WELDING PROCEDURE SPECIFICATION (WPS)

OFFICINE MECCANICHE PELLANDA Srl — Company Name

Authorized by — 14-02-2017 Date

02/17 — WPS No.

001-17 — Supporting PQR(s)

0 — Rev. No. — 14-02-2017 Date

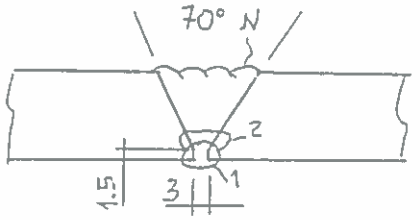
N.A. — CVN Report

BASE METALS	Specification	Type or Grade	AWS Group No.
Base Material	EN 10025-2	S355 J2	II
Welded To	EN 10025-2	S355 J2	II
Backing Material	N.A.		
Other			

BASE METAL THICKNESS	As-Welded	With PWHT
CJP Groove Welds	25 mm.	N.A.
CJP Groove w/CVN		
PJP Groove Welds		
Fillet Welds		
DIAMETER		

JOINT DETAILS	
Groove Type	SINGLE V-GROOVE BUTT JOINT
Groove Angle	60°-70°
Root Opening	3 mm.
Root Face	1.5 mm.
Backgouging	N.A.
Method	

JOINT DETAILS (Sketch)



POSTWELD HEAT TREATMENT	
Temperature	N.A.
Time at Temperature	
Other	

PROCEDURE								
Weld Layer(s)	ALL							
Weld Pass(es)	ALL							
Process	GMAW							
Type *(Semiautomatic, Mechanized, etc.)*	Semiauto							
Position	F							
Vertical Progression	N.A.							
Filler Metal (AWS Spec.)	A5.18							
AWS Classification	ER70S-6							
Diameter	1.2 mm.							
Manufacturer/Trade Name	SIDERWELD							
Shielding Gas (Composition)	SG-ACO-3/1							
Flow Rate	17 l/min.							
Nozzle Size	18 mm.							
Preheat Temperature	20°C							
Interpass Temperature	250°C							
Electrical Characteristics	—	—	—	—	—	—	—	—
Current Type & Polarity	DCEP							
Transfer Mode	SPRAY							
Power Source Type *(cc, cv, etc.)*	CC							
Amps	200-280							
Volts	24-28							
Wire Feed Speed	(Amps)							
Travel Speed	200-420							
Maximum Heat Input	2185 J/mm							
Technique	—	—	—	—	—	—	—	—
Stringer or Weave	STRINGER							
Multi or Single Pass (per side)	MULTI							
Oscillation *(Mechanized/Automatic)*	N.A.							
Traverse Length	N.A.							
Traverse Speed	N.A.							
Dwell Time	N.A.							
Number of Electrodes	1							
Contact Tube to Work Distance	20-25 mm.							
Peening	N.A.							
Interpass Cleaning	GRINDING							
Other								

Form M-2

SGS Italia S.P.A.

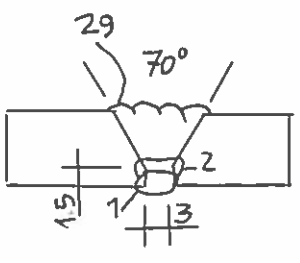
SGS

PROCEDURE QUALIFICATION RECORD

According to AWS D1.1

IDENTIFICATION No.	PQR N° 001-17
Company Name : **Officine Meccaniche Pellanda Srl** **Via Facca, 89 - 35013 CITTADELLA - (PD)** Welding Process(es) : **GMAW** Applicable WPS No.(s) : **02/17 Rev. 0 Date : 14/02/2107**	Revision **0** Date **14-02-2017** By Authorized by : **Off. Mecc. PELLANDA Srl** Date **14-02-2017** Type -Manual [ ] Semi-Automatic [X] Machine [ ] Automatic [ ]
JOINT DESIGN USED Type: **CJP - BUTT WELD - Single Bevel Groove Weld** Single [X] Double Weld [ ] Backing: Yes [ ] No [X] Backing Material: **N.A.** Root Opening **3 mm** Root Face Dimension **1,5 mm** Groove Angle: **α=70°** Radius (J-U) **N.A.** Back Gouging: Yes [ ] No [X] Method **Grinding**	**POSITION** Position of Groove: **1G** Fillet: **N.A.** Vertical Progression: Up [ ] Down [ ] **ELECTRICAL CHARACTERISTICS** Transfer Mode (GMAW): Short-Circuiting [ ] Globular [ ] Spray [X] Current : AC [ ] DCEP [X] DCEN [ ] Pulsed arc [ ] Other: Tungsten Electrode (GTAW) Size: **N.A.** Type: **N.A.**
BASE METALS Material Spec. : **EN 10025-2** Type or Grade : **S 355 J2+N** Thickness: Groove **25 mm** Fillet **N.A.** Diameter (Pipe) **N.A.**	**TECHNIQUE** Stringer or Weave Bead: **Stringer** Multi-pass or Single Pass (per side) : **Multipass** Number of Electrodes : **Single** Electrode Spacing Longitudinal : **N.A.** Lateral : **N.A.** Angle : **N.A.**
FILLER METALS **GMAW** AWS Specification **A 5.18** AWS Classification **ER70S-6**	Contact Tube to Work Distance : **15÷20 mm** Peening : **Not permitted** Interpass Cleaning : **Grinding** Note : **None**
SHIELDING Flux **N.A.** Gas **Argon +CO2+O2** Composition **96%+3%+1%** Electrode-Flux (Class) **N.A.** Gas Flow Rate **17 l/Min.** Gas Cup Size : **Ø 18 mm.**	
PREHEAT Preheat Temp. **20°C** Interpass Temp. : **250°C**	**POSTWELD HEAT TREATMENT** Temp. : **N.A.** Time : **N.A.**

