



Manufacturers Data Report

ADSN0000xxxx



MDR



xxxxxx 0 1 0 1

Manufacturers Data Report

Customer	Sample
PO Number	PO
Aflex Job Number	xxxxxx
Aflex Batch Number	xxxxxx01
Aflex Item Number	xxxxxx0101
Serial Number	ADSN0000xxxx
Release ID	xxx
Item Description	300NB UEB
Report Generated	12:56 25/07/2018
Release Date	25/07/2018



Photo is indicative only and may be of another item in the same batch



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Statement of Certification

BESTPRACTICE
CERTIFICATION

Aflex Pty Ltd

Best Practice Certification Pty Ltd has assessed the above company as complying with the following management system standard requirements at the address shown.

Standard:	ISO 9001:2015 Quality Management System Requirements	
Scope of Certification:	Design and manufacture of metal expansion bellows for use in pipework	
Head Office Address:	Unit 14, 12 - 14 Beaumont Road, Mt. Kuring-gai NSW 2080 Australia	
Initial Certification Date:	11/09/2013	
Issue Date:	Expiry Date:	Certificate Number:
21/08/2019	20/09/2022*	73070676201Q



CERTIFICATION APPROVED:

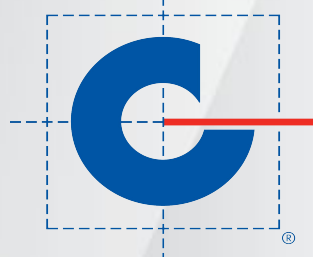
Kobi Simmat
Managing Director
Best Practice Certification Pty Ltd

a» Suite 2, Level 2, Building B
122-126 Old Pittwater Road
Brookvale NSW 2100
p» 1300 402 602
w» <https://bestpracticecertification.com.au>



www.jas-anz.org/register

JAS-ANZ



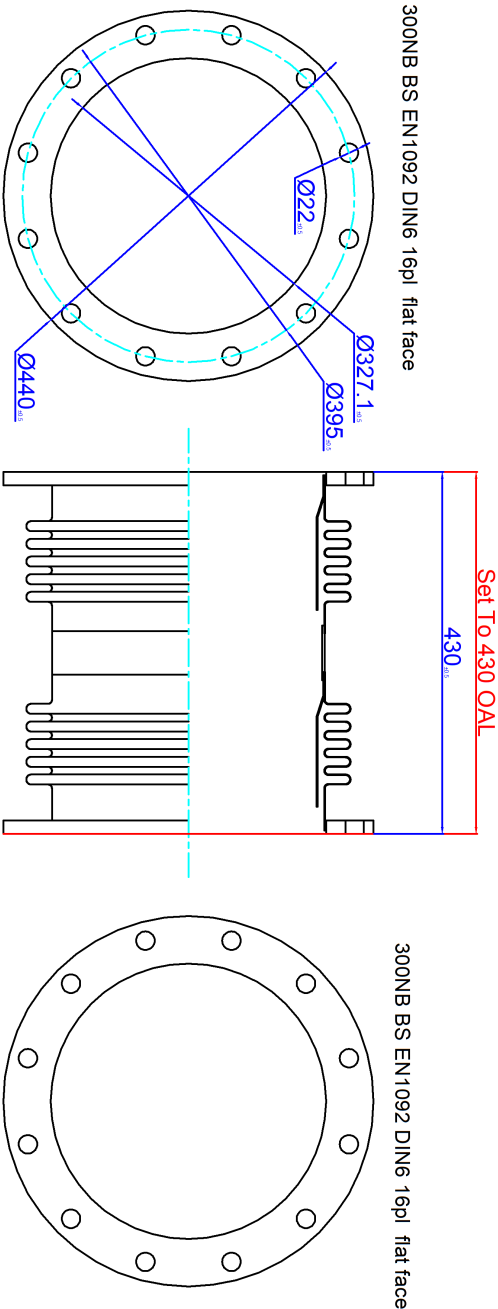
BESTPRACTICE
CERTIFICATION



* Subject to regular surveillance audits



Manufacturing Drawing



Revision History:			
Rev 1: Change dim layer states (JK)			
Rev 0: Bellows geometry Drawn by Aflex AutoDraw (JK)			
TITLE:		Master Drawing R1	
STATUS: Approved		SCALE	N/A
JK	25-05-2018	JK	25-05-2018 Aflex Ref: None
			

