Site Inspection/Hardbanding Application
Inspection and Evaluation Procedure

Hardbanding Solutions by Postle Industries believes strongly in customer communication, support, and technical assistance. To reinforce that idea with our hardbanding products, we have established a procedure that assures hardband applicators that you have entrusted to apply our products, are doing it in accordance with the Hardbanding Solutions procedure manual.

The first thing we do to get the process started is get the “general” approval from the Drilling Contractor that allows Hardbanding Solutions or assigned Technical Center to do on-site inspections of the Applicator specifically related to a hardbanding job the Applicator is currently undertaking. (see page 3).

Once approval is granted for a specific job, Hardbanding Solutions or assigned Technical Center, without the Applicator’s prior knowledge, would visit the site to verify that the hardbanding material is being applied as per the Hardbanding Solutions "Hardbanding Applications" manuals. The site inspector will use the Procedure Qualification Report (see page 4) to evaluate the hardbanding company.

If the Applicator is in conformance to proper welding procedures as per the Hardbanding Solutions manuals, a “Site Inspection Certificate of Compliance” will be issued to the Applicator and a copy will be sent to the Drilling Contractor. (see page 5)

If the Applicator is not in conformance, a Non-Conformance Report (NCR) would be issued to the Applicator and a copy would be sent to the Drilling Contractor. (see page 6)

Hardbanding Solutions would determine the reason for the NCR and would issue a Corrective Action Plan (CAR) to the Applicator on how to rectify the NCR. The Applicator would have to sign the CAR signifying they understand the NCR and will undertake the corrective actions to rectify the NCR. A signed copy of the CAR will be forwarded to the Drilling contractor. (see page 6)

Hardbanding Solutions would then do follow-up un-announced visit to verify that the corrective actions have been followed.

If the Applicator refuses to sign the CAR, Hardbanding Solutions would de-certify the Applicator as they are not in conformance to proper welding procedures. Hardbanding Solutions would then send out a letter notifying all drilling contractors that the specified Applicator no longer has the rights to apply our products.
Hardbanding Application Inspection and Evaluation

At Hardbanding Solutions by Postle Industries, we believe in customer communication and support. and we are always available for technical assistance. To reinforce that idea with our hardbanding products, we have established Technical Centers to help drilling contractors, operators, pipe suppliers and manufacturers whenever there is a question concerning hardbanding and/or casing wear.

As part of its quality commitment to users of our hardbanding products, we would like to offer you an additional service to insure that our products are being applied to your drill pipe according to the correct procedures. With your permission and at your request, when one of our products is being applied to your drill pipe, Hardbanding Solutions by Postle Ind. or its appointed Technical Center will visit the job site to evaluate the work being done.

We will provide you with a complete report of whether or not the Applicator is in compliance with weld hardband procedures, along with a Non-Conformance Report and Corrective Action Report if necessary. Copies of the report(s) will be sent to the Hardbander/Applicator.

If you are in agreement to the above, please sign below.

I ________________________ (personal name) of ___________________________ (company) have read the above “Hardbanding Application Inspection and Evaluation” and being in a position to approve the above request, do so give that approval to Hardbanding Solutions by Postle Ind. and/or its appointed Technical Center.

___________________________________________     ____/____/________
Signature                                                                            Date

PLEASE FAX THIS FORM BACK TO 1-216-265-9030 OR EMAIL TO sstefancic@postle.com
WELDING PROCEDURE SPECIFICATION (WPS):

DATE
COMPANY:_________________________________________
ADDRESS: _________________________________________
SUPERVISOR'S NAME:_______________________________

TOOLTIP JOINT
OD:______
WIRE:
LOT NO:______________________
TYPE OF STEEL:

APPLICATION TYPE:
BOX FLUSH            18º TAPER             BOX SEMI
PIN RAISED             PIN SEMI             PIN FLUSH

POLARITY: ELECTRODE POSITIVE____
AMPERAGE:_______________
VOLTS:_________________

SHIELDING GAS: MIXTURE____%_________/  ____%_________
FLOW RATE __________

ANGLE______ OFFSET______ STICKOUT______

OSCILLATION: WIDTH_________SPEED__________

ROTATIONAL SPEED:______________________

PREHEAT TEMPERATURE:______________

INTERPASS TEMPERATURE:______________
Max Allowed 850ºF (454ºC)

