



**BUREAU
VERITAS**



SGQ N° 009A SGE N° 009M
SGA N° 008D EMAS N° 004P
PRD N° 009B GHG N° 008O
SCR N° 008F ISP N° 006E
FSMS N° 0031 SSI N° 013G
PRS N° 076C

Membro degli Accordi di Mutuo Riconoscimento EA e IAF
Signatory of EA and IAF mutual Recognition Agreements

WELDING PROCEDURE QUALIFICATION RECORD

N° QP-ITA-18-00690-rev.0

LEVEL

2

Manufacturer's WPS no CO 01/18 REV.0

Manufacturer COMERI COSTRUZIONI MECCANICHE SRL

Address VIA FRIULI, 8 29017 FIORENZUOLA D'ARDA (PC)

Date of welding 18/06/2018

Reference standard UNI EN ISO 15614-1 Ed. 2017

Code/ Standard Supplem./Client Req NA

Certificate issued by / Authorized Inspector Mr.GIANNI ARLEO

BUREAU VERITAS

certifies that test pieces were prepared, welded and tested satisfactorily in accordance with the requirements of the documents indicated above.

Permanent Joining Procedure Qualification Record complies with the Essential Safety Requirements stated by PED Directive Appendix 1- § 3.1.2.

☒ No

☐ Yes

EXAMINATION BODY	MANUFACTURER
Name, date and signature of authorized representant Mr.GIANNI ARLEO	Name, date and signature of representant
DATE 12/07/2018	
Stamp	

Other identification (if necessary) :

RECORD OF WELD TEST

Organization Name	COMERI COSTRUZIONI MECCANICHE SRL - FIORENZUOLA D'ARDA (PC)		
Mfr Procedure Qualification Record No.	QP-ITA-18-00690-rev.0	Date	18/06/2018
pWPS No.	CO 01/18 REV.0		
Welding Process(es)	A) 121	B)	C)
Types (Manual, Autom., Partly Mechanized)	A) FULLY MECHANIZED	B)	C)

WELDING PERFORMED WITNESSED BY :	Mr.GIANNI ARLEO
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PREPARATION		PARENT MATERIAL		
Joint type	BW/BUTT WELD FULL PENETRATION	Parent material grade	S690QL	S690QL
Tungsten electrode (type & Ø)	NA	Material Standard	EN 10025-6	EN 10025-6
Backing	YES BASE METAL	Group / Subgroup	3.1	3.1
Gouging or grinding	NA	Thickness (mm)	12	12
Preparation and cleaning	MACHINE TOOL	Outside diameter (mm)	NA	NA

JOINT DESIGN	WELDING SEQUENCES

FILLER METALS				HEAT		
	A)	B)	C)	Preheat temperature	EN ISO 13916 Tp20 CT	° C
Filler Metal trade make	PITTARC-S3 Ni 2,5 CrMo			Interpass temperature	EN ISO 13916 Ti 200 CT	° C
Filler Metal designation Ø	ISO 26304-A S3Ni2½ CrMo Ø 3,2			Postheat temp and time	NA	° C
F-No. (Only for level 1)	NA			POST WELD HEAT TREATMENT		
A-No. (Only for level 1)	NA			Holding temp.	--	° C
Flux trade make	AS 630			Holding time	--	min.
Flux designation	EN ISO 14174 SA FB 1 66 AC H5 LINCOLN			Heating rate	--	°C/h
Weld Metal deposit	12mm			Cooling rate	--	°C/h
Flux batch (recrushed slag)	NA			Other info	NONE	
Other	NONE					

