



**DATA SHEET**  
**DS 004**  
**Rev. 7 dd 11/05/2015**  
**INEFIL**

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**CLASSIFICATION****APPROVALS**

AWS SPECIFICATIONS	EN SPECIFICATIONS
AWS A 5.18: ER70S-6	EN ISO 14341-A: G 46 4 M21 3Si1
AWS A 5.18M: ER48S-6	EN ISO 14341-A: G 42 2 C1 3Si1
ASME SFA 5.18: ER70S-6	EN ISO 14341-A: G 46 3 M14 3Si1
ASME SFA 5.18M: ER48S-6	

ABS	TÜV	RINA
GL	DNV	
DB	LRS	

**ALLOY TYPE**

Copper-coated solid wire for welding carbon and C-Mn steels with tensile strength up to 510 MPa.

**APPLICATIONS**

Copper-coated solid wire designed for welding carbon and carbon-manganese steels with tensile strength up to 510 MPa. Suitable for single pass or multi-pass welding. Applications include tanks, boilers, steel structural works, earthworks and construction works. To be used under the shield of Ar+CO<sub>2</sub>, Ar+O<sub>2</sub> or CO<sub>2</sub>.

**MATERIALS TO BE WELDED**

ASTM		EN		Others
A139	A131 Gr A, B, D	10113-2 S275	10113-3 S420M	Fe 360
A210 Gr A1	API 5LX42	10113-2 S355	10113-3 S420ML	Fe 430
A210 Gr C	API 5LX46	10113-2 S420	10025 S185, S235	Fe 510
A36	API 5LX52	10113-3 S275M	10025 S275, S355	(steel group 1 EN
A234 Gr WPB	API 5LX60	10113-3 S275ML	10208-1 L210, L240	288/3)
A334 Gr 1		10113-3 S355M	10208-1 L290, L360	
A106 Gr A, B, C		10113-3 S355ML		

**WELDING GUIDELINES**

Preheat and PWHT are not required.

**TECHNICAL INFORMATION**

Gas: CO<sub>2</sub>, Mix Ar- CO<sub>2</sub> & Mix Ar- O<sub>2</sub> (EN ISO 14175)

Welding position: all positions

**WELDING PARAMETERS**

Current	DC + Reverse polarity				
Diameter (mm)	0.8	1.0	1.2	1.6	
Volts (V)	16 ÷ 28	17 ÷ 32	18 ÷ 34	19 ÷ 38	
Intensity (A)	60 ÷ 200	80 ÷ 260	100 ÷ 360	130 ÷ 450	



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**TYPICAL CHEMICAL COMPOSITION OF WIRE**

C %	Mn %	Si %	S %	P %	Cu %	Ni %	Cr %	Mo %	
0.07	1.40	0.80	0.012	0.012	0.15	-	-	-	

**TYPICAL MECHANICAL PROPERTIES**

GAS		Yield strength	Tensile strength	Elongation on % 5d	Impact energy (Charpy V)				
		Rs	Rm	A 5d	+ 20°C	0°C	-20°C	-30°C	-40°C
		(MPa)	(MPa)	%	(Joule)	(Joule)	(Joule)	(Joule)	(Joule)
<b>M21</b>	as welded	470	560	26	-	-	90	70	60
<b>C1</b>	as welded	440	530	26	-	-	70	-	-
<b>M14</b>	as welded	480	580	28	-	-	80	60	-

**PRODUCTS AVAILABLE**

Process	Product	Classification AWS	Classification EN
<b>MIG/MAG</b> Solid wire	INEFIL S2	AWS A 5.18: ER70S-2	EN 14341-A: G2Ti
	INEFIL 13.7	AWS A 5.18: ER70S-3	EN 14341-A: G2Si
	INEFIL S4	AWS A 5.18: ER70S-4	EN 14341-A: G3Si1
	INEFIL 19.12	AWS A 5.18: ER70S-6	EN 14341-A: G4Si1
	INEFIL NR	AWS A 5.18: ER70S-6	EN 14341-A: G3Si1
<b>TIG</b> Rods	INETIG S2	AWS A 5.18: ER70S-2	EN 636-A: W2Ti
	INETIG 13.7	AWS A 5.18: ER70S-3	EN 636-A: W2Si
	INETIG	AWS A 5.18: ER70S-6	EN 636-A: W3Si1
<b>SAW</b> Submerged arc	INESUB S2	AWS A 5.17: EM12K	EN 14171-A: S2
	INESUB S2Si	AWS A 5.17: EM12K	EN 14171-A: S2Si
	INESUB S3Si	AWS A 5.17: EH12K	EN 14171-A S3Si
<b>FCAW</b> Cored wire	INETUB R71T1	AWS A 5.20: E71T-1	EN 17632-A: T 46 2 P M
	INETUB R70T1	AWS A 5.20: E70T-1	EN 17632-A: T 42 2 R M
	INETUB R71T1-CO2	AWS A 5.20: E71T-1	EN 17632-A: T 46 2 P C
	INETUB M71TG	AWS A 5.18: E70C-6	EN 17632-A: T 46 2 M M
	INETUB B71T5	AWS A 5.20: E71T-5	EN 17632-A: T 46 4 B M
<b>SMAW</b> Electrodes	INE 50 B	AWS A 5.1: E7018	EN 2560-A: E 42 4 B
	INE 55 B	AWS A 5.1: E7018-1	EN 2560-A: E 42 4 B