



REVIEW NO > 2019-009
CERTIFICATE NO > 004/19-2
APPROVAL DATE > 22nd July 2019
EXPIRY DATE > 21st July 2021
REGISTERED SINCE > 22nd July 2008

**PRODUCT
APPROVAL
2019**

Postle Industries, Inc.

5500 WEST 164TH STREET, CLEVELAND, OH 44142, USA.

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

> Duraband® NC Alloy Hardbanding Initial Application onto New Drill Pipe Tool Joints

SCOPE: The procedure followed was to compare the specific requirements of the relevant Fearnley Procter NS-1™ Edition 3 documentation with The submitted information, perform certain testing on the product and to conduct an assessment of the Applicant's Quality Management System. The evaluation of the application procedures for Postle Industries, Inc. Duraband® NC Alloy 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 Postle Industries, Inc. 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
- 7) Chemical analysis of hardband wire.

As a result of this review, Postle Industries, Inc. has been granted approval for the initial application of Duraband® NC Alloy 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™.



Fearnley Procter Group
Non-productive-time Solutions

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

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REFERENCE DOCUMENTS: Postle Industries, Inc. Hardbanding Procedure Manual Version 1.1, 12th May 2008 (Initial Approval) and Version 2.6, 1st August 2018 (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.fearnleyprocter.com



REVIEW NO > 2019-009
CERTIFICATE NO > 0041/19-2
APPROVAL DATE > 17th March 2019
EXPIRY DATE > 16th March 2021
REGISTERED SINCE > 17th March 2012

**PROCESS
APPROVAL
2019**

Postle Industries, Inc.

5500 WEST 164TH STREET, CLEVELAND, OH 44142, USA.

The above Company has demonstrated through Procedure Qualification Records that their Welding Procedure Specifications, for the welding process and scope of applications below, are capable of providing the required properties specified by the Company.

Qualification is in conformance with the requirements of:

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 (Drill Pipe with Welded Tool Joints)
- > NS.03.30.80.1110 (Heavy Weight Drill Pipe with Welded Tool Joints)
- > NS.03.30.80.1120 (Non-welded Heavy Weight Drill Pipe)

SERVICE/PROCESS

- > Re-application of Duraband® NC Hardbanding over Hardbanding Products:
1) Arncro 150XT™, 2) Arncro 100XT™, 3) Castolin OTW 12Ti,
4) Duraband® NC, 5) Smooth X®, 6) Armacor™ M Star,
7) TCS™ Titanium, 8) TCS™ 8000, 9) Tuffband® NC

SCOPE: The evaluation of the application procedures for Duraband® NC on drill pipe tool joints for the re-application over the above stated Hardbanding products 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 date was supplied, and tests performed by Postle Industries, Inc. 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.



Fearnley Procter Group
Non-productive-time Solutions

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

A handwritten signature in black ink, appearing to read 'Kevin Fearnley'.

REFERENCE DOCUMENTS: Postle Industries, Inc. Hardbanding Procedure Manual Version 2.0, 10th February 2011 (Initial Approval) and Version 2.6, 1st August 2018 (Re-approval).

EXCLUSIONS: Hardbanding on the Centre Wear Pad of Heavy Weight Drill Pipe. **NOTA BENE:** 1) Arncro 150XT™, Arncro 100XT™ and Castolin OTW 12Ti registered first approval – February 9, 2015. 2) Duraband® NC, Smooth X®, Armacor™ M Star and TCS™ Titanium registered first approval - December 11, 2009.

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.
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