Cellulosic electrode

Classification

AWS A5.1 : E6010
ISO 2560-A : E 42 3 C 25

General description

All-position cellulosic pipe electrode designed for all position pipe welding, including vertical down root pass welding
Designed for root pass welding of pipe up to and including X80, fill and cap pass welding up to and including X60
Light slag with little slag interference for easy arc control
Easy slag removal, smooth bead
Deep penetration with maximum dilution
X-ray quality welds, even out of position

Welding positions

ISO/ASME PA/1G PB/2F PC/2G PF/3Gup PG/3Gdown PE/4G PF/5Gup PG/5Gdown

Current type

DC + / -

Chemical composition (w%), typical, all weld metal

C	Mn	Si	P	S
0.11	0.55	0.18	0.009	0.009

Mechanical properties, all weld metal

	Condition	Yield strength (N/mm^2)	Tensile strength (N/mm^2)	Elongation (%)	Impact ISO-V(J) -29°C	Impact ISO-V(J) -30°C
Required: AWS A5.1		min. 331	min. 414	min. 22	27	
ISO 2560-A		min. 420	500-640	min. 20		47
Typical values	AW	420-524	503-594	24-33	51-85	

Packaging and available sizes

	Diameter (mm)	2.5	3.2	4.0	5.0
	Length (mm)	300	350	350	350
Unit: metal can	Pieces / unit	xx	xx	xx	xx
	Net weight/unit (kg)	4.5	4.5	4.5	4.5

Identification Imprint: 6010 PIPELINER 6P+ Tip Color: none

PIPELINER® 6P+: rev. EN 21

Materials to be welded

Steel grades/Code	Type
Pipe material	
API 5LX	X42, X46, X52, X56, X60

Calculation data

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode at max. current - (s)*	Energy E(kJ)	Dep.rate H(kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal B	kg Electrodes/ kg weldmetal 1/N
2.5x350	40-70	DC+/-						
3.2x350	65-130	DC+/-						
4.0x350	90-175	DC+/-						
5.0x350	140-225	DC+/-						

Welding parameters, optimum fill passes

Diameter (mm)	Welding positions	
	5G up	5G down
3.2	90A	110A
4.0	130A	150A
5.0	150A	165A

Remarks/ Application advice

Preheating pipe material L360 (X52) required (acc. EN 1011-1).
Pipeclamps to be removed after finishing root pass, start welding hot pass (within 5 min) after root pass
Use electrodes directly from metal cans

PIPELINER® 8P+

High strength cellulosic electrode

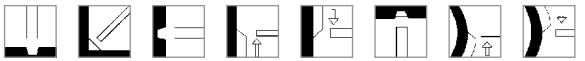
Classification

AWS A5.5 : E8010-P1
ISO 2560-A : E 46 4 1Ni C 25

General description

Designed for vertical down welding of pipes up to and including X70
Excellent resistance to porosity, X-ray quality welds
High stacking efficiency: fill joints in fewer passes
Exceptional mechanical properties

Welding positions



ISO/ASME PA/1G PB/2F PC/2G PF/3Gup PG/3Gdown PE/4G PF/5Gup PG/5Gdown

Current type

DC +

Approvals

ABS
+

Chemical composition (w%), 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, all weld metal

	Condition	0.2% Proof strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -29°C	-40°C	-46°C
Required: AWS A5.5		min. 460	min. 550	min. 19	27		
ISO 2560-A		min. 460	530-680	min. 20		min. 47	
Typical values	AW	460-559	550-676	20-27	62-99		46-84

Packaging and available sizes

	Diameter (mm)	3.2	4.0	5.0
	Length (mm)	350	350	350
Unit: metal can	Pieces / unit	xx	xx	xx
	Net weight/unit (kg)	4.5	4.5	4.5

Identification Imprint: 8010-P1 PIPELINER 8P+ Tip Color: none

Materials to be welded

Steel grades/Code	Type
Pipe material	
API 5LX	X56, X60, X65, X70

Calculation data

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode at max. current - (s)*	Energy E(kJ)	Dep.rate H(kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal B	kg Electrodes/ kg weldmetal 1/N
3.2 x 350	75 - 130	DC+						
4.0 x 350	90 - 185	DC+						
5.0 x 350	140 - 225	DC+						

Welding parameters, optimum fill passes

Diameter (mm)	Welding positions	
	5G up	5G down
3.2	90A	110A
4.0	130A	150A
5.0	150A	165A

