DAIKOWT 35.45Nb

GTAW

HIGH TEMPERATURE ALLOYS
35.45

DESCRIPTION

Rod corresponding to heat-resistant alloys

These consumables are developed to ensure matching with heat-resistant cast alloys with 35% Cr, 45% Ni, and 1% Nb. They offer excellent resistance to oxidation and carburization up to 1150 °C. Predominant applications include pyrolysis coils and reformer tubes in the petrochemical industry.

SPECIFICATIONS

Shielding	I1	**Positions**	PA, PB, PC, PD, PE, PF
Current	DC-	**Packaging Type**	5kg carton tube

PREN

36.33

CHEM. COMP. %	DEFAULT
C	0.43
Mn	1
Ni	46
Cr	36
Nb	1
Mo	0.1
Si	1.2
Ti	0.1

MECHANICAL PROPERTIES	PRODUCT
Tensile strength R_m MPa	680
Yield strength $R_{p0.2}$ MPa	530
Elongation A (L_0=5d_0) %	3

WELDING PARAMETERS	1.6 mm	2.4 mm
Ampere	95A - 135A	145A - 205A
Voltage	-	-
Packaging	Ø 1,6÷3,2mm	Ø 1,6÷3,2mm
Packaging Type	5kg carton tube	5kg carton tube

35.45

DESCRIPTION

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.