

**STOLZ-MIRAS (VIETNAM), LTD.**

**Welding procedure qualification – Test certificate**

Page 1 of 3

Manufacturer's WPQR No.: **SM-PQR-GT-P8P8-03**

Examiner or Examining body: **METECHCO ASIA**

Manufacturer: **STOLZ-MIRAS (VIETNAM), LTD.**

Address: **Lot 521, Street No.13, Amata Industrial Park, Bien Hoa City, Dong Nai Province, Viet Nam**

Code/Testing Standard: **EN ISO 15614 -1 (Level 2)**

Date of Welding: **06 Sep, 2019**

**RANGE OF QUALIFICATION**

Welding Process:	<b>141 (GTAW)</b>	Type: <b>Manual</b>
Type of joint and weld:	<b>FW</b>	
Parent material group and sub-group:	<b>8.1 to 8.1</b>	
Parent Material Thickness (mm):	<b>BW: --- FW: 3– 20 mm</b>	
Weld Metal Thickness (mm):	<b>---</b>	
Throat Thickness (mm):	<b>Single run: 5.25 – 10.5 Multi-run: No restriction</b>	
Single run/ Multi run:	<b>Single run / Multi run</b>	
Outside Pipe Diameter (mm):	<b>&gt; 500 for all positions &gt; 150 in the PA, PC, PF rotated position</b>	
Filler Metal Type/Designation:	<b>AWS A5.9 - ER 308L</b>	
Shielding Gas/Flux:	<b>Argon</b>	
Backing gas:	<b>Argon</b>	
Type of Welding Current and Polarity:	<b>DCEN</b>	
Transfer mode:	<b>---</b>	
Heat input:	<b>0.35 – 0.76 kJ/mm</b>	
Welding Positions:	<b>All positions, except PG, PJ and J-L045</b>	
Preheat Temperature:	<b>Ambient temperature</b>	
Inter pass Temperature:	<b>≤ 150 °C</b>	
Post-heating:	<b>---</b>	
Post Weld Heat Treatment:	<b>---</b>	

**OTHER INFORMATION**

For further details, please see Laboratory test report

We confirm that the statements in this record are corrected and that test pieces were prepared, welded and tested and have fulfilled the requirements in accordance with ISO 15614-1

**METECHCO ASIA CO., LTD**

Name: **NGUYEN DUC THIEN PHUC**

Signature:



Date of issue: **12 Sep, 2019**

**STOLZ-MIRAS (VIETNAM), LTD.**

## RECORD OF WELD TEST

Page 2 of 3

Location: **MIRAS's Workshop**

Examiner or Examining body: **METECHCO ASIA**

Manufacturer's pWPS No: **SM-GT-P8P8-03**

Method of Preparation and Cleaning: **Brushing & Grinding**

Manufacturer's WPQR No: **SM-PQR-GT-P8P8-03**

Parent Material Specification: **ASTM A240, 304L**

Manufacturer: **STOLZ-MIRAS (VIETNAM), LTD**

(attached material certificates) \*

Welder Name: **TRAN THE CONG**

Material Thickness (mm): **10** Heat No.: **Y190525D20-E03567**

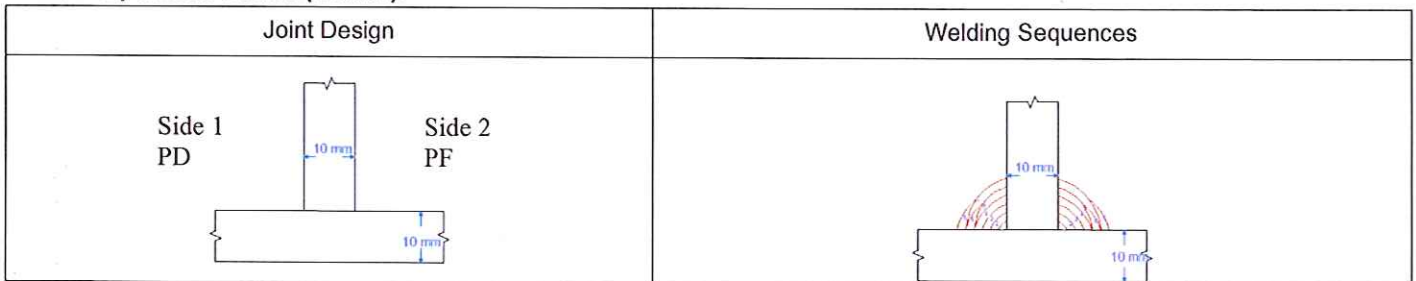
ID No.: **W92**

Outside Pipe Diameter (mm): **-**

Joint Type and Weld: **FW**

Welding Position: **PD + PF**

**Weld Preparation Details (Sketch):**



**Welding detail**

Run/Layers	Welding Process	Size of Filler Material	Current A	Voltage V	Type Current/ Polarity	Wire Feed/ mm/min.	Travel Speed* mm/min.	Heat Input* (KJ/mm)	Metal transfer
<b>Side 1: PD</b>									
1	141	2.4	136	11	DCEN	-	120	0.45	-
2 - 5	141	2.4	146	12	DCEN	-	92 - 130	0.43-0.68	-
6	141	2.4	142	12	DCEN	-	100	0.60	-
<b>Side 2: PF</b>									
1	141	2.4	136	11	DCEN	-	152	0.35	-
2 - 5	141	2.4	136 -142	12	DCEN	-	90-134	0.4-0.67	-
6	141	2.4	142	12	DCEN	-	80	0.76	-

