

**WELDER PERFORMANCE QUALIFICATION (WPQ)**

**Name & address of manufacturer: P.E.S. ENGINEERS PVT LTD.**  
**1<sup>st</sup> Floor, Pancom Chambers 6-3-1090/1/A, Rajbhavan Road,**  
**Somajiguda, Hyderabad-500 082. Phone : 23311740, 23311194**  
**Package : Steel Liner**

**Welder's Name: Durga Goswami**  
**Identification No : W - 04**

**WPQ No : PES-KIRU-CSG-WPQ-04**  
**Test Date : 04-01-2023**

**Test Description**

Identification of WPS followed: PES-KIRU-CSG-WPS-04

[ ☒ ] Test coupon [ ] Production weld

Specification of Base Metal(s) : IS-2062 E450 BR & IS 1570-V-20Cr13

Thickness : 32+25 mm

**Testing Variables And Qualification Limits**

| <b><u>WELDING VARIABLES(QW-350)</u></b>                       | <b><u>ACTUAL VALUE</u></b> | <b><u>RANGE QUALIFIED</u></b> |
|---------------------------------------------------------------|----------------------------|-------------------------------|
| Welding Processes :                                           | SMAW                       | SMAW                          |
| Type:                                                         | Manual                     | Manual                        |
| Backing (metal, weld-metal, double-welded, etc) :             | N.A                        | N .A                          |
| [ <input checked="" type="checkbox"/> ] Plate [ ] Pipe        | 32+25 mm                   | All Thickness                 |
| Base metal P Number to P Number                               | Not Specified to 1         | Not Specified to 1            |
| Filler Metal or Electrode Specifications (SFA)                | 5.4                        | 5.4                           |
| Filler Metal or Electrode classification                      | E-309-16                   | E-309-16                      |
| Filler metal F- Number                                        | Not Specified              | Not Specified                 |
| Consumable inserts (GTAW or PAW)                              | N.A                        | N .A                          |
| Filler Metal Product form                                     | Solid (Flux Coated)        | Solid (Flux Coated)           |
| Position                                                      | 2F                         | 2F, 1F                        |
| Vertical Progression (uphill or downhill)                     | N.A.                       | N.A.                          |
| Type of fuel gas (OFW)                                        | N.A.                       | N.A.                          |
| Inert gas Backing (GTAW, PAW, GMAW)                           | N.A.                       | N.A.                          |
| Transfer Mode (spray/globular or pulse to short circuit-GMAW) | N.A.                       | N.A.                          |
| GTAW current type/ polarity (AC, DCEP, DCEN)                  | N.A.                       | N.A.                          |

**RESULTS**

Visual Examination of Completed Weld (QW-302.4) : Satisfactory

[ ] Transverse root and face{QW-462.3(a)} [ ] Longitudinal root and face{QW-462.3(b)} [ ☒ ] Side {QW-462.2}

[ ] Pipe bend specimen, corrosion resistant overlay{QW-462.5(c)}

[ ] Plate bend Specimen, corrosion-resistant overlay{ QW-462.5(d)}

[ ] Pipe specimen , Macro test for fusion { QW-462.5(b)}

[ ] Plate specimen ,Macro test for fusion { QW-462.5(e)}

| <b>Speciman No</b> | <b>Type of Test</b> | <b>Result</b> |
|--------------------|---------------------|---------------|
| PES-KI-12          | Macro Examination   | Satisfactory  |
| PES-KI-12          | Fracture Test       | Satisfactory  |
| PES-KI-12          | Hardness Survey     | Satisfactory  |

Alternative Volumetric examination results {QW-191} : N.A.

Radiography Report No : N.A.

Fillet Weld- fracture test {QW-180} : Satisfactory

Macro Examination (QW-184) : Satisfactory

Length and percent of defects : N.A.

Other Tests: In visual check at weld cross section and HAZ complete fusion noticed and free from defects.

Film or specimen evaluated by: Santosh Arya

Mechanical tests conducted by: ITE Noida

Welding supervised by: Santosh Arya

Company: PES ENGINEERS PVT. LTD.

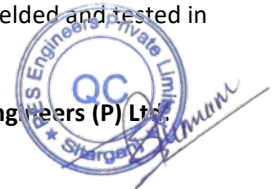
Laboratory Test No.:1185F/1189F

Test Witnessed by: Vikash Yadav

We certify that the statements in this record are correct and that the test coupons were prepared welded and tested in accordance with the requirements of Section-IX of the ASME Code.

