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Data Sheet



CENTER WEAR PAD HARDBANDING

The Center Wear Pad (CWP) of Heavy Weight Drill Pipe (HWDP) is located in an area of the pipe that receives high cyclic stress. As this area flexes while rotating, downhole stresses can concentrate in the hardbanded area and possibly lead to failure by fatigue.

For this reason, when hardbanding the Center Wear Pad area of HWDP extra precautions should be implemented and application procedures should be strictly enforced in order to avoid excessive hardness in the heat affected zone. Because of its location, the CWP is inherently more difficult to preheat, postheat and slow cool than either the pin or box end.

For many years the CWP of HWDP, has been hardbanded with tungsten carbide and mild steel, whereby the mild steel provides greater ductility. However, the use of tungsten carbide and mild steel is declining. Tungsten carbide is not casing friendly, and therefore, should not be used if HWDP is used in the top section of the drill string or any other area where casing wear is a concern. We recommend the use of non-cracking and casing friendly Duraband[®]NC. However, the risk of a failure increases with higher hardness products, like Duraband.

Adequate precautions should be taken to make sure that proper soak preheat, interpass temperature and slow cooling is achieved. Keep in mind, when hardbanding in the center of the drill pipe, the heat generated during the welding process travels away from the center wear pad much faster than when hardbanding the box or pin tool joint.

Only hardbands that are 100% crack-free by Magnetic Particle Inspection (MPI) should be used on center wear pads. Therefore Duraband is acceptable for initial application and re-application. Since the development of our products in 2003 we have not been made aware of any failures, flaking or spalling with Tuffband or Duraband.

Fearnley Procter came out with the following statement regarding center wear pad hardbanding in their Manual V 03.30.80.1110 dated September 1, 2013.

Note: Alloy hardbandings that crack on application are not recommended for use on centre wear pads. This is because [cracks in the hardband could extend into] the Heat Affected Zone (HAZ) in this reduced section and [then could] penetrate to the ID.



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