



G-TECH 320LHR

SMAW

SUPERAUSTENITIC STEELS
ALLOY 20

DESCRIPTION

Rutile high recovery coated electrode for Alloy 20

Fully austenitic weld metal with high resistance to corrosion in sulphuric acid, mineral acids and organic acids. Typical applications include tanks and vessels, piping, cast pumps, valves, heat exchanger and other components used in chemical processing, metal cleaning and pickling industries. Excellent weldability with a spatter free arc, self-releasing slag producing a very smooth bead appearance. High recovery coating increases deposition rate but limits welding position to flat.

SPECIFICATIONS

ISO	-	AWS A5.4	E320LR-26
DIN	-	Werkstoff Number	-
Certifications	-	Shielding	-
Positions	PA, PB, PC	Current	DC+, AC

ASME QUALIFICATIONS	FERRITE	PREN	HARDNESS
F-No (QW432)	5	27.49	-
A-No (QW442)	-		

CHEM. COMP. %	DEFAULT	MECHANICAL PROPERTIES	MIN	VARIANT
C	0.02	Tensile strength R _m MPa	520	535
Mn	1.7	Yield strength R _{p0.2} MPa	0	340
Ni	33.8	Elongation A (L ₀ =5d ₀) %	28	30
Cr	19.9	Impact Charpy ISO-V	-	60J @ -196°C
Nb	0.1	Impact Charpy ISO-V	-	-
P	0.016			
S	0.006			
Mo	2.3			
Si	0.16			
Cu	3.2			

WELDING PARAMETERS	2.5 mm	3.2 mm	4 mm	
Ampere	50A - 80A	80A - 110A	110A - 150A	150A -
Voltage	-	-	-	
Packaging	30 pcs/kg	18 pcs/kg	12 pcs/kg	8 pcs/kg
Packaging Type	Carton box	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.



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DESCRIPTION

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APPLICATION

These consumables are engineered to produce a fully austenitic weld metal, skillfully stabilized with niobium, and enriched with the alloying elements of molybdenum and copper. This meticulous formulation imparts a weld metal that exhibits exceptional resistance to corrosion across a spectrum of challenging environments, including sulphuric acid, various mineral acids, organic acids, and their intricate mixtures. Tailored primarily for castings, these consumables extend their application prowess to a wide array of scenarios, serving notably in tanks, process piping, heat exchangers, agitators, rotors, as well as cast pumps and valves. Their versatility finds a fitting niche in industries engaged in chemical processing, metal cleaning, and pickling. Furthermore, these consumables, bearing the designation 825, stand as akin to other high-alloy corrosion-resistant products. This similarity positions them as a technically compatible alternative in select applications, offering flexibility and adaptability to meet diverse corrosion-resistant needs across different industrial settings.

ALLOY TYPE

20%Cr-34%Ni-3.5%Cu-2.5%Mo (alloy 20) austenitic corrosion resistant alloy.

MICROSTRUCTURE

In the as-welded condition the microstructure is fully austenitic.

MATERIALS

ASTM: A351, A744 gr. CN-7M.

PROPRIETARY: Alloy 20, 20Cb, 20Cb-3 (Carpenter), Paramount P20 (Lake, Elliot), Langalloy 20V (Meighs).

WELDING & PWHT

No preheating is necessary, and it is imperative to control the interpass temperature, ensuring it does not exceed 150°C. Additionally, close scrutiny of heat input, especially when employing 4mm diameter electrodes, is crucial. Repairing alloy 20 castings may pose challenges, as Heat-Affected Zone (HAZ) regions are prone to fissuring, and weld metal becomes more susceptible to cracking if silicon pick-up occurs. Addressing problematic castings may involve buttering at extremely low heat input using small diameter electrodes to minimize dilution. Typically, welds are left in the as-welded condition. However, castings adhering to ASTM specifications might necessitate a solution treatment at 1125°C following significant repairs.

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