GAS				TECHNIQUE		
	A)	B)	C)	Weaving (max width of run)	NA	
Shielding gas type	NA			Oscillation amplitude	NA	
Designation (EN ISO 14175)	NA			Oscillat. frequ. - dwell time	NA	
flow rate	NA			Single or Multiple Electr.	SINGLE	
Backing gas type	NA			Pulse welding details	NA	
Designation (EN ISO 14175)	NA			Dist. cont. tube/work piece	25mm	
flow rate	NA			Single or Multiple Pass/Layer.	MULTIPLE	
Plasma gas type	NA			Torch angle	NA	
Designation (EN ISO 14175)	NA			Other	NONE	
flow rate	NA					

Run	Process	Transfert mode	Position	Filler metal (mm)	Current (A)	Voltage (V)	Curr. type and polar.	Wire speed (m/min)	Welding speed (mm/s)	Heat input (J/mm)
1	121	NA	PA	3,2	550	28	DCEP	--	560	1,65
2-3	121	NA	PA	3,2	550	28	DCEP	--	650	1,42
4-5	121	NA	PA	3,2	550	32	DCEP	--	600	1,76

Welder and/or welding operators: BORRA WILLIAM Pz.BW

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TESTS RESULTS

NON DESTRUCTIVE TEST			
	Carried out by	Result	Report No
Visual test	BUREAU VERITAS	SATISFACTORY	CO 01/18
Penetrant test			
Magnetoscopic test	SSM-GENOVA	SATISFACTORY	C 967
Radiographic test	SSM-GENOVA	SATISFACTORY	C 968
Ultrasonic test			
Other test			

MECHANICAL TEST WITNESSED BY :	Mr.GIANNI ARLEO
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TENSILE TEST							Report No		2467		
Test No	Direction	Position	Dimensions (mm)		Temp. °C *R	Rm (MPa) Required Min 770	Rp* (MPa) Required Info	A * (%) Required Info	Z * (%) Required Info	Fracture location	Results and remarks
			Thickness	Width - Diam.							
1	T	--	11,29	25,02	R	840	--	--	--	WM DUCTILE	SATISFACTORY
2	T	--	11,26	25,03	R	834	--	--	--	WM DUCTILE	SATISFACTORY

Note	*R= ROOM TEMPERATURE
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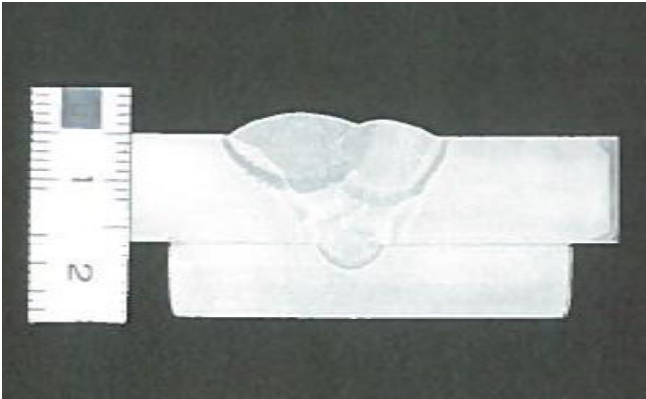
BEND TEST							Report No		2467		
Test No	Direction	Specimen type			Dimensions (mm)		Former diameter (mm)	Angle °	Results and remarks		
		Transv-Long	Face	Root	Side	Thickness					
1	--	--	--	--	4	12,00	10,0	60	180	SATISFACTORY	

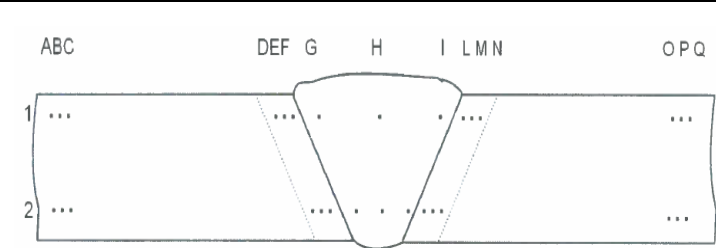
Note	NONW
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IMPACT TEST											Report No		2467; AVERAGE 30,0 J			
Test No	Direction	Position	Location	Dimens. (mm)		Temp °C	Values J Acceptance				Shear area			Lateral expansion		
				Thk	W		I	II	III	Av.	I	II	III	I	II	III
1	T	VWT	0/1,5	10	10	- 40	134,00	112,0	100,0	115,33	--	--	--	--	--	--
2	T	VHT	1,5/1,5	10	10	- 40	202,0	202,0	207,0	203,66	--	--	--	--	--	--