Drawing not to Scale



Bellows Information (M-03)



- 1 0 7 5 3 0 0 4 -

Quote Reference: 10753004**Bellows Calculations (EJMA 9th Ed.)****Aflex Part Number: None****Bellows Design Inputs**

Bellows ID
Working Pressure
Design Pressure
Pitch
Working Temperature (< 450 Deg. for EJMA)
Pressure Band Material Thickness
Bellows Material Thickness
Convolution Height
Axial Compression
Axial Extension
Lateral Movement
Angular Movement
Youngs Modulus, Room Temp
Youngs Modulus, Design Temp
Yield Stress, Room Temp
Yield Stress, Design Temp
Yield Stress, Material Cert
Element Length
Cuff Length
Mean Convolution Radius
Number of Convolutions
Number of Plies
Cp Factor
Cf Factor
Cd Factor

db	323.0	mm
p	10	kPa
pd	50	kPa
q	21	mm
temp	450	Deg C
tc	0.0	mm
t	0.7	mm
w	23	mm
xcomp	20	mm
xext	0	mm
y	20.0	mm
tod	0.0	Degrees
eybrt	193.1	GPa
eybdt	187.35	GPa
sycrt	206.0	MPa
sycdt	95.18	MPa
sym	280.00	MPa
el	247	mm
lt	50	mm
rm	4.725	mm
n	7	cons
np	1	plies
cp	0.7330	cp
cf	1.6690	cf
cd	1.5470	cd

Bellows Design Results**Calculated Cycle Life**

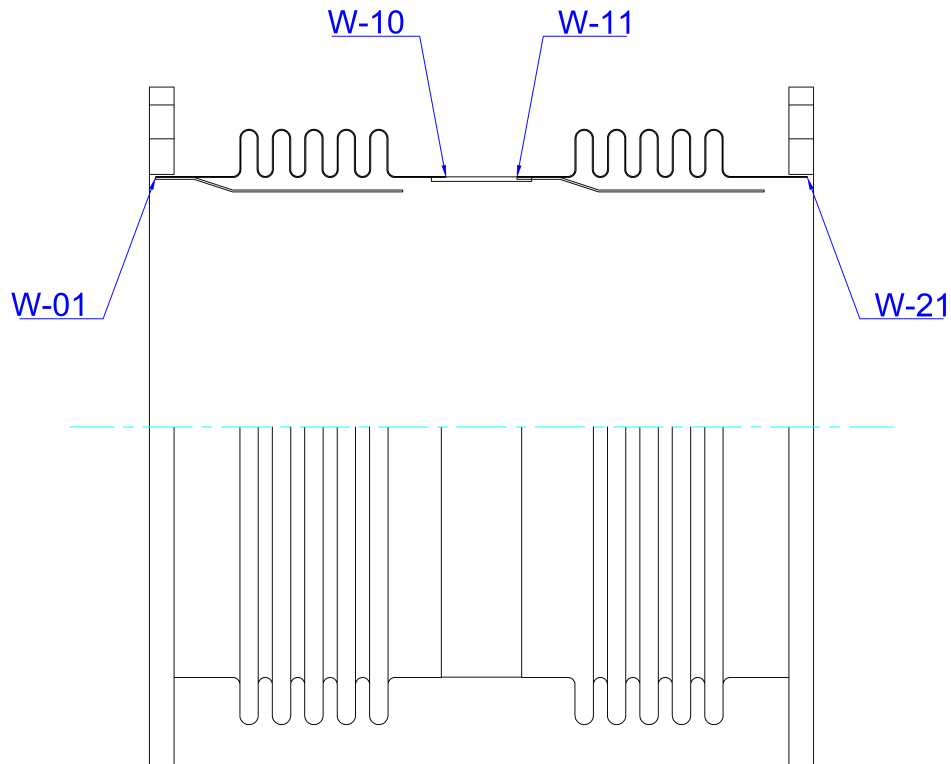
Bellows Cuff Circumferential Pressure Stress
Pressure Band Circumferential Pressure Stress
Bellows Circumferential Pressure Stress
Meridional Membrane Pressure Stress
Meridional Bending Pressure Stress
Meridional Membrane Stress due to Deflection
Meridional Bending Stress due to Deflection
Total Stress due to Pressure and Deflection
Column Instability Pressure
Inplane Instability Pressure
Axial Spring Rate
Angular Spring Rate
Lateral Spring Rate
Resultant Axial Reaction Force (Compression)
Lateral Force due to Lateral Deflection
Force Req.to Compress Bellows (20mm)
Bellows Effective Area
Bellows Pressure Thrust

