

# Welder's Qualification Test Certificate ISO 9606: 1:2013 (Cor)

## **American Welding Society**

Educational Institution Member

Examiner/Examining Body Ref No CWI-0806441

| Designation(s):              | EN 9606-1 131 P FW FM1 S t             |                           |  |      |
|------------------------------|--|---------------------------|--|------|
| WPS - Reference              | WPS/123/TECHNOFAB                      | Certificate No            | EACS/18/23   |      |
| Welder's Name:               | Ashish Yadav                           | Identification:           | UID No : 8636 5685<br>4553                           | 1000 |
| Address Welder               | xxxxxxxxxxxxxxxxx                      | Date of birth:            | 02-01-1988   | E    |
| Employer/<br>Organisation:   | XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX | Code/Testing<br>Standard: | BS EN ISO 15614-1 :<br>2017 + ASME B31.1<br>+ API-5L |      |
| Method of<br>identification: | Test as per standard                   | Job knowledge:            | Acceptable   |      |

| Qualification                  | Test Piece  | Range of Qualification  |
|--------------------------------|-------------|---|
| Welding process(es)            | 131         | 131 (GMAW) FW on plate  |
| Transfer Mode                  | Spray       | Spray   |
| Product type (plate or pipe)   | Plate       | Plate   |
| Type of weld                   | Fillet weld | Fillet weld (single and both side)                                    |
| Pipe Material group(s)(Al)     | 1.2         | Any group   |
| Filler Material group(s)       | FM1         | FM1.  |
| Filler material (Designation)  | ER 70S-6    | SFA - 5.18, AWS No Class ER 70S-6 ,                                   |
|                                |             | F No Solid and Metal Cored Wire Electrode ; Size 0.8 mm               |
| Shielding gas                  | CO 2        | CO 2- 100%  |
| Auxiliaries (e.g. backing gas) | N/A         | N/A   |
| Type of Current and Polarity   | DCEP        | DCEP  |
| Material thickness (mm)        | 10 MM       | The range of approval on thickness for butt welds is now based on the |
|                                |             | deposited weld metal thickness.                                       |
| Deposited Thickness (mm)       | 12 MM       | 5 mm to 15 mm   |
| Outside pipe diameter (mm)     |             | Not Applicable  |
| Welding position               | PB          | PB (Hor-Ver -2F),   |
| Weld details                   | (ss,nb)     | (ss,nb),(ss,mb),(bs)  |
| Multi/Single layer             | ml          | sl and ml   |

| Type of tests        | Performed and<br>Accepted | Not tested | Type of tests      | Performed and<br>Accepted | Not tested |
|----------------------|---------------------------|------------|--------------------|---------------------------|------------|
| Visual testing       | Accepted                  |            | Notch Tensile Test | Accepted                  |            |
| Radiographic Testing | Accepted                  |            | Fracture Test      | Accepted                  |            |
| Bend test            | NA                        |            | Ultrasonic Testing | Accepted                  |            |

| Name of examiner or | Eurotech                 |                 |
|---------------------|--------------------------|-----------------|
| examining body      |                          | Place, date and |
| Date of Welding     | 12 July 2018             | signature       |
| Date of Issue       | 20 July 2018             | of examiner or  |
| Revalidation 9.3a   | Valid until 20 July 2021 | body:           |
| Revalidation 9.3b   | Valid until 20 July 2020 |                 |
| Revalidation 9.3c   | Valid until 20 Jan 2019  |                 |

| Confirmation of the validity by employer/welding coordinator for the following 6 month (refer to 9.2) |   | Prolongation for qualification by examiner or examining body for the following 2 years (refer to 9.3b) |            |           | ody for the |                                    |
|---|---|--|------------|-----------|-------------|------------------------------------|
| Date  | Signature                                       | Position or<br>title   | Date       | Signature |             | Position or title                  |
| 20/07/20<br>18  | ASSESSMENT AND CERTIFICATION SERVICES PVT. LTD. | QA Manager   | 20/07/2018 |           |             | Manager<br>Technical<br>– Eurotech |



