4.0 x 350	SRP	28	1.5	523645-1
5.0 x 450	SRP	23	2.4	523638-1

Conarc® 70G

TOP FEATURES

- Good impact values down to -40°C
- DC welding preferred
- 115 - 120% recovery

CLASSIFICATION

AWS A5.5 E9018-G-H4
EN ISO 18275-A E 55 4 1NiMo B 32 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

DNV	TÜV
+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	Ni	Mo	HDM
0.06	1.2	0.4	0.014	0.009	1.0	0.4	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					-20°C	-40°C	-46°C
Required: AWS A5.5		min. 530	min. 620	min. 17	not specified		
EN ISO		min. 550	610-780	min. 18		min. 47	
Typical values	AW	600	655	24		90	60
	SR:15h/580°C	550	640	24	90		50

AW = As welded; SR = Stress relieved

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	60-100
3.2 x 350	80-130
4.0 x 350	120-180
5.0 x 450	160-240

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	64	1.2	523706-1
3.2 x 350	SRP	50	1.9	523737-1
4.0 x 350	SRP	28	1.5	523713-1
4.0 x 450	SRP	28	2.0	523744-1
5.0 x 450	SRP	23	2.4	523720-1

Kryo® 1

TOP FEATURES

- Excellent mechanical properties (impact down to -60°C)
- Good CTOD down to -10°C
- Extremely low hydrogen content
- 110 - 120% recovery
- Weldable on AC and DC

CLASSIFICATION

AWS A5.5 E7018-G-H4R
EN ISO 2560-A E 50 6 Mn1Ni B 32 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	DNV	TÜV	DB
+	+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	Ni	HDM
0.05	1.5	0.4	0.010	0.010	0.9	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					-20°C	-60°C
Required: AWS A5.5		min. 390	min. 480	min. 22	not specified	
EN ISO		min. 500	560-720	min. 18	min. 47	
Typical values	AW	550	640	24	150	90
	SR:580°C/15	460	550	24		90

AW = As welded; SR = Stress relieved

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	55-80
3.0 x 350	70-110
3.2 x 350	80-140
3.2 x 450	80-140
4.0 x 350	120-170
4.0 x 450	120-170
5.0 x 450	180-240

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	70	1.3	524383-1
3.2 x 350	SRP	50	1.9	524390-1
3.2 x 450	SRP	10	0.5	515725-1
	SRP	50	2.4	524437-1
4.0 x 350	SRP	28	1.5	524468-1
4.0 x 450	SRP	28	2.0	524499-1
5.0 x 450	SRP	22	2.4	524475-1

Kryo® 1-180

TOP FEATURES

- Extremely low hydrogen content
- Approx. 175% recovery, easy slag release, weldable on AC and DC
- Filling horizontal V- and X-grooves

CLASSIFICATION

EN ISO 2560-A E 50 5 1Ni B 73 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

LR	DNV	TÜV	DB
+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	Ni	HDM
0.07	1.2	0.3	0.02	0.0010	0.9	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					-40°C	-50°C
Required: AWS A5.5		min. 460	min. 550	min. 19	not specified	
EN ISO		min. 500	560-720	min. 18		min. 47
Typical values	AW	550	640	26	90	60
	SR:600°C/4h	540	620	24	100	85

AW = As welded; SR = Stress relieved

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
3.2 x 450	130-160
4.0 x 450	170-240
5.0 x 450	250-300

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
3.2 x 450	SRP	27	1.7	524765-1
4.0 x 450	SRP	23	2.3	524734-1
5.0 x 450	SRP	19	2.7	524772-1

Kryo® 1P

TOP FEATURES

- Excellent mechanical properties (impact down to -60°C)
- Good CTOD at -10°C
- Extremely low hydrogen content
- 112 - 120% recovery
- Weldable on AC and DC