Remarks/ Application advice

Preheating pipe material L360 - L480 (X56 - X70) required (acc. EN 1011-1).
Pipeclamps to be removed after finishing root pass, start welding hot pass (within 5 min) after root pass
Use electrodes directly from metal cans
Use PIPELINER 6P+ for lower hardness in the root pass when required

Basic electrode

Classification

AWS A5.1 : E7016 H4
ISO 2560-A : E 42 3 B 12 H5

General description

Designed for vertical up root pass welding of pipes up to and including X80
Suitable for hot, fill, and cap pass welding for up to and including X65
Excellent low temperature impact properties
Square burnoff makes welding easier, especially in critical pipe welding applications
Open gap root pass welding with 2.5 and 3.2 mm electrodes using DC - / + polarity

Welding positions

ISO/ASME PA/1G PB/2F PC/2G PF/3Gup PE/4G PF/5Gup

Current type

DC - / +, AC

Chemical composition (w%), typical, all weld metal

C	Mn	Si	P	S
0.06	1.3	0.5	0.013	0.009

Mechanical properties, all weld metal

	Condition	0.2% Proof strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -29°C	Impact ISO-V(J) -30°C
Required: AWS A5.1		min. 400	min. 480	min. 22	27	
ISO 2560-A		min. 420	500-640	min. 20		min. 47
Typical values	AW	448-566	550-640	25-32	54-122	

Packaging and available sizes

	Diameter (mm)	2.5	3.2	4.0
	Length (mm)	350	350	350
Unit: Metal can	Pieces / unit	xx	xx	xx
	Net weight/unit (kg)	22.7	22.7	22.7

Identification Imprint: 7016 H4 PIPELINER 16P Tip Color: none

PIPELINER® 16P: rev. EN 21

Materials to be welded

Steel grades/Code	Type
Pipe material	
API 5LX	X42, X46, X52, X56, X60, X65

Calculation data

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode at max. current - (s)*	Energy E(kJ)	Dep.rate H(kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal B	kg Electrodes/ kg weldmetal 1/N
2.5 x 350	55 - 80	DC+						
3.2 x 350	75 - 120	DC+						
4.0 x 350	120 - 160	DC+						

Welding parameters, optimum fill passes

Diameter (mm)	Welding positions 1G	2F	2G	3Gup	4G
2.5	80A	85A	85A	85A	80A
3.2	120A	115A	115A	115A	110A
4.0	170A	180A	180A	180A	160A

Remarks/ Application advice

Preheating pipe material L360 - L445 (X56 - X65) required (acc. EN 1011-1).

Basic electrode

Classification

AWS A5.5 : E8018-G-H4R
ISO 2560-A : E 50 6 Mn1Ni B 32 H5

General description

Designed for vertical up fill and cap pass welding of welding of high strength pipe up to and including X70
Excellent low temperature impact properties down to -60°C
Square burnoff makes welding easier, especially in critical pipe welding applications

Welding positions

ISO/ASME PA/1G PB/2F PC/2G PF/3Gup PE/4G PF/5Gup

Current type

AC / DC + / -

Chemical composition (w%), typical, all weld metal

C	Mn	Si	P	S	Ni
0.05	1.5	0.5	0.010	0.005	0.95

Mechanical properties, all weld metal

	Condition	0.2% Proof strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -46°C	Impact ISO-V(J) -60°C
Required: AWS A5.1		min. 460	min. 550	min. 19	not required	
ISO 2560-A		min. 500	560-720	min. 18		min. 47
Typical values	AW	550	640	24		80

Packaging and available sizes

	Diameter (mm)	3.2	4.0
	Length (mm)	350	350
Unit: Metal can	Pieces / unit	123	75
	Net weight/unit (kg)	4.2	4.0

Identification Imprint: 8018-G H4R PIPELINER 18P Tip Color: none

PIPELINER® 18P: rev. EN 21

Materials to be welded

Steel grades/Code	Type
Pipe material	
API 5LX	X 56, X60, X65, X70, X80

Calculation data

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode at max. current - (s)*	Energy E(kJ)	Dep.rate H(kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal B	kg Electrodes/ kg weldmetal 1/N
3.2 x 350	80 - 145	DC+	66	220	1.2	37.7	48	1.79
4.0 x 350	120 - 185	DC+	77	355	1.6	54.1	29	1.59

Welding parameters, optimum fill passes

Diameter (mm)	Welding positions 1G	2F	2G	3Gup	4G	5G up
3.2	140A	120A	145A	120A	120A	120A
4.0	150A	140A	150A	140A	135A	140A

Remarks/ Application advice

Preheating pipe material L360 - L480 (X56 - X70) required (acc. EN 1011-1).

