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Hardbanding Wire

Data Sheet

POSTALLOY[®] ULTRABAND[®] NM

U.S. Pat. No. US 9,724,786 B2

Description

Ultraband is a hard, 100% crack free hardband material designed for non-magnetic drill collars and related components. By controlling critical elements during development of the hardband alloy, **Ultraband[®]NM** meets magnetic resistance compared to permeability specifications and offers substantially improved wear resistance compared to conventional non-mag welding alloys, like 310 stainless – a 400% to 500% improvement. In addition, the abrasion resistance of **Ultraband** is 400% to 500% better than drill collar base materials.

- Use on non-mag base materials such as P530, AG17, 15-15LC, NMS-100 and others
- Meets all requirements of API Specification 7 - Relative Permeability – less than 1.01 (All tests are carried out according to ASTM A342 Method 3)
- It can be applied in multiple layers without spalling providing the interpass temperatures are properly controlled
- Non-Cracking
- Hardness 40 Rc (Work hardens in service to 50 Rc)

Ideal for oil and gas industry applications such as non-magnetic drill collars, stabilizers and MWD/LWD drilling tools and related components - optimized for improved wear resistance.

Ultraband can be applied directly on to non-mag tools and over previous layers of 310 stainless. Used by itself, **Ultraband** provides excellent wear resistance. For additional wear protection, a non-magnetic “cast tungsten carbide” may be dropped into the weld. Recommended size is 20-30 or 30-40 mesh at a drop rate of approximately 40 grams per minute. Deposits are smooth and free of any slag. Re-application is easy providing the worn deposit is clean and free of defects. Please contact your Postle support person or Tech Center for complete procedure.

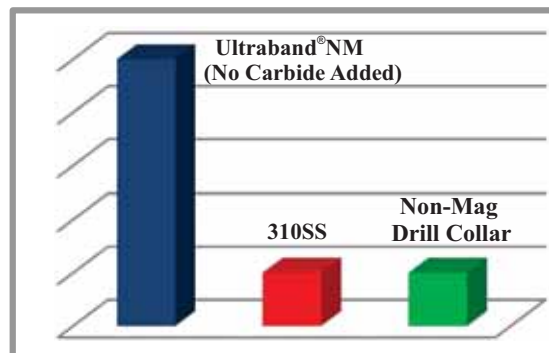


Ultraband[®]NM



Ultraband[®]NM
w/ 20-30 Mesh Cast Carbide

Wear Rating



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POSTALLOY[®] ULTRABAND[®] NM

Application Procedure

1. Application surface must be free from rust, scale, grease, dirt and other contamination. Clean surface by sand blasting, grinding or brushing with a **stainless steel** brush or wire wheel.
2. Preheat material to 100°F (38°C).
3. Apply Ultraband at a thickness of 3/32" (+1/32"/-0") 2.4mm (+.8mm/-0mm) as per parameters listed below.
4. **DO NOT** exceed the maximum interpass temperature of 400°F (204°C). Pause between bands to allow the work to cool in order to not exceed 400°F (204°C). Wet rags may be placed on either side of the hardband area to help dissipate excessive heat. Continue to hardband using this process so interpass does not exceed 400°F (204°C). Post heating is not required.
5. When hardbanding is completed, immediately cover with a Postle HB Insulator or cooling cans to slow cool.
6. Any grinding of the hardbands may be done after the work has cooled to 150°F (65°C) or less.
7. If carbide is required, use 20-30 or 30-40 mesh **Cast Carbide** at a rate of 40 grams/minute.

Contact your Postle Industries or Tech Center Representative for training and assistance.

Welding Parameters

Diameter.....1/16" (1.6mm)
Polarity.....Electrode Positive - DCEP/Reverse
Amperage.....240 (250-325)
Volts30 (26-33)
Gas Mix.....98% Argon/2% Oxygen (or other Argon/Oxygen Mix)
Gas Flow Rate..... 35 CFH (32 to 37) 16.5 LPM (15 to 17.5)
Torch Angle.....15° (10° to 17°)
Offset.....1" (25mm) (3/4 to 1-1/2" 19 to 38mm)
Stickout.....7/8" (21mm) (3/4 to 1" 19 to 25mm)
Oscillation Width.....1" (25mm) (3/4 to 1 1/4" 19 to 32mm)
Oscillation Speed.....80 per minute (60-100)
Preheat.....100°F (38°C)
Maximum Interpass Temp....400°F (204°C)
Slow Cooling.....Cover immediately with a Postle HB Insulator or cool can