DAIKOFCW 1025

FCAW

COBALT ALLOYS
Gr. 25

DESCRIPTION

Cobalt based cored wire for hardfacing

This flux cored wire deposits a cobalt-based alloy, with the addition of chromium, tungsten and nickel to achieve excellent resistance to high temperatures and oxidation as well as sulphiting. It can be used in high temperature oxidizing environments, with operating temperatures up to 1093°C. The material also has good wear and abrasion resistance. This combination of characteristics makes this wire the ideal material for applications in the aeronautical and aerospace sectors, but also for land-based gas turbines.

SPECIFICATIONS

EN ISO 14700	T Co1	**Shielding**	I1, I3
Positions	PA, PB, PC	**Current**	DC+
Packaging Type	BS300 spool		

HARDNESS

23HRC - 40HRC

CHEM. COMP. %	DEFAULT
C	0.25
Mn	0.1
Ni	10
Cr	20.5
Si	0.5
Fe	15
W	15

WELDING PARAMETERS	1.2 mm	1.6 mm
Ampere	100A - 250A	140A - 350A
Voltage	16V - 29V	26V - 30V
Packaging	Ø 1,2÷1,6mm	Ø 1,2÷1,6mm
Packaging Type	BS300 spool	BS300 spool

ANTI-WEAR CHARACTERISTICS

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

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APPLICATION

This filler metal is a variant of the rolled L605 alloy, renowned for its excellent resistance to thermal fatigue. It is ideal for the restoration and rebuilding of tools used in hot steel processing, such as shears and punches used in the steel industry. The non-magnetic welding metal offers first-rate mechanical strength and maintains good oxidation resistance up to 980 °C. It demonstrates excellent resistance to sulfidation and adequate wear and elongation resistance in metal-to-metal bonds. It also stands out for its resistance to "metal-to-metal" corrosion, abrasion, cavitation, and high-impact at elevated temperatures. It effectively resists oxidation and reducing atmospheres up to 1150 °C. Due to its notable impact resistance, it is widely used for filling molds and dies for hot forming. Its applications extend to the petrochemical sector, high-pressure steam control valves, a wide range of valves, cutting blades, as well as for refilling turbine blades, extrusion molds, dies and forging tools, furnace components, and tools for hot steel processing.

ALLOY TYPE

Cobalt-based alloy with additions of chromium, tungsten and nickel for excellent high temperature strength and oxidation resistance

MICROSTRUCTURE

Chromium and tungsten carbides in an austenitic type matrix.

MATERIALS

It is used for rebuilding and/or hardfacing of tools that work hot steel, such as scissors, punches, etc. for the steel industry.

WELDING & PWHT

Before welding, it is essential to thoroughly clean the joint surface and adjacent area. Remove all traces of grease, oil, marker marks, sulfur compounds, and other contaminants. It is important to avoid contact with copper or copper-containing materials in the joint area. Preferably, the alloy should be in the solution annealed condition during welding, although this is not strictly necessary. Preheating is usually not required as long as the base metal exceeds 0 °C. Interpass temperatures must remain low. If necessary, auxiliary cooling methods may be employed between passes, provided they do not introduce contaminants. Generally, no post-weld heat treatment is required.