



DAIKOWM 1008



COBALT ALLOYS

Gr. 12

DESCRIPTION

Solid cobalt based wire rod

Grade 12 wire rod develops high hardness, abrasion resistance and good corrosion resistance. These properties make this consumable the choice for cutting wood saws and bars and for industrial cutting applications for carpet, plastics, paper and chemical industries. It is non-forgable and can be machined with difficulty using carbide tools. It bonds well to all weldable grade steels, including stainless.

SPECIFICATIONS

ISO	-	AWS A5.21	ERCoCr-B
DIN	-	Werkstoff Number	-
Certifications	-	Shielding	I1, M13
Positions	PA, PB, PC, PD, PE, PF, PG	Current	DC+

ASME QUALIFICATIONS

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

FERRITE

-

PREN

-

HARDNESS

46HRC - 50HRC

CHEM. COMP. %

DEFAULT

C	1.1
Ni	2.2
Cr	30
B	0.2
Si	1.3
Fe	2
W	8.6

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

	1.2 mm	1.6 mm
Ampere	100A - 250A	140A - 350A
Voltage	16V - 29V	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.

ANTI-WEAR CHARACTERISTICS

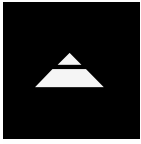
Adhesive wear	▲ ▲ ▲ ▲ ▲
Abrasive wear	▲ ▲ ▲ ▲ ▲
Impact	▲ ▲ ▲ ▲ ▲
Corrosion	▲ ▲ ▲ ▲ ▲
Heat	▲ ▲ ▲ ▲ ▲

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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

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.