PIPELINER® LH-D80

High strength basic electrode

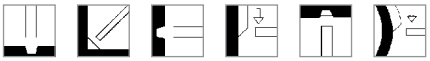
Classification

AWS A5.5 : E8048-P2 H4R
ISO 2560-A : E 46 4 Z 1Ni B 45 H5

General description

Specifically designed for vertical down
Basic covered low hydrogen electrode primarily designed for vertical down hot, fill and cap pass pipe welding
Recommended for pipe grades up to and including X70
Low temperature impact properties down to -46°C.
Unique "hot start" tip helps initiate the arc and quickly establish puddle control
Slag design allows for easy control of weld puddle

Welding positions



ISO/ASME PA/1G PB/2F PC/2G Pg/3Gdown PE/4G PG/5Gdown

Current type

AC / DC + / -

Chemical composition (w%), typical, all weld metal

C	Mn	Si	P	S
0.05	1.15	0.45	0.010	0.010

Mechanical properties, all weld metal

	Condition	0.2% Proof strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -30°C	Impact ISO-V(J) -46°C
Required: AWS A5.5		min. 460	min. 550	min. 19	27	
ISO 2560-A		min. 460	530 - 680	min. 20	min. 47	
Typical values	AW	523-543	599-618	25-30	80	50-95

Packaging and available sizes

	Diameter (mm)	3.2	4.0	4.5
	Length (mm)	350	350	350
Unit: Metal can	Pieces / unit	xx	xx	xx
	Net weight/unit (kg)	4.5	4.5	4.5

Identification Imprint: LH-D80 8018-G Tip Color: none

PIPELINER® LH-D80: rev. EN 21

Materials to be welded

Steel grades/Code	Type
Pipe material	
API 5 L	X60, X65, X70

Calculation data

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode (s)*	Energy - at max. current - E(kJ)	Dep.rate - at max. current - H(kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal B	kg Electrodes/ kg weldmetal 1/N
3.2 x 350	140 - 170	DC+						
4.0 x 350	180 - 240	DC+						
4.5 x 350	200 - 260	DC+						

Welding parameters, optimum fill passes

Diameter (mm)	Welding positions PG/5G down
3.2	140-170A
4.0	180-240A
4.5	200-260A

PIPELINER® LH-D90

High strength basic electrode

Classification

AWS A5.5 : E8010-45-P2 H4R
ISO 18275 : E 55 4 ZB 45 H5

General description

Basic covered low hydrogen electrode primarily designed for vertical down hot, fill and cap pass pipe welding
Recommended for pipe grades up to and including API 5L Grade X80
High deposition rates and excellent low temperature impact properties down to -46°C.
Unique "hot start" tip helps initiate the arc and quickly establisch puddle control
Slag design allows for easy control of weld puddle

Welding positions

ISO/ASME PA/1G PB/2F PC/2G Pg/3Gdown PE/4G PG/5Gdown

Current type

AC / DC + / -

Chemical composition (w%), typical, all weld metal

C	Mn	Si	P	S	Ni	Mo
0.05	1.30	0.50	0.010	0.010	0.90 (4.0 & 4.5mm) / 0.25 (3.2mm)	0.2

Mechanical properties, all weld metal

	Condition	0.2% Proof strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -29°C	-46°C	-50°C
Required: AWS A5.5		min. 530	min. 620	min. 17	27		
EN 757		min. 550	610-780	min. 18			min. 47
Typical values	AW	550-600	630-670	24-28	90-120	65-95	

Packaging and available sizes

	Diameter (mm)	3.2	4.0	4.5
	Length (mm)	350	350	350
Unit: Metal can	Pieces / unit	xx	xx	xx
	Net weight/unit (kg)	4.5	4.5	4.5

Identification Imprint: LH-D90 9018-G Tip Color: None

PIPELINER® LH-D90: rev. EN 21

Materials to be welded

Steel grades/Code	Type
Pipe material	
API 5 L	X65, X70, X80

Calculation data

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode (s)*	Energy at max. current - E(kJ)	Dep.rate - H(kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal B	kg Electrodes/ kg weldmetal 1/N
3.2 x 350	140 - 170	DC+						
4.0 x 350	180 - 240	DC+						
4.5 x 350	200 - 260	DC+						

