1 Coated

Specifications: AWS 5.13, ASME SFA 5.13

Classification: ECoCr-C

Description:

1 Coated is the highest hardness standard cobalt alloy in the group of cobalt alloys used for elevated temperature abrasive wear associated with corrosion. Deposits of this alloy have a large volume of chromium carbides that impart outstanding abrasive wear resistance. The addition of tungsten enhances high temperature hardness and matrix toughness for excellent adhesive and solid particle erosion wear resistance. It bonds well with all steels including stainless.

Typical Deposit Analysis

C	Cr	Fe	Mn	Mo	Ni
2.1	29.6	5.0 max	2.0 max	1.0 max	3.0 max
Si	W	Co	Other		
2.0 max	12.1	Rem	1.0 max		

Typical Deposit Characteristics

Abrasion Resistance	Excellent
Impact Resistance	Fair
Corrosion Resistance	Good
Hardness	HRC 48 - 56
Hot Hardness	Very Good

6 Coated

Specifications: AWS 5.13, ASME SFA 5.13

Classification: ECoCr-A

Description:

6 Coated electrodes produce a medium hardness cobalt-chromium deposit for high temperature applications with good abrasive wear and good impact resistance. # 6 Coated is the most versatile and widely used cobalt alloy with a good balance of abrasion and impact resistance. Chromium carbides contained in the deposit have excellent resistance to many forms of chemical and mechanical degradation, including galling and cavitation erosion. It bonds well with all weldable steels, including stainless.

Typical Deposit Analysis

C	Cr	Fe	Mn	Mo	Ni
1.1	28.8	5.0 max	2.0 max	1.0 max	3.0 max
Si	W	Co	Other		
2.0 max	5.0	Rem	1.0 max		

Typical Deposit Characteristics

Abrasion Resistance	Very Good
Impact Resistance	Very Good
Corrosion Resistance	Good
Hardness	HRC 38 - 46
Hot Hardness	up to 1200°F

12 Coated

Specifications: AWS 5.13, ASME SFA 5.13

Classification: ECoCr-B

Description:

12 Coated electrodes produce a high hardness cobalt-chromium deposit for high temperature applications with good abrasive wear associated with corrosion. It is similar to the # 6 coated electrode except for a slightly higher carbide content. Chromium carbides contained in the deposit provide excellent resistance to many forms of chemical and mechanical degradation, including galling. It bonds well with all weldable steels, including stainless.

Typical Deposit Analysis

C	Cr	Fe	Mn	Mo	Ni
1.4	28.8	5.0 max	2.0 max	1.0 max	3.0 max
Si	W	Co	Other		
2.0 max	8.5	Rem	1.0 max		

Typical Deposit Characteristics

Abrasion Resistance	Excellent
Impact Resistance	Good
Corrosion Resistance	Good
Hardness	HRC 44 - 50
Hot Hardness	Excellent

21 Coated

Specifications: AWS 5.13, ASME SFA 5.13

Classification: ECoCr-E

Description:

21 Coated electrodes deposit a low carbon austenitic type cobalt alloy with excellent work hardenable high temperature strength and impact resistance. These deposits are quite stable during thermal cycling, making them a favorite for hot die materials. They have good strength and ductility in temperatures up to 1600º F. Resistance to galling
(self-mating), corrosion, and cavitation erosion make # 21 Coated a good choice for valve trim on steam and fluid control valve bodies and seats. It bonds well to all weldable steels, including stainless.

Typical Deposit Analysis

C	Cr	Fe	Mn	Mo	Ni
0.3	27.0	5.0 max	1.5 max	5.2	2.5
Si	W	Co	Other		
1.5 max	0.50 max	Rem	1.0 max		

Typical Deposit Characteristics

Abrasion Resistance	Fair
Impact Resistance	Excellent
Corrosion Resistance	Good
Hardness (2 Layers)	HRC 22 - 26
Hardness: Work Hardened	HRC 40 - 45
Hot Hardness	Excellent