ncu	95842	cycles
s1	2	MPa
sc1	0	MPa
s2	1	MPa
s3	0	MPa
s4	4	MPa
s5	7	MPa
s6	802	MPa
st	812	MPa
ps	449	kPa
psi	578	kPa
ksr	123	N/mm
umt	32	Nm/Deg
uml	50	N/mm
rx	2470	N
vl	997	N
fx	3415	N
ae	94411	mm^2
pthrust	945	N



Welding Information

Weld Map



Drawing not to Scale

Identifier	Weld Description	Procedure	Process
W-01	Bellows Inlet to Flange	Group A1/K Bellows Attachment	GTAW
W-10	Bellows To Centre Spool 1	Group K/K Bellows Attachment	GTAW
W-11	Bellows to Centre Spool 2	Group K/K Bellows Attachment	GTAW
W-21	Bellows Outlet to Flange	Group A1/K Bellows Attachment	GTAW

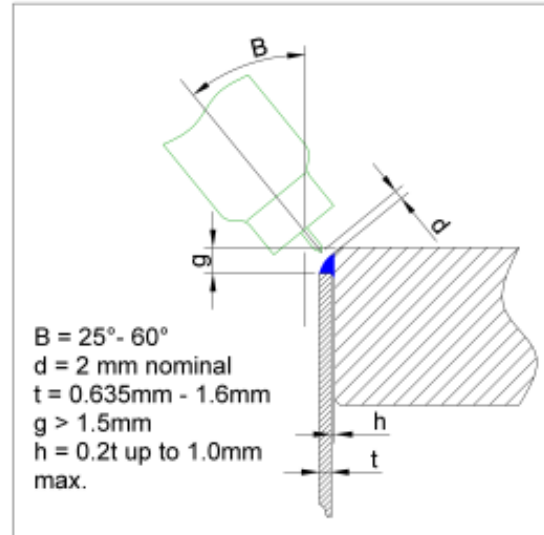


Weld W-01

Weld Procedure Specification (WPS)

