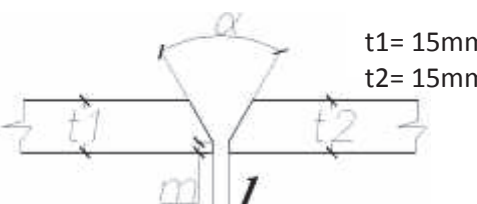
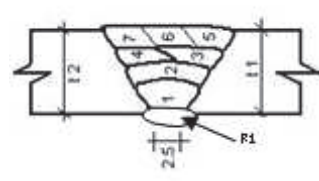


CertificateNo: 0948//MI/S/T-1780-2014 Rev.01

WELDING PROCEDURE RECORD TEST CERTIFICATE

| | | | |
|-------------------------|--|---|----------------|
| Manufacturer / Address: | N.R. SNC DI SPELGATTI ROBERTO & C Via G. di Vittorio, 8 – 25030 ADRO (BS) | Internal No: | AP001 |
| | | Manufacturer's WPS: | A001 |
| Code/Testing Standard: | AWS D1.1/D1.1M | Location / Date of Welding: | 25/02/2014 |
| Welding Process(es): | GMAW | Types: (Manual, Automatic, Semi-Automatic) | SEMI-AUTOMATIC |

JOINT (See 4.14.1)

| | | |
|--|---|---|
| <p>Joint Design</p>  | <p>Welding Sequence</p>  | |
| Joint Type: Complete Joint Penetration Groove Weld - BW | Backing: NO | Backing Material (Type): |
| Root opening Radius: U J | Root face: 2mm | Backgouging: Yes <input checked="" type="checkbox"/> No |
| Backgouging Method: Grinding | | |

BASE METALS (See 4.14.2)

| | | | | |
|--------------------------------|----------------------------------|---------|----------------------------|----------------------------------|
| M-No. A572 | Group No. II | or to | M-No. A572 | Group No. II |
| Specification Type/ Grade: | EN 10025-2:S355J2+N (A572 Gr.50) | or to | Specification Type/ Grade: | EN 10025-2:S355J2+N (A572 Gr.50) |
| Thickness Range of Base Metal: | Groove: Min. 3 mm to 30 mm | Fillet: | All | |
| Pipe Diameter Range: | Groove: >600 mm | Fillet: | | |
| Other: | | | | |

FILLER METAL (See 4.14.3)

| | | | |
|----------------------------|----------|-------------------------|------------|
| Filler Metal F-No.: | 6 | Other: | |
| AWS Classification: | ER 70S-6 | AWS Specification: | AWS A 5.18 |
| Weld Metal Analysis A-No.: | 10 | Other: | - |
| Filler Metal Size: | 1.2 mm | Electrode Flux (Class): | - |
| Weld Metal Thickness: | 15mm | Flux Trade Name: | |
| Consumable Insert: | - | Other: | |



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POSITIONS (See 4.14.4)

| | | | |
|----------------------|--------|-------------------|---|
| Positions of Groove: | 1G | Weld progression: | - |
| Positions of Fillet: | 1F (F) | Weld progression: | - |

PREHEAT (See 4.14.5)

| | | | |
|-------------------------------|-----|-------------------------------|---|
| Preheat Temperature Min (°C): | 10° | Preheat Temperature Max (°C): | - |
|-------------------------------|-----|-------------------------------|---|

PWHT (See 4.14.6)

| | | | |
|-------------------|---|-------------|---|
| Temperature (°C): | - | Time (min): | - |
|-------------------|---|-------------|---|

SHIELDING (See 4.14.7)

| | Torch: | Root: | Trailing: | Environmental Shielding: |
|--------------|----------------------|----------------------|----------------------|--------------------------|
| Gas: | Ar + CO ² | Ar + CO ² | Ar + CO ² | |
| Composition: | 92% + 8% | 92% + 8% | 92% + 8% | |
| Flow rate: | - | 15 l/min | 18 l/min | |

ELECTRICAL CHARACTERISTICS AND WELDING PARAMETERS (See 4.14.8)

| Run No. | Process | Filler Metal / Φ (mm) | Tungsten Size / Type. (mm) | Current [A] | Voltage [V] | Type of Current | Transfer Mode Transfer modus * | Polarity | Wire Feed [m/min] | Travel Speed (mm/min) | Heat Input [KJ/mm] |
|---------|---------|-----------------------|----------------------------|-------------|-------------|-----------------|--------------------------------|----------|-------------------|-----------------------|--------------------|
| 1 | GMAW | ER 70S-6 | - | 120÷135 | 18÷20 | DC | SHORT | EP | - | 118 | 1.13 |
| 2 | GMAW | ER 70S-6 | - | 230÷255 | 25÷27 | DC | SHORT | EP | - | 250 | 1.31 |
| 3-4 | GMAW | ER 70S-6 | - | 255÷273 | 28÷29 | DC | SPRAY | EP | - | 360 | 1.25 |
| 5÷7 | GMAW | ER 70S-6 | - | 255÷273 | 28÷29 | DC | SPRAY | EP | - | 435 | 1.21 |
| R1 | GMAW | ER 70S-6 | - | 120÷135 | 28÷29 | DC | SPRAY | EP | - | 321 | 1.17 |

