

WELDING PROCEDURE QUALIFICATION RECORD QUALIFICAZIONE PROCEDURA DI SALDATURA

Certificate No./ Certificato No. GD0052/11

**THE ITALIAN INSTITUTE OF WELDING CERTIFIES THAT /
L'ISTITUTO ITALIANO DELLA SALDATURA CERTIFICA CHE**

the procedure COMERI COSTR.MECCANICHE No.CO 04/11 Rev. 0

**IS QUALIFIED ACCORDING TO / E' QUALIFICATA IN ACCORDO A
AWS D1.1/D1.1M (2010)**

REMARKS / NOTE

Annexes No.9

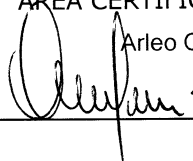
**This PQR has been issued supported by mechanical tests related to the
previous PQR No.GD0047/07 heading "CO.ME.RI." actually converted
in " COMERI COSTRUZIONI MECCANICHE SRL"**

**ISSUE DATE /
DATA DI EMISSIONE**

05/09/2011

**CERTIFICATION AREA CSP
AREA CERTIFICAZIONE CSP**

Arleo Gianni



**SGQ n° 021A
PRD n° 021B**

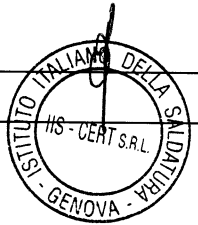
**PRS n° 021C
SGA n° 033D**

Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreement

Il presente certificato è soggetto al rispetto delle condizioni stabilite nel Regolamento IIS CERT QAS 023 R.
This certificate complies with the terms established by IIS CERT regulations QAS 023 R.

**IIS CERT Srl Lungobisagno Istria 29 R – 16141 GENOVA – www.iiscert.it
Corporate Governance Istituto Italiano della Saldatura**

		WELDING PROCEDURE SPECIFICATION W P S AWS D 1.1		WPS-N. CO 04/11 Date 05/09/2011 Supp. PQR-N. GD0052/11		REV 0																						
Welding Process(es)		a) GMAW		b)		c)																						
Type(s)		a) Semiautomatic		b)		c)																						
JOINT DESIGN Joint Design double-Vee groove weld Backing ☐ Backing Material (Type) ☐ ☐ ☐ Other:Welded from both sides																												
BASE METAL Gr.No NA to NA Spec.Type - Grade EN 10025 - S355J2G3** - to Spec.Type & Grade WELDOX 700 * - - Base metal (mm) Groove 25 Fillet NA Pipe dia. (mm) Groove NA Fillet NA Other * TRADE NAME; * *Similar to ASTM A 516 Grade 70 Group II and similar to the steels pertaining Steel Type 6 Table 4.6.1(B) AS/NSZ 1554.1:2000;																												
				a=60°; t=25mm;s=2mm;g=3mm;1/2t=11,5mm																								
FILLER METAL Spec. No. (SFA) AWS A5.18 AWS No. (Class) ER70S-6 F-No. NA Size of filler metal 1,2 F.M. Trade Name INEFIL Manufacturer INE Thk range Groove: 25 Thk range Fillet: NA Flux Trade Name NA Manufacturer NA Electr.-Flux(Class) NA Other NONE				GAS Plasma Shield.) Shield.) Trailing Backing GAS for OFW Other <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Percent Composition Gas(es)</th> <th>Flow Rate (l/min)</th> </tr> </thead> <tbody> <tr><td>NA</td><td></td><td>NA</td></tr> <tr><td>80%Ar -20% CO2</td><td></td><td>16÷18</td></tr> <tr><td>NA</td><td></td><td>NA</td></tr> <tr><td>NA</td><td></td><td>NA</td></tr> <tr><td>NA</td><td></td><td>NA</td></tr> </tbody> </table>				Percent Composition Gas(es)		Flow Rate (l/min)	NA		NA	80%Ar -20% CO2		16÷18	NA		NA	NA		NA	NA		NA			
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POSITIONS Position(s) of groove 1G Welding Progression ☐ ☐ ☒ Position(s) of fillet NA Other				ELECTRICAL CHARACTERISTICS <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>a)</th> <th>b)</th> <th>c)</th> </tr> </thead> <tbody> <tr> <td>Current DC</td> <td></td> <td></td> </tr> <tr> <td>Polarity EP</td> <td></td> <td></td> </tr> <tr> <td colspan="3">Mode of Met. Transf. for GMAW Spray Arc</td> </tr> <tr> <td colspan="3">Tungst. Electr. Type & Size NA</td> </tr> <tr> <td colspan="3">Electr. wire feed speed range SEE AMPS VALUE</td> </tr> <tr> <td colspan="3">Other NONE</td> </tr> </tbody> </table>				a)	b)	c)	Current DC			Polarity EP			Mode of Met. Transf. for GMAW Spray Arc			Tungst. Electr. Type & Size NA			Electr. wire feed speed range SEE AMPS VALUE			Other NONE		
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Other NONE																												
PREHEAT Preheat Temp. 20C Interpass Temp. 200°C Preheat maintenance NONE Other NONE				TECHNIQUE String or Weave Bead Orifice or Gas Cup Size (mm) 16mm Initial & Interpass Clean. BRUSHING AND GRINDING Method of Back Gouging GRINDING TO SOUND METAL Contact Tube to Work Dist. 15mm Oscillation Ampl. - - Freq. - - Multiple/Single Pass per Side ☒ ☐ ☐ Multiple/Single Electrodes ☐ ☒ ☐ Electrode spacing: longitudinal lateral angle Other NONE																								
POSTWELD HEAT TREATMENT Temp. Range (°C) -- - Time Range (h) -- Heat rate (°C/h) -- - Cool rate (°C/h) -- Other NONE																												