CLASSIFICATION

AWS A5.5 E 8018-G-H4R
EN ISO 2560-A E 50 6 MnNi B 32 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	BV	DNV	TÜV	DB
+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	Ni	HDM
0.05	1.5	0.5	0.010	0.005	0.95	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					-40°C	-60°C
Required: AWS A5.5		min. 460	min. 550	min. 19	not specified	
EN ISO		min. 500	560-720	min. 18		min. 47
Typical values	AW	550	640	24	140	80
	SR:580°C/15h	460	550	24	150	90

AW = As welded; SR = Stress relieved

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	55-85
3.2 x 350	80-145
3.2 x 450	80-145
4.0 x 350	120-185
4.0 x 450	120-185
5.0 x 450	180-270

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	70	1.3	519211-1
3.2 x 350	SRP	50	1.9	519181-1
3.2 x 450	SRP	50	2.4	519273-1
4.0 x 350	SRP	28	1.5	519198-1
4.0 x 450	SRP	28	2.0	519280-1
5.0 x 450	SRP	22	2.4	519204-1

Kryo® 1R

TOP FEATURES

- Excellent mechanical properties (impact down to -60°C)
- Weldable on AC and DC
- Extremely low hydrogen content

CLASSIFICATION

AWS A5.5 E 8018-C3-H4R
EN ISO 2560-A E 46 6 1Ni B 32 H5

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	DNV	TÜV
+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	Ni	HDM
0.07	1.15	0.4	0.015	0.005	0.9	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					-40°C	-60°C
Required: AWS A5.5		470-550	550	min. 24		47
EN ISO 2560-A		460	530-680	min. 20		
Typical values	AW	520	585	24	140	115

* AW = As welded

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	70	1.4	524809-1
3.2 x 350	SRP	50	1.8	524816-1
4.0 x 350	SRP	28	1.5	524823-1

Kryo® 2

TOP FEATURES

- Excellent impact toughness at -60°C
- Good CTOD at -15°C
- Extremely low hydrogen content

CLASSIFICATION

AWS A5.5 E 9018-G-H4R
EN ISO 2560-A E 55 6 Z B 32 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	Ni	HDM
0.05	1.6	0.3	0.015	0.01	1.5	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					-40°C	-50°C	-60°C
Required: AWS A5.5		min. 530	min. 620	min. 17	not specified		
EN ISO		min. 550	610-780	min. 18			min. 47
Typical values	AW	570	650	22	140	110	60
	SR:620°C/1h	530	620	22			

AW = As welded; SR = Stress relieved

CTOD value at -10°C > 0.25 mm

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	55-85
3.2 x 450	80-140
4.0 x 450	120-170

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	68	1.4	524642-1
3.2 x 450	SRP	50	2.5	524659-1
4.0 x 450	SRP	28	2.0	524666-1

Kryo® 3

TOP FEATURES

- 115 - 120% recovery
- Excellent impact toughness down to -80°C
- Good CTOD at -10°C
- Extremely low hydrogen content

CLASSIFICATION

AWS A5.5 E8018-C1-H4
EN ISO 2560-A E 50 6 Mn1Ni B 32 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

LR	TÜV
+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	Ni	HDM
0.05	0.7	0.3	0.015	0.01	2.5	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					-60°C	-80°C
Required: AWS A5.5	SR*	min. 460	min. 550	min. 19	min. 27	
EN ISO		min. 460	530-680	min. 20		min. 47
Typical values	AW	520	600	26	120	60
	SR:620°C/1h	500	590	29	90	

AW = As welded; SR = Stress relieved

CTOD value at -10°C > 0.25 mm

SR* = 605±14°C/1h

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	55-80
3.2 x 350	80-140
3.2 x 450	80-140
4.0 x 350	120-170
4.0 x 450	120-170
5.0 x 450	180-240

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
3.2 x 350	SRP	50	1.9	524604-1
3.2 x 450	SRP	50	2.4	524543-1
4.0 x 350	SRP	28	1.5	524574-1

Kryo® 4

TOP FEATURES

- Excellent impact toughness down to -80°C in as welded condition and -100°C after PWHT
- Extremely low hydrogen content
- Shall be used in AC or DC+/- mode.