WELDING PROCEDURE

PASS OR WELD LAYER(S)	PROCESS	FILLER METAL		CURRENT		VOLT	TRAVEL SPEED (mm/1')	JOINT DETAIL
		CLASS	DIAM.	TYPE AND POLARITY	A OR WIRE FEED SPEED			
1	GMAW	ER70S-6	1,2 mm	DC EP	200	24	200	
2÷29	GMAW	ER70S-6	1,2 mm	DC EP	260÷280	25÷26	400÷420	

SGS

PROCEDURE QUALIFICATION RECORD No. 001-17

TEST RESULTS

TENSILE TEST

Specimen No.	WIDTH mm	THICKNESS mm	AREA mm^2	ULTIMATE TENSILE LOAD N	ULTIMATE UNIT STRESS N/mm	Character of failure and location
1	20,0	22	440		567,3	DUCTILE - OUTSIDE WELD
2	20,0	22	440		569,8	DUCTILE - OUTSIDE WELD

GUIDED BEND TEST

Specimen No	Type Of Bend	Result
1	FIG. 4.9 SIDE BEND (α180° transv.)	acceptable
2	FIG. 4.9 SIDE BEND (α180° transv.)	acceptable
3	FIG. 4.9 SIDE BEND (α180° transv.)	acceptable
4	FIG. 4.9 SIDE BEND (α180° transv.)	acceptable

VISUAL INSPECTION

APPEARANCE :	ACCEPTABLE
UNDERCUT :	None
PIPING POROSITY	None
CONVEXITY :	ACCEPTABLE
TEST DATE :	14/02/2017

WITNESSED BY : SGS INSPECTOR - PELLANDA Coordinator

RADIOGRAPHIC –ULTRASONIC EXAMINATION

RT REPORT No. 0137-2017/1 sh. 6 RESULT ACCEPTABLE

UT REPORT No. RESULT

OTHER TESTS :

Hardness test	N.A.
MACROETCH	see Report. No. 0137-2017/1 sh.5
IMPACT TEST :	see Report No. 0137-2017/1 sh.4
PENETRANT	N.A.

FILLET WELD TEST RESULT

MINIMUM SIZE MULTILPLE PASS	MAXIMUM SIZE SINGLE PASS
MACROETCH	MACROETCH
N.A	N.A.

ALL WELD METAL TENSION TEST

TENSILE STRENGTH	N.A.
YIELD POINT /STRENGTH	N.A.
ELONGATION IN 2 in. %	N.A.
LABOTATORY TEST No.	N.A.

Welder's name : clock no. **N.A.** stamp .no. **CIM**

Test conducted by : **ST Mario Cuzzolin Srl**

Report no. **0137-2017/1 of 22/02/2017**

Per **M. Cuzzolin**

We , undersigned ,certify that the statements in this record are correct and that the test weld were prepared , welded and tested in conformance with the requirements of clause 4 of AWS D1.1/D1.1 M -2015 edition " Structural welding code – steel "

Third party inspector date and signature

SGS Italia S.p.A. SGS Italia S.p.A.

Signed

By

Title Welding Coordinator

Date 24/02/2017

AWS D1.1/D1.1M
Reference No. WPQ 17-004

WELDER, WELDING OPERATOR, OR TACK WELDER PERFORMANCE QUALIFICATION TEST RECORD

Type of Welder : **WELDER**
Name : _____ Identification No. **CIM**
Welding Procedure Specification No. **02/17** Rev. **0** Date: **14.02.2017**

Variables	Record Actual Values Used in Qualification	Qualification Range
Process/Type	**GMAW – Semiauto.**	**GMAW – Semi./Mech./Auto.**
Electrode (single or multiple)	**Single**	**Single**
Type of Weld Joint	**Plate - Groove**	**Groove, Fillet, Plug and Slot Welds (T-,Y-,K-Groove PJP only)**
Position	**Groove – 1G**	**Groove : F Fillet : F, H**
Weld progression (Up/Downhill)	**N.A.**	**N.A.**
Backing (Yes or No)	**No**	**Yes or no**
Material Spec.	**S355 J2+N - Group II to S355 J2+N - Group II**	**Group I to Group I Group II to Group I Group II to Group II**
Base Metal Thickness : (Plate)		
Groove	**25**	**3 to Unlimited**
Fillet	**n.a.**	**3 to Unlimited**
Thickness : (Pipe/Tube)		
Groove	**n.a.**	**3 to Unlimited**
Fillet	**n.a.**	**3 to Unlimited**
Diameter : (Pipe)		
Groove	**n.a.**	**≥ 600**
Fillet	**n.a.**	**All**
Filler Metal		
Spec. No.	**AWS A5.18**	**A5.18**
Class	**ER 70S-6**	**All**
F-No.	**/**	**/**
Gas/Flux Type	**A5.32 SG-ACO-3/1**	**A5.32 SG Approved**
Other : GMAW Transfer Mode	**Spray**	**Spray, Pulsed, Globular**

VISUAL INSPECTION (4.9.1) Acceptable (Yes or No) : **Yes**

Guided Bend Test Results (4.9.3.1)

Type	Result	Type	Result
T-Side Bend	**Satisfactory**	**T-Side Bend**	**Satisfactory**
T-Side Bend	**Satisfactory**	**T-Side Bend**	**Satisfactory**

Fillet Test Results (4.22.2.2 and 4.22.4.1)

Appearance : **n.a.** Fillet size : **n.a.**
Fracture test root penetration : **n.a.** Macroetch : **n.a.**
(Describe the location, nature, and size or any crack or tearing of the specimen.)

