DAIKOWM 25.35.4CNb

GMAW

HIGH TEMPERATURE ALLOYS
HP40Nb

DESCRIPTION

Solid wire for matching HP40Nb alloy

These consumables are designed to match heat resistant cast alloys with 0.4%C-25%Cr-35%Ni-Nb. They are also suitable for high carbon Cr-Ni alloys such as HK40, HT40 and IN519. The weld deposit has excellent hot strength and creep resistance in the typical service temperature range 900-1100°C. High levels of Cr and Ni provide good resistance to oxidation and carburization. The principal applications are pyrolysis coils and reformer tubes in the petrochemical industry.

SPECIFICATIONS

Werkstoff Number	1.4853	**Certifications**	-
Shielding	M12, M13	**Positions**	PA, PB, PC, PD, PE, PF, PG
Current	DC+	**Packaging Type**	Drums, B300, D200 and D100 spools.

FERRITE	PREN	HARDNESS
-	26.99	-

CHEM. COMP. %	DEFAULT
C	0.4
Mn	1.7
Ni	35
Cr	26
Nb	1.3
Mo	0.3
Si	1.1
Cu	0.15

MECHANICAL PROPERTIES	MIN	VARIANT
Tensile strength R_m MPa	-	750
Yield strength $R_{p0.2}$ MPa	-	500
Elongation A (L_0=5d_0) %	-	13
Impact Charpy ISO-V	-	-
Impact Charpy ISO-V	-	-

WELDING PARAMETERS	1 mm	1.2 mm
Ampere	170A - 210A	180A - 260A
Voltage	24V - 28V	26V - 30V
Packaging	Ø 0,8÷1,6mm	Ø 0,8÷1,6mm
Packaging Type	Drums, B300, D200 and D100 spools.	Drums, B300, D200 and D100 spools.

HP40Nb

DESCRIPTION

APPLICATION

Designed to complement heat-resistant cast alloys with 0.4%C-25%Cr-35%Ni-Nb, these consumables also cater to micro-alloyed variants with Ti for enhanced creep resistance. They extend their applicability to Nb-free alloys and leaner high-carbon Cr-Ni alloys like HK40, HT40, and IN519, where overmatching weld metal is typically acceptable. Notably, Alloy HP40Nb exhibits resistance to sigma phase embrittlement, and its composition, featuring eutectic and secondary carbides, ensures remarkable hot strength and creep resistance within the common service temperature range of 900-1100°C. The elevated levels of Cr and Ni contribute to robust resistance against oxidation and carburization. Primary applications revolve around pyrolysis coils and reformer tubes essential for ethylene production in the petrochemical sector. Remarkably, these consumables generally do not necessitate preheating.

ALLOY TYPE

Consumables to match 0.4%C-25%Cr-35%Ni-Nb heat resistant cast alloys.

MICROSTRUCTURE

In the as-welded condition the weld metal consists of austenite with eutectic and secondary carbide.

MATERIALS

Also suitable for high carbon 18%Cr-37%Ni-Nb alloys e.g.W.-Nr 1.4849.
EN W.Nr.: 1.4857 (G-X40NiCrSi 35 25), 1.4853 (X 40 NiCrNb 35-25)
ASTM: A297 HP40Cb, A297 HP, A297 HP40
PROPRIETARY: Paralloy H39W (Doncasters Paralloy), Lloyds T64 (LBA), MO-RE® 10, 10-MA (Duraloy), Thermalloy 64 (Duraloy), Manaurite® 36X, 36XM (Manoir Industries), Pyrotherm G25/35Nb, NbTZ (Pose Marre), Centralloy® 4852, 4852 Micro (Schmidt + Clemens), E2535Nb, E2535Nb-MA (Engemasa), Paralloy H39 (Doncasters Paralloy), Lloyds T63 (LBA), HR33 (Cronite)