Filler Material Designation and Make: **MENAM, ER 308L**

Any Special Baking or Drying: **---**

Gas/ Flux: Shielding: **100% Argon**

Backing: **100% Argon**

Gas Flow Rate - Shielding: **10 – 15 l/min**

- Backing: **5 – 10 l/min**

Tungsten Electrode Type/ Size: **Wth20 / Ø 2.4mm**

Details of Back Gouging/Backing: **-**

Preheat Temperature: **Ambient temperature**

Inter-pass temperature: **≤ 150 °C**

Post Weld Heat Treatment: **---**

Time, temperature, method: **---**

Heating and Cooling Rates\*: **---**

**Other information**

Weaving (max. width of run) **---**

Oscillation: amplitude, frequency, dwell time **---**

Pulsed welding detail: **---**

Distance contact tube/ work piece: **5 – 7mm**

Plasma welding details: **---**

Torch angle: **65 - 70°**

**STOLZ MIRAS**

Name: *W. BAUX*  
Signature: *[Signature]*

Date: **12 Sep, 2019**

**METECHCO ASIA**

Name: **NGUYEN DUC THIEN PHUC**  
Signature: *[Signature]*

Date: **12 Sep, 2019**



**STOLZ-MIRAS (VIETNAM), LTD.**

**TEST RESULTS**

Page 3 of 3

Manufacturer's WPQR No: **SM-PQR-GT-P8P8-03**      Examiner or Examining body: **METECHCO ASIA**  
 Visual: **Acceptable**      Radiography: **NA**  
 Penetrant: **Acceptable**      Ultrasonic: **NA**  
 Magnetic Particle: **N.A.**      Refer to RT/UT report No.: **NA**  
 Refer to PT/MT report No.: **MTC-19-10-PT-02**      Temperature: **Ambient**

**Tensile Tests (Refer to Report No.: NA)**

Type/No.	Re N/mm <sup>2</sup>	Rm N/mm <sup>2</sup>	A% on	Z%	Fracture Location	Remarks
Requirement		-				
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

**Bend Tests (Refer to Report No.: NA      Former Diameter: NA)**

Type No	Bend Angle	Elongation*	Result
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

**Macroscopic Examination: Acceptable**      Refer to Report No.: **19899**

**Impact Test\* N.A.**      Type:      Size:      Requirement:

Notch Location/ Direction	Temp. °C	Values			Average	Remarks
		1	2	3		

**Hardness Test\* (type/Load) N.A.**      Location of Measurements (Sketch\*)

Parent Metal:  
HAZ:  
Weld metal:

**Other Tests: N.A**

**Remarks :**

Test carried out in accordance with the requirements of: **EN ISO 15614 -1**  
 Laboratory Report reference No.: **THT MECHANICAL TESTING**      Test report No.: **19899**      Date: **10 Sep, 2019**  
 Test results were: **Acceptable**  
 Tests carried out in the presence of: **STOLZ MIRAS VIETNAM CO., LTD**

**METECHCO ASIA**

Name: **NGUYEN DUC THIEN PHUC**  
 Signature:



Date: **12 Sep, 2019**



# DYE PENETRANT EXAMINATION REPORT

Report No : MTC-19-10-PT-02  
 Request No: : SM- 001  
 Procedure No : MTC-SM-P01  
 Page : 1 of 1

Project Name: <b>WELDING PROCEDURE SPECIFICATION (WPS)</b>		Client: <b>STOLZ MIRAS VN CO.,LTD</b>
Acceptance criteria: ISO 15614-1	Item <b>WELDING SPECIMEN</b>	Working area: METECHCO's WORKSHOP

## MATERIAL INFORMATION

Material Base: <b>ASTM A 240-TP304L</b>	WPS No: <b>SM-GT-P8P8- 03</b>	Drawing No.: <b>N/A</b>
Surface Cleaning <input type="checkbox"/> Grinding <input type="checkbox"/> Machining <input checked="" type="checkbox"/> Brushing <input type="checkbox"/> Non- magnetic coating	Surface condition <input type="checkbox"/> As-rolled <input type="checkbox"/> As- casted <input type="checkbox"/> As- forged <input checked="" type="checkbox"/> As- welded	

