G-TECH 1008

SMAW

COBALT ALLOYS
Gr. 12

DESCRIPTION

Hardfacing electrode with rutile-basic coating

Rutile-basic coated electrode with good weldability and easy to remove slag. It is used for surfacing subjected to medium to severe abrasion, light to medium mechanical shock, light to medium thermal shock, severe erosion and corrosion, cavitation, high temperature up to 800 °C, metal to metal friction and compression. It is widely used for the reconstruction of the profile of paper, cardboard, wood and plastic cutting tools, shredder knife refills, mixer blades and knives, sliding guides, hot shear blades, etc.

SPECIFICATIONS

ISO	-	AWS A5.13	ECoCr-B
DIN 8555	E 20-UM-50-CTZ	Werkstoff Number	-
Certifications	-	Shielding	-
Positions	PA, PB, PC, PD, PF	Current	DC+

ASME QUALIFICATIONS

F-No (QW432)	71
A-No (QW442)	-

FERRITE

-

PREN

-

HARDNESS

48HRC

CHEM. COMP. %

	DEFAULT
C	1.2
Ni	2.3
Cr	30
Si	1.2
Fe	3.2
W	8.7

MECHANICAL PROPERTIES

	MIN	VARIANT
Tensile strength R_m MPa	-	490
Yield strength $R_{p0.2}$ MPa	0	350
Elongation A (L_0=5d_0) %	0	25
Impact Charpy ISO-V	-	-
Impact Charpy ISO-V	-	-

WELDING PARAMETERS

	2.5 mm	3.2 mm	4 mm
Ampere	80A - 120A	100A - 140A	150A - 200A
Voltage	-	-	-
Packaging	pcs/kg	pcs/kg	pcs/kg
Packaging Type	Carton box	Carton box	Carton box

ANTI-WEAR CHARACTERISTICS

Adhesive wear	▲
Abrasive wear	▲▲
Impact	▲
Corrosion	▲▲▲▲
Heat	▲▲▲▲▲

Gr. 12

DESCRIPTION

APPLICATION

These consumables exhibit an exceptional combination of characteristics, providing resistance to metal-to-metal wear, corrosion, erosion, and thermal shock. Specifically engineered for temperatures up to 800°C, they consist of chromium, nickel, and molybdenum alloys, collectively imparting excellent mechanical properties for enhanced corrosion and wear resistance. The resulting weld deposit demonstrates robust creep strength, making it well-suited for enduring high-temperature environments. With an optimal ferrite content in the joint, this filler material finds application in a range of scenarios, including heavy structural fabrications, oil rigs, boilers, pressure vessels, and cryogenic storage tanks. Notably, it surpasses similar fillers in terms of superior impact values at low temperatures. Widely utilized for surfacing valves and valve seats in the oil and gas industries, as well as for enhancing the durability of screw conveyors, augers in rubber and plastic industries, saw teeth in wood industries, and critical components like cams, shafts, tappets, and push rods in engines, among other applications.

ALLOY TYPE

Similar in composition to deposits made using ERCoCr-A electrodes and rods except for a slightly higher percentage of carbides.

MICROSTRUCTURE

Chromium and tungsten carbides (approximately 16%) in an austenitic type matrix.

MATERIALS

It is used to surface valves and valve seats for oil& gas industries, screw conveyors and augers for rubber and plastic, saw teeth for wood industries, cams, shafts, tappets and push rods for engines, etc.

WELDING & PWHT

Prior to engaging in the welding process, it is imperative to meticulously cleanse the joint surface and its immediate vicinity. Complete removal of grease, oil, crayon marks, sulfur compounds, and any extraneous substances is paramount. Exercise caution to prevent contact between the joint area and copper or copper-bearing materials. Ideally, although not obligatory, the alloy should find itself in the solution-annealed state before initiating the welding procedure. The necessity for preheating arises only when the base metal temperature descends below 0°C. During welding, it is advisable to maintain relatively low interpass temperatures. This approach is designed to cultivate optimal conditions for a seamless welding operation.

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