CLASSIFICATION

AWS A5.5 E7016-C2L H4
EN ISO 2560-A E 42 6 3Ni B 12 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	Ni	HDM
0.03	0.6	0.4	0.01	0.005	3.6	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					-80°C	-101°C
Required: AWS A5.5	PWHT*	min. 390	min. 480	min. 25		min. 27
EN ISO	AW	min. 380	470-600	min. 20	47	
Typical values	AW	490	570	30	90	
	PWHT*	420	510	30	120	90

AW = As welded

* 605±14°C/1h

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	60-90
3.2 x 350	80-140
4.0 x 350	
4.0 x 450	

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	TBD	0.0	524970-1
3.2 x 350	SRP	TBD	0.0	524932-1
4.0 x 350	SRP	TBD	0.0	524949-1

SL® 12G

TOP FEATURES

- Service temperature from -40 up to 500°C
- DC-welding preferred
- 115 - 120% recovery

CLASSIFICATION

AWS A5.5 E7018-A1-H4R
EN ISO 3580-A E Mo B 32 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

DNV	TÜV	DB
+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	Mo	HDM
0.05	0.8	0.6	0.020	0.010	0.55	2 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					+20°C	-20°C
Required: AWS A5.5	SR(1)	min. 390	min. 490	min. 25	not specified	
EN ISO	SR(2)	min. 355	min. 510	min. 22	min. 47	
Typical values	SR(3)	560	620	25	140	50
	AW	550	610	25	160	70

AW = As welded

Stress relieved: SR(1) = 620±14°C/1h, SR(2) = 570-620°C/1h, SR(3) = 620°C/1h

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	60-90
3.2 x 350	80-130
4.0 x 350	120-180
5.0 x 450	160-240

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	67	1.4	523973-1
	CBOH	94	2.0	516999-1
3.2 x 350	SRP	50	1.9	524017-1
	CBOX	108	4.0	516968-1
4.0 x 350	SRP	28	1.5	524000-1
	CBOX	80	4.3	516975-1
5.0 x 450	CBOX	50	5.3	516982-1

SL[®] 22G

TOP FEATURES

- Maximum service temperature 550 °C
- AC/DC electrode + or -. DC welding by preference. Root pass in open joints, electrode negative preferable
- 115 - 120% recovery

CLASSIFICATION

AWS A5.5 E 8018-B1-H4
EN ISO 3580-A E Z B 32 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

TÜV

+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	Cr	Mo	HDM
0.06	0.8	0.6	0.020	0.010	0.5	0.5	3 ml/100 g

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					+20 °C	-10 °C
Required: AWS A5.5	SR(1)	min. 460	min. 550	min. 19	not specified	
Typical values	SR(2)	570	640	24	180	110

* Stress relieved: SR(1) = 690±14 °C/1h, SR(2) = 730 °C/1h

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	60-90
3.2 x 350	80-130
4.0 x 350	120-180
5.0 x 450	160-220

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	63	1.3	524246-1
3.2 x 350	SRP	50	1.9	524284-1
4.0 x 350	SRP	28	1.5	524277-1

Conarc® 55CT

TOP FEATURES

- Excellent mechanical properties (impact down to -40°C)
- Suitable for positional welding and welding with an inverter power source.
- Very low diffusible hydrogen content.
- The weld deposit has a very similar appearance to Cor-Ten A steel.

CLASSIFICATION

AWS A5.5 E 8018-G H4R
EN ISO 2590-A E 50 4 Z B 32 H5

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	Ni	Cu	Cr
0.06	1.3	0.4	≤0.02	≤0.02	0.45	0.45	0.5

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					-18°C	-40°C
Required: AWS A5.5		min. 460	min. 550	min. 19	min. 27	
EN ISO 2560-A	AW	min. 500	560-720	min. 18		≥47
Typical values		≥500	560-720	≥23		100

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	55-85
3.2 x 350	80-145
4.0 x 350	120-185
5.0 x 450	180-270

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	SRP	62	1.5	523522-1
3.2 x 350	SRP	50	2.0	523539-1
4.0 x 350	SRP	27	1.9	523546-1

