

STOODITE® 21

Shielded Metal Arc Welding Electrode

AWS Classification A5.13/A5.13M:2010 ECoCr-E

Stoodite 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. Resistance to galling (self-mating), corrosion, and cavitation erosion make Stoodite 21 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 MECHANICAL PROPERTIES

Abrasion Resistance	Fair
Impact Resistance	Excellent
Corrosion Resistance	Good
Hardness (2 layer), HRC	24 – 28
Hardness (work hardened), HRC	45 – 45
Hot Hardness	Excellent
Magnetic	No
Deposit Layers	3 Maximum
Surface Cross Check	No
Machinability	Use carbide tools

TYPICAL DEPOSIT CHEMISTRY (WT%)

Carbon	0.2
Chromium	27.9
Iron	3.4
Manganese	0.5
Molybdenum	5.2
Nickel	2.5
Silicon	0.7
Tungsten	0.1
Cobalt	Balance

TYPICAL APPLICATIONS

- Steam valves
- Forging dies
- Chemical and petrochemical valves
- Hydro-turbine cavitation repair
- Hot shears
- Piercing plugs

OPERATIONAL CHARACTERISTICS/WELDING PARAMETERS (DCEP)

1/8" (3.2 mm)	
Current, amp	90 – 120
Position	Flat
5/32" (4.0 mm)	
Current, amp	135 – 160
Position	Flat
3/16" (4.8 mm)	
Current, amp	160 – 180
Position	Flat
1/4" (6.4 mm)	
Current, amp	220 – 270
Position	Flat

Note: Minimum preheat recommended is 400°F (204°C). Required preheat will depend on base material composition and component dimensions.

STANDARD SIZES & PACKAGING

Diameter	Packaging	Part #
1/8" (3.2 mm)	10 lb (4.5 kg) Vacuum Pak	812101205125
5/32" (4.0 mm)	10 lb (4.5 kg) Vacuum Pak	812101205156
3/16" (4.8 mm)	10 lb (4.5 kg) Vacuum Pak	812101205187
1/4" (6.4 mm)	10 lb (4.5 kg) Vacuum Pak	812101205250

PDS-CO-E-004
Revision 5
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NOTICE - Failure to follow manufacturer's directions for use may result in equipment or material failure and void any applicable warranty. The data provided or referenced herein is provided for informational purposes only, without guarantee or warranty and represents "typical" results when Stoodie products are used in accordance with internal Stoodie procedures. Other tests and procedures may produce differing results. Stoodie expressly disclaims any liability resulting from reliance on this data.

PROTECT YOURSELF AND OTHERS - Users should read and follow all recommended guidance on health and safety from their employer, the supplier, the manufacturer, and government authorities. These, at a minimum including the Warning Labels on the products and the Safety Data Sheets ("SDS"). The SDS and additional safety information may be found on materials or links at: Stoodie.com.