Weld pass	Welding Process	Filler metal		Current				Volt Range		Travel Speed Range (mm/min)	☒
		AWS-Class. or Trade Name	Size (mm) 1E 2E	Type & polarity 1E 2E	Amp. Range 1E 2E			1E 2E			
1	GMAW	ER70S-6	1.2		DCEP		220÷240		22÷24	240÷260	1,11÷1,44
2÷n	GMAW	ER70S-6	1.2		DCEP		230÷240		22÷24	210÷230	1,32÷1,64
R1	GMAW	ER70S-6	1.2		DCEP		230÷240		22÷24	260÷280	1,08÷1,32
Rn	GMAW	ER70S-6	1.2		DCEP		230÷240		22÷24	260÷280	1,08÷1,32

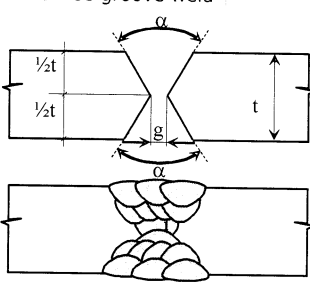
Manufacturer

Sheet/Foglio 1

		PROCEDURE QUALIFICATION RECORD P Q R		PQR-N. WPS N.	GD0052/11 CO 04/11	
Company Name		COMERI COSTRUZIONI MECCANICHE SRL - VIA FRIULI, 8 - 29017 FIORENUOLA D'ARDA (PC)		Date	31/05/2007	
Proc. Qualification Record No.		GD0052/11		Date	05/09/2011	
WPS No.		CO 04/11		Rev.	0	
Welding Process(es)		a) GMAW		b)		c)
Type(s)		a) Semiautomatic		b)		

JOINTS

Joint Design double-Vee groove weld



a=60°; t=25mm; s=2mm; g=3mm; 1/2t=11,5mm

Weld pass	Welding Process	Filler Metal Size (mm)		Ampère		Volt		Travel Speed mm/min
		1E	2E	1E	2E	1E	2E	
1	GMAW	1.2		230		23		260
2	GMAW	1.2		240		24		240
3-4	GMAW	1.2		240		23		240
5÷10	GMAW	1.2		240		23		280