DEVIATIONS: CHEMICAL COMPOSITION

Mn = 1.4-1.9% AWS: Mn = 0.50-1.30%
Si = 0.15-0.60% AWS: Si = 0.35-0.80%
Cr = 0.1% AWS: Cr = 0.45-0.70%
Ni = 0.7-1.0% AWS: Ni = 0.40-0.80%
Cu = 0.3-0.5% EN: Cu max. 0.3%

Arosta® 304L

TOP FEATURES

- Excellent corrosion resistance in oxidizing environments such as nitric acid
- High resistance to intergranular corrosion
- Smooth bead appearance
- Easy slag release
- Strong electrode coating
- Weldable on AC and DC

CLASSIFICATION

AWS A5.4 E308L-16
EN ISO 3581-A E 19 9 L R 12

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

BV	TÜV
+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	FN (acc. WRC 1992)
0.02	0.8	0.8	19.5	9.7	4-10

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					+20°C	-20°C	-196°C
Required: AWS A5.4		not specified	min. 520	min. 35	not specified		
EN ISO		min. 320	min. 510	min. 30	not specified		
Typical values	AW	440	580	43	70	60	24

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.0 x 300	30-50
2.5 x 350	40-75
3.2 x 350	60-110
4.0 x 350	80-150
5.0 x 350	140-220

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.0 x 300	CBOH	93	1.0	527520-1
2.5 x 350	SRP	69	1.4	530087-1
	CBOH	105	2.1	527537-1
3.2 x 350	SRP	56	1.8	530063-1
	CBOX	130	4.1	527834-1
4.0 x 350	CBOX	83	4.4	527940-1
5.0 x 350	CBOX	50	4.1	528053-1

Arosta® 307

TOP FEATURES

- Especially developed for steels difficult to weld, such as armour plates and austenitic high Mn-steels
- Often used as a buffer layer in hardfacing applications
- Weldable on AC and DC+ polarity

CLASSIFICATION

AWS A5.4 E307-16
EN ISO 3581-A E 18.8 Mn R 12

CURRENT TYPE

AC/DC+

WELDING POSITIONS

All position, except vertical down

APPROVALS

TÜV	DB
+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	FN (acc. WRC 1992)
0.09	5.0	0.6	18.5	8.5	0

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					+20°C	-60°C
Required: AWS A5.4		not specified	min. 590	min. 30	not specified	
EN ISO		min. 350	min. 500	min. 25	not specified	
Typical values	AW	450	650	35	110	75

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	70-80
3.2 x 350	90-120
4.0 x 350	110-140

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOH	97	2.1	527391-1
3.2 x 350	CBOX	130	4.4	527407-1
4.0 x 350	CBOX	86	4.5	527414-1

Arosta® 309S

TOP FEATURES

- For welding stainless steel to mild steel and root runs in clad steel
- Applicable for root passes in N alloyed AISI 304LN steels
- Excellent weldability and self releasing slag
- High resistance to embrittlement
- Weldable on AC and DC+ polarity

CLASSIFICATION

AWS A5.4 E 309L-16
EN ISO 3581-A E 23 12 L R 32

CURRENT TYPE

AC/DC+

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	BV	TÜV
+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	FN (acc. WRC 1992)
0.02	0.8	0.8	23.5	12.5	12-20

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					+20°C	-20°C	-120°C
Required: AWS A5.4		not specified	min. 520	min. 30	not specified		
EN ISO		min. 320	min. 510	min. 25	not specified		
Typical values	AW	480	560	40	60	50	40

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	40-75
3.2 x 350	60-110
4.0 x 350	80-150
5.0 x 350	140-220

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOH	100	2.0	528374-1
3.2 x 350	SRP	56	1.9	528367-1
	CBOX	125	4.2	528381-1
4.0 x 350	CBOX	84	4.2	528497-1

Arosta® 316L

TOP FEATURES

- Molybdenum level min. 2.7%
- High resistance to general and intergranular corrosion
- Smooth weld appearance
- Easy slag release
- Strong electrode coating

