



RINA
SERVICES



SGQ N° 002 A SSI N° 001 G
SGA N° 002 D DAP N° 001 H
PRD N° 002 B PRS N° 066 C
SCR N° 003 F LAB N° 0832

Signatory of EA, IAF and ILAC
Mutual Recognition Agreements

WELDING PROCEDURE QUALIFICATION RECORD (WPQR)

N. 2016-BG-PO-13-01

Manufacturer **"Galera 07" Ltd.**

WPQR No. **2016-BG-PO-13-01**

Dated **01.09.2016**

Manufacturer's welding procedure (WPS) No. **136**

Dated **30.08.2016**

RANGE OF APPROVAL

Welding process **136** Type **Manual**

Joint type **Plates and Pipes BW ssnb-ssmb-bs/FW**

Single/Multiple pass **Multiple**

Parent material group(s) **1-1** ISO/TR 15608

Steels with specified minimum yield strength $R_{eH} \leq 275N/mm^2$

Parent material thickness (mm) **Butt Joint = 3 - 20 Fillet Joint $t_1 = 5 - 12$ $t_2 = 5 - 12$**

Throat thickness (mm) **No restriction**

Weld deposit thickness (mm) **3 - 20**

Outside diameter (mm) **44.5 and over**

Filler metal type **Flux-cored wire P**

Shielding gas (ISO 14175) **M21** Backing gas (ISO 14175) **None**

Type of welding current **DCEP** Heat input kJ/cm **min 5.76**

Welding position **All positions except for PG and J-L045**

Preheat min. (°C) **5** Interpass temp. max. (°C) **250**

Post weld heat treatment / Ageing **N/ A**

Other information

Welders name **Todor Ivanov Todorov**

Stamp No. **16**

Welding test conducted by **Yordan Arabadziev - "Galera 07" Ltd.**

Mechanical test conducted by **TL at "Multitest" Ltd.** Laboratory test No. **16-437-001, 2, 3, 4, 5**

At presence of RINA Surveyor **Grozdan Peev -Welding Inspector at RINA**

We certify that statements in this certificate are correct and that the test welds were prepared, welded and tested in accordance with the requirements of **UNI EN ISO 15614-1: 2012** Standard

Issued at: Genova

on 02 September 2016



[Handwritten signature]

RINA Services S.p.A.