RINA

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO

SGQ N° 002 A SSI N° 001 G
SGA N° 002 D DAP N° 001 H
PRD N° 002 B PRS N° 066 C
SCR N° 003 F LAB N° 0832

Signatory of EA, IAF and ILAC Mutual Recognition Agreements

WELDING PROCEDURE QUALIFICATION RECORD (WPQR)

N. 11PA00043PO1/A

Manufacturer **METALTUMINO - 97100 Ragusa**

WPQR No. **01/11** Dated **01/06/2011**

Manufacturer's welding procedure (WPS) No. **01/11** Dated **16/05/2011**

RANGE OF APPROVAL

Welding process	**135**	Type	**Partly mechanized**
Joint type	**Plates and Pipes FW**		
Single/Multiple pass	**Single**		
Parent material group(s)	**1 to 1**	ISO/TR 15608	
	with a specified minimum yield strength ≤ 275 Mpa		
Parent material thickness (mm)	Butt Joint = **N.A.**	Fillet Joint t_1 = **5 to 12**	t_2 = **5 to 12**
Throat thickness (mm)	**3,75 to 7,50**		
Weld deposit thickness (mm)	**N.A.**		
Outside diameter (mm)	**over 150 (PA-PB-PC positions); over 500 (other qualified positions)**		
Filler metal type	**Solid wire ISO 14341-A - G3Si1**		
Shielding gas (ISO 14175)	**M21 with max. CO2 % = 22**	Backing gas (ISO 14175)	**None**
Type of welding current	**DCEP**	Heat input Kj/cm	**No restriction**
Welding position	**All, vertical down excluded**		
Preheat min. (°C)	**20**	Interpass temp. Max. (°C)	**N.A.**
Post weld heat treatment / Ageing	**None**		
Other information	-		

Welders name **Tumino Giovanni** Stamp No. **TG**

Welding test conducted by **METALTUMINO - 97100 Ragusa**

Mechanical test conducted by **TECNOLAB RINA-IIS srl** Laboratory test No. **n.770/11 del 24/05/11**
n.484 del 31/05/11

At presence of RINA Surveyor **Arecco Mauro**

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

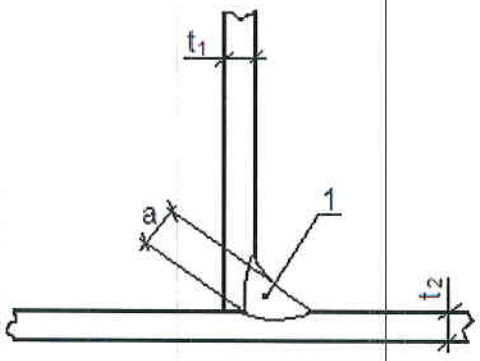
Issued at: Genova on 21 June 2011

RINA Services S.p.A.

JOINT DETAILS AND WELDING SEQUENCES

SINGLE RUN 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	ISO 14341-A - G3Si1	230	25	28	9,8	-



$t_1 = t_2 = 10mm$; a = 5mm

PARENT MATERIAL

Material specification	**EN 10025-2**		
Type or grade	**S275JR +AR**		
Group(s)/Subgroup(s) No. (ISO/TR 15608)	**1.1**		
Thickness (mm)	**10 to 10**	Throat thickness (mm)	**5**
Diameter (mm)	**N.A.**		
Branch connection angle	**N.A.**		
Other	-		

WELDING CONSUMABLES

Process	**135**
Trade name(s)	**ARROWELD SG2**
Specification	**ISO 14341-A**
Classification / designation	**G3Si1**
Size (mm)	**1,2**
Deposited metal thickness	
Groove	**N.A.**
Throat	**5mm**
Flux trade name	**N.A.**
Consumable insert	**N.A.**
Other	-

GAS

	Gas	Mixture	Flow rate (l/min.)
Shielding	-	**Ar (80%) - CO2 (20%)**	**12**
Trailing	-	-	-
Backing	-	-	-

