



## Cobalt METAL CORE WIRE DATA SHEET

# exocor Cobalt 21

### DESCRIPTION

**Exocor Cobalt 21** is a cobalt base alloy, low carbon, molybdenum strengthened alloy that provides excellent work hardenability, high temperature, strength, and impact resistance. These deposits are quite stable during thermal cycling, making them a favorite for hot die materials. Resistance to galling (self-mated), corrosion and cavitation erosion make Exocor Cobalt 21 a good choice for valve trim on steam and fluid control valve bodies and seats.

### APPLICATION

This alloy bonds well to all weldable steels, including stainless. Some typical applications for Exocor Cobalt 21 include: steam valves, hot shears, chemical and petrochemical valves, hydro-turbine cavitation repair and forging dies.

### TYPICAL CHEMICAL VALUES

C	Mn	Si	Cr	Ni	Mo	Fe	W	Co	TOE
0.3	0.7	0.5	27	2.0	5.4	3.8	0.1	Rem	1.0

### WELDING PARAMETERS

PROCESS	SIZE	VOLTS	AMPS	STICK OUT	POSITION	SHIELDING GAS / FLUX
GMAW	.045	25 – 27	180 - 200	1/2" – 5/8"	Flat	100% Argon
	.062	26 – 28	280-300	5/8" – 3/4"	Flat	100% Argon

### MECHANICAL PROPERTIES

Deposit Layers: Unlimited  
Surface Cross Check: No\*  
Machinability: Use Carbide Tools  
Abrasion Resistance: Fair  
Impact Resistance: Excellent  
Corrosion Resistance: Good  
Hardness (2 layers): HRC 22-26  
Work Hardened: HRC 40-45  
Hot Hardness: Excellent

\*ensure proper preheat and slow cooling

### CLASSIFICATION

Wire chemistry has been optimized for best performance and conforms to **AWS/SFA A5.21, Class ERCCoCr-E**.