Inspected by : **ST Mario Cuzzolin Srl** Test N° : **0137-2017/1 sh. 3**

RADIOGRAPHIC TEST RESULTS (4.22.3.2) Film

Film Identification	Results	Remarks	Film Identification	Results	Remarks
1-2 CIM	**Satisfactory**				

Interpreted by : **ST Mario Cuzzolin Srl (A. Cestaro)** Test N° : **0137-2017/1 sh. 6**

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared welded and tested in conformance with the requirements of Section 4 of AWS D1.1/D1.1M - 2015 Structural Welding Code-Steel.

Manufacturer: **PELLANDA Officine Meccaniche Srl** Authorized by :

Date : **24.02.2017**

STUDIO TECNICO
Mario Cuzzolin s.r.l

LABORATORIO/LABORATORY

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO

LAB N°0303
Membro degli Accordi di Mutuo Riconoscimento
EA, IAF e ILAC
Signatory of EA, IAF and ILAC
Mutual Recognition Agreements

RAPPORTO DI PROVA N° : 0137 - 2017 / 1 — Pagina/Page: 1 di/of 6
Test report n°

RICHIEDENTE : Officine Meccaniche Pellanda s.r.l.
Customer

INDIRIZZO : Via Facca, 89
Address 35013 - Cittadella (PD)

OGGETTO : Qualifica procedimento della saldatura secondo AWS D1.1.
Object

IDENTIFICAZIONE : Plate **sp.** 25,0 mm, **mat.** S355J2+N (EN 10025-2), **proc di sald.** GMAW
Identification:
Saldatore: -

BOLLA DI ENTRATA : e-mail — **DATA :** 17/02/2017
Bill of entry *Commessa SGS n° 75.17.13305* *Date*

IL PRESENTE RAPPORTO E' COSTITUITO DAI SEGUENTI RESOCONTI DI PROVA :
This report includes the following tests

(* Prova non accreditata da ACCREDIA)
(This test is not accredited by ACCREDIA)*

DATA DI ESECUZIONE DELLA/E PROVA/E : 21/02/2017 - 22/02/2017
Test date

LA RIPRODUZIONE PARZIALE DEL PRESENTE RAPPORTO DEVE ESSERE AUTORIZZATA PER ISCRITTO DAL RESPONSABILE DEL LABORATORIO
– *Partial reproduction of this report must be authorized in writing by the laboratory manager.*
I RISULTATI CONTENUTI NEL PRESENTE RAPPORTO SI RIFERISCONO ESCLUSIVAMENTE AGLI OGGETTI PROVATI
- *The test results relate only to the tested item.*
CAMPIONAMENTO EFFETTUATO DAL CLIENTE - *Sampling executed by the customer*
TEMPO DI CONSERVAZIONE - *STORAGE TIME* :
- CAMPIONE - *SAMPLE* = 90 giorni - *90 days*
- RAPPORTO DI PROVA - *TEST REPORT* = 10 anni - *10 years*
- REGISTRAZIONE DATI PROVE - *DATA TEST RECORDING* = 2 anni - *2 years*

DATA DI EMISSIONE : 22/02/2017
Emission date

PRESIDENTE STUDIO TECNICO
Chairman
Per.Ind. Mario Cuzzolin

ST. TEC. MARIO CUZZOLIN * MOGLIANO V. (TV) * Laboratorio Prova

Sede Amm.va e Lab.: Via Marconi, 22/2 (ingresso carrabile Via Tavoni) - 31021 Mogliano V.to (TV) - PI: 00775450265
T: +39 041 5987484 - F: +39 041 5906033 - laboratorio.prove@stcuzzolin.it - http://www.stcuzzolin.it

STUDIO TECNICO
Mario Cuzzolin s.r.l

RAPPORTO DI PROVA

PROVA DI TRAZIONE

Tensile test

Cliente/*Customer* :	Commessa/*Job* :	Rapporto/*Report* :
Officine Meccaniche Pellanda s.r.l.	2017/0188	**0137 - 2017 / 1**
Materiale/*Material* :	Data di prova/*Test date* :	Pagina/Page: 2 di/of 6
S355J2+N (EN 10025-2)	22/02/2017	
Spessore/*Thickness* :	D.est./*D.ext* :	Tipo/*Type* :
25,0 mm	\	**Butt full penetration**

NORMA DI PROVA / *TEST STANDARD*

AWS D.1.1 - Figure 4.10 Reduced Section Tension Specimens (see 4.9.3.4)