COOL DOWN METHOD:________________

WELD BEAD: Width _______   Band Profile _______________________
Voids/Porosity/Cracking _______   If Yes - Explain _______________________________

NOTES_____________________________________________________________________
________________________________________________________
________________________________________________________
________________________________________________________

SURFACE PREPARATION___________________________

POLARITY: ELECTRODE POSITIVE ____

AMPERAGE:_______________   VOLTS:______________________

SHIELDING GAS: MIXTURE____%_______/  ____%_______

FLOW RATE __________

TORCH SETTINGS:

ANGLE____ OFFSET_____ STICKOUT____

OSCILLATION: WIDTH______ SPEED___________

ROTATIONAL SPEED:__________________
Minutes/Seconds per Revolution

TYPICAL WELDING PARAMETERS

Process: Gas Shielding GMA
Current: Electrode Positive - DCEP/Reverse
Amperage: Tuffband 330 (300 to 380)
Duraband 320 (300-365)

Volts: 30 (29-35)
Gas Mix: 98% Argon/2% Oxygen (100% Argon, 95/5)
Flow Rate: 35 CFH (16.5 LPM) 32-37 CFH (15-17.5 LPM)
Preheat: (see table above)

Offset: 1" (25mm) (3/4 to 1-1/2" 19-38mm)
Stickout: 1" (25mm) (3/4 to 1-1/8" 19-28.5mm)
Oscillation Width: 1" (25mm) (3/4 to 1-4/" 19-32mm)
Oscillation Speed: 80 per minute (60 to 100)

Cooling Rate: 50ºF to 75ºF Ave/Hour over 8 hour period
Max Interpass Temperature: 850ºF (454ºC)

10ºC to 24ºC Ave/Hour over 8 hour period

Drill Pipe (4137) ____
HWDP (4145)     ____
Drill Collar          ____
Other ________________

WELDING PROCEDURE SPECIFICATION (WPS):

PREHEAT TEMPERATURE:

INTERPASS TEMPERATURE:
Max Allowed 850ºF (454ºC)

COOL DOWN METHOD:

WELD BEAD: Width _______   Band Profile _______________________
Voids/Porosity/Cracking _______   If Yes - Explain _______________________________

NOTES_____________________________________________________________________
________________________________________________________
________________________________________________________
________________________________________________________

SURFACE PREPARATION___________________________

POLARITY: ELECTRODE POSITIVE ____

AMPERAGE:_______________   VOLTS:______________________

SHIELDING GAS: MIXTURE____%_______/  ____%_______

FLOW RATE __________

TORCH SETTINGS:

ANGLE____ OFFSET_____ STICKOUT____

OSCILLATION: WIDTH______ SPEED___________

ROTATIONAL SPEED:__________________
Minutes/Seconds per Revolution

TYPICAL WELDING PARAMETERS

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Drill Pipe (4137) ____
HWDP (4145)     ____
Drill Collar          ____
Other ________________
The product listed above was inspected at the above location by a Hardbanding Solutions or assigned Technical Center representative and found to be in compliance with the welding procedures found in the Hardbanding Solutions application manual. A copy of the site visit is shown below.

John Postle
President
Postle Industries, Inc.

PHOTO
CORRECTIVE ACTION REPORT

QUALITY ASSURANCE DEPARTMENT

1. Is this the first or only CORRECTIVE ACTION REPORT issued for the incident identified?  YES ___ NO ___
2. Was this CORRECTIVE ACTION REPORT completed by receiver?  YES ___ NO ___
3. Did the CORRECTIVE ACTION taken result in a change in or initiation of a procedure?  YES ___ NO ___
4. Is Quality Assurance Department satisfied that the CORRECTIVE ACTION taken by the receiver is effective and appropriate?  YES ___ NO ___
5. Are further CORRECTIVE ACTIONS required?  YES ___ NO ___

*NO* responses to questions 1, 2, 3 or 4 require an explanation, include any further action planned.

ADDITIONAL COMMENTS

SIGNED ______________________ DATE __/__/____
Quality Assurance