#### WELDING PROCEDURE QUALIFICATION RECORD (WPQR) ISO 15614-1:2017+ AWS 31.1

**American Welding Society** 

Educational Institution Member Examiner/Examining Body Ref No CWI-0806441

| WPQR No            | WPQR/123/ TECHNOFAB  | Reference No            | 20180720-FW-023         |
|--------------------|----------------------|-------------------------|-------------------------|
|                    |                      |                         |                         |
| Manufacturer       | TECHNOFAB ENGG LTD   | Code / Testing Standard | EN ISO 15614-1:2017     |
| EN ISO 15614       |                      |                         | + AWS 31.1+APL-5L       |
| Address            | ****                 | Date of Welding         | 12/07/2018              |
|                    |                      |                         |                         |
| Test Body/Surveyor | Eurotech ACS Pvt Ltd | Welder's Birth date     | 02-01-1988              |
|                    |                      |                         |                         |
| Welder Name        | Ashish Yadav         | Identification          | UID No : 8636 5685 4553 |
|                    |                      |                         |                         |

#### **RANGE OF QUALIFICATION**

| Welding Process                     | 131 (GMAW) , FW             |
|-------------------------------------|-----------------------------|
| Type of joint & weld                | Fillet weld in Plate        |
| Parent Metal(s) group               | 1.2                         |
| Parent Metal Thickness (mm)         | 10 mm (Qualify 2mm to 10mm) |
| Weld Metal Thickness (mm)           | 12 mm (Qualify 3mm to 15mm) |
| Throat Thickness (mm)               | 3 < t < 15                  |
| Single run/Multi run                | Single run and Multi Run    |
| Outside Pipe Diameter (mm)          | Not Applicable              |
| Filler Metal Designation            | FM1                         |
| Filler Material Make                | ADOR welding Pvt Itd        |
| Filler Material Size (mm)           | Dia. 0.8 mm                 |
| Designation of Shielding Gas / Flux | CO2                         |
| Designation of Backing Gas          | -                           |
| Type of Welding Current: & Polarity | DCEP                        |
| Mode of Metal Transfer              | Spray                       |
| Heat Input                          | 1                           |
| Welding Positions                   | Fillet PB ( Hor- Ver -2F),  |
| Preheat Temperature                 | Ambient ( 50 deg)           |
| Inter pass Temperature              | None                        |
| Post-Heating                        | None                        |
| Post - Weld Heat Treatment          | None                        |
| Other Information:                  | None                        |

It is certified, that the test welds were prepared, welded and tested in a satisfactory manner, according to the Requirements of the code / testing standard as indicated above.



Mohali (Punjab) (Location) 20 July 2018 Date of Issue Examiner/ Examining Body Name Date and Signature

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## **RECORD OF WELD TEST**

## **American Welding Society**

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| Location         | Eurotech, Mohali           | Date of Issue         | 20/07/2018           |
|------------------|----------------------------|-----------------------|----------------------|
| WPS No           | WPS/123/TECHNOFAB          | Welding Process       | 131 (GMAW)           |
| Welding position | Fillet PB ( Hor- Ver -2F), | Joint Type            | Fillet Weld in Plate |
| Mode of Metal    | Spray                      | Method of Preparation | Grinding & Brushing  |
| transfer         |                            | and Cleaning          |                      |

### WELD PREPARATION DETAILS



#### **ELECTRICAL CHARACTERISTICS**

| Run<br>Process | Process | Size of Filler<br>Metal (mm) | Current A | Voltage V | Type of current/<br>Polarity | Travel Speed<br>inch / min | Heat Input<br>kJ / mm |  |
|----------------|---------|------------------------------|-----------|-----------|------------------------------|----------------------------|-----------------------|--|
| 1              | 131     | 0.8 mm                       | 80        | 18        | DCEP                         | 235                        | 1.62 k /J             |  |