Riferimenti/*References*

AWS D1.1:2015

MACCHINE DI PROVA / *TESTING MACHINE*

Galdabini PM 50 matr. 32508 (01A) ☐

Scala (KN)	Classe
100	1
500	0,5

Galdabini PM 20 matr. 24394 (02A) ☐

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

Galdabini PM 60 matr. 29618 (03A) ☐

Scala (KN)	Classe
600	0,5

Galdabini QUASAR 600 matr. V9UG (06A) ☑

Scala (KN)	Classe
600	0,5

INSTRON 4411 matr. H1929 (04A) ☐

Scala (KN)	Classe
5	1

Cert. di taratura LAT 034/*Certificate of calibration LAT 034*:
N.372-15F & N.374-16F (01/06/16)
N.362-16F (01/06/2016)
N.363-16F (01/06/2016) - N.375-16F (01/06/16)

Risultati delle prove / *Test results*

CARATTERISTICHE PROVINO *Specimen carachteristics*								CARATTERISTICHE MECCANICHE *Mechanical carachteristics*			
Pos. *Position*	**Direz. prelievo** *Direc. drawing*	**Numero saggio** *Test piece n°*	**Dimensioni** t_s x b *Dimensions*			**Area** S_0 *Area*	**All.** L_0 *Elong.*	**Carico snervamento superiore** R_{eH} *Upper yield strength*	**Carico di rottura** R_m *Tensile strength*	**Allungamento % dopo rottura** A *Elongation % after fracture*	*** Tipo e Posizione rottura** *Failure type and position*
			mm			mm²	mm	N/mm²	N/mm²	%	
1	TW	CIM	22,0	x	20,0	440,0	\	\	567,3	\	BM - D
2	TW	CIM	22,0	x	20,0	440,0	\	\	569,8	\	BM - D

SGS SGS ITALIA S.p.A.
Witnessed ☒
Review ☐
Noted for information only ☐
22.02.17
Date Signature

Annotazioni :
Notes :

* BM = Fuori saldatura (*Out of weld*); W = In saldatura (*Weld metal*); H.A.Z. = Zona termicamente alterata (*Heat affected zone*);
D = Duttile (*ductile*); F = Fragile (*fragile*);

Esecutore
Operator

Per. Ind. Luca Polfetto

ST. TEC. MARIO CUZZOLIN CANOVA (TV) Laboratorio Prove

L' Ispettore
Inspector

Mod.CPM.02 Rev. : 08 del 21.05.2016

STUDIO TECNICO
Mario Cuzzolin s.r.l

RAPPORTO DI PROVA

PROVA DI PIEGAMENTO

Bend test

Cliente/*Customer :*
Officine Meccaniche Pellanda s.r.l.
Materiale/*Material :*
S355J2+N (EN 10025-2)
Saggio/*Test piece :*
CIM

Commessa/*Job :*
2017/0188
Data di prova/*Test date :*
22/02/2017
Spessore/*Thickness :*
25,0 mm
D.est./*D.ext :*
\

Rapporto/*Report*:
0137 - 2017 / 1
Pagina/Page: 3 di/of 6
Tipo/*Type :*
Butt full penetration

NORMA DI PROVA / *TEST STANDARD*

AWS D.1.1 - Figure 4.9 Side Bend Specimens (see 4.9.3.1)

Riferimenti/*References*
AWS D1.1:2015

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*
40	0,5
200	0,5

Galdabini PM 60 matr. 29618 (03A) ☐

Scala (KN)	*Classe*
600	0,5

Cert. di taratura LAT 034/Certificate of calibration LAT 034:
N.374-16F & N.362-16F (01/06/2016)

CARATTERISTICHE PROVINO / *Specimen carachteristics*

RISULTATI DELLE PROVE / *Test results*

Pos. *Position*	**Numero saggio** *Test piece n°*	**Dimensioni** t_s *Dimensions*	**b** *Dimensions*	**Piega** *Bend*	**Diametro mandrino** *Diameter of the former*	**Distanza tra i rulli** *Distance bet. Rollers*	**Angolo** *Angle*	**Allung.** *Elongation*	**Pos. e angolo di rottura** *Failure position and angle*	**Tipo e dimensioni delle imperfezioni osservate** *Defect Type and dimensions*
		mm			*mm*	*mm*	°	*mm*		
1	CIM	25	10	SBB	40	63	180	\	\	No Defect
2	CIM	25	10	SBB	40	63	180	\	\	No Defect
3	CIM	25	10	SBB	40	63	180	\	\	No Defect
4	CIM	25	10	SBB	40	63	180	\	\	No Defect

SGS SGS ITALIA S.p.A.
Witnessed ☒
Review ☐
Noted for information only ☐
22.02.17
Date Signature
8

Annotazioni :
Notes :

Esecutore
Operator
Per. Ind. Luca Poletto

ST. TEC. MARIO CUZZOLIN Laboratorio Prove SELIANO V. (TV)

L' Ispettore
Inspector

Mod.CPM.02 Rev. : 08 del 21.09.2016

STUDIO TECNICO
Mario Cuzzolin s.r.l

RAPPORTO DI PROVA

PROVA DI RESILIENZA

Impact test

Cliente/*Customer :*	Commessa/*Job :*	Rapporto/*Report :*
Officine Meccaniche Pellanda s.r.l.	2017/0188	**0137 - 2017 / 1**
Materiale/*Material :*	Data di Prova/*Test date :*	Pagina/Page: 4 di/of 6
S355J2+N (EN 10025-2)	22/02/2017	

Saggio/*Test piece :*	Spessore/*Thickness :*	D.est./*D.ext :*	Tipo/*Type :*
CIM	**25,0 mm**	\	**Butt full penetration**