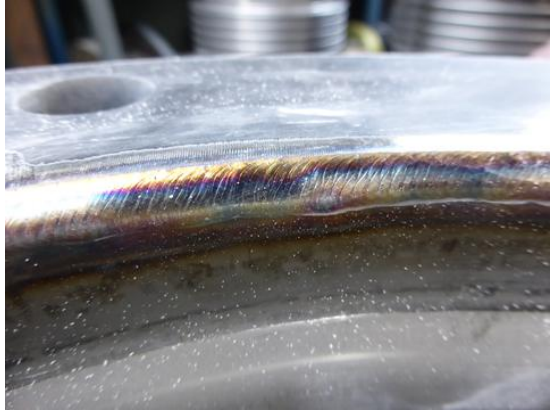
Weld Description	W-01 - Bellows Inlet to Flange
WPS Name	Group A1/K Bellows Attachment
WPS ID	30
Based On PQR ID	12969
Applicable Code	AS3992:1998
Process	GTAW
Amps Min	170
Amps Max	215
Volts Min	8
Volts Max	12
Weld Speed Min (mm/s)	3
Weld Speed Max (mm/s)	5.5
Arc Energy Min (kJ/mm)	0.45
Arc Energy Max (kJ/mm)	0.47
Polarity	DC Positive to Earth
Pulse Freq. Min	1.8
Pulse Freq. Max	2.5
Pulse Low %	40
Pulse Duty %	40
Tungsten Dia. (mm)	2.4
Electrode Stickout. (mm)	6
Minimum Pipe Diameter	0
Maximum Pipe Diameter	0
Parent 1 Material Group	A1
Parent 2 Material Group	K
Filler Material Group	F6
Filler Material	AWS ER309/309L
Filler Size Min (mm)	1.6
Filler Size Max (mm)	2.4
Flux	
Weld Position	2F
Weld direction	Forwards
Torch Shielding Gas	100% Argon
Gas Flow Torch (l/min)	12
Purge Shielding Gas	N/A
Gas Flow Purge (l/min)	0
Pre Heat Temperature Minimum	N/A
Interrun Temperature Maximum	N/A
Intermediate heat treatment	N/A
Post weld heat treatment	N/A
Interrun Cleaning	N/A
Back Gouging	N/A
Notes	

Torch Position / Material Fitup





Weld Record

Weld Identifier	W-01	Photo of weld 
Weld Record ID	30827	
Operator	TF	
Time of Weld	25/05/2018 07:13	
WPS Name	Group A1/K Bellows Attachment	
WPS ID	30	
Process	GTAW	
Amps	180	
Volts	8	
Weld Speed (mm/s)	3	
Arc Energy (kJ/mm)	0.48	
Polarity	DC Positive to Earth	
Pulse Freq.	2.5	
Pulse Low %	50	
Pulse Duty %	50	
Tungsten Dia. (mm)	2.4	
Electrode Stickout. (mm)	6	
Parent 1 Material Group	A1	
Parent 1 Material	Refer to Materials Map	
Parent 2 Material Group	K	
Parent 2 Material	Refer to Materials Map	
Filler Material Group	F6	
Filler Material	AWS ER309/309L	
Filler Size Dia. (mm)	1.6	
Flux		
Weld Position	2F	
Weld direction	Forwards	
Torch Shielding Gas	100% Argon	
Gas Flow Torch (l/min)	12	
Purge Shielding Gas	N/A	
Gas Flow Purge (l/min)	0	
Number of Runs	1	
Pre Heat Temperature Minimum	N/A	
Interrun Temperature Maximum	N/A	
Intermediate heat treatment	N/A	
Post weld heat treatment	N/A	
Interrun Cleaning	N/A	
Back Gouging	N/A	
Notes		

Note: Weld photo is indicative only and may be of another item in the same batch.

NDT Results

Check ID	Description	Technician	Date Performed	Result
41818	Axial Dynamics 100% Through Dye Pen.	TF	25/05/2018	PASS

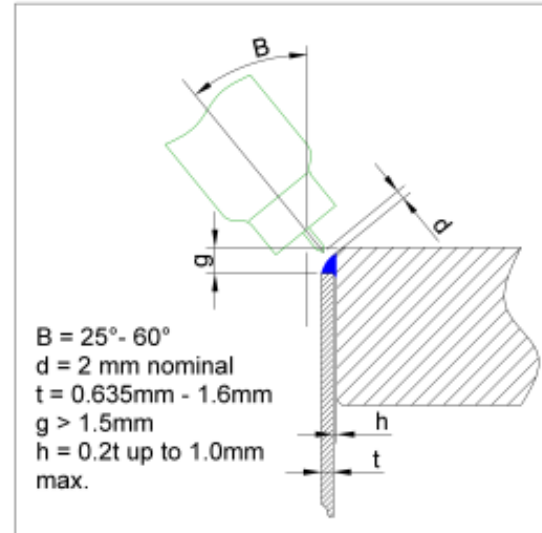


Weld W-10

Weld Procedure Specification (WPS)