CLASSIFICATION

AWS A5.4 E316L-16
EN ISO 3581-A E 19 12 3 L R 12

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS	LR	BV	DNV	TÜV	DB
+	+	+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	Mo	FN (acc. WRC 1992)
0.02	0.8	0.8	18.0	11.5	2.85	4-10

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					+20°C	-20°C	-120°C
Required: AWS A5.4		not specified	min. 490	min. 30	not specified		
EN ISO 3581-A		min. 320	min. 510	min. 25	not specified		
Typical values	AW	450	580	39		60	40

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
1.5 x 250	20-40
2.0 x 300	30-50
2.5 x 350	40-75
3.2 x 350	60-110
4.0 x 350	80-150
5.0 x 350	140-220

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
1.5 x 250	PE Tube	145	1.0	529159-1
2.0 x 300	CBOH	170	1.9	529173-1
2.5 x 350	SRP	10	0.2	515236-1
	CBOH	69	1.4	530001-1
3.2 x 350	SRP	100	2.0	529180-1
	CBOH	56	1.8	530032-1
4.0 x 350	CBOH	130	4.3	529487-1
	CBOX	84	4.5	529593-1
5.0 x 350	CBOX	50	4.1	529708-1

Clearosta® E 304L

TOP FEATURES

- Suitable for root pass
- Lower porosity, good striking and restriking
- Excellent slag removal

CLASSIFICATION

AWS A5.4 E308L-17
 EN ISO 3581-A E 199 L R 22

CURRENT TYPE

DC+

WELDING POSITIONS

Flat/Horizontal

APPROVALS

DNV	TÜV
+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	P	S	FN (acc. WRC 1992)
0.03	0.8	1.00	19.5	10.0	0.025	0.01	5-10

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) +20°C
Typical values	AW	≥420	≥520	≥35	≥50

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 300	70-90
3.2 x 350	100-120
4.0 x 350	140-160
5.0 x 350	190-210

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 300	VPMD	90	1.7	710001
3.2 x 350	VPMD	55	1.9	710002
4.0 x 350	VPMD	40	2.1	710003
5.0 x 350	VPMD	20	1.6	710004

MMA

Clearosta® E 309L

TOP FEATURES

- Suitable for root pass
- Lower porosity, good striking and restriking
- Excellent slag removal

CLASSIFICATION

AWS A5.4 E 309L-17
EN ISO 3581-A E 23 12 L R 22

CURRENT TYPE

DC+

WELDING POSITIONS

Flat/Horizontal

APPROVALS

DNV	TÜV
+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	P	S	FN (acc. WRC 1992)
0.03	0.9	1.00	24.0	13.0	0.025	0.01	8-15

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) +20°C
Typical values	AW	≥420	≥520	≥35	≥50

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 300	70-90
3.2 x 350	100-120
4.0 x 350	140-160
5.0 x 350	190-210

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 300	VPMD	90	1.8	710005
3.2 x 350	VPMD	55	2.0	710006
4.0 x 350	VPMD	40	2.2	710007
5.0 x 350	VPMD	20	1.7	710008

Clearosta® E 316L

TOP FEATURES

- Suitable for root pass
- Lower porosity, good striking and restriking
- Excellent slag removal

CLASSIFICATION

AWS A5.4 E316L-17
EN ISO 3581-A E 19 12 3 L R 22

CURRENT TYPE

DC+

WELDING POSITIONS

Flat/Horizontal

APPROVALS

DNV	TÜV
+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	Mo	P	S	FN (acc. WRC 1992)
0.03	0.8	1.00	19.5	10.0	2.7	0.025	0.01	5-10

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) +20°C
Typical values	AW	≥420	≥520	≥35	≥50

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 300	70-90
3.2 x 350	100-120
4.0 x 350	140-160
5.0 x 350	190-210

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 300	VPMD	90	1.7	710009
3.2 x 350	VPMD	55	2.0	710010
4.0 x 350	VPMD	40	2.1	710011
5.0 x 350	VPMD	20	1.7	710012