Welding parameters, optimum fill passes

Diameter (mm)	Welding positions PG/5G down
3.2	140-170A
4.0	180-240A
4.5	200-260A

PIPELINER® LH-D100

High strength basic electrode

Classification

AWS A5.5 : E10045-P2 H4R
ISO 18275 : E 69 15 GA H5

General description

Basic covered low hydrogen electrode primarily designed for vertical down hot, fill and cap pass pipe welding
Recommended for pipe grades up to and including API 5L Grade X90
High deposition rates and excellent low temperature impact properties down to -46°C.
Unique "hot start" tip helps initiate the arc and quickly establisch puddle control
Slag design allows for easy control of weld puddle

Welding positions

ISO/ASME PA/1G PB/2F PC/2G Pg/3Gdown PE/4G PG/5Gdown

Current type

AC / DC + / -

Chemical composition (w%), typical, all weld metal

C	Mn	Si	P	S	Ni	Mo
0.05	1.55	0.50	0.010	0.010	0.9	0.45

Mechanical properties, all weld metal

	Condition	0.2% Proof strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -29°C	Impact ISO-V(J) -46°C
Required: AWS A5.5		min. 600	min. 690	min. 16	27	
Typical values	AW	620-690	700-750	21-28	75-110	55-85

Packaging and available sizes

	Diameter (mm)	3.2	4.0	4.5
	Length (mm)	350	350	350
Unit: Metal can	Pieces / unit	xx	xx	xx
	Net weight/unit (kg)	4.5	4.5	4.5

Identification Imprint: LH-D100 10018-G Tip Color: None

PIPELINER® LH-D100: rev. EN 21

Materials to be welded

Steel grades/Code	Type
Pipe material	
API 5 L	X70, X80, X90

Calculation data

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode at max. current - (s)*	Energy E(kJ)	Dep.rate H(kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal B	kg Electrodes/ kg weldmetal 1/N
3.2 x 350	20 - 170	DC+						
4.0 x 350	170 - 250	DC+						
4.5 x 350	200 - 300	DC+						

Welding parameters, optimum fill passes

Diameter (mm)	Welding positions PG/5G down
3.2	20-170A
4.0	170-250A
4.5	200-300A

Solid wire

Classification

AWS A5.18 : ER70S-G
ISO 14341 : G 38 3 M G2Si / G 38 3 C G2Si

General description

Specially intended and packaged for the needs of semiautomatic and automatic root pass pipe welding
Fluid puddle provides good wash-in at the weld toes and uniform bead shape
Clean weld deposit
Foil bag packaging guards against moisture
Consistent X-ray quality welds
Primarily intended for all position welding on pipe steels such as API 5L X42 through X65
Suitable for welding root passes for up to and including API 5L X80

Shielding gases (acc. ISO 14175)

M21 Mixed gas Ar+ >5-25% CO_2
C1 Active gas 100% CO_2

Chemical composition (w%) typical wire

C	Mn	Si	P	S
0.07	1.25	0.55	0.010	0.020

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	Yield strength (N/mm^2)	Tensile strength (N/mm^2)	Elongation (%)	Impact ISO-V(J) -18°C
Typical values	C1	AW	439	525	30	95

Materials to be welded

Steel grades/Code	Type
Pipe material	
API 5LX	X42, X46, X52, X56, X60, X65

Packaging and available sizes

Unit	Sizes (mm) 1.1 (0.045")	1.3 (0.052")
4.5 kg Plastic spool SFB	X	X
11.3 kg Plastic spool SFB	X	X

SFB = Sealed Foil Bag

Solid wire

Classification

AWS A5.18 : ER80S-G
ISO 14341 : G 50 3 M G4Si1

General description

Specially intended and packaged for the needs of semiautomatic and automatic root pass pipe welding
Fluid puddle provides good wash-in at the weld toes and uniform bead shape
Clean weld deposit
Foil bag packaging guards against moisture
Consistent X-ray quality welds
Primarily intended for all position welding on pipe steels such as API 5L X65 through X80

Shielding gases (acc. ISO 14175)

M21 Mixed gas Ar+ >5-25% CO_2

Chemical composition (w%) typical wire

C	Mn	Si	P	S	Mo
0.09	1.72	0.61	0.012	0.007	0.45

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	Yield strength (N/mm^2)	Tensile strength (N/mm^2)	Elongation (%)	Impact ISO-V(J) -29°C
Typical values	M21	AW	634	710	23	147