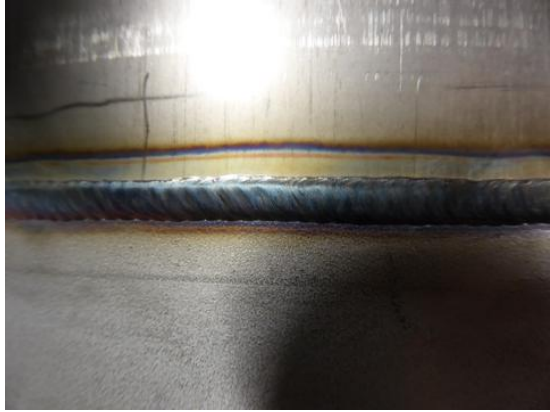
Weld Description	W-10 - Bellows To Centre Spool 1
WPS Name	Group K/K Bellows Attachment
WPS ID	1
Based On PQR ID	12971
Applicable Code	AS3992:1998
Process	GTAW
Amps Min	170
Amps Max	215
Volts Min	8
Volts Max	12
Weld Speed Min (mm/s)	3
Weld Speed Max (mm/s)	5
Arc Energy Min (kJ/mm)	0.45
Arc Energy Max (kJ/mm)	0.52
Polarity	DC Positive to Earth
Pulse Freq. Min	1.8
Pulse Freq. Max	2.5
Pulse Low %	40
Pulse Duty %	40
Tungsten Dia. (mm)	2.4
Electrode Stickout. (mm)	6
Minimum Pipe Diameter	50
Maximum Pipe Diameter	1200
Parent 1 Material Group	K
Parent 2 Material Group	K
Filler Material Group	F6
Filler Material	316/316L
Filler Size Min (mm)	1.6
Filler Size Max (mm)	2.4
Flux	N/A
Weld Position	2F
Weld direction	Forwards
Torch Shielding Gas	100% Argon
Gas Flow Torch (l/min)	12
Purge Shielding Gas	N/A
Gas Flow Purge (l/min)	0
Pre Heat Temperature Minimum	N/A
Interrun Temperature Maximum	N/A
Intermediate heat treatment	N/A
Post weld heat treatment	N/A
Interrun Cleaning	N/A
Back Gouging	N/A
Notes	

Torch Position / Material Fitup





Weld Record

Weld Identifier	W-10	Photo of weld 
Weld Record ID	30829	
Operator	SK	
Time of Weld	15/05/2018 08:26	
WPS Name	Group K/K Bellows Attachment	
WPS ID	1	
Process	GTAW	
Amps	170	
Volts	8	
Weld Speed (mm/s)	4	
Arc Energy (kJ/mm)	0.34	
Polarity	DC Positive to Earth	
Pulse Freq.	2.5	
Pulse Low %	40	
Pulse Duty %	40	
Tungsten Dia. (mm)	2.4	
Electrode Stickout. (mm)	6	
Parent 1 Material Group	K	
Parent 1 Material	Refer to Materials Map	
Parent 2 Material Group	K	
Parent 2 Material	Refer to Materials Map	
Filler Material Group	F6	
Filler Material	316/316L	
Filler Size Dia. (mm)	1.6	
Flux	N/A	
Weld Position	2F	
Weld direction	Forwards	
Torch Shielding Gas	100% Argon	
Gas Flow Torch (l/min)	12	
Purge Shielding Gas	N/A	
Gas Flow Purge (l/min)	0	
Number of Runs	1	
Pre Heat Temperature Minimum	N/A	
Interrun Temperature Maximum	N/A	
Intermediate heat treatment	N/A	
Post weld heat treatment	N/A	
Interrun Cleaning	N/A	
Back Gouging	N/A	
Notes		

Note: Weld photo is indicative only and may be of another item in the same batch.