Limarosta® 304L

TOP FEATURES

- Mirror like bead appearance
- Self releasing slag
- Excellent side wall wetting, no undercut
- High resistance to porosity
- Weldable on AC and DC

CLASSIFICATION

AWS A5.4 E308L-17
EN ISO 3581-A E 199 L R 12

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

LR	DNV	TÜV	DB
+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	FN (acc. WRC 1992)
0.025	0.75	0.95	19.0	9.7	4-10

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					+20°C	-20°C
Required: AWS A5.4		not specified	min. 520	min. 35	not specified	
EN ISO		min. 320	min. 510	min. 30	not specified	
Typical values	AW	440	600	45	75	60

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.0 x 300	35-50
2.5 x 350	45-80
3.2 x 350	80-115
4.0 x 450	100-155
5.0 x 450	150-220

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.0 x 300	CBOH	150	1.8	557312-1
2.5 x 350	CBOH	92	2.0	557329-1
3.2 x 350	CBOX	120	4.2	557367-1
4.0 x 450	CBOX	85	5.8	557398-1
5.0 x 450	CBOX	50	5.3	557404-1

Limarosta® 309S

TOP FEATURES

- Self releasing slag
- Excellent side wall wetting, no undercut, mirror like bead appearance
- High resistance to porosity

CLASSIFICATION

AWS A5.4 E 309L-17
EN ISO 3581-A E 23 12 L R 32

CURRENT TYPE

AC/DC+

WELDING POSITIONS

All position, except vertical down

APPROVALS

LR	DNV	TÜV	DB
+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	FN (acc. WRC 1992)
0.02	0.8	1.0	23.0	12.5	10-20

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					+20°C	-20°C
Required: AWS A5.4		not specified	min. 520	min. 30	not specified	
EN ISO		min. 320	min. 510	min. 25	not specified	
Typical values	AW	440	600	40	55	50

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.0 x 300	35-55
2.5 x 350	45-80
3.2 x 350	80-115
4.0 x 350	100-155
5.0 x 350	150-220

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.0 x 300	CBOH	150	1.8	557527-1
2.5 x 350	SRP	65	1.4	539684-1
	CBOH	90	2.0	557534-1
3.2 x 350	SRP	52	1.8	539714-1
	CBOX	120	4.2	557565-1
4.0 x 450	SRP	28	1.9	539691-1
	CBOX	81	5.6	557589-1
5.0 x 450	CBOX	50	5.4	557596-1

Limarosta® 316L

TOP FEATURES

- Molybdenum level min. 2.7%
- Mirror like bead appearance
- Self releasing slag
- Good side wall fusion, no undercut
- High resistance to porosity

CLASSIFICATION

AWS A5.4 E316L-17
EN ISO 3581-A E 19 12 3 L R 12

CURRENT TYPE

AC/DC(+/-)

WELDING POSITIONS

All position, except vertical down

APPROVALS

LR	DNV	TÜV	DB
+	+	+	+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	Mo	FN (acc. WRC 1992)
0.02	0.8	1.0	18.0	11.5	2.8	4-10

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)		
					+20° C	-20° C	-105° C
Required: AWS A5.4		not specified	min. 490	min. 30	not specified		
EN ISO		min. 320	min. 510	min. 25	not specified		
Typical values	AW	450	580	40	70	60	40

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
1.5 x 250	20-40
2.0 x 300	35-50
2.5 x 350	45-80
3.2 x 350	80-115
4.0 x 450	100-155
5.0 x 450	150-220

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.0 x 300	CBOH	150	1.7	557435-1
	SRP	65	1.4	539912-1
2.5 x 350	CBOH	90	2.0	557442-1
	SRP	52	1.8	539943-1
3.2 x 350	CBOX	120	4.2	557466-1
	SRP	28	1.9	539929-1
4.0 x 450	CBOX	81	5.5	557497-1
	SRP	22	2.4	539936-1
5.0 x 450	CBOX	52	5.6	557503-1

LINCOLN LINOX 308L

TOP FEATURES

- Smooth weld appearance
- Minimum spatter and high resistance to porosity
- Good side wall wetting, no undercut