Materials to be welded

Steel grades/Code	Type
Pipe material	
API 5LX	X65, X70, X80

Packaging and available sizes

Unit	Sizes (mm)	1.1 (0.045")	1.3 (0.052")
4.5 kg Plastic spool SFB		X	X
11.3 kg Plastic spool SFB		X	X

SFB = Sealed Foil Bag

PIPELINER® G70M

Rutile cored wire

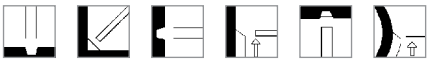
Classification

AWS A5.20/A5.20M : E71T-1M-JH8 / E71T-9M-JH8
EN 758 : T 46 4 P M 2 H10

General description

Mix gas shielded flux cored wire for semi-automatic and mechanized hot, fill and cap pass pipeline welding
Smooth, spray type arc transfer and low spatter level
Slag system provides for puddle support, good wetting and bead shape in all positions
All position single and multiple pass wire designed fo join pipe up to and including X70
Reliable weld metal properties
For the root pass, Pipeliner 70S-G is recommended
Excellent wire feeding
In diameter 1.3 mm (0.052") the wire is called PIPELINER AUTOWELD® G70M, and is designed to use with mechanized pipe welding systems.
PIPELINER AUTOWELD® G70M has tightly controlled cast and helix to assure proper wire placement every time

Welding positions



ISO/ASME PA/1G PB/2F PC/2G PF/3Gup PE/4G PF/5Gup

Current type/Shielding gas

DC +
Ar+ (>5-25%) CO_2 (ISO 14175: M21)
15-25 l/min

Chemical composition (w%), typical, all weld metal

Shielding gas	C	Mn	Si	P	S	Ni
M21	0.05	1.60	0.45	0.013	0.011	0.36

Mechanical properties, all weld metal

	Shielding gas	Condition	Yield strength (N/mm^2)	Tensile strength (N/mm^2)	Elongation (%)	Impact ISO-V(J) -40°C
Required: AWS A5.20			min. 400	min. 480	min. 22	min. 27
EN 758			min. 460	530-680	min. 20	min. 47
Typical values	M21	AW	550	612	26	106

Packaging and available sizes

Unit type	Net weight/unit (kg) (kg)	Diameter (mm) 1.1 (0.045")	1.3 (0.052")
Plastic spool SFB	4.5	X	X
Plastic spool SFB	11.3	X	X

SFB = Sealed Foil Bag

Materials to be welded

Steel grades/Code	Type
Pipe material	
API 5LX	X42, X46, X52, X56, X60, X65, X70

Calculation data

Diameter (mm)	Electrical Stick-out (mm)	Wire feed speed (cm/min)	Current (A)	Arc Voltage (V)	Deposition Rate (kg/h)	kg Wire/ kg weldmetal
1.1	19	440-1330	130-275	23-30	1.4-4.4	1.21
1.3	19	380-1140	155-315	22-31	1.6-4.9	1.22

PIPELINER® G70M-E

Back

Low temperature rutile cored wire

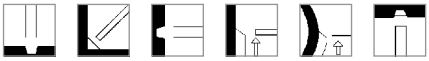
Classification

AWS A5.29/A5.29M : E81T1-GM-H4
EN 758 : T50 5 Z P M 2 H5

General description

All position gas shielded 1% Ni, 0.15% Mo flux cored wire
Specifically designed for pipeline applications
Superior weldability, low spatter, good bead appearance
Outstanding operators appeal
Exceptional mechanical properties (CVN >47J at -50°C)
Very low hydrogen (H_{DM} <5 ml/100g)
Superior product consistency with optimal alloy control
Excellent wire feeding

Welding positions



ISO/ASME PA/1G PB/2F PC/2G PF/3G up PF/5G up PE/4G

Current type/Shielding gas

DC +
Ar+ (>15-25)% CO_2 (ISO 14175 : M21)
15-25 l/min

Approvals

TUV
Pending

Chemical composition (w%). typical. all weld metal

Shielding gas	C	Mn	Si	Mo	P	S	Ni	H_{DM} ml/100g
M21	0.05	1.45	0.2	0,15	0.013	0.010	0.95	4

