



**DATA SHEET
DS 262
Rev. 06 dd 06/07/2017
INESUB EB9**

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 E mail: ine@ine.it

CLASSIFICATION

AWS SPECIFICATIONS	EN SPECIFICATIONS
AWS A 5.23: EB91	EN ISO 24598-A: S CrMo91
AWS A 5.23M: EB91	
ASME SFA 5.23: EB91	
ASME SFA 5.23M: EB91	

APPROVALS

TÜV		

ALLOY TYPE

9Cr1Mo modified for the welding of creep resistant steel (0,5Ni, Nb, V, N).

APPLICATIONS

Copper-free solid wire for submerged arc welding with 9% Cr and 1% Mo content to be used for the welding of creep resistant steel. It will find applications in petro-chemical industry for welding P91 steels. Long term creep properties get improved thanks to small additions of niobium, vanadium and nitrogen. This wire is designed for elevated temperature service up to 650°C. It is used in fossil fuelled power generating plants for components such as headers, main steam piping and turbine casings. To be used with basic fluxes, such as INEFLUX BL.

MATERIALS TO BE WELDED

ASTM		EN		Others
A 199 Gr T91	A 387 Gr 91	10222-2 X10CrMoV 9-1		
A 200 Gr T91	A 182 Gr F91	(DIN X10CrMoVNb 9-1)		
A 213 Gr T91	A 217 C12A	(BS 1503 Gr 91)		
A 335 Gr P91	A 234 WP91			
A 336 Gr F91	A 369 FP91			

WELDING GUIDELINES

Preheat and interpass temperature 200°C. PWHT at 760°C for two hours. In multipass welding it is recommended to clean accurately the surface of the material to be welded by grinding off the surface layer of chrome oxide.

TECHNICAL INFORMATION

Welding positions: flat and flat-frontal





DATA SHEET
DS 262
Rev. 06 dd 06/07/2017
INESUB EB9

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 E mail: ine@ine.it

WELDING PARAMETERS

Current	DC + Reverse polarity, AC					
Diameter (mm)	2.0	2.4	3.2	4.0		
Intensity (A)	300 ÷ 400	350 ÷ 450	430 ÷ 530	480 ÷ 580		
Volts (V)	26 ÷ 29	27 ÷ 30	27 ÷ 30	27 ÷ 30		

TYPICAL CHEMICAL COMPOSITION OF WIRE

C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %	Nb %	N %
0.10	0.60	0.20	0.003	0.005	8.80	0.60	0.95	0.04	0.20	0.06	0.045

NOTE: refer to the results obtained with the relevant flux for the mechanical characteristics of the deposited metal.

PRODUCTS AVAILABLE

Process	Product	Classification AWS	Classification EN
MIG/MAG Solid wire	INEFIL B9	AWS A 5.28: ER90S-B9	EN 21952-A: G CrMo91
	INEFIL B9LowNi	AWS A 5.28: ER90S-B9	
TIG Rods	INETIG B9	AWS A 5.28: ER90S-B9	EN 21952-A: W CrMo91
	INETIG B9LowNi	AWS A 5.28: ER90S-B9	
SAW Submerged arc	INESUB EB9LowNi	AWS A 5.23: EB91	
FCAW Cored wire	INETUB M91TG-B9	AWS 5.28: E90C-B9	
SMAW Electrodes	INE B9	AWS A 5.5: E9015-B91	EN 3580-A: E CrMo91