



# G-TECH 35.45Nb

SMAW

HIGH TEMPERATURE ALLOYS

35.45

## DESCRIPTION

### Basic coated electrode

The weld deposit is high carbon 35Cr-45Ni-1Nb to match heat-resisting castings with great oxidation and carburization resistance for applications up to 1150°C. In the as-welded condition the multi-pass weld metal microstructure consists of austenite with primary eutectic and secondary precipitated carbides. For the thicker section materials a preheat may prove beneficial owing to the low ductility of the material. Typical applications include tubes for steam cracking pyrolysis transfer lines, pyrolysis furnace outlet lines and steam reformer headers in the petrochemical industry.

## SPECIFICATIONS

ISO 3581-A	EZ 35 45 Nb B 32	AWS	-
DIN	-	Werkstoff Number	-
Certifications	-	Shielding	-
Positions	PA, PB, PC, PD, PE, PF	Current	DC+;

## ASME QUALIFICATIONS

F-No (QW432)	FERRITE	PREN	HARDNESS
-	-	35.165	-
A-No (QW442)	-		

## CHEM. COMP. %

	DEFAULT	MECHANICAL PROPERTIES	MIN	VARIANT
C	0.45	Tensile strength R <sub>m</sub> MPa	-	760
Mn	0.9	Yield strength R <sub>p0.2</sub> MPa	-	540
Ni	46	Elongation A (L <sub>0</sub> =5d <sub>0</sub> ) %	-	6
Cr	35	Impact Charpy ISO-V	-	-
Nb	0.9	Impact Charpy ISO-V	-	-
Mo	0.05			

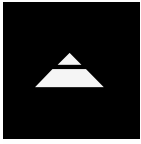
	2.5 mm	3.2 mm	4 mm
<b>WELDING PARAMETERS</b>			
Ampere	60A - 90A	80A - 110A	100A - 150A
Voltage	-	-	-
Packaging	55 pcs/kg	30 pcs/kg	19 pcs/kg
Packaging Type	Carton box	Carton box	Carton box



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](http://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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