



Manufacturers of Custom Welding Lines for Resale  
www.selectrode.com

# SELECTRODE 1221

Cobalt Grade 21 Electrode

## INTERNATIONAL CLASSIFICATIONS

AWS/ASME A 5.13 ECoCr-E      EN 14700 E Co1  
DIN 8555: E20-UM-350-CKTZ

## FEATURES & APPLICATIONS

High-duty overlays of sealing faces and moving parts of valve seats and valves of combustion engines, for pumps and fittings for gas, water, steam and acids, gas turbines and hot working tools.

Extremely smooth running Alloy 21 Cobalt electrode

- Excellent resistance to metal and mineral abrasion
- Slag is self releasing.
- Weld deposits are unusually fine rippled and uniform.
- Available bare as product code 1290
- Special technology also performs on AC current.

## ALL WELD METAL ANALYSIS (TYPICAL WEIGHT %)

**Microstructure:** Cobalt based austenite with some carbides and other complex phases.

**Flux Color:** Grey

**Tip Color:** Black

C	Mn	Si	Cr	Fe	Mo	Ni	W	Co
.25	1.5	1.0	27	2	6	4	.50	Bal.

## TYPICAL MECHANICAL PROPERTIES

### Undiluted Weld Metal

### Maximum Value Up to:

Hardness

Room Temperature: 68°F (20°C)

Rockwell C30-32

Work Hardened

Rockwell C45

Elevated Temperatures: 750°F (400°C)

Rockwell C33

110°F (600°C)

Rockwell C30

1475°F (800°C)

Rockwell C28

1620°F (900°C)

Rockwell C26

## WELDING CURRENT & INSTRUCTIONS

**Recommended Current:** AC or DC Reverse (+)

**Welding Techniques:** Preheat massive parts to 570°F (300°C). Minimize amperage during welding.

### Recommended Amperage Settings:

Diameter (mm)	3/32(2.5)	1/8(3.25)	5/32 (4.0)
Minimum Amperage	65	80	100
Maximum Amperage	85	110	130

**Welding Positions:** Flat, horizontal

### Deposition Rates:

Diameter (mm)	Length (mm)	Weldmetal/ Electrode	Electrodes per lb (kg) of Weldmetal	Arc Time of Deposition min/lb (kg)	Amperage Settings	Recovery Rate
3/32 (2.5)	14" (350)	.80 oz. (22g)	20 (44)	19 (42)	75	130%
1/8 (3.25)	14"(350)	1.2 oz (33g)	13 (29)	14 (31)	95	130%
5/32 (4.0)	14" (350)	1.56 oz (44g)	10 (22)	11 (24)	115	130%

### APPROXIMATE ELECTRODE PACKAGING & DIMENSIONS

Diameter (mm)	3/32 (2.5)	1/8 (3.25)	5/32 (4.0)
Length (mm)	14" (350)	14" (350)	14" (350)
Electrodes / lb	18	11	7
Electrodes / kg	40	25	16