NORMA DI PROVA / *TEST STANDARD*

AWS D.1.1 - Part. D rif. 4.25 - Figure 4.28 CVN Test Specimen Locations (see 4.26.1)

Riferimenti/*References*
AWS D1.1:2015

MACCHINE DI PROVA / *TESTING MACHINE*

Impact 450 matr. VC17 (59B) ☑

Digitale con risoluzione minima/*Digital with minimum resolution* = 0,1 J

Energia potenziale nominale/*Potential nominal energy*: 450 J

Cert. di taratura LAT 034 N.001-17R (12/01/2017)/*Certificate of calibration LAT 034 N.001-17R (12/01/2017)*

Taratura NIST del 26/01/2017/*Calibration NIST of 01/26/2017*

NOTE/*Notes*: Geometria del coltello/*Knife geometry* = KV_2

CARATTERISTICHE PROVINO *Specimen carachteristics*				RISULTATI DELLE PROVE *Test result*			
Pos. *Position*	**Numero saggio** *Test piece n°*	**Tipo e Senso Posizione** *Type and sense position*	**Dimensioni a b** *Dimension*	**Temp.** *Temp.*	**Energia** *Energy*	**Duttilità** *Ductility*	**Espansione laterale** *Lateral expansion*
			mm	***°C***	***J***	***%***	***mm***
1	CIM	VWT 0/1,5	10,0 10,0	- 20	106,2 - 164,3 - 129,0	\	\
2	CIM	VHT 1,0/1,5	10,0 10,0	- 20	184,1 - 181,6 - 134,7	\	\
3	CIM	VHT 5,0/1,5	10,0 10,0	- 20	160,5 - 108,5 - 65,7	\	\

SGS SGS ITALIA S.p.A.
Witnessed ☒
Review ☐
Noted for information only ☐
22.02.17
Date Signature
8

Annotazioni :
Notes :

Esecutore
Operator

Per. Ind. Luca Poretto

L'Ispettore
Inspector

STUDIO TECNICO
Mario Cuzzolin s.r.l

RAPPORTO DI PROVA

ESAME MACROGRAFICO

Macro examination

Cliente/*Customer :*	Commessa/*Job :*	Rapporto/*Report :*
Officine Meccaniche Pellanda s.r.l.	2017/0188	**0137 - 2017 / 1**
Materiale base/*Base material :*	Data di prova/*Test date :*	Pagina/Page: 5 di/of 6
S355J2+N (EN 10025-2)	22/02/2017	

Saggio/*Test piece :*	Spessore/*Thickness :*	D.est./*D.ext :*	Tipo/*Type :*
CIM	**25,0 mm**	\	**Butt full penetration**

NORMA DI PROVA / *TEST STANDARD*
AWS D.1.1 (see 4.9.4)

Riferimenti/*References*
AWS D1.1:2015

Posizione/*Position*
Trasversale al giunto saldato

Condizioni superficiali/*Surface finish*
Lappatura secondo / Lapping second : ASTM E3-11

DATI / *DATA*

Ingrandimento / *Magnification* : **1,4 x**

Lato "Z" cordone 1 : n.a.
Lato "Z" cordone 2 : n.a.
Dimensione gola "a" : n.a.

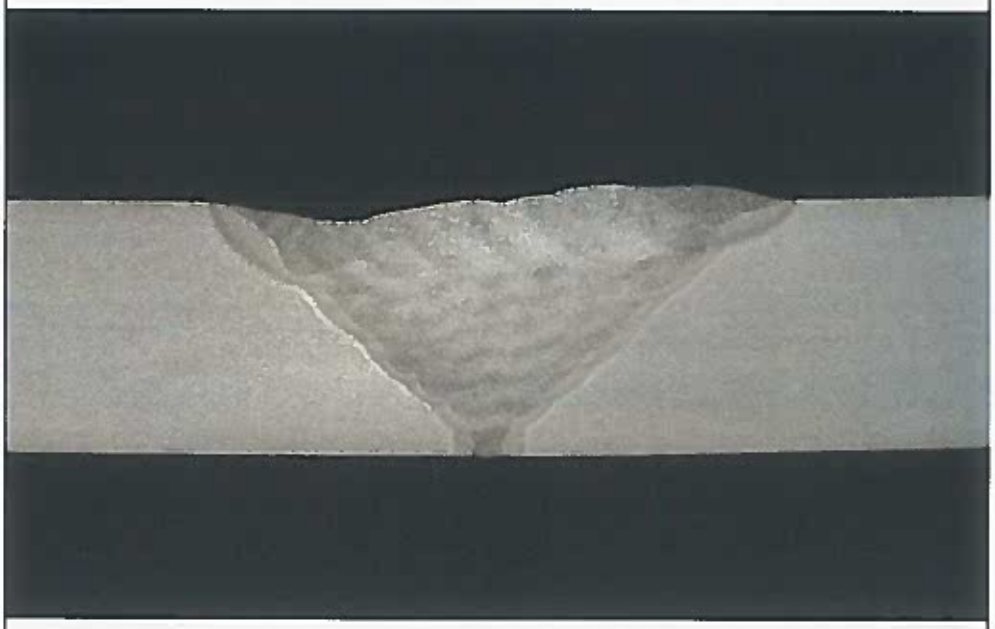
TECNICHE E MATERIALI IMPIEGATI / ***Materials and test method in according to ASTM E340-00***