BASE METAL from to

Gr.No NA to Gr.No. NA

Spec.Type - Grade EN 10025 - S355J2G3** -

to Spec.Type & Grade WELDOX 700 * - -

Thick. of Test Coupon (mm) 25 to 25

Diam. of Test Coupon (mm) NA to NA

Other * TRADE NAME;** Similar to ASTM A 516 Grade 70 Group II and similar to the steels pertaining Steel Type 6 Table 4.6.1(B) AS/NSZ 1554.1:2000;

POSTWELD HEAT TREATMENT

Temp. Range (°C) -- - Time Range (h) --

Heat rate (°C/h) -- - Cool rate (°C/h) --

Other NONE

FILLER METAL

Spec. No. (SFA) AWS A5.18

AWS No. (Class) ER70S-6

F-No. NA

Size of filler metal 1,2

F.M. Trade Name INEFIL

Manufacturer INE

Thk range Groove: 25

Thk range Fillet: NA

Flux Trade Name a) NA

Manufacturer NA

Electr.-Flux(Class) NA

Other NONE

GAS

Plasma Shield.) Shield.) Trailing Backing GAS for OFW Other	Percent Composition Gas(es)		Flow Rate (l/min)
	NA		
80%Ar -20% CO2			18
NA			NA
NA			NA
NA			NA
NA			NA
NONE			

POSITIONS

Position(s) of groove 1G

Welding Progression

Position(s) of fillet NA

Other

ELECTRICAL CHARACTERISTICS

Current	a)		b)		c)	
	DC	EP				
Polarity						
Mode of Met. Transf. for GMAW			Spray Arc			
Tungst. Electr. Type & Size			NA			
Electr. wire feed speed range			SEE AMPS VALUE			
Other NONE						

PREHEAT

Preheat Temp. 20C

Interpass Temp. 200°C

Preheat maintenance NONE

Other NONE

TECHNIQUE

String or Weave Bead

Orifice or Gas Cup Size (mm) 16mm

Initial & Interpass Clean. BRUSHING AND GRINDING

Method of Back Gouging GRINDING TO SOUND METAL

Contact Tube to Work Dist. 15mm

Oscillation Ampl. - - Freq. - -

Multiple/Single Pass per Side

Multiple/Single Electrodes

Electrode spacing: longitudinal lateral angle

Other NONE

**PROCEDURE QUALIFICATION
RECORD
P Q R**
**PQR-N.
WPS N.**

 GD0052/11
CO 02/07
**TENSILE TESTS**

Specimen No.	Dimensions (mm)		Area (mm ²)	Ult. Total Load (kN)	Ult. Unit Stress N/mm ²	Type of Failure & Location
	Width	Thickness				
TRANSVERSE	19,0	25	475,0	291840	614,4	DUCTILE S355J2G3 SIDE
TRANSVERSE	19,0	25	471,2	292945	621,7	DUCTILE S355J2G3 SIDE

GUIDED BEND TESTS

Specimen No.	Type of bend	Result	Remarks
TRANSVERSE	SIDE	180° SATISFACTORY	
TRANSVERSE	SIDE	180° SATISFACTORY	
TRANSVERSE	SIDE	180° SATISFACTORY	
TRANSVERSE	SIDE	180° SATISFACTORY	

LONGITUDINAL TENSION TEST

Laboratory test report	Specimen No.	Tensile strength (N/mm ²)	Yeld point (N/mm ²)	Elongation (%)

TOUGHNESS TESTS

Sp. size (mm)	Notch Locations	Notch Type	Test T. (°C)	Impact Tests			Drop W. Break (Y/N)
				Values / Average (Joule)	% shear	(mm)	
							☐ Yes ☐ No
							☐ Yes ☐ No
							☐ Yes ☐ No
							☐ Yes ☐ No
							☐ Yes ☐ No

