



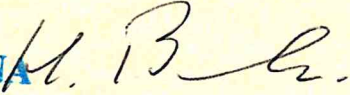
**CERTIFICATE OF APPROVAL OF MANUFACTURERS OF  
MATERIALS  
No. FAB014518XG**

**This is to certify** that the manufacture of the product identified below is in compliance with the applicable requirements of the RINA Rules for the Approval of Manufacturers of Materials.

<i>Description</i>	<b>Welding</b>
<i>Type</i>	<b>Coupling and Shaftlines ELECTRON BEAM WELDING</b>
<i>Applicant</i>	<b>Pro-Beam-AG &amp; Co. KGaA Lindenallee 22 D-39288 Burg GERMANY</b>
<i>Reference standards</i>	<b>RINA Rules for the approval of manufacturers of materials</b>

Issued in **HAMBURG** on **February 14, 2018**. This Certificate is valid until **January 31, 2023**



**RINA**   
H. BRINK  
RINA Services S.p.A.

This certificate consists of this page and 1 enclosure



**FAB014518XG**  
**Electron beam welding under vacuum**  
**EN ISO 4063: Prozess 51**

**Process-details**

Process: Electron beam welding under vacuum

Art / Design: Butt weld with defined weld depth

Welding equipment: Suitable, according to the instructions of the responsible welding supervisor.

Welding data: According to the welding instruction of the responsible welding supervisor.

Welding consumables: Without welding filler

Joint preparation: I-seam, according to WPS.

Heat treatment at Welding: Preheating about 250 °C min., acc. WPS

Wall thickness (s) [mm]: < 30 [mm]

Welded pipe specimen D 181.0 x 21.5 mm with recess thickness 4mm; Related test report: ZLS test number: 13-01076 from the central laboratory Siegerland Braun & Co, from 18.02.2013.

30CrNiMo8V (diaphragm) with 30CrMoV9V (intermediate shaft)



**RINA**  
H. Brunk