



Welding Procedure Qualification Certificate (EN ISO 15614-1) Energy - Downstream, Power and Manufacturing

Manufacturer's Welding Procedure Qualification Record No.: **SM 02/15** Examining body Reference No: /

Manufacturer: **SUD MONTAGGI srl**
Address: **Via delle Ortensie, 10 - 70026 Modugno (BA)**
Welders Name: **DI GENNARO Riccardo (Stamp nr. DGR)**

Code/Testing Standard: **EN ISO 15614-1**
Date of Welding: **06 March 2015**

Range of Qualification

Welding Process(es): **111**
Type of joint and weld: **Fillet weld on plate**
Parent material group(s) and sub-
Parent Material Thickness (mm): **S355J2 - Group 1.2 acc. to ISO/TR 15608 (Range of approval: Subgroup 1.1 to 1.2 only)**
8 mm - (range of approval 4 to 9,6 mm)
Weld Metal Thickness (mm): **N.A.**
Throat Thickness (mm): **5 mm - (range of approval 3.75 to 7.5 mm)**
Single Run/Multi Run: **Single run**
Outside Pipe Diameter (mm): **N.A. - (range of approval 150 mm and over Poss. PA, PC - 500 mm and over other Poss.)**
Filler Material Designation: **EN ISO 2560-A: E 42 4 B 32 H5**
Filler Material Make: **ESAB CITOBASICO**
Filler Material Size: **2.5 mm**
Designation of Shielding Gas/Flux: **N.A.**
Designation of Backing Gas: **N.A.**
Type of Welding Current and Polarity: **DC EP**
Mode of Metal Transfer: **N.A.**
Heat Input: **10.4 min.**
Welding Positions: **PB - (range of approval All Positions, Vertical down excluded)**
Preheat Temperature: **None**
Interpass Temperature: **N.A.**
Post-Heating: **None**
Post-Weld Heat Treatment and/or

Other Information

Certified that test welds were prepared, welded and tested satisfactorily in accordance with the requirements of the code/testing standard indicated above.

Location: **Taranto**

Date of Issue: **20 April 2015**

Surveyor

S. Bottari

Surveyor to Lloyd's Register EMEA

A subsidiary of Lloyd's Register Group Limited

Examining Body

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Details of Test Weld

Manufacturer's provisional Welding Procedure Specification Reference No. **SM 02/15**

Examining Body: /
Reference No:

Manufacturer's Welding Procedure Qualification Record No.: **SM 02/15**

Manufacturer: **SUD MONTAGGI srl**

Date of Welding: **06 March 2015**

Location: **Via delle Ortensie, 10 – 70026 Modugno (BA)**

Welder's Name: **DI GENNARO Riccardo (Stamp nr. DGR)**

Method of Preparation and Cleaning: **Machining and grinding**

Mode of Metal Transfer: **N.A.**

Parent Material Specification: (attach material certificates)* **UNI EN 10025-2: 2005 S355 J2 - Group 1.2 acc. to ISO/TR 15608**

Joint Type and Weld: **FW**

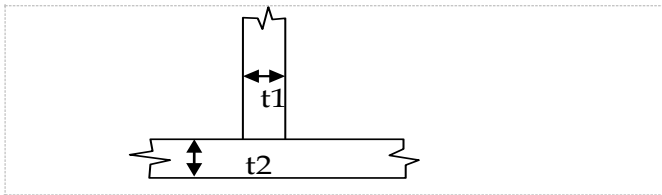
Parent Material Thickness (mm): **t1=t2=8**

Test Piece/Welding Position: **PB**

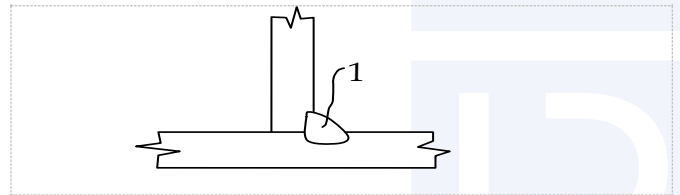
Outside Pipe Diameter (mm): **N.A.**

Weld Preparation Details (Sketch)

Joint Design



Welding Sequences

**Welding Details**

Run	Process	Size of Filler Metal	Current A	Voltage V	Type current Polarity	Wire Feed m/min	Travel Speed cm/min	Heat Input kJ/cm	Metal Transfer
1	111	2.5	120	24	DC EP	N.A.	10	13.8	N.A.

Filler Material: **Covered electrode**

Type, Designation, Trade Name: **EN ISO 2560-A: E 42 4 B 32 H5 - ESAB CITOBASICO**

Any Special Baking or Drying: **N.A.**

Other Information*:

Gas/Flux: Shielding **N.A.**

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Gas/Flux: Backing **N.A.**

Gas/Flux: Shielding **N.A.**

Gas/Flux: Backing **N.A.**

Tungsten Electrode – Type/Size: **N.A.**

Post-Weld Heat Treatment and/or Ageing

None

Details of Back Gouging/Backing: **N.A.**

Time, Temperature, Method: **N.A.**

Preheat Temperature: **25 °C min.**

Heating and Cooling Rates*: **N.A.**

Interpass Temperature: **N.A.**

Post-Heating: **None**

Manufacturer's Name: **SUD MONTAGGI srl**

Surveyor

Manufacturer's Signature

S. Bottari
Surveyor to Lloyd's Register EMEA

A subsidiary of Lloyd's Register Group Limited

Date: **20 April 2015**

Examining Body

* As Required

Test Results

Manufacturer's Welding Procedure Qualification Record No.: **SM 02/15** Examining Body: Reference No: /

Visual Examination: **Satisfactory: VT 110/15** Radiography*: **N.A.**

Penetrant/Magnetic Particle Test*: **Satisfactory: PT 110/15** Ultrasonic Examination*: **N.A.**

Coloration Assessment**: -

Tensile Tests*

Type/No	Re N/mm ²	Rm N/mm ²	A% on	Z%	Fracture Location	Temperature:	Remarks
Requirements							

Bend Tests*

Type/No	Bend Angle	Former Diameter	Elongation*	Result

Macroscopic Examination: **Satisfactory to EN 1321 -No. 1 Section cert. CTR LAB S.r.L. test report n. RP292-15**

Microscopic Examination:

Impact Tests* Type: Size: Requirement:

Notch Location/Direction	Temp °C	Values (J)			Average (J)	Remarks
		1	2	3		

Hardness Tests* Other Tests:

Type/Load: **HV10** -

Values - Parent Metal: **178**

- H.A.Z.: **194** Remarks

- Weld Metal: **196** -

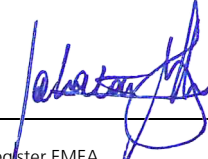
Location of Measurements (Sketch)* see attached

Tests carried out in accordance with the requirements of: **EN ISO 15614-1**

Laboratory Report Reference No: **CTR LAB - Test Report n RP292-15 dated 26/03/2015**

Test Results were acceptable

Test carried out in the presence of: **S. Bottari**

Surveyor: 

S. Bottari
 Surveyor to Lloyd's Register EMEA
 A subsidiary of Lloyd's Register Group Limited

Examining Body

* As Required
 ** 15614-5 only

Form 4102 (2013.12)