FILLET WELD TESTS

1) Minum size for multiple pass	2	3	1) Maximum size for single pass	2	3
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NON DESTRUCTIVE TESTS

Type of Test	RT		
Test report No.	11781/B		
Result	SATISFACTORY		

OTHER TESTS

Type of Test			
Test report No.			
Result			

Welder's Name DONATI EUGENIO Stamp No. DE
 Welding Test conducted by CO.ME.RI. - FIORENUOLA D'ARDA (PC)
 Laboratory Test conducted by STMC - MOGLIANO V.(TV) Laboratory test report No. 11781/B

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded and tested in conformance with the requirements of section of AWS D1.1/D1.1M (2010).

Date 05/09/2011

Test supervised by Italian Institute of Welding

CERTIFICATION AREA CSP

Arled Gianni

Manufacturer
(Stamp and Signature)

COMERI COSTRUZIONI MECCANICHE s.r.l.
SOCIETA' UNIPERSONALE



STUDIO TECNICO
Mario Cuzzolin s.r.l.

LABORATORIO/LABORATORY

n° 0303

Pagina/Page: 1 di/of 4

RAPPORTO DI PROVA N° : 11781 / B

Test report n°

RICHIEDENTE : CO.ME.RI. srl

Customer

INDIRIZZO :

Address

OGGETTO : Qualifica procedimento secondo AWS D 1.1

Item

IDENTIFICAZIONE : Sample 2

Identification

BOLLA DI ENTRATA : Richiesta 17835/1/2

Bill of entry

DATA : 07,06,2007

Date

IL PRESENTE RAPPORTO E' COSTITUITO DAI SEGUENTI RESOCONTI DI PROVA :

This report includes the following tests

Prova di Trazione/Tensile test	*	Vedi pag./see page :	2 di 4
Prova di Piega/Bend test	*	Vedi pag./see page :	3 di 4
Prova di Resilienza/Impact test		Vedi pag./see page :	
Prova di Durezza/Hardness test		Vedi pag./see page :	
Prova di Frattura/Fracture test	*	Vedi pag./see page :	
Esame Macrografico/Macro examination		Vedi pag./see page :	
Esame Micrografico/Micro examination		Vedi pag./see page :	
Trattamenti Termici/Heat treatment	*	Vedi pag./see page :	
Controllo M.T./Magnetic particle examination	*	Vedi pag./see page :	
Controllo R.X./Radiographic examination		Vedi pag./see page :	4 di 4
Controllo L.P./Penetrant examination	*	Vedi pag./see page :	
Controllo U.T./Ultrasonic examination	*	Vedi pag./see page :	
Esame Visivo/Visual examination	*	Vedi pag./see page :	

(* Prova non accreditata dal SINAL)

DATA DI ESECUZIONE DELLA/E PROVA/E : 15,06,2007

Test date

LA RIPRODUZIONE DEL PRESENTE RAPPORTO DEVE ESSERE AUTORIZZATA ESPLICITAMENTE DAL RESPONSABILE DEL LABORATORIO E DAL SINAL – This report shall not be reproduced without the approval of the responsible laboratory and SINAL.

I RISULTATI CONTENUTI NEL PRESENTE RAPPORTO SI RIFERISCONO ESCLUSIVAMENTE AGLI OGGETTI PROVATI – The test results relate only to the item tested.

CAMPIONAMENTO EFFETTUATO DAL CLIENTE - Sampling executed by customer

DATA DI EMISSIONE :

Emission date

15,06,2007

RESPONSABILE LABORATORIO

Laboratory responsible

Per.Ind. Mario Cuzzolin



STUDIO TECNICO
Mario Cuzzolin s.r.l.