Mechanical properties, all weld metal

	Shielding gas	Condition	Yield strength (N/mm^2)	Tensile strength (N/mm^2)	Elongation (%)	Impact ISO-V (J) -20°C	-40°C	-50°C
Required: AWS A5.29/A5.29M			min. 468	550-689	min. 19			
EN758			min. 500	560-720	min. 18			min. 47
Typical values:	M21	AW	580	630	23	100	60	min. 47

Packaging and available sizes

Unit type	Net weight/unit (kg)	Diameter (mm) 1.2
Plastic spool S200	4.5	X
Plastic spool B300	15	X

Materials to be welded

Steel	Code	Type
Pipe material	EN 10208	L360, L360NB, L360QB, L360MB, L415MB, L415NB, L450MB, L485MB
	API 5LX	X52, X60, X65, X70
Fine grained steel	EN 10113	S355, S420, S460, S500N, S460NL, S500NL, S500NC, S550NC

Calculation data

Diameter (mm)	Electrical Stick-out (mm)	Wire feed speed (cm/min)	Current (A)	Arc Voltage (V)	Deposition Rate (kg/h)	kg Wire/ kg weld metal
1.2	20	445	130	20-22	1.6	1.20
		700	180	23-25	2.5	1.20
		950	220	25-27	3.4	1.20
		1270	265	27-29	4.5	1.20
		1590	305	30-32	5.9	1.20

Welding parameters, optimum fill, shielding gas Ar + (>15 - 25)% CO_2

Diameter (mm)	Current/ Voltage	Welding position PA/1G	PB/2F	PC/2G	PF/3G up	PF/5G up	PE/4G
1.2	(A)	230-280	230-280	200-240	200-240	200-240	160-220
	(V)	26-32	26-32	25-32	25-28	25-28	23-28

Rutile cored wire

Classification

AWS A5.29/A5.29M : E101T1-G-H8
EN 12535 : T 62 3 P M 2 H10

General description

Mix gas shielded flux cored wire for semi-automatic and mechanized hot, fill and cap pass pipeline welding
Smooth, spray type arc transfer and low spatter level
Slag system provides for puddle support, good wetting and bead shape in all positions
All position single and multiple pass wire designed fo join pipe up to and including X80
For the root pass, the use of PIPELINER 70S-G or 80S-G is recommended
Reliable weld metal properties
Excellent wire feeding
In diameter 1.3 mm (0.052") the wire is called PIPELINER AUTOWELD® G80M, and is designed to use with mechanized pipe welding systems.
PIPELINER AUTOWELD® G80M has tightly controlled cast and helix to assure proper wire placement every time

Welding positions

ISO/ASME PA/1G PB/2F PC/2G PF/3Gup PE/4G PF/5Gup

Current type/Shielding gas

DC +
Ar+ (>5-25%) CO_2 (ISO 14175: M21)
15-25 l/min

Chemical composition (w%), typical, all weld metal

Shielding gas	C	Mn	Si	P	S	Ni	Cr	Mo
M21	0.04	1.75	0.40	0.020	0.010	1.0	0.11	0.25

Mechanical properties, all weld metal

	Shielding gas	Condition	Yield strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -29°C	-30°C	-40°C
Required: AWS A5.29			min. 605	690-825	min. 16	not required		
EN 758			620	700-890	min. 18		min. 47	
Typical values	M21	AW	724	765	21	46		39

Packaging and available sizes

Unit type	Net weight/unit (kg) (kg)	Diameter (mm) 1.1 (0.045")	1.3 (0.052")
Plastic spool SFB	4.5	X	X
Plastic spool SFB	11.3	X	X

SFB = Sealed Foil Bag

Materials to be welded

Steel grades/Code	Type
Pipe material	
API 5LX	X70, X80

Calculation data

Diameter (mm)	Electrical Stick-out (mm)	Wire feed speed (cm/min)	Current (A)	Arc Voltage (V)	Deposition Rate (kg/h)	kg Wire/ kg weldmetal
1.1	19	440-1330	130-275	23-30	1.4-4.4	1.21
1.3	19	380-1140	155-315	22-31	1.6-4.9	1.22

PIPELINER® G80M-E

Low temperature rutile cored wire

Classification

AWS A5.29/A5.29M : E91T1-GM-H4
ISO 18276-A : T 55 4 Z P M 2 H5

General description

All position gas shielded 1% Ni and 0.4%Mo alloyed flux cored wire for offshore and pipeline applications
Superior weldability, low spatter, good bead appearance and outstanding operators appeal
Exceptional mechanical properties
Very low hydrogen (H_{DM} <5 ml/100g)
Superior product consistency with optimal alloy control
Excellent wire feeding
Specific design to withstand high heat input procedures