OTHER VARIABLES (See 4.14.9)

| | | | |
|-----------------------|---|----------------------------|--|
| Cup or nozzle Size: | Ø 17mm | Cleaning Method: | |
| Pulsing: | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Pulsing Parameters: | |
| Nozzle: | <input type="checkbox"/> Gas Lens: <input type="checkbox"/> | Collet Body: | |
| Technique: | <input type="checkbox"/> Stringer <input checked="" type="checkbox"/> | Wave Bead | |
| Number of electrodes: | 1 | Number of passes for side: | |
| Other | | Flux Trade Name: | |
| Consumable Insert: | | Other: | |



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TENSILE RESULTS

| | |
|----------------------|--------------|
| Visual Test results: | SATISFACTORY |
|----------------------|--------------|

TENSILE RESULTS

| Specimen No. | Width [mm] | Thickness [mm] | Area [mm ²] | Ultimate Tensile Load [N] | Ultimate Unit Stress [N/mm ²] | Character of Failure and Location |
|--------------|------------|----------------|-------------------------|---------------------------|---|-----------------------------------|
| TT01 | 14,9 | 20 | 298 | 165500 | 555,4 | BM Ductile |
| TT02 | 14,9 | 20, | 299,5 | 167500 | 559,3 | BM Ductile |

GUIDED BEND TEST:

| Type and Figure No. | Qualification Results for Toughness Application: |
|-----------------------------|--|
| Side Bend Acc. to Fig. 4.13 | SEE TEST REPORT N° 187/14 – 28.03.2014 |
| Side Bend Acc. to Fig. 4.13 | |
| Face Bend Acc. to Fig. 4.12 | |
| Root Bend Acc. to Fig. 4.12 | |
| Results. | Results. |
| Pass | Pass |
| Pass | |
| Pass | |
| Pass | |

FILLET WELD TEST:

OTHER TEST

| Type and Figure No. | Type and Figure No. |
|---------------------|--|
| | HARDNESS TEST SEE TEST REPORT N° 187/14 – 28.03.2014 |
| | |
| | |
| Results. | Results. |
| | Pass |
| | Pass |
| | |
| | |

We the undersigned certify that the statements in this record are correct and the test welds were prepared welded and tested in accordance with the requirements of AWS B2.1/B2.1M 2009, Specification for Welding Procedure and Performance Qualification.

Manufacturer or Contractor

N.R. Snc di Spelgatti Roberto & C.

Date 30/07/2015

Certified by

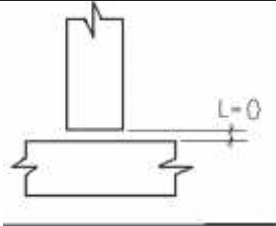
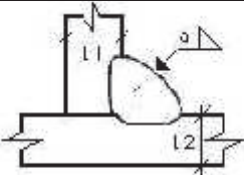


CertificateNo: 0948//MI/S/T-1781-2014 Rev.01

WELDING PROCEDURE RECORD TEST CERTIFICATE

| | | | |
|-------------------------|--|---|----------------|
| Manufacturer / Address: | N.R. SNC DI SPELGATTI ROBERTO & C Via G. di Vittorio, 8 – 25030 ADRO (BS) | Internal No: | AP002 |
| | | Manufacturer's WPS: | A002 |
| Code/Testing Standard: | AWS D1.1/D1.1M | Location / Date of Welding: | 25/02/2014 |
| Welding Process(es): | GMAW | Types: (Manual, Automatic, Semi-Automatic) | SEMI-AUTOMATIC |

JOINT (See 4.14.1)

| | | |
|--|--|--|
| Joint Design  | Welding Sequence  | |
| Joint Type: <u>FILLET - FW</u> | Backing: <u>YES</u> | Backing Material (Type): <u>BASE METAL</u> |
| Root opening Radius: U <input type="checkbox"/> J <input type="checkbox"/> | Root face: <u>-</u> | Backgouging: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Backgouging Method: _____ | | |