| TECHNIQUE                         |           |                                   |        |
|-----------------------------------|-----------|-----------------------------------|--------|
| Filler Metal Designation and Make | ER70S-6   | Other Information (If Required):- | None   |
| Any special Backing or Drying     | None      | Weaving (Maximum Width of Run)    | Either |
| Gas/Flux for Shielding CO2        | CO2 100 % | Oscillation                       | None   |
| Gas/Flux for Backing              | N/A       | Pulse welding details             | None   |
| Gas Flow rate for Shielding       | 15 LPM    | Standoff Distance                 | None   |
| Gas Flow rate for Backing         | N/A       | Plasma welding details            | NA     |
| Tungsten Electrode Type/Size      | N/A       | Torch angle                       | NA     |
| Details of Back Gouging/Backing   | None      | Inter Pass Temperature            | None   |
| Preheat Temperature               | 50 deg    | Post weld Heat Treatment          | None   |
| Post Heating                      | None      | Other                             | None   |



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### WELDING PROCEDURE SPECIFICATIONS (WPS) : TECHNOFAB ENGG LTD ISO 15614-1:2017 and AWS 31.1



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| Company Name                        | TECHNOFAB ENGG LTD  | Examined By        | 1      | Sh.K. Manikandan |  |
|-------------------------------------|---------------------|--------------------|--------|------------------|--|
| Welding Procedure Specification NO. | WPS/123/ TECHNOFAB  | Date               |        | 20/07/2018       |  |
| Supporting PQR NO.(s)               | WPQR/123/ TECHNOFAB | <b>Revision No</b> | & Date | Original         |  |
| Standard                            | ISO 15614-1:2017 +  | Page               |        | 1 of 2           |  |
|                                     | AWS 31.1 +APL-5L    |                    |        |                  |  |
|                                     | •                   |                    |        |                  |  |
| SCOPE                               |                     |                    |        |                  |  |
| Welding Process (es)                | GMAW                | Type of Process    | Semi A | utomatic         |  |
|                                     | •                   |                    |        |                  |  |
| JOINTS (QW- 402) DETAILS            |                     | $\langle$          |        |                  |  |
| Joint Design                        | Fillet Weld         |                    |        |                  |  |
| Root Spacing                        | None                | None<br>None       |        | 12 80            |  |
| Backing Material                    | None                |                    |        |                  |  |
| Treatment of backside,              | None                |                    |        | Canada and the   |  |
| Method of gauging/preparation       |                     | 80                 |        |                  |  |
| Backing Material (Type)             | None                |                    |        | 7                |  |
| Maximum Mismatch                    | None                |                    |        | /~~              |  |
| Typical Joint Details               | See Diagram         |                    |        |                  |  |
|                                     |                     |                    |        |                  |  |
|                                     |                     | •                  |        |                  |  |
| BASE METAL (QW-403)                 |                     |                    |        |                  |  |
| M No: 1 Group No: 1                 | то                  | M No: 1            |        | Group No: 1      |  |
| USN Number                          | K 02596             | Type and Grade     |        | A 36             |  |
|                                     | •                   | •                  |        |                  |  |

| FILLER METALs                     | 1         | 2 |
|-----------------------------------|-----------|---|
| Process                           | GMAW      |   |
| AWS Spec. No. (SFA)               | A 5.18    |   |
| AWS No. (Classification No )      | ER 70S-6  |   |
| F-No.                             | 6         |   |
| A-No.                             | 1         |   |
| Size of Filler Metals             | 0.8 mm    |   |
| Weld Metal : Deposited Thickness: | 12 mm     |   |
| Electrode-Flux (Class)            | N/A       |   |
| Flux Type                         | N/A       |   |
| Flux Trade Name                   | N/A       |   |
| Consumable Insert                 | CCMS Wire |   |



