



REVIEW NO > FZE2017- 117
CERTIFICATE NO > 0043/17-2
APPROVAL DATE > 1st October 2017
EXPIRY DATE > 30th September 2019
REGISTERED SINCE > 1st October 2007

**PRODUCT
APPROVAL
2017**

Shanghai BoTeng Welding Consumables Co., Ltd.

NO.1825 LUODONG ROAD, BAOSHAN INDUSTRIAL ZONE, SHANGHAI, 200949, P.R.C.

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

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

SPECIFICATIONS

> NS.03.30.00.1110

PRODUCT

> BoTn 3000 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-1TM Edition 3 documentation with the submitted information, and to perform certain testing on the product. The evaluation of the application procedures for BoTn 3000 Hardbanding onto new drill pipe tool joints has been performed in compliance with the general requirements and recommendations as stipulated in NS-1TM 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 Shanghai BoTeng Welding Consumables Co., Ltd. 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, Shanghai BoTeng Welding Consumables Co., Ltd. has been granted approval for the initial application of BoTn 3000 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-1TM.



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

A handwritten signature in black ink, appearing to read 'Kevin Fearnley', is written over a vertical line.

REFERENCE DOCUMENTS: Shanghai BoTeng Welding Consumables Co., Ltd. Specification for new application of BoTn 3000 Hardbanding on Tool Joints, Heavy Weight Drill Pipe and Drill Collars, Version 4.1, May 2010 (Initial Approval) and Version 1.3, October 2016 (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-1TM 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-1TM 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