CLASSIFICATION

AWS A5.4 E 308L-17
EN ISO 3581-A E 19 9 L R 32

CURRENT TYPE

AC/DC+

WELDING POSITIONS

Flat/Horizontal

APPROVALS

ABS

+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	P	S	FN (acc. WRC 1992)	
0.025	0.9	0.8	19.8	9.5	≤0.030	≤0.025	5-10	

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) +20°C
Typical values	AW	≥320	≥520	≥35	≥60

AW = As welded

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.0 x 300	CBOH	150	1.7	620163
	VPMD	150	1.7	620166
2.5 x 300	VPMD	90	1.7	620203
	CBOH	90	2.0	620140
2.5 x 350	VPMD	90	2.0	620152
	CBOH	55	1.9	620141
3.2 x 350	VPMD	55	1.9	620153
	CBOH	40	2.8	620142
4.0 x 450	VPMD	40	2.8	620154
	VPMD	20	2.1	620155

LINOX 309L

TOP FEATURES

- Smooth weld appearance
- Minimum spatter and high resistance to porosity
- Good side wall wetting, no undercut

CLASSIFICATION

AWS A5.4 E 309L-17
EN ISO 3581-A E 23 12 L R 32

CURRENT TYPE

AC/DC+

WELDING POSITIONS

Flat/Horizontal

APPROVALS

ABS

+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	P	S	FN (acc. WRC 1992)
≤0.040	0.9	0.9	23.5	12.2	≤0.025	≤0.025	5-20

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) +20°C
Typical values	AW	≥400	≥520	≥30	≥47

AW = As welded

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOH	90	2.0	620144
	VPMD	90	2.0	620156
3.2 x 350	CBOH	55	2.0	620145
	VPMD	55	2.5	620157
4.0 x 450	VPMD	40	3.3	620158

LINOX 316L

TOP FEATURES

- Smooth weld appearance
- Minimum spatter and high resistance to porosity
- Good side wall wetting, no undercut

CLASSIFICATION

AWS A5.4 E 316L-17
EN ISO 3581-A E 19 12 3 LR 32

CURRENT TYPE

AC/DC+

WELDING POSITIONS

Flat/Horizontal

APPROVALS

ABS

+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	Mo	P	S	FN (acc. WRC 1992)
0.035	0.9	0.8	19.0	12.0	2.6	≤0.025	≤0.025	44839

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) +20°C
Typical values	AW	≥350	≥510	≥30	≥50

AW = As welded

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.0 x 300	CBOH	150	1.7	620165
	VPMD	150	1.7	620168
2.5 x 300	VPMD	90	1.7	620202
	CBOH	90	2.0	620148
2.5 x 350	VPMD	90	2.0	620159
	CBOH	55	2.0	620149
3.2 x 350	VPMD	55	2.0	620160
	CBOH	40	2.8	620150
4.0 x 450	VPMD	40	3.1	620161
	VPMD	20	2.2	620162

LINOX P 308L

TOP FEATURES

- All positional welding including fixed pipework
- Smooth weld appearance
- Minimum spatter and high resistance to porosity

CLASSIFICATION

AWS A5.4 E 308L-16
EN ISO 3581-A E 19 9 L R 32

CURRENT TYPE

AC/DC+

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS

+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	FN (acc. WRC 1992)
0.025	0.8	0.6	19.0	9.5	3-10

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) -100°C
Required: AWS A5.4		not specified	min. 520	min. 35	
EN ISO		min. 310	min. 510	min. 30	
Typical values	AW	450	590	45	35

AW = As welded

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.0 x 300	CBOH	150	1.6	620172
	VPMD	150	1.6	620176
2.5 x 350	CBOH	95	1.8	620173
	VPMD	95	1.8	620177
3.2 x 350	CBOH	55	1.7	620174
	VPMD	55	1.7	620178
4.0 x 450	CBOH	40	2.6	620175
	VPMD	40	2.6	620179

LINCOLN P 309L

TOP FEATURES

- All positional welding including fixed pipework
- Smooth weld appearance
- Minimum spatter and high resistance to porosity