Welding positions

ISO/ASME PA/1G PB/2F PC/2G PF/3Gup PF/5Gup PE/4G

Current type/Shielding gas

DC +
Ar+ (>15-25%) CO_2 (ISO 14175: M21)
15-25 l/min

Approvals

Available on request

Chemical composition (w%), typical, all weld metal

Shielding gas	C	Mn	Si	P	S	Ni	Mo	H_{DM} ml/100g
M21	0.06	1.4	0.3	0.013	0.010	0.95	0.4	3

Mechanical properties, all weld metal

	Shielding gas	Condition	Yield strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -40°C	Impact ISO-V(J) -50°C
Required: AWS A5.29/A5.29M			min. 540	620-760	min. 17		
ISO 18276-A			min. 550	640-820	min. 18	min. 47	
Typical values	M21	AW	695	740	21		65

Packaging and available sizes

Unit type	Diameter (mm) 1.2
4.5kg plastic spool S200	X
15 kg spool B300	X

Pipeliner G80M-E: rev. EN 02

Materials to be welded

Steel grades/Code	Type
Pipe material	
EN 10208	L360, L360NB, L360QB, L360MB, L415MB, L415NB, L485MB, L555MB
API 5LX	X60, X65, X70, X80

Calculation data

Diameter (mm)	Electrical Stick-out (mm)	Wire feed speed (cm/min)	Current (A)	Arc Voltage (V)	Deposition Rate (kg/h)	kg Wire/ kg weldmetal
1.2	20	445	130	20-22	1.6	1.20
		700	180	23-25	2.5	1.20
		950	220	25-27	3.4	1.20
		1270	265	27-29	4.5	1.20
		1590	305	30-32	5.9	1.20

Welding parameters, optimum fill passes in shielding gas Ar + (>15-25)% CO_2

Diameter (mm)	Welding positions PA/1G	PB/2F	PC/2G	PF/3G up	PE/4G
1.2	230-280A	230-280A	200-240A	200-240A	160-220A
	26-32V	26-32V	25-32V	25-28V	23-28V

PIPELINER® G90M-E

High strength rutile cored wire

Classification

AWS A5.29/A5.29M : E111T1-GM-H4
ISO 18276-A : T 69 4 Z P M 2 H5

General description

All position gas shielded rutile flux cored wire, for high strength steel grades like grade X70-X80
Outstanding operator appeal
Excellent mechanical properties (CVN >50J at -40°C)
Very low hydrogen (H_{DM} <5 ml/100g)
Superior product consistency with optimal alloy control
Excellent wire feeding

Welding positions

ISO/ASME PA/1G PB/2F PC/2G PF/3G up PF/5G up PE/4G

Current type/Shielding gas

DC +
Ar+ (>15-25%) CO_2 (ISO 14175: M21)
15-25 l/min

Approvals

Available on request

Chemical composition (w%), typical, all weld metal

Shielding gas	C	Mn	Si	P	S	Ni	Mo	H_{DM} ml/100g
M21	0.06	1.5	0.2	0.015	0.010	2.0	0.5	3

Mechanical properties, all weld metal

	Shielding gas	Condition	Yield strength (N/mm^2)	Tensile strength (N/mm^2)	Elongation (%)	Impact ISO-V(J) -30°C	Impact ISO-V(J) -40°C
Required: AWS A5.29/A5.29M				min. 680	760-900	min.27	
ISO 18276-A			min. 690	770-970	min.17		min.47
Typical values	M21	AW	740	790	19	75	70

Packaging and available sizes

Unit type	Diameter (mm) 1.2	1.6
4.5kg plastic spool S200	X	
15 kg spool B300	X	X

Pipeliner G90M-E: rev. EN 02

Materials to be welded

Steel grades/Code	Type
Pipe material	
EN 10208-2	L485MB, L555MB
API 5LX	X70, X80

Calculation data

Diameter (mm)	Electrical Stick-out (mm)	Wire feed speed (cm/min)	Current (A)	Arc Voltage (V)	Deposition Rate (kg/h)	kg Wire/ kg weldmetal
1.2	20	445	130	20-22	1.6	1.20
		700	180	23-25	2.5	1.20
		950	220	25-27	3.4	1.20
		1270	265	27-29	4.5	1.20
		1590	305	30-32	5.9	1.20
1.6	20	320	170	21-23	1.9	1.20
		510	235	22-24	3.1	1.20
		635	275	24-25	3.9	1.20
		760	310	25-27	4.7	1.20
		890	350	27-29	5.6	1.20
		1015	385	28-30	6.4	1.20
		1080	400	30-31	6.8	1.20

