



RINA

SINCERT

UNIVERSITY OF GENOVA

ISO 9001:2008 - ISO 14001:2004  
ISO 45001:2018 - ISO 45001:2018  
ISO 9001:2015 - ISO 9001:2015

Member degli Accordi di Mutuo  
Riconoscimento di ENI, CNF  
Registrazione di ENI, CNF, CNR  
Recognition Agreements

WELDING PROCEDURE QUALIFICATION RECORD (WPQR)

N. 10TA00036PO2/A

Manufacturer **M & G METALMECCANICA sas - Torrecuso (Bn)**

WPQR No. **02/010**

Dated **21/04/2010**

Manufacturer's welding procedure (WPS) No. **02/010**

Dated **22/03/2010**

RANGE OF APPROVAL

Welding process	<b>135</b>	Type	<b>Partly mechanized</b>
Joint type	<b>Plates and Pipes FW</b>		
Single/Multiple pass	<b>Multiple</b>		
Parent material group(s)	<b>1-1 (Subgroup 1.1 only)</b>		<b>ISO/TR 15608</b>
	with a specified minimum yield strength $\leq$ 275 Mpa		
Parent material thickness (mm)	<b>Butt Joint - N.A.</b>	<b>Fillet Joint <math>t_1 = 5.0</math> to <math>12.0</math></b>	<b><math>t_2 = 5.0</math> to <math>12.0</math></b>
Throat thickness (mm)	<b>No restriction</b>		
Weld deposit thickness (mm)	<b>N.A.</b>		
Outside diameter (mm)	<b>Over 150 (PA-PB); over 500 (other qualified positions)</b>		
Filler metal type	<b>Solid wire EN ISO 14341-A: G3 Si1</b>		
Shielding gas (ISO 14175)	<b>M21 with max. CO2 % = 21.6</b>	<b>Bucking gas (ISO 14175)</b>	<b>N.A.</b>
Type of welding current	<b>DCEP</b>	<b>Heat input KJ/cm</b>	<b>All</b>
Welding position	<b>All, vertical down excluded</b>		
Preheat min. (°C)	<b>None</b>	<b>Interpass temp. Max. (°C)</b>	<b>200</b>
Post weld heat treatment / Ageing	<b>None</b>		
Other information	<b>-</b>		

Welders name **PROCACCINI Francesco**

Stamp No. **PF**

Welding test conducted by **M & G METALMECCANICA sas - Torrecuso (Bn)**

Mechanical test conducted by **TECNOLAB srl - Civitavecchia (Rm)** Laboratory test No. **177 dated 21/04/2010**

At presence of RINA Surveyor **D. Eranio**

We certify that statements in this certificate are correct and that the test welds were prepared, welded and tested in accordance with the requirements of **UNI EN ISO 15614-1: 2008** Standard

Issued at: Genova

on 16 June 2010



*Ernio Procaccini*

RINA Services S.p.A.

**JOINT DETAILS AND WELDING SEQUENCES**

**FILLET WELD**

Pass No.	Process	Filler metal diam. (mm)	Filler metal classification	Amps	Volt	Travel speed (cm/min)	Heat input (kJ/cm)	Other
1	135	1.2	EN ISO 14341-A	240	24	35	7.9	-
2-3	135	1.2	EN ISO 14341-A	235	24	38	7.1	-



**PARENT MATERIAL**

Material specification	EN 10025-2:2005		
Type or grade	S275JR + AR		
Group(s)/Subgroup(s) No. (ISO/TR 15608)	1.1		
Thickness (mm)	t1=t2=10	Throat thickness (mm)	9.0 mm
Diameter (mm)	N.A.		
Branch connection angle	N.A.		
Other	-		

**WELDING CONSUMABLES**

Process	135		
Trade name(s)	SPIRA FERRO		
Specification	EN ISO 14341-A		
Classification / designation	G3 S11		
Size (mm)	1.2		
Deposited metal thickness			
Groove	N.A.		
Throat	9.0 mm		
Flux trade name	N.A.		
Consumable insert	N.A.		
Other	-		



<b>GAS</b>			
	Gas	Mixture	Flow rate (l/min.)
Shielding	-	Argon 82% + CO2 18%	18
Trailing	None	-	-
Backing	N.A.	-	-

<b>POSITION</b>	
Welding position	<b>PB</b>
Other	-

<b>PREHEAT</b>		<b>POSTWELD HEAT TREATMENT</b>	
Preheat temperature	15 °C min.	Temperature	None
Interpass temperature	200 °C max.	Time	N.A.
Other	-	Other	-

<b>ELECTRICAL CHARACTERISTICS</b>			
Current	<b>DC EP</b>		
Ampere (range)	See table	Volts (Range)	See table
Mode of metal transfer	Spray arc		
Tungsten electrode size and type	N.A.		
Other	-		

<b>TECHNIQUE</b>	
Travel speed (range)	See table
String or weave bead	String and weave
Oscillation (*)	N.A.
Method of groove/edge preparation	Machining/Grinding
Interpass cleaning	Grinding/Brushing
Method of back gouging	N.A.
Orifice or gas cup size	18 mm
Stand off distance (*)	N.A.
Multiple or single pass	Multiple
Multiple or single electrodes	Single
Torch angle (*)	N.A.
Other (*)	for fully mechanized/robotic only



**OTHER TEST**

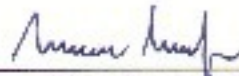
MACROGRAPHIC EXAMINATION	Acceptable
MICROGRAPHIC EXAMINATION	Not required

**NON DESTRUCTIVE EXAMINATION**

VISUAL EXAMINATION	Acceptable
RADIOGRAPHIC EXAMINATION	Not required
PENETRANT TEST	Not required
MAGNETIC PARTICLE	Acceptable
ULTRASONIC TEST	Not required

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