

DIAMONDSPARK PIPELINE CORED WIRES

FCAW and MCAW seamless welding wires for pipeline applications



Excellent welding performance and mechanical properties

Our diamondspark cored wires for pipeline applications are reliable with consistent high quality performances. The range, including seamless FCAW and MCAW wires, offers a unique and trustable solution in terms of arc stability and lower defects rate. Precise alloy and slag concept ensure excellent welding performance and mechanical properties. Selected diamondspark pipeline cored wires can be used in sour gas applications (HIC tested acc. to NACE TM-0284). Test values for SSC are available upon request. Produced in Europe, they are fulfilling both EN ISO and AWS codes chasing the most stringent requirements for pipeline jobs.

Features	User benefit	
» Seamless design	» Low risk of HAC	
» Copper coated seamless cored wire	» Excellent current transfer » Less contact tip wear	
» Dependable feedability	» Increase arc time » No wire breaks	
» Dependable arc ignition	» No starting defects	
» Wide parameter box	» Easy setting » Low defect rate	
» Low amount of silicates » Easy slag removal	» Low and easy inter-run cleaning	
» High weld metal recovery	» Productive welding	

Classification				Typical analysis of all weld metal [wt.-%]				
Product name	AWS	EN ISO	Base material	C	Si	Mn	Ni	Mo
diamondspark X52 RC-Pipe	E71T1-M21A4-CS1-H4	T 46 4 P M21 1 H5	X42 - X60	0.06	0.40	1.45	-	-
diamondspark X60 RC-Pipe	E81T1-M21A8-Ni1-H4	T 50 6 1Ni P M21 1 H5	X60 - X70	0.05	0.40	1.30	0.85	-
diamondspark X70 RC-Pipe	E91T1-M21A6-K2-H4	T 55 5 Mn1Ni P M21 1 H5	X70 - X80	0.07	0.40	1.50	1.10	-
diamondspark X70 RC-Pipe (N)	E91T1-M21A8-G-H4	T 55 6 Z P M21 1 H5	X60 - X70	0.05	0.35	1.6	0.85	0.25
diamondspark X80 RC-Pipe	E101T1-M21A4-K2-H4	T 62 4 Mn1.5Ni P M21 H5	X80 - X90	0.04	0.40	1.45	1.60	0.15
diamondspark X100 RC-Pipe	E111T1-M21A4-G-H4	T 69 4 Z P M21 1 H5	X90 - X100	0.05	0.30	1.70	2.50	0.15
diamondspark X60 MC-Pipe	E71T15-M21A4-CS2-H4	T 46 4 M M21 1 H5	X42 - X60	0.07	0.70	1.50	-	-
diamondspark X70 MC-Pipe	E81T15-M21A8-G-H4	T 46 6 Z M M21 1 H5	X70 - X80	0.06	0.35	1.35	0.75	-
diamondspark X80 MC-Pipe	E91T15-M21A8-K1-H4	T 55 6 1NiMo M M21 1 H5	X80 - X90	0.07	0.45	1.30	0.90	0.50

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Mechanical properties, all weld metal (single values typical)						
Product name	Yield strength R _{p0.2%} ksi	Tensile strength R _m ksi	Elongation A ₅ %	CVN Impact toughness ISO-V / J		
				-4 °F	-40 °F	-75 °F
diamondspark X52 RC-Pipe	72.5 (≥66.7)	85.6 (79.8-95.7)	26 (≥20)	74 ft-lbs (35 ft-lbs)	44 ft-lbs (35 ft-lbs)	-
diamondspark X60 RC-Pipe	79.8 (≥72.5)	88.5 (81.2-100.0)	25 (≥18)	-	74 ft-lbs	55 ft-lbs (35 ft-lbs)
diamondspark X70 RC-Pipe	91.4 (≥79.8)	101.5 (92.8-110.2)	22 (≥18)	-	52 ft-lbs	44 ft-lbs (35 ft-lbs)
diamondspark X70 RC-Pipe (N)	89.9 (≥79.8)	100.0 (92.8-110.2)	22 (≥18)	-	74 ft-lbs	59 ft-lbs (35 ft-lbs)
diamondspark X80 RC-Pipe	98.6 (≥89.9)	104.4 (101.5-110.2)	22 (≥18)	-	59 ft-lbs (35 ft-lbs)	-
diamondspark X100 RC-Pipe	105.9 (≥100.0)	113.1 (111.7-136.3)	19 (≥17)	-	52 ft-lbs (35 ft-lbs)	-
diamondspark X60 MC-Pipe	71.1 (≥66.7)	87.0 (79.8-107.3)	27 (≥20)	-	59 ft-lbs (35 ft-lbs)	-
diamondspark X70 MC-Pipe	76.9 (≥68.2)	84.1 (79.8-98.6)	27 (≥20)	-	118 ft-lbs	103 ft-lbs (35 ft-lbs)
diamondspark X80 MC-Pipe	100.0 (≥79.8)	108.8 (92.8-118.9)	22 (≥18)	-	-	44 ft-lbs (35 ft-lbs)

Operating data - Typical welding parameters for diamondspark pipe wires			
Welding position	Shielding gas	Stick-out	Preheat temperature
5G	Argon + 18%CO ₂	3/4 in	212 °F

Pass	Type	Diameter [inch]	Wire feed [ipm]	Welding speed [ipm]	Current [Ampere]	Voltage [Volt]*	
Root	MCAW	0.045	118	6.3	80-110	14-16	
Hot pass	FCAW	0.045	236	8.7	160-180	20-22	
Fill	FCAW	0.045	275	6	200-210	22-24	
Cap	FCAW	0.045	275	5.5	200-210	22-24	

* Voltage could be influenced by the welding machine used / Arc length of max. 1/8 in

Overview spool types					
Plastic spool S300			Wire basket spool BS300		
	Precision layer wound	Available spool weight: 11 lb		Precision layer wound	Available spool weight: 35 lb
	Dimensions: Ø external 8 in Ø internal 2 in Width 1.8 in	Available diameters: 0.040 in 0.045 in		Dimensions: Ø external 12 in Ø internal 2 in Width 4 in	Available diameters: 0.040 in 0.045 in 1/16 in
Plastic spool S300					
	Precision layer wound	Available spool weight: 33 lb			
	Dimensions: Ø external 12 in Ø internal 2 in Width 4 in	Available diameters: 0.040 in 0.045 in 1/16 in			