



**DATA SHEET**  
**DS 001**  
**Rev. 6 dd 22/04/2015**  
**INEFIL S2**

I.N.E. S.p.A.  
Via Facca 10  
35013 Cittadella (PADOVA)  
ITALY  
Tel. : +39 049/9481111 Fax: + 39 049/9400249  
Internet: [www.ine.it](http://www.ine.it) E mail: [ine@ine.it](mailto:ine@ine.it)

**CLASSIFICATION**

**APPROVALS**

AWS SPECIFICATIONS	EN SPECIFICATIONS
AWS A 5.18: ER70S-2	EN ISO 14341-A: G 42 2 M21 2Ti
AWS A 5.18M: ER48S-2	EN ISO 14341-A: G 38 2 C1 2Ti
ASME SFA 5.18: ER70S-2	
ASME SFA 5.18M: ER48S-2	


**ALLOY TYPE**

Copper-coated solid wire for welding carbon and carbon-manganese steels.

**APPLICATIONS**

Copper-coated solid wire designed for welding carbon and carbon-manganese steels with tensile strength up to 510 MPa. Suitable as well for welding thin, galvanised or electro-galvanised plates; very limited spattering thanks to the addition of titanium and zirconium. The fusion allows the degassing of zinc vapours, which prevents the formation of blows and pores in the weld bead. To be used under the shield of Ar+CO<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> (EN ISO 14175)  
Welding position: all positions



**WELDING PARAMETERS**

Current	DC + Reverse polarity					
Diameter (mm)	0.6	0.8	0.9	1.0	1.2	
Volts (V)	15 ÷ 26	16 ÷ 28	16 ÷ 30	17 ÷ 32	18 ÷ 34	
Intensity (A)	50 ÷ 180	60 ÷ 200	70 ÷ 230	80 ÷ 260	100 ÷ 360	



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**TYPICAL CHEMICAL COMPOSITION OF WIRE**

C %	Mn %	Si %	S %	P %	Cu %	Ti %	Zr %	Al %	
0.06	1.10	0.50	0.012	0.012	0.15	0.10	0.09	0.10	

**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	-40°C	-60°C
		(MPa)	(MPa)	%	(Joule)	(Joule)	(Joule)	(Joule)	(Joule)
<b>M21</b>	as welded	440	520	28	130	-	70	-	-
<b>C1</b>	as welded	400	490	27	100	-	50	-	-

**PRODUCTS AVAILABLE**

Process	Product	Classification AWS	Classification EN
<b>MIG/MAG</b> Solid wire	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	AWS A 5.18: ER70S-6	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