



DAIKOFCW 1008



COBALT ALLOYS
Gr. 12

DESCRIPTION

Cobalt based cored wire for hardfacing

Grade 12 flux cored wire 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-forgeable and can be machined with difficulty using carbide tools. It bonds well to all weldable grade steels, including stainless.

SPECIFICATIONS

AWS A5.21	ERCCoCr-B	DIN 8555	MF 20-MF-50-CTZ
Shielding	I1, I3	Positions	PA, PB, PC
Current	DC+	Packaging Type	B5300 spool

ASME QUALIFICATIONS

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

72
-

HARDNESS

46HRC - 50HRC

CHEM. COMP. %

DEFAULT

C	1.5
Mn	1.1
Cr	30
Si	1
Fe	2.8
W	7.5

MECHANICAL PROPERTIES

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

MIN. PER STANDARD

-	490
0	350
0	25
-	-
-	-

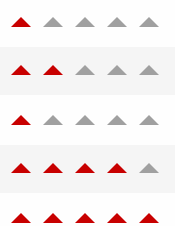
WELDING PARAMETERS

Ampere
Voltage
Packaging
Packaging Type

1.2 mm	1.6 mm
100A - 250A	140A - 350A
16V - 29V	26V - 30V
Ø 1,2÷1,6mm	Ø 1,2÷1,6mm
B5300 spool	B5300 spool

ANTI-WEAR CHARACTERISTICS

Adhesive wear
Abrasive wear
Impact
Corrosion
Heat



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APPLICATION

Gr. 12 consumables combine exceptional metal-to-metal wear resistance with remarkable corrosion, erosion, and thermal shock resistance. Ideal for service temperatures up to 800 °C, they consist of chromium, nickel, and molybdenum alloys. These confer excellent mechanical properties, enhancing corrosion and wear resistance, and produce a weld deposit characterized by good creep resistance, suitable for high-temperature environments. The ferrite content in the joint makes these consumables particularly suitable for applications such as heavy structural constructions, oil platforms, boilers, pressure vessels, and cryogenic storage tanks. They also offer superior impact values at low temperatures compared to similar consumables. They are used for rebuilding valves and valve seats in the oil and gas industry, conveyors and augers for rubber and plastic, saw teeth for the wood industry, cams, shafts, tappets, and push rods for engines, etc.

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

It is essential to thoroughly clean the joint surface and adjacent area before welding, ensuring the removal of all grease, oil, marker marks, sulfur compounds, and other contaminants. Avoid contact with copper or copper-containing materials in the joint area. It is preferable, but not essential, for the alloy to be in the solution annealed condition during welding. Normally, preheating is not necessary, provided the base metal to be welded is at a temperature above 0 °C. Generally, it is advisable to keep interpass temperatures low.