POSITION

Welding position **PB**

Other **-**

PREHEAT

Preheat temperature **20°C**

Interpass temperature **N.A.**

Other **-**

POSTWELD HEAT TREATMENT

Temperature **N.A.**

Time **N.A.**

Other **-**

ELECTRICAL CHARACTERISTICS

Current **DCEP**

Ampere (range) **See table** Volts (Range) **See table**

Mode of metal transfer **Spray arc**

Tungsten electrode size and type **N.A.**

Other **-**

TECHNIQUE

Travel speed (range) **See table**

String or weave bead **String**

Oscillation (*) **N.A.**

Method of groove/edge preparation **Machining/Grinding**

Interpass cleaning **N.A.**

Method of back gouging **N.A.**

Orifice or gas cup size **12 mm**

Stand off distance (*) **N.A.**

Multiple or single pass **Single**

Multiple or single electrodes **Single**

Torch angle (*) **N.A.**

Other (*) for fully mechanized/robotic only

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**

Issued at: Genova

on 21 June 2011

RINA Services S.p.A.

CND SERVICE Controlli non distruttivi srl
ROMA - CIVITAVECCHIA

RAPPORTO ESAME PARTICELLE MAGNETICHE

MAGNETIC EXAMINATION REPORT

UNI EN ISO 9001-2008 Certificato n. 98.107

EASA PART 145 Certificato ENAC n. IT.145.128

CERTIFICATO N. *Report n.* 0770/11	Foglio n. *Sheet n.* 1	di *Of* 1	

COMMITTENTE: *Customer* TECNOLAB srl	COSTRUTTORE: *Manufacturer* METALTUM INO	ORDINE: *Order*	
IMPIANTO *Plant* QUALIFICA PROCEDIMENTO DI SALDATURA 135 POS. PB IN ACCORDO ALLA NORMA UNI EN ISO 15614-1:2008		COMMESSA *Job*	
OGGETTO: *Object:* WPS 01/11 SAGGIO 129 E			

DISEGNO: *Drawings*	===	PULIZIA DOPO ESAME: *Cleaning after examination*	NO
MATERIALE: *Material*	S275JR+AR	ESTENSIONE ESAME: *Test extension*	100%
DIMENSIONI: *Dimensions*	Sp 10 su 10 mm	SMAGNETIZZAZIONE: *Demagnetization*	NO
TIPO DI GIUNTO: *Type of joint*	FW	PROCEDURA D'ESAME: *Examination procedure*	UNI EN 17638
STADIO DI LAVORAZIONE: *Fabrication step*	COME SALDATA	LIMITI DI ACCETTABILITA' *Acceptance standards*	UNI EN 23278
CONDIZIONI SUPERFICIALI: *Test surface status*	SPAZZOLATA		

TECNICA DI MAGNETIZZAZIONE *Magnetization method*

☐ PUNTALI *Prods*	☒ GIOGO *Yoke*	☐ BOBINA *Coil*
CORRENTE: *Current*	CORRENTE: *Current* AC	CORRENTE: *Current*
INTENSITÀ' (A): *Intensity*	DISTANZA (mm): *Distance* 100	INTENSITÀ'(A): *Intensity (A)*
DISTANZA (mm): *Distance*	CAMPO MAGNETICO: *Magnetic Field* 50 A/Cm 180 mm	DIAMETRO: *Diameter*
TIPO APPARECCHIO: *Equipment type*	TIPO APPARECCHIO: *Equipment type* YOKE (CGM)	TIPO APPARECCHIO: *Equipment type*

RILEVATORE MAGNETICO *Inspection medium*

☒ VISIBILE *Visible*		☐ FLUORESCENTE *Fluorescent*		MEZZO DI CONTRASTO *Contrast paint*	
MARCA/TIPO *Trade mark/type*	LOTTO *Batch*	MARCA/TIPO *Trade mark/type*	LOTTO *Batch*	MARCA/TIPO *Trade mark/type*	LOTTO *Type*
CGM LK 35				CGM VECOPLAST	

INDICAZIONI: *indication* NESSUNA

CONFORME *Conforming*	☒	NOTE: *Remarks:*
NON CONFORME *Not conforming*	☐	

OPERATORE *Operator*	LIV. *Lev.*	DATA *Date*	COMMITTENTE *Customer*	ISPETTORE COMMITTENTE *Customer Inspector*	
				FIRMA *(Signe)*	DATA *(Date)*
V. PANTALONE EN473/ISO9712	2	24/05/2011		RINA M. Arecco	24.05.11