BASE METALS (See 4.14.2)

| | | | | |
|--|------------------------|--|-------------------|---------------------|
| M-No. <u>A572</u> | Group No. <u>II</u> | or to | M-No. <u>A572</u> | Group No. <u>II</u> |
| Specification Type/ Grade: <u>EN 10025-2:S355J2+N (A572 Gr.50)</u> | or to | Specification Type/ Grade: <u>EN 10025-2:S355J2+N (A572 Gr.50)</u> | | |
| Thickness Range of Base Metal: <u>Groove: -</u> | Fillet: <u>≥ 3mm</u> | | | |
| Pipe Diameter Range: <u>Groove: -</u> | Fillet: <u>≥ 600mm</u> | | | |
| Other: _____ | | | | |

FILLER METAL (See 4.14.3)

| | | | |
|----------------------------|-----------------|-------------------------|-------------------|
| Filler Metal F-No.: | <u>6</u> | Other: | _____ |
| AWS Classification: | <u>ER 70S-6</u> | AWS Specification: | <u>AWS A 5.18</u> |
| Weld Metal Analysis A-No.: | <u>10</u> | Other: | <u>-</u> |
| Filler Metal Size: | <u>1.2 mm</u> | Electrode Flux (Class): | _____ |
| Weld Metal Thickness: | <u>15mm</u> | Flux Trade Name: | _____ |
| Consumable Insert: | <u>-</u> | Other: | _____ |



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POSITIONS (See 4.14.4)

| | | | |
|----------------------|--------------|-------------------|---|
| Positions of Groove: | - | Weld progression: | - |
| Positions of Fillet: | 2F, 1F (F,H) | Weld progression: | - |

PREHEAT (See 4.14.5)

| | | | |
|-------------------------------|-----|-------------------------------|---|
| Preheat Temperature Min (°C): | 10° | Preheat Temperature Max (°C): | - |
|-------------------------------|-----|-------------------------------|---|

PWHT (See 4.14.6)

| | | | |
|-------------------|---|-------------|---|
| Temperature (°C): | - | Time (min): | - |
|-------------------|---|-------------|---|

SHIELDING (See 4.14.7)

| | Torch: | Root: | Trailing: | Environmental Shielding: |
|--------------|----------------------|----------------------|----------------------|--------------------------|
| Gas: | Ar + CO ² | Ar + CO ² | Ar + CO ² | |
| Composition: | 92% + 8% | 92% + 8% | 92% + 8% | |
| Flow rate: | - | 15 l/min | 18 l/min | |

ELECTRICAL CHARACTERISTICS AND WELDING PARAMETERS (See 4.14.8)

| Run No. | Process | Filler Metal / Φ (mm) | Tungsten Size / Type. (mm) | Current [A] | Voltage [V] | Type of Current | Transfer Mode Transfer modus * | Polarity | Wire Feed [m/min] | Travel Speed (mm/min) | Heat Input [KJ/mm] |
|---------|---------|-----------------------|----------------------------|-------------|-------------|-----------------|--------------------------------|----------|-------------------|-----------------------|--------------------|
| 1 | GMAW | ER 70S-6 | - | 265÷290 | 28÷30 | DC | SPRAY | EP | - | 288 | 1.76 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

OTHER VARIABLES (See 4.14.9)

Cup or Nozzle Size: Ø 17mm Cleaning Method: _____

Pulsing: Yes No **Pulsing Parameters:** _____

Nozzle: Gas Lens: **Collet Body:** _____

Technique: Stringer **Wave Bead** _____

Number of electrodes: 1 Number of passes for side: _____

Other: _____ Flux Trade Name: _____

Consumable Insert: _____ Other: _____



CertificateNo: 0948//MI/S/T-1781-2014 Rev.01

TENSILE RESULTS

| | |
|----------------------|--------------|
| Visual Test results: | SATISFACTORY |
|----------------------|--------------|

TENSILE RESULTS

| Specimen No. | Width [mm] | Thickness [mm] | Area [mm ²] | Ultimate Tensile Load [N] | Ultimate Unit Stress [N/mm ²] | Character of Failure and Location |
|--------------|------------|----------------|-------------------------|---------------------------|---|-----------------------------------|
| - | - | - | - | - | - | - |
| - | - | - | - | - | - | - |

GUIDED BEND TEST:

| Type and Figure No. | Qualification Results for Toughness Application: |
|-------------------------------------|--|
| | |
| | |
| | |
| Results. | Results. |
| | |
| | |
| | |
| FILLET WELD TEST: 188/14 | OTHER TEST |
| Type and Figure No. | Type and Figure No. |
| MACRO EXAMINATIONS ETCHANT 74 E 407 | |
| | |
| | |
| Results. | Results. |
| Pass (No defects evidenced) | Pass |
| | |
| | |

We the undersigned certify that the statements in this record are correct and the test welds were prepared welded and tested in accordance with the requirements of AWS B2.1/B2.1M 2009, Specification for Welding Procedure and Performance Qualification.

Manufacturer or Contractor

N.R. Snc di Spelgatti Roberto & C.

Date 30/07/2015

Certified by

