



DAIKOWM 35.45Nb



HIGH TEMPERATURE ALLOYS
35.45

DESCRIPTION

Solid wire for matching heat resisting alloys

These consumables are designed to match heat resistant cast alloys with 35%Cr-45%Ni-1%Nb. They have great oxidation and carburization resistance for applications up to 1150°C. The principal applications are pyrolysis coils and reformer tubes in the petrochemical industry.

SPECIFICATIONS

Werkstoff Number	1.4889	Shielding	M12, M13
Positions	PA, PB, PC, PD, PE, PF, PG	Current	DC+
Packaging Type	Drums, B300, D200 and D100 spools.		

PREN

36.33

CHEM. COMP. %	DEFAULT	MECHANICAL PROPERTIES	PRODUCT
C	0.43	Tensile strength R _m MPa	680
Mn	1	Yield strength R _{p0.2} MPa	530
Ni	46	Elongation A (L ₀ =5d ₀) %	3
Cr	36		
Nb	1		
Mo	0.1		
Si	1.2		
Ti	0.1		
		WELDING PARAMETERS	
			1.0 mm
			1.2 mm
		Ampere	170A - 210A
		Voltage	24V - 28V
		Packaging	Ø 0,8÷1,6mm
		Packaging Type	Drums, B300, D200 and D100 spools.





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APPLICATION

These alloys offer exceptional resistance to carburization and oxidation, surpassing alloys with a 25% Cr-35% Ni composition when used at temperatures up to 1150 °C. However, there is a slight decrease in creep resistance. **Main applications include use in pyrolysis coils and reformer tubes in the petrochemical industry.** For significant thicknesses, preheating is recommended due to the material's low ductility. Generally, no post-weld heat treatment (PWHT) is required.

ALLOY TYPE

High carbon 35Cr-45Ni-1Nb to match heat-resisting castings, which are often micro-alloyed with Ti and Zr.

MICROSTRUCTURE

In the as-welded condition the multi-pass weld metal microstructure consists of austenite with primary eutectic and secondary precipitated carbides.

MATERIALS

PROPRIETARY: Paralloy H46M (Doncasters Paralloy), Manaurite® XT, XTM (Manoir Industries), Centralloy® ET45 Micro (Schmidt + Clemens), Lloyds T80, Lloyds T75MA (LBA), E3545Nb-MA (Engemasa)

WELDING & PWHT

Queste leghe richiedono un controllo preciso dei parametri di saldatura per garantire cuciture di qualità. L'utilizzo di materiali di apporto appropriati e il mantenimento di un ambiente di lavoro pulito possono influenzare significativamente l'integrità della saldatura. È cruciale monitorare le temperature interpass e l'apporto di calore per mitigare potenziali problemi legati alla fessurazione a caldo e alla stabilità della microstruttura. In casi specifici, l'impiego di velocità di raffreddamento controllate e lente può migliorare le proprietà meccaniche finali delle saldature, proteggendo da distorsioni indesiderate e tensioni residue.

