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

AWS A5.4	E320LR-26	**Shielding**	-
Positions	PA, PB, PC	**Current**	DC+, AC
Packaging Type	Carton box		

ASME QUALIFICATIONS

F-No (QW432)	5
A-No (QW442)	-

PREN

27.49

CHEM. COMP. %	DEFAULT
C	0.02
Mn	1.7
Ni	33.8
Cr	19.9
Nb	0.1
P	0.016
S	0.006
Mo	2.3
Si	0.16
Cu	3.2

MECHANICAL PROPERTIES	MIN. PER STANDARD	PRODUCT
Tensile strength R_m MPa	520	535
Yield strength $R_{p0.2}$ MPa	0	340
Elongation A (L_0=5d_0) %	28	30
Impact Charpy ISO-V	-	60J @ -196°C
Impact Charpy ISO-V	-	-

WELDING PARAMETERS	2.5 mm	3.2 mm	4.0 mm	5.0 mm
Ampere	50A - 80A	80A - 110A	110A - 150A	150A - 200A
Voltage	-	-	-	-
Packaging	30 pcs/kg	18 pcs/kg	12 pcs/kg	8 pcs/kg
Packaging Type	Carton box	Carton box	Carton box	Carton box

NOTES

Pcs/kg is indicative, actual number may vary ± 5%.

DAIKO

ALLOY 20

DESCRIPTION

APPLICATION

These consumables provide a fully austenitic weld metal, stabilized with niobium and enriched with molybdenum and copper, ensuring high resistance to corrosion in environments containing sulfuric acid, other mineral acids, organic acids, and their mixtures. Typically, the base material specifications pertain to castings. Typical applications include tanks, process piping, heat exchangers, agitators and rotors, as well as cast pumps and valves, particularly suited for use in chemical processing, metal cleaning and pickling. The 825 consumables are also highly alloyed products characterized by significant corrosion resistance and can be proposed as a technically compatible alternative for certain applications.

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 preheat is necessary; however, the interpass temperature must be carefully managed not to exceed 150 °C. Heat input must be strictly controlled, especially when using 4 mm diameter electrodes. Repairing Alloy 20 castings can result in specific issues in the HAZ zones, susceptible to cracking, and in the weld metal, with an increased predisposition to cracking caused by the presence of silicon during reheating. Problematic castings may require a buttering procedure with very low heat input using reduced diameter electrodes and minimal dilution. Welds are generally left in the 'as welded' condition, but castings that meet ASTM specifications may require a solution treatment at 1125 °C after significant repairs.