CLASSIFICATION

AWS A5.4 E 309L-16
EN ISO 3581-A E 23 12 L R 32

CURRENT TYPE

AC/DC+

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS

+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	FN (acc. WRC 1992)
0.025	0.8	0.6	23.5	13.0	8-20

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J) -20 °C
Required: AWS A5.4		not specified	min. 520	min. 30	not specified
EN ISO		min. 320	min. 510	min. 25	not specified
Typical values	AW	495	595	41	45

AW = As welded

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CBOH	95	1.9	620180
	VPMD	95	1.9	620183
3.2 x 350	CBOH	55	1.9	620181
	VPMD	55	1.9	620184

LINOX P 316L

TOP FEATURES

- All positional welding including fixed pipework
- Smooth weld appearance
- Minimum spatter and high resistance to porosity

CLASSIFICATION

AWS A5.4 E 316L-16
EN ISO 3581-A E 19 12 3 L R 32

CURRENT TYPE

AC/DC+

WELDING POSITIONS

All position, except vertical down

APPROVALS

ABS

+

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

C	Mn	Si	Cr	Ni	Mo	FN (acc. WRC 1992)
0.025	0.8	0.6	19.0	12.0	2.5	3-10

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact ISO-V (J)	
					+20 °C	-105 °C
Required: AWS A5.4		not specified	min. 520	min. 30	not specified	
EN ISO		min. 320	min. 510	min. 25	not specified	
Typical values	AW	480	580	41	70	40

AW = As welded

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.0 x 300	CBOH	150	1.7	620186
	VPMD	150	1.7	620191
2.5 x 350	CBOH	95	1.9	620187
	VPMD	95	1.9	620192
3.2 x 350	CBOH	60	2.0	620188
	VPMD	60	2.0	620193
4.0 x 450	VPMD	40	2.7	620194

ALMN

TOP FEATURES

- Good weldability
- No porosity

CLASSIFICATION

AWS A5.3 E3003
EN ISO 18273-A Al 3103

CURRENT TYPE

DC+

WELDING POSITIONS

All position, except vertical down

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

Al	Mn	Si	Zn	Fe	Cu	Mg	Others
bal.	0.9-1.2	0.3 max.	0.09 max.	0.6 max.	0.02 max.	0.15 max.	0.15 max.

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)
Typical values	AW	40	110	20

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	40-70
3.2 x 350	60-90

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CAN	-	2.0	809718
3.2 x 350	CAN	-	2.0	800579

AlSi5

TOP FEATURES

- Good weldability, no porosity
- Shall be welded in DC+ mode

CLASSIFICATION

AWS A5.3 E 4043
EN ISO 18273-A EI-AlSi5

CURRENT TYPE

DC+

WELDING POSITIONS

All position, except vertical down

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

Al	Si
bal.	5.0

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)
Typical values	AW	90	160	15

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	40-70
3.2 x 350	60-90
4.0 x 350	80-120

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CAN	-	2.0	800593
3.2 x 350	CAN	-	2.0	800609

AlSi12

TOP FEATURES

- Also applicable as surfacing electrode
- Good weldability, no porosity
- Applicable when Al-properties are unknown

CLASSIFICATION

AWS A5.3 E 4047
EN ISO 18273-A EI-AlSi 12

CURRENT TYPE

DC+

WELDING POSITIONS

All position, except vertical down

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

Al	Si
bal.	12.0

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition*	0.2% Proof strength (MPa)	Tensile strength (MPa)	Elongation (%)
Typical values	AW	80	180	5

AW = As welded

OUTPUT RANGE

Diameter x Length (mm)	Current range (A)
2.5 x 350	40-70
3.2 x 350	60-90
4.0 x 350	80-120

PACKAGING AND AVAILABLE SIZES

Diameter x Length (mm)	Packaging	Electrodes/pack	Net weight/pack (kg)	Item number
2.5 x 350	CAN	-	2.0	800623
3.2 x 350	CAN	-	2.0	800630
4.0 x 350	CAN	-	2.0	800647