Date: 25-02-2023

Organization: **PES Engineers (P) Ltd.**



**WELDER PERFORMANCE QUALIFICATION (WPQ)**

**Name & address of manufacturer: PES ENGINEERS PVT LTD.**  
**1<sup>st</sup> Floor, Pancom Chambers 6-3-1090/1/A, Rajbhavan Road,**  
**Somajiguda, Hyderabad-500 082. Phone : 23311740, 23311194**  
**Package : HM Gates & Embedded Parts**

**Welder's Name: Durga Goswami**  
**Identification No : W - 012**

**WPQ No : PES-RNG-IV-HM-WPQ-06B**  
**Test Date : 10-06-2023**

**Test Description**

Identification of WPS followed: PES/RNG-IV-HM-WPS-06  
Specification of Base Metal(s) : AISI-304

[ ☒ ] Test coupon [ ] Production weld  
Thickness : 28 mm

**Testing Variables And Qualification Limits**

| <b><u>WELDING VARIABLES(QW-350)</u></b>                       | <b><u>ACTUAL VALUE</u></b> | <b><u>RANGE QUALIFIED</u></b> |
|---------------------------------------------------------------|----------------------------|-------------------------------|
| Welding Processes :                                           | SMAW                       | SMAW                          |
| Type:                                                         | Manual                     | Manual                        |
| Backing (metal, weld-metal, double-welded, etc) :             | N.A                        | N .A                          |
| [ <input checked="" type="checkbox"/> ] Plate [ ] Pipe        | 28 mm                      | 5-56 mm                       |
| Base metal P Number to P Number                               | 8                          | 8                             |
| Filler Metal or Electrode Specifications (SFA)                | 5.4                        | 5.4                           |
| Filler Metal or Electrode classification                      | E-308-16                   | E-308-16                      |
| Filler metal F- Number                                        | Not Specified              | Not Specified                 |
| Consumable inserts (GTAW or PAW)                              | N.A                        | N .A                          |
| Filler Metal Product form                                     | Solid (Flux Coated)        | Solid (Flux Coated)           |
| Position                                                      | 1G                         | 1G                            |
| Vertical Progression (uphill or downhill)                     | NA                         | NA                            |
| Type of fuel gas (OFW)                                        | N.A.                       | N.A.                          |
| Inert gas Backing (GTAW, PAW, GMAW)                           | N.A.                       | N.A.                          |
| Transfer Mode (spray/globular or pulse to short circuit-GMAW) | N.A.                       | N.A.                          |
| GTAW current type/ polarity (AC, DCEP, DCEN)                  | N.A.                       | N.A.                          |

**RESULTS**

Visual Examination of Completed Weld (QW-302.4) : Satisfactory  
[ ] Transverse root and face{QW-462.3(a)} [ ] Longitudinal root and face{QW-462.3(b)} [ ☒ ] Side {QW-462.2}  
[ ] Pipe bend specimen, corrosion resistant overlay{QW-462.5(c)}  
[ ] Plate bend Specimen, corrosion-resistant overlay{ QW-462.5(d)}  
[ ] Pipe specimen , Macro test for fusion { QW-462.5(b)} [ ] Plate specimen ,Macro test for fusion { QW-462.5(e)}

| <b>Speciman No</b> | <b>Type of Test</b> | <b>Result</b> |
|--------------------|---------------------|---------------|
| PES-RN-HM-02       | Tensile Test        | Satisfactory  |
| PES-RN-HM-02       | Side Bend Test      | Satisfactory  |
| PES-RN-HM-02       | Hardness Survey     | Satisfactory  |
| PES-RN-HM-02       | Charpy Impact Test  | Satisfactory  |

Alternative Volumetric examination results {QW-191} : Acceptable (RT)  
Fillet Weld- fracture test {QW-180} : N.A.  
Macro Examination (QW-184) : N.A.  
Length and percent of defects : N.A.  
Other Tests: In visual check at weld cross section and HAZ complete fusion noticed and free from defects.

Film or specimen evaluated by: Santosh Arya  
Mechanical tests conducted by: SD Testing & Calibration Laboratory  
Welding supervised by: Santosh Arya

Company: PES ENGINEERS PVT. LTD.  
Laboratory Test No.: SD23062310/51, SD24062304/11  
Test Witnessed by: Vikash Yadav

We certify that the statements in this record are correct and that the test coupons were prepared welded and tested in accordance with the requirements of Section-IX of the ASME Code.

Date: 10-07-2023

Organization: PES Engineers (P) Ltd