Welding parameters, optimum fill passes in shielding gas Ar + (>15 - 25)% CO_2

Diameter (mm)	Welding positions PA/1G	PB/2F	PC/2G	PF/3G up	PE/4G
1.2	230-280A	230-280A	200-240A	200-240A	160-220A
	26-32V	26-32V	25-32V	25-28V	23-30V
1.6	250-350A	250-350A	230-280A	220-260A	170-240A
	24-29V	24-29V	24-28V	24-26V	22-26V

PIPELINER® NR®-207+

Self-shielded cored wire

Classification

AWS A5.29/A5.29M : E71T8-K6

General description

Optimum performance on vertical down hot, fill and cap pass welding in pipe steels such as API 5L X42 through X70
Self-shielded, flux cored. No need for external gas or flux
Produces quality welds in moderate wind conditions with no tenting
Superior arc characteristics and feedability
Very good crack resistance, CTOD and Charpy-V impact properties

Welding positions

ISO/ASME PA/1G PB/2F PC/2G PG/3Gdown PE/4G PG/5Gdown

Current type

DC -

Chemical composition (w%), typical, all weld metal

C	Mn	Si	P	S	Ni	Al
0.04	1.22	0.25	0.010	0.010	0.82	1.1

Mechanical properties, all weld metal

	Condition	Yield strength (N/mm^2)	Tensile strength (N/mm^2)	Elongation %	Impact ISO-V(J) -29°C	Impact ISO-V(J) -40°C
Required: AWS A5.29		min. 400	483-620	20	27	not required
Typical values	AW	400-441	517-551	20-33	176-230	147

Packaging and available sizes

Unit type	Net weight/unit (kg) (kg)	Diameter (mm) 2.0
Coils 14C	6.35	X

Suggestions for use

Optimum performance on vertical down hot, fill and cap passes on standard cross-country pipelines and arctic grade pipe

Materials to be welded

Steel grades/Code	Type
Pipe material	
API 5LX	X42, X46, X52, X56, X60, X65, X70

Calculation data

Diameter (mm)	Electrical Stick-out (mm)	Wire feed speed cm/min	Current (approx. A)	Arc Voltage (V)	Deposition Rate (kg/h)	kg Wire/ kg Weldmetal
2.0	19	170-330	210-305	18-21	1.6-3.0	1.21

PIPELINER® NR®-207XP

Self-shielded cored wire

Classification

AWS A5.29/A5.29M : E71T8-K6

General description

Optimum performance on vertical down hot, fill and cap pass welding in pipe steels such as API 5L X42 through X70
Self-shielded, flux cored. No need for external gas or flux
Produces quality welds in moderate wind conditions with no tenting
Great arc characteristics and superior feedability
Superior Charpy-V impact properties, consistent down to -40°C. Virtually eliminates Charpy-V impact values below 56J

Welding positions

ISO/ASME PA/1G PB/2F PC/2G PG/3Gdown PE/4G PG/5Gdown

Current type

DC -

Chemical composition (w%), typical, all weld metal

C	Mn	Si	P	S	Ni	Al
0.04	1.15	0.07	0.010	0.010	0.68	1.0

Mechanical properties, all weld metal

	Condition	Yield strength (N/mm²)	Tensile strength (N/mm²)	Elongation %	Impact ISO-V(J) -29°C	Impact ISO-V(J) -40°C
Required: AWS A5.29		min. 400	483-620	20	27	not required
Typical values	AW	434	545	30	234-340	199

Packaging and available sizes

Unit type	Net weight/unit (kg) (kg)	Diameter (mm) 2.0
Coils 14C	6.35	X

Suggestions for use

Optimum performance on vertical down hot, fill and cap passes on standard cross-country pipelines and arctic grade pipe
For consistently high Charpy-V impact values

Materials to be welded

Steel grades/Code	Type
Pipe material	
API 5LX	X42, X46, X52, X56, X60, X65, X70

Calculation data

Diameter (mm)	Electrical Stick-out (mm)	Wire feed speed cm/min	Current (approx. A)	Arc Voltage (V)	Deposition Rate (kg/h)	kg Wire/ kg Weldmetal
2.0	19	170-330	210-305	18-21		