RAPPORTO DI PROVA

PROVA DI PIEGA

Bend test

Cliente/Customer : **CO.ME.RI. srl** Commessa/Job : **2007/0452** Rapporto/Report : **11781 / B**
Materiale/Material : **WELDOX 700 to S355J2G3 EN 10025** Data di prova/Test date : **15.06.2007** Pagina/Page : **3 di/of 4**

CONDIZIONI D'ESAME/TEST CONDITIONS

Norma di rif./Reference standard : **QW 462.2** Criteri di accettabilità/Reference standard : **AWS D 1.1** Istruzione di lavoro/ Instruction of work : **IL007#0 - IL007#1**
Norma di taratura/Calibration Standard : **UNI EN ISO 7500-1:2002** Tipo di prova/Type of test : **Con punzone/With a former**

MACCHINE DI PROVA/TESTING MACHINE

Galdabini PM 20 matr. 24394 (02A)

Scala (KN)	Classe
20	0,5
40	0,5
100	0,5
200	0,5



Galdabini PM 60 matr. 29618 (03A)

Scala (KN)	Classe
58,8	1
147	1
294	2
588	2

Risultati delle prove / Test results

Valori richiesti Requirements									
Pos.	Numero saggio	Spessore mm	Piega	Diametro mandrino	Distanza tra i rulli	Angolo	Allung.	Pos. e angolo di rottura	
Position	N° test piece	Thickness	Bend	Diameter of the former	Distance bet. rollers	Angle	Elongation	Failure position and angle	
1	Sample 2	25 x 10	side bend	63	95	180	\	\	Satisfactory
2	Sample 2	25 x 10	side bend	63	95	180	\	\	Satisfactory
3	Sample 2	25 x 10	side bend	63	95	180	\	\	Satisfactory
4	Sample 2	25 x 10	side bend	63	95	180	\	\	Satisfactory

Annotazioni :

Notes :

Per il laboratorio
For laboratory

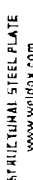
Per.Ind. Mario Cuzzolin

L' Ispettore
Inspector

Istituto Italiano della Saldatura
L'ISPETTORE INCARICATO
(Gianni Arleo)

Inspection certificate EN 10 204 - 3.1		Issuing department Quality inspection		A05		Purchaser order no MZ/27		A07		Our order no 10044482		A08		Certificate no and date 11697714 2007-03-29		A03																							
Consignee Comeri S.r.l. Via Friuli 8 29017 Fiorenzuola d'Arda (PC) Italy		A06		Product Structural steel		B01 Marking (Stamping) Steel grade, Trade mark, PLATE ID NO		B06		Standard/rules Steel grade WELDOX 700 E		B02																											
Dimensions [mm] T 25		W 2500		B10-B12 L 12000		B13 PLATE ID NO 081921-524664		B07		Deliv. Cond. Q		B04		Internal code 20338		B16																							
Purchaser Comeri S.r.l. Via Friuli 8 29017 Fiorenzuola d'Arda (PC) Italy		All Customer marks		B15																																			
Chemical composition		C		Si		Mn		P		S		Cr		Ni		Mo		V		Ti		Cu		Al		Nb		B		N		EW		C71-C92		Carbon equivalent etc CEV (EW) = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15		C93-C99	
Heat no 081921		.13		.29		1.21		.008		.001		.25		.05		.142		.028		.017		.01		.048		.019		.001		.003		.42							
Test type		C04		C00		C01		C02		C03		C10		B05		Treat- ment		Specimen type		Temp [degr C]		C03		Test results															
Impact test		664378		Top end		Transvers		Delivery condition		Charpy-V 10x10		C42 E [J]		C42 E [J]		C42 E [J]		C42 E [J]		C42 E [J]		C42 E [J]		C43 Ave [J]		185													
Tensile Test		664394		Top end		Transvers		Delivery condition		Rectangular		C11 Rp0.2 [MPa]		C12 Rm [MPa]		C13 A5 [%]		825		856		14																	

B02: EN 10025-6/S590QL
EN 10025-6, OPTION 30.

		It is hereby certified that the material described above complies with the requirements of the order.		A01		This certificate is produced with EDP and valid without signature Quality Inspection Department / Ivarsson / R. Persson		Z01		A04  STRUCTURAL STEEL PLATE www.weldox.com	
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