Metodo d'attacco/Etching method :
- ☑ **Immersione**/dipping
- ☐ **Strofinamento**/swabbing
- ☐ **Elettrolitico**/Electrolytic

Tipo d'attacco / Etching : **Nital 5%**

DIFETTI / *Imperfections*

FOTOGRAFIA / Photograph



M

NOTE / Notes
Materiale d'apporto:
Trattamento termico:

Esecutore
Operator
Per. Ind. Luca Peretto

SGS SGS ITALIA S.p.A.
Witnessed ☐
Review ☒
Noted for information only ☐
22.02.17
Date Signature
8

Ispettore
Inspector

Mod. MAC.02 Rev. : 07 del 21.09.2016

STUDIO TECNICO
Mario Cuzzolin s.r.l

RAPPORTO DI PROVA

CONTROLLO RADIOGRAFICO

Radiographic examination

Cliente/*Customer* :	Commessa/*Job* :	Data di prova/*Test date* :	Rapporto/*Report* :
Officine Meccaniche Pellanda s.r.l.	2017/0188	21/02/2017	**0137 - 2017 / 1**
Materiale base/*Base material* :	Tipo/*Type* :	Prep.giunto/*Prep joint* :	Pagina/Page: 6 di/of 6
S355J2+N (EN 10025-2)	**Butt full penetration**	**BW**	

NORMA DI PROVA / *TEST STANDARD*

AWS D1.1 (Part E rif. 6.16)

Condizioni superficiali/*Surface finish*

Come saldato ☑ Molato ☐ Trattamento termico ☐ Lavorato di macc. ☐

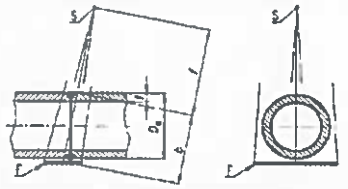
MACCHINE ED ATTREZZATURE DI PROVA / *TESTING MACHINE AND EQUPMENT*

Caratt. sorgente	Film	Tecniche controllo	Sviluppo radiografia autom.
Raggi : **Raggi X**	Sistema Pellicola : **D5 AGFA Structurix**	S.P.S.I. ☑	Sviluppo tempo : **3 min**
Model :**Y.XPO 225kV - 10mA**	Formato cm : **48x10** ☑ **24x10** ☐	D.P.S.I. ☐	Fissaggio tempo : **5 min**
Mac. Focale : **2,26 x 2,45**	Dist. Fuoco-film : **700 mm**	D.P.D.I. ☐	Lavaggio T°/t : **28,3 / 0,5 min**
Serial no.: **64194**	Schermi Pb : **0,05**	PANOR. ☐	Essiccatore : **Aria calda**

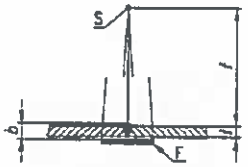
Penetrametro : ASTM E 747 Tipo : **Set. B** Lato: **S**

SCHEMA DI POSIZIONAMENTO DELLE PELLICOLE/*SCHEME OF PLACEMENT OF FILMS*

S Sorgente di radiazione
S a radiation source
F Pellicola
F film
☐



S Sorgente di radiazione
S a radiation source
F Pellicola
F film
☑



ESITO DEL CONTROLLO / *RESUL EXAMINATION*

QWT	Pellicola n°	Thk / Diam. (mm)	Punz / W.st	W P S	mA	KV	Esposizione	Densità	Filo visibile	Classe radiografica
\	1-2	25 mm	CIM	\	5,3	225	2' 10"	2,4	W 12	B

SIMBOLI DEI DIFETTI/*SIMBOLS OF IMPERFECTIONS*

UNI ISO 6520/1:2008

Cricche	100	Sovrametallo	502
Cricche di cratere	104	Convessità eccessiva	503
Porosità	2011	Eccesso penetrazione	504
Soffiature	2012	Sgocciolamento	5041
Pori	2014	Slivellamento	507
Porosità localizzate	2013	Riempimento incompleto	511
Cavità allungate	2015	Avvallamento	509
Tarli	2016	Insellamento vertice	515
Inclusioni solide	300	Incisione vertice	5013
Inclusioni di rame	3042	Traboccamento	506
Mancanza di fusione	401	Ripresa difettosa	517
Mancanza penetrazione	402	Colpo d'arco	601
Incisione	5011	Spruzzo	602
Incisione Marginale	5012		

CRITERI DI ACCETTABILITA'/*REFERENCE STANDARD*

AWS D1.1 - Part.C rif 6.12

N° PELLICOLA	DIFETTI	GIUDIZIO
1-2 (CIM)	\	A

SGS SGS ITALIA S.p.A.
Witnessed ☐
Review ☒
Noted for information only ☐
22.02.17
Date Signature
8

SIMBOLI DEI GIUDIZI/*SIMBOLS OF WISDOMS*

A : Accettabile	**NR** : Non accettabile,riparare	**NT** : Non accettabile,tagliare

Esecutore
Operator

Studio Tecnico CUZZOLIN MARIO s.r.l.* per. ind. CESTARO ALESSANDRO II° liv. ASNT/CPND VT. PT. RT

Per.Ind. Alessandro Cestaro

Ispettore
Inspector

Mod. CRX.02 Rev.: 07 del 21.09.2016

AWS D1.1/D1.1M
Reference No. WPQ 17-005

WELDER, WELDING OPERATOR, OR TACK WELDER PERFORMANCE QUALIFICATION TEST RECORD

Type of Welder : **WELDER**
Name : [redacted] Identification No. **CI**
Welding Procedure Specification No. **02/17** Rev. **0** Date: **14.02.2017**