TECNOLAB RINA IIS srl Via G. Mauro De Angelis D'Ossat snc 00053 – Civitavecchia RM	SAGGIO TEC / *JOB* N. 129E	DATA / *DATE* 31/05/2011	RAPPORTO / *REPORT* N. 484	PAGINA/*PAGE* N. 1 di/*of* 1
	ORDINE / *ORDER* N. QIB/FMD/50872 del 27/11/2009		SAGGIO / *TEST* N. 1	

CLIENTE/*CUSTOMER*

METALTUMINO Ragusa RG

DESCRIZIONE/*DESCRIPTION*

Qualifica procedimento di saldatura "135" WPS 01/11 Pos. PB

Materiale base: UNI EN 10025-2:2005 S275JR+AR

Norma: UNI EN ISO 15614-1:2008

Saldatore: TUMINO Giovanni Pratica RINA 2011PAPO43

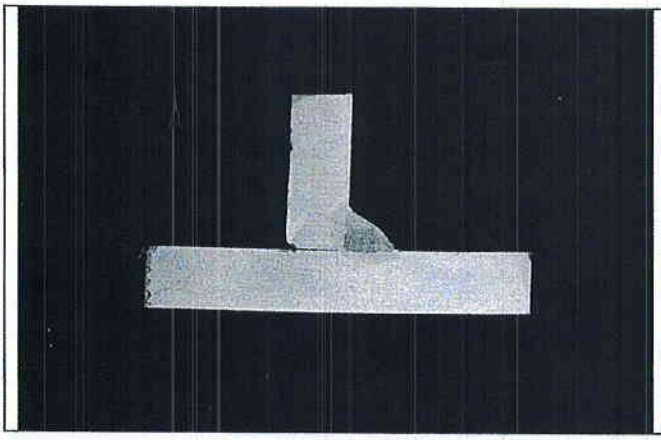
PLACCA / *PLATE* -

COLATA / *HEAT*

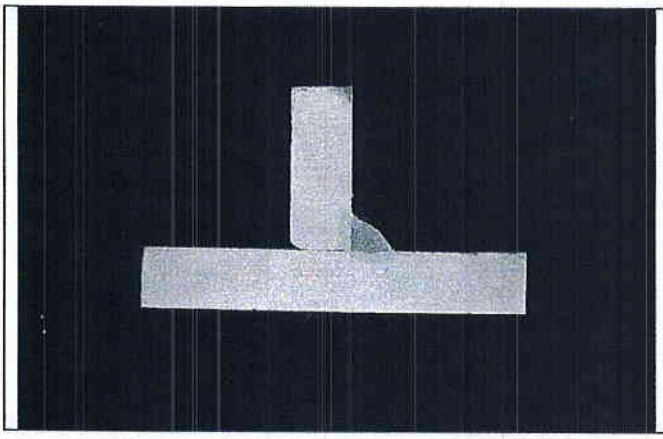
COLLAUDO / *INSPECTION*
RINA Service

DIMENSIONI DEL MATERIALE / *DIMENSIONS OF MATERIAL (mm) spess.* 10 su 10

ESAME MACROSCOPICO



Macrografia: **N° 129E Macro 1**
Attacco: **Nital 5%**
Ingrandimento: **1 x**
Riferimento Normativo: **UNI EN ISO 5817:2008 liv. B**
Gola : **5,0 mm**
Esito : **Soddisfacente**



Macrografia: **N° 129E Macro 2**
Attacco: **Nital 5%**
Ingrandimento: **1 x**
Riferimento Normativo: **UNI EN ISO 5817:2008 liv. B**
Gola : **4,0 mm**
Esito : **Soddisfacente**

NORME / *STANDARDS* : UNI EN 1321:1997.

NOTE / *REMARKS*

RESPONSABILE DEL LABORATORIO
HEAD OF THE LABORATORY
M. Romitelli

OPERATORE
OPERATOR

ISPETTORE
INSPECTOR
M. Arecco