Visa of examining body's representative	GIANNI ARLEO		Certificate n°	QP-ITA-18-00690-rev.0	PAGE 3
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TEST RESULTS

MACROSCOPIC EXAMINATION		Report No	430F-18-MD
			
Note	NITAL 10% ; X 1	Note	

HARDNESS TEST		Report No	430F-18-MD
		Hardness type	HV10
		Required	MAX 450
		Line	Max values obtain
		1	BM: 289-286-288; HAZ: 301-312-330; WM: 261-268-255; HAZ: 326-278-277; BM: 288-291-289
		2	BM: 291-290-290; HAZ: 286-296-292; WM: 291-294- 290; HAZ: 269-272-288; BM: 289-289-291
Note		Note	

OTHER TESTS	Report No
NONE	

CERTIFICATE ATTACHMENT	
1 Range of qualification	
1 VISUAL TEST	
NDT & MECHANICAL TEST BY SSM-GENOVA	
CERTIF. BM & FILLER METAL	

NOTE - OBSERVATION
NONE



LEVEL

2

General for all process		
Welding process(es)	121	
Degree of mechanization	FULLY MECHANIZED	
Type of joint and weld	BW; TW: ss,mb,bs; FW: P & T	
Parent material group(s) and sub group(s) included permanent backing material	3; 1-1; 2-1; 2-2; 3-1; 3-2; 3-3;(Covers the equal or lower specified yield strenght stele of the same group)	
Parent Material Thickness (mm) (*)	BW-TW-FW : 3÷24	
	(*): when impact requirements are specified but impact tests have not been performed, the maximum thickness of qualification is limited to 12 mm.	
Deposited W M Thickness (mm) each rocess :	≤ 24	
Throat Thickness (mm) :	NO RESTRICTION	
Outside Pipe Diameter (mm) :	>500; >150 FOR ROTATING PIPE PC; PH; PA POSITION	
Single run / Multi run :	MULTIRUN	
Angle of branch connection	NONE	
Filler Material	Equivalent mechanical properties, same type of covering core or flux, same nominal composition and the same or lower hydrogen content	
Filler Material Size	No restriction if heat input is respected. No limitation if hardness and impact not required	
Type of Welding Current	Direct current (DC) EP	
Heat Input (ISO/TR 18491)	Same used in procedure test	- 25 % when hardness requirements apply + 25 % when impact requirements apply
Welding Positions :	PA	
Preheat Temperature :	EN ISO 13916 Tp 20 CT A decrease until to 50°C from the recorded permitted	
Interpass Temperature :	EN ISO 13916 Ti 200 CT A increase until to 50°C from the recorded permitted on root and fill pass.	
	Increase on cap passes not permitted	
	For materials groups 8, 10 and 41 to 48 upper limit is the highest recorder during welding of test sample	
Post-Heating for hydrogen release :	The temperature and duration of post-heating for hydrogen release shall not be reduced. Post-heating shall not be omitted, but may be added.	
Post-Weld Heat Treatment	Yes ☐ No ☒ Addition or deletion not permitted	
Post-Weld Heat Treatment temp.	Used in qualification ± 20°C	
Other informations	NONE	
Process 121		
Number of electrodes		
Flux make and designation (if impact required at < -20°C)	No change admitted	
Flux re-crushed slag if used	same batch used in qualification	

Manufacturer's representative		Certificate n°	QP-ITA-18-00690-rev.0	Attachment 1
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