	Record Actual Values Used in Qualification	Qualification Range
Variables		
Process/Type	GMAW – Semiauto.	GMAW – Semi./Mech./Auto.
Electrode (single or multiple)	Single	Single
Type of Weld Joint	Plate - Groove	Groove, Fillet, Plug and Slot Welds (T-,Y-,K-Groove PJP only)
Position	Groove – 1G	Groove : F Fillet : F, H
Weld progression (Up/Downhill)	N.A.	N.A.
Backing (Yes or No)	No	Yes or no
Material Spec.	S355 J2+N - Group II to S355 J2+N - Group II	Group I to Group I Group II to Group I Group II to Group II
Base Metal Thickness : (Plate)		
Groove	25	3 to Unlimited
Fillet	n.a.	3 to Unlimited
Thickness : (Pipe/Tube)		
Groove	n.a.	3 to Unlimited
Fillet	n.a.	3 to Unlimited
Diameter : (Pipe)		
Groove	n.a.	≥ 600
Fillet	n.a.	All
Filler Metal		
Spec. No.	AWS A5.18	A5.18
Class	ER 70S-6	All
F-No.	/	/
Gas/Flux Type	A5.32 SG-ACO-3/1	A5.32 Approved
Other : GMAW Transfer Mode	Spray	Spray, Pulsed, Globular

VISUAL INSPECTION (4.9.1) Acceptable (Yes or No) : **Yes**

Guided Bend Test Results (4.9.3.1)

Type	Result	Type	Result
T-Side Bend	**Satisfactory**		
T-Side Bend	**Satisfactory**		

Fillet Test Results (4.22.2.2 and 4.22.4.1)

Appearance : **n.a.** Fillet size : **n.a.**
Fracture test root penetration : **n.a.** Macroetch : **n.a.**
(Describe the location, nature, and size or any crack or tearing of the specimen.)

Inspected by : **ST Mario Cuzzolin Srl** Test N° : **0137-2017/2**

RADIOGRAPHIC TEST RESULTS (4.22.3.2) Film

Film Identification	Results	Remarks	Film Identification	Results	Remarks
n.a.					

Interpreted by : Test N° :

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared welded and tested in conformance with the requirements of Section 4 of AWS D1.1/D1.1M - 2015 Structural Welding Code-Steel.

Manufacturer: **PELLANDA Officine Meccaniche Srl** Authorized by :

Date : **24.02.2017**

AWS D1.1/D1.1M
Reference No. WPQ 17-006

WELDER, WELDING OPERATOR, OR TACK WELDER PERFORMANCE QUALIFICATION TEST RECORD

Type of Welder : **WELDER**
Name : _____ Identification No. **TT**
Welding Procedure Specification No. **02/17** Rev. **0** Date: **14.02.2017**

	Record Actual Values Used in Qualification	Qualification Range
Variables		
Process/Type	**GMAW – Semiauto.**	**GMAW – Semi./Mech./Auto.**
Electrode (single or multiple)	**Single**	**Single**
Type of Weld Joint	**Plate - Groove**	**Groove, Fillet, Plug and Slot Welds (T-,Y-,K-Groove PJP only)**
Position	**Groove – 1G**	**Groove : F Fillet : F, H**
Weld progression (Up/Downhill)	**N.A.**	**N.A.**
Backing (Yes or No)	**No**	**Yes or no**
Material Spec.	**S355 J2+N - Group II to S355 J2+N - Group II**	**Group I to Group I Group II to Group I Group II to Group II**
Base Metal		
Thickness : (Plate)		
Groove	**25**	**3 to Unlimited**
Fillet	**n.a.**	**3 to Unlimited**
Thickness : (Pipe/Tube)		
Groove	**n.a.**	**3 to Unlimited**
Fillet	**n.a.**	**3 to Unlimited**
Diameter : (Pipe)		
Groove	**n.a.**	**≥ 600**
Fillet	**n.a.**	**All**
Filler Metal		
Spec. No.	**AWS A5.18**	**A5.18**
Class	**ER 70S-6**	**All**
F-No.	**/**	**/**
Gas/Flux Type	**A5.32 SG-ACO-3/1**	**A5.32 Approved**
Other : GMAW Transfer Mode	**Spray**	**Spray, Pulsed, Globular**

VISUAL INSPECTION (4.9.1) Acceptable (Yes or No) : **Yes**

Guided Bend Test Results (4.9.3.1)

Type	Result	Type	Result
T-Side Bend	**Satisfactory**		
T-Side Bend	**Satisfactory**		

Fillet Test Results (4.22.2.2 and 4.22.4.1)

Appearance : **n.a.** Fillet size : **n.a.**
Fracture test root penetration : **n.a.** Macroetch : **n.a.**
(Describe the location, nature, and size or any crack or tearing of the specimen.)

Inspected by : **ST Mario Cuzzolin Srl** Test N° : **0137-2017/2**

RADIOGRAPHIC TEST RESULTS (4.22.3.2) Film

Film Identification	Results	Remarks	Film Identification	Results	Remarks
n.a.					

Interpreted by : Test N° :

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared welded and tested in conformance with the requirements of Section 4 of AWS D1.1/D1.1M - 2015 Structural Welding Code-Steel.

