



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

ISO	-	AWS	-
DIN	-	Werkstoff Number	1.4889
Certifications	-	Shielding	M12, M13
Positions	PA, PB, PC, PD, PE, PF, PG	Current	DC+

ASME QUALIFICATIONS

F-No (QW432)	-	FERRITE	-	PREN	36.33	HARDNESS	-
A-No (QW442)	-						

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

	MIN	VARIANT
Tensile strength R _m MPa	-	680
Yield strength R _{p0.2} MPa	-	530
Elongation A (L ₀ =5d ₀) %	-	3
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.

V 01/2024



The information in this datasheet is the result of detailed research and is considered accurate as of the publication date. However, we cannot guarantee its complete accuracy, and it is subject to change without notice. Actual results may vary due to many factors like welding procedures, material composition, temperature conditions, bevel configuration, and specific manufacturing techniques. We accept no liability for any errors or omissions in this datasheet. For the most current information, please visit www.daikowelding.com.





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APPLICATION

Such kind of alloys exhibit superior resistance to carburization and oxidation compared to those based on a 25% chromium and 35% nickel composition, particularly in service conditions reaching temperatures up to 1150°C. However, it's worth noting a marginal reduction in creep strength. These alloys are well-suited for critical applications in environments such as pyrolysis coils and reformer tubes within the petrochemical industry. The material's ductility presents a consideration for thicker sections, where preheating may prove beneficial. Generally, standard operating conditions do not necessitate post-weld heat treatment (PWHT). This nuanced approach ensures optimal performance and longevity in applications exposed to high temperatures and aggressive chemical environments.

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).

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