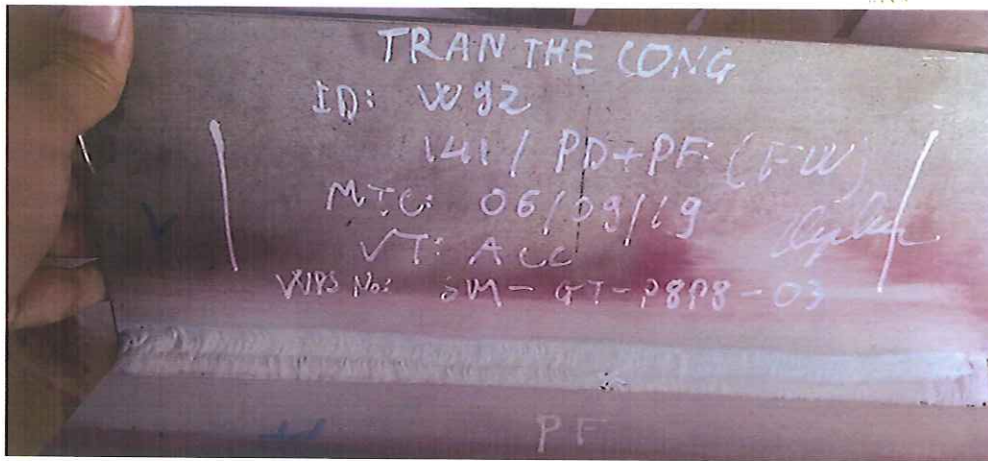
## TECHNIQUE INFORMATION

PT material	Brand/Batch no.	Type	Dwell time (min.)	Temperature
Penetrant	NABAKEM/ MCP2010	P2	10	Ambient
Remover	NABAKEM/MCC1010	R1-3	5	Ambient
Developer	NABAKEM/MCC3010	D4	10	Ambient

## EVALUATION

WELD IDENTIFICATION		Length/Thk (mm)	INTERPRETATION			RESULT		Date of Inspection	Remarks
WPS No.	Welder Name.		Location (mm)	Length (mm)	Type	ACC	REJ		
SM-GT-P8P8- 03	TRAN THE CONG	10x350x150				X		06/09/2019	FW, Both side (PF+PD)

Sketch



### ABBREVIATION:

ACC- acceptable      REJ- Reject      LOP- Lack of penetrant  
 P- Porosity      S- Slag inclusion      LOF- Lack of fusion  
 C- Crack      UC- Undercut      RW- To cut or reweld

<b>METECHCO ASIA</b>	<b>REVIEWED BY STOLZ MIRAS VN CO., LTD.</b>	<b>APPROVED BY OWNER</b>
Evaluated by: <b>DOAN ANH TUNG</b> PT LEVEL II  Signature: Date: 07/09/2019	Name: <i>Le Huynh Dong</i>  Signature: Date: 10/09/19	Name:  Signature: Date:

**METECHCO ASIA**

Đại diện bởi / Representative :

NGUYEN DUC THIEN PHUC

**KHÁCH HÀNG / Client :**

STOLZ MURAS

Đại diện bởi / Representative:

LE HUYNH LONG

Địa điểm / Location:

MURAS'S WORKSHOP

Nội dung / Items:

W.P.S

1	Vật liệu cơ bản / Base metal			
	Loại vật liệu / Type	Dạng / Form	Kích thước / Dimension	Số chứng chỉ / Certificate No.
	ER 308L	<input checked="" type="checkbox"/> Tấm / Plate <input type="checkbox"/> Ống / Pipe	150 x 350 x 10 mm	Y 190525 D10 - E 03587

2	Vật liệu hàn / Weld metal			
	Loại vật liệu / Type	Kích thước / Dimension	Thuốc hàn / Flux	Khí bảo vệ / Shielding gas
	ER 308L	φ 2.5; φ 2.4		Argon

3	Số quy trình hàn / WPS No. :	SM - GT - P808 - 03
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4	Loại máy hàn / Type equipments :	
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5	Nội dung thực hiện giám sát / Items inspection :	W.P.S
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6	Kết quả kiểm tra trực quan / Visual test : ISO 15614-2   ISO 5817					
	Stt No.	Họ & tên thợ hàn Welder's name	Mã số ID	Phương pháp hàn Welding process	Vị trí hàn Welding position	Kết quả Results
	1	TRAN THE CONG	W92	U1	PD+PF (FW)	
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
10						

7	Mục 6. đạt yêu cầu kiểm tra trực quan, những mẫu hàn trên sẽ được kiểm tra NDT hoặc thử cơ tính phù hợp với Tiêu chuẩn đang áp dụng / Item No. 6 passed, the coupons shall be NDT testing or Destructive testing conformable following standard application
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8	Mục 7. đạt yêu cầu theo Tiêu chuẩn đang áp dụng, những thợ hàn đó sẽ được METECHCO cấp chứng chỉ thợ hàn. / Item No. 7 passed, the welders shall be issue welder certificates by METECHCO.
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9	Công việc đánh giá kết thúc vào lúc : .....giờ .....ngày .....tháng .....năm 201..... The welder qualification to be finished at : .....o'clock....., date .....month .....year 201.....
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**METECHCO ASIA**

Ngày / Date : 06/09/2019

Tên / Name : NG. D. T. PHUC

Chức danh / Position :

Chữ ký / Signature :

**KHÁCH HÀNG / CLIENT**

Ngày / Date: 06/09/2019

Tên / Name: Lê Huỳnh Long

Chức danh / Position :

Chữ ký / Signature :