

(Your Company Name) Duraband Hardbanding Requirements

This Standard Operating Procedure (SOP) quick reference chart outlines in detail the requirements for hardbanding on all of (Company Name) standard drill pipe and HWDP. In order to maintain consistency with their inventory, all hardband application companies must comply with predetermined dimensions and requirements or will be responsible for the expense to remove hardbands and proper re-application.

- All re-applications must meet pre- and post-inspection per the Postle Fearnley Procter NS-1™ V2.6 manual or specific Postle Industries procedure SOP.
- A log will be required on all re-applications. Postle will provide a sample of an approved log sheet.
- If there are any questions please contact (Company) or Postle Industries immediately. These requirements need to be followed to the letter to guarantee consistent, high quality results. Do not take any shortcuts.

Pin Tool Joint

- Re-apply hardbanding at 1/32 or less
- 2" wide hardbanding applied using two 1" wide bands.
- Existing hardbanding must be completely covered.
- Maximum build-up will be 3/32" proud.
- Partial bands are acceptable. They must be ground and blended for smooth transition.
- All step over and start/stop areas will be ground for smooth finish and consistent height.



Box Tool Joint

- Re-apply hardbanding at 1/32 or less.
- 3" wide hardbanding applied using three 1" wide bands.
- Existing hardbanding must be completely covered.
- Maximum build-up will be 3/32" proud.
- Partial bands are acceptable. They must be ground and blended for smooth transition.
- All step over and start/stop areas will be ground for smooth finish and consistent height.



Re-Application of Duraband on Drill Pipe, Collars & HWDP

Inspect existing hardbanding to determine if it's a candidate for re-application. Existing hardbanding should be $\leq 1/32$ " proud and stable. If the previous hardbanding has spalled (missing pieces), it must be removed. If the hardbanding is intact you may proceed with re-application.

The existing hardbanding may contain cracks that are visible to the naked eye. These cracks typically cut across the weld band (longitudinal) or may be bi-directional. If these cracks are noted to be numerous and fine, there is a possibility that they are caused by excessive heat excursions (heat checking) during the drilling operations and can be removed by light grinding prior to hardbanding. They are characteristically hairline in nature and normally do not penetrate into the HAZ.

However, if the cracks are too wide ($>1/32$ " thick) and if they are transverse (see drawing) they are highly suspect to HAZ penetration. In such cases, the worn hardbanding must be rejected and then removed.

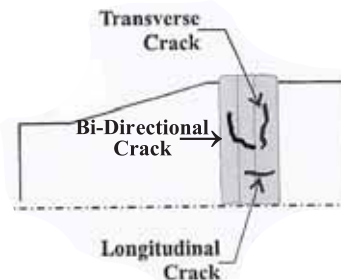
Some re-applications of Duraband may be over a previous hardbanding that is comprised of a mixture of un-known cracking hardbanding products. In some cases you may experience trouble re-applying Duraband over these mixtures. In those situations we recommend using Tuffband on the application and then Duraband on subsequent re-applications. Tuffband should be used as the exception and not the rule. If you are having application issues, notify (Your Company Contact) and Postle Industries **immediately** for technical assistance.



Spalled Hardbanding - Rejectable



Cracked - Intact
Good for Re-Application



Contacts

Your Company QA/QC Contacts

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