| PS No                   |       | WPS/123/TECHNOFAB |   | Page               | 2 of 2                           |        |  |  |
|-------------------------|-------|-------------------|---|--------------------|----------------------------------|--------|--|--|
|                         |       |                   |   |                    |                                  |        |  |  |
| POSITION (QW-405)       |       |                   |   |                    | PREHEAT (QW-406)                 |        |  |  |
| Position of Groove      |       |                   | N/A   |                    | Preheat Temp, Min                | 50 deg |  |  |
| Welding Progression N/A |       |                   | N/A   | Interpass Temp Max |                                  | K N/A  |  |  |
| Position of Fillet      |       |                   | 2 F Horizontal- Vertical  |                    | Preheat Maintenan                | ce N/A |  |  |
| Progression             |       |                   | Left to Right   |                    | Other                            | N/A    |  |  |
|                         |       |                   |   |                    |                                  |        |  |  |
| GAS (QW-408)            | Gases | Percent           | age Composition   | Flow Rate          | POSTWELD HEAT TREATMENT (QW-407) |        |  |  |
|                         |       | Mixture           | i de la companya de l | (LPM)              |                                  |        |  |  |
| Shielding               | CO2   | 100 %             |   | 10-15              | Temp Range                       | N/A    |  |  |
| Trailing                | N/A   | N/A               |   | N/A                | Other                            | N/A    |  |  |
| Backing                 | N/A   | N/A               |   | N/A                |                                  |        |  |  |
| Other                   | N/A   | N/A               |   | N/A                |                                  |        |  |  |
|                         |       |                   |   | •                  | •                                | ÷      |  |  |

| ELECTRICAL CHARACTERISTICS (QW-409)  |         |                |                    |                                   |                                |                            |            |          |                   |       |                |
|--|---------|----------------|--------------------|-----------------------------------|--------------------------------|----------------------------|------------|----------|-------------------|-------|----------------|
| Weld   | Process | s Filler Metal |                    |                                   |                                |                            |            |          |                   |       |                |
| Pass(s)  |         | Class-         | Dia-               |                                   | Current/                       | Amp                        | Wire       | Energy   | Volts             | Trave | Other (e.g.,   |
|  |         | ification      | mete               | r                                 | Polarity                       | Range                      | feed       | or power | (Range)           | Speed | Remarks, Torch |
|  |         |                |                    |                                   | type                           |                            | speed      | (range)  |                   | Range | Angle, etc.)   |
| Multi  | GMAW    | A5.18          | 0.8 mr             | n                                 | DCEP                           | 70-150                     | 250 imp    | DC       | 18-20             | 235   | Torch angle    |
| Run  |         | ER70S-6        |                    |                                   |                                | amp                        |            | Inverter |                   | imp   | 75 Degree      |
| Amps and volts range should be recorded for each electrode size, Position, and thickness, etc. |         |                |                    |                                   |                                |                            |            |          |                   |       |                |
| Pulsing Current N/A  |         |                | I/A Heat II        |                                   |                                | t (Max)                    | 1.62 kJ/mm |          |                   |       |                |
| Tungsten Electrode Size and Type N   |         |                | N/#                | A Mode of Metal Transfer for GMAW |                                |                            | w          | Spray    |                   |       |                |
|  |         |                |                    |                                   |                                |                            |            |          |                   |       |                |
| TECHNIQUE (QW-410)   |         |                |                    |                                   |                                |                            |            |          |                   |       |                |
| Stringer or Weave Bead Eit   |         |                | Eitl               | Either                            |                                | Oscillation                |            |          | N                 | N/A   |                |
| Orifice or Gas Cup Size 13-2   |         |                | -25 mm             |                                   | Contact Tube to Work Distance  |                            |            |          | mm                |       |                |
| Method of Back Gouging N/A   |         |                |                    | Multiple or Single Electrodes     |                                |                            |            | Multiple |                   |       |                |
| Multiple or Single Pass (Per Side)   |         | Mu             | Multiple           |                                   | Peening                        |                            |            | N        | N/A               |       |                |
| Other  |         | Chi            | Chipping, Grinding |                                   | Initial and Interpass Cleaning |                            |            | Si       | Silicon spray/Gel |       |                |
| a  |         |                | and                | d/or Wire b                       | rushing                        | (Brushing, Grinding, etc.) |            |          |                   |       |                |
| Electrodes Spacing   |         | As             | needed             |                                   |                                |                            |            |          |                   |       |                |



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