



REVIEW NO > FPI 2017-030
CERTIFICATE NO > 0185 /17-3
APPROVAL DATE > 17th August 2017
EXPIRY DATE > 16th August 2019
REGISTERED SINCE > 17th August 2016

**PRODUCT
APPROVAL
2017**

Welding Alloys Group

8535 DIXIE HIGHWAY, FLORENCE KY 41042.

Fearnley Procter Certify that the above company's following Product has been reviewed and approved by a NS-1™ Technical Review Committee.

Fearnley Procter NS-1™ Edition 3 Quality and Inspection Requirements for New and Refurbished Drilling and Well Completion Equipment Standards.

SPECIFICATIONS

> NS.03.30.00.1110

PRODUCT

> DRILL-GUARD Ti™ Hardbanding Initial Application onto New Drill Pipe Tool Joints

SCOPE:

The procedure followed has been to compare the specific requirements of the relevant Fearnley Procter NS-1™ Edition 3 documentation with the submitted information, and to perform certain testing on the product.

The evaluation of the application procedures for DRILL-GUARD Ti™ Hardbanding onto new drill pipe tool joints has been performed in compliance with the general requirements and recommendations as stipulated in NS-1™ Supplementary Requirements, NS.03.30.00.1110 (Rev. 10) Section 5.0, and Sub-Specification 90.1, 90.3 and 160.

The following data was supplied and tests performed by Welding Alloys Group for Fearnley Procter under this approval:

1) Micro Hardness Test (across weld metal, HAZ plus base metal) 2) Hardbanding Adhesion Test Results 3) Welding Procedures/Guidelines 4) Inspection Guidelines 5) Acceptance/Rejection Criteria 6) Casing Wear Results.

As a result of this review, Welding Alloys Group has been granted approval for the initial application of DRILL-GUARD Ti™ Hardbanding onto new drill pipe tool joints, and deemed suitable for service when applied as per the processes, procedures reviewed and the requirements of NS-1™.



Issued By
Kevin Fearnley
Chairman NS-1™ Technical Review Committee

REFERENCE DOCUMENTS: Welding Alloys Group Specification Manual for the Preparation, Application and Inspection of Hardbanding Products Version 1.0, 29th February 2016 (Initial Approval and Re-approval).

NOTA BENE: This certificate relates solely to the Procedure Qualification Record of the Organisation identified above and should not be interpreted as implying that all or any other applicators of this product are competent to do so. Organisations applying the above Hardbanding are required to qualify their own Welding Procedure Specification by means of a Procedure Qualification Record and maintain Welder Performance Qualification in accordance with Fearnley Procter NS-1™ Edition 3 requirements.

To maintain validity during the said period the above named Company must maintain a valid subscription to and comply with the Fearnley Procter NS-1™ Quality and Inspection Requirements for New and Refurbished Drilling and Well Completion Equipment.
Certificates and Levels of Approval can be verified at www.fp.international