Manufacturer: **PELLANDA Officine Meccaniche Srl** Authorized by :

Date : **24.02.2017**

STUDIO TECNICO
Mario Cuzzolin s.r.l

LABORATORIO/LABORATORY

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO

LAB N°0303
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

RAPPORTO DI PROVA N° : 0137 - 2017 / 2
Test report n°

RICHIEDENTE : Officine Meccaniche Pellanda s.r.l.
Customer

INDIRIZZO : Via Facca, 89
Address 35013 - Cittadella (PD)

OGGETTO : Qualifica del saldatore secondo AWS D1.1.
Object

IDENTIFICAZIONE : Plate **sp.** 25,0 mm, **mat.** S355J2+N (EN 10025-2), **proc di sald.** GMAW.
Identification:

Saldatori: *(CI)* - *(TT)*

BOLLA DI ENTRATA : e-mail **DATA :** 17/02/2017
Bill of entry *Commessa SGS n° 75.17.13305* *Date*

IL PRESENTE RAPPORTO E' COSTITUITO DAI SEGUENTI RESOCONTI DI PROVA :
This report includes the following tests

Prova di Piega/*Bend test* * Vedi pag./*see page* : 2 di/*of* 2

(* Prova non accreditata da ACCREDIA)
(This test is not accredited by ACCREDIA)*

DATA DI ESECUZIONE DELLA/E PROVA/E : 22/02/2017
Test date

LA RIPRODUZIONE PARZIALE DEL PRESENTE RAPPORTO DEVE ESSERE AUTORIZZATA PER ISCRITTO DAL RESPONSABILE DEL LABORATORIO
– *Partial reproduction of this report must be authorized in writing by the laboratory manager.*
I RISULTATI CONTENUTI NEL PRESENTE RAPPORTO SI RIFERISCONO ESCLUSIVAMENTE AGLI OGGETTI PROVATI
- *The test results relate only to the tested item.*
CAMPIONAMENTO EFFETTUATO DAL CLIENTE - *Sampling executed by the customer*
TEMPO DI CONSERVAZIONE - *STORAGE TIME :*
- CAMPIONE - *SAMPLE* = 90 giorni - *90 days*
- RAPPORTO DI PROVA - *TEST REPORT* = 10 anni - *10 years*
- REGISTRAZIONE DATI PROVE - *DATA TEST RECORDING* = 2 anni - *2 years*

DATA DI EMISSIONE : 22/02/2017
Emission date

PRESIDENTE STUDIO TECNICO
Chairman
Per.Ind. Mario Cuzzolin

ST. TEC. MARIO CUZZOLIN * Laboratorio Prove * MOGLIANO V. (TV)

Sede Amm.va e Lab.: Via Marconi, 22/2 (ingresso carrabile Via Tavoni) - 31021 Mogliano V.to (TV) - PI: 00775450265
T: +39 041 5987484 - F: +39 041 5906033 - laboratorio.prove@stcuzzolin.it - http://www.stcuzzolin.it

STUDIO TECNICO
Mario Cuzzolin s.r.l

RAPPORTO DI PROVA

PROVA DI PIEGAMENTO

Bend test

Cliente/*Customer :*	Commessa/*Job :*	Rapporto/*Report*:
Officine Meccaniche Pellanda s.r.l.	2017/0188	**0137 - 2017 / 2**
Materiale/*Material :*	Data di prova/*Test date :*	Pagina/Page: 2 di/of 2
S355J2+N (EN 10025-2)	22/02/2017	

Saggio/*Test piece :*	Spessore/*Thickness :*	D.est./*D.ext :*	Tipo/*Type :*
CI - TT	**25,0 mm**	\	**Butt full penetration**

NORMA DI PROVA / *TEST STANDARD*

AWS D.1.1 - Figure 4.9 Side Bend Specimens (see 4.9.3.1)

Riferimenti/*References*
AWS D1.1:2015

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*
40	0,5
200	0,5

Galdabini PM 60 matr. 29618 (03A) ☐

Scala (KN)	*Classe*
600	0,5

Cert. di taratura LAT 034/Certificate of calibration LAT 034:
N.374-16F & N.362-16F (01/06/2016)

CARATTERISTICHE PROVINO / *Specimen carachteristics*

RISULTATI DELLE PROVE / *Test results*

Pos. *Position*	**Numero saggio** *Test piece n°*	**Dimensioni** t_s *Dimensions*	**b** *Dimensions*	**Piega** *Bend*	**Diametro mandrino** *Diameter of the former*	**Distanza tra i rulli** *Distance bet. Rollers*	**Angolo** *Angle*	**Allung.** *Elongation*	**Pos. e angolo di rottura** *Failure position and angle*	**Tipo e dimensioni delle imperfezioni osservate** *Defect Type and dimensions*
		mm			*mm*	*mm*	°	*mm*		
1	CI	25	10	SBB	40	63	180	\	\	No Defect
2	CI	25	10	SBB	40	63	180	\	\	No Defect
1	TT	25	10	SBB	40	63	180	\	\	No Defect
2	TT	25	10	SBB	40	63	180	\	\	No Defect

SGS SGS ITALIA S.p.A.
Witnessed ☒
Review ☐
Noted for information only ☐
22.02.17
Date Signature
8

Annotazioni :
Notes :

Esecutore
Operator

Per. Ind. Luca Poretto

L' Ispettore
Inspector