NDT Results

Check ID	Description	Technician	Date Performed	Result
41820	Axial Dynamics 100% Through Dye Pen.	SK	15/05/2018	PASS



Welder Qualification Certificate

Welder Qualification Details

WPS ID	1
WPS Name	Group K/K Bellows Attachment
Process	GTAW
Weld Position	2F
Technician	Stephen Klosowski
Initials	SK
Date of Qualification	16-07-2015 12:27:31
Method of Qualification	Satisfactory Completion of PQR
PQR ID	12972
PQR Document	http://axialdynamics.com.au/pqr/Axial_PQR_12972.pdf
Approved By	Nick Gould

Test Piece



Please Refer to PQR ID 12972 for full details

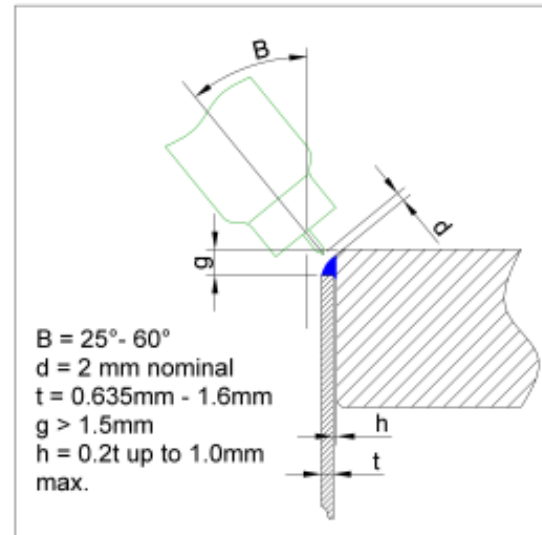


Weld W-11

Weld Procedure Specification (WPS)

Weld Description	W-11 - Bellows to Centre Spool 2
WPS Name	Group K/K Bellows Attachment
WPS ID	1
Based On PQR ID	12971
Applicable Code	AS3992:1998
Process	GTAW
Amps Min	170
Amps Max	215
Volts Min	8
Volts Max	12
Weld Speed Min (mm/s)	3
Weld Speed Max (mm/s)	5
Arc Energy Min (kJ/mm)	0.45
Arc Energy Max (kJ/mm)	0.52
Polarity	DC Positive to Earth
Pulse Freq. Min	1.8
Pulse Freq. Max	2.5
Pulse Low %	40
Pulse Duty %	40
Tungsten Dia. (mm)	2.4
Electrode Stickout. (mm)	6
Minimum Pipe Diameter	50
Maximum Pipe Diameter	1200
Parent 1 Material Group	K
Parent 2 Material Group	K
Filler Material Group	F6
Filler Material	316/316L
Filler Size Min (mm)	1.6
Filler Size Max (mm)	2.4
Flux	N/A
Weld Position	2F
Weld direction	Forwards
Torch Shielding Gas	100% Argon
Gas Flow Torch (l/min)	12
Purge Shielding Gas	N/A
Gas Flow Purge (l/min)	0
Pre Heat Temperature Minimum	N/A
Interrun Temperature Maximum	N/A
Intermediate heat treatment	N/A
Post weld heat treatment	N/A
Interrun Cleaning	N/A
Back Gouging	N/A
Notes	

Torch Position / Material Fitup





Weld Record

Weld Identifier	W-11	Photo of weld 
Weld Record ID	30828	
Operator	TF	
Time of Weld	25/05/2018 08:42	
WPS Name	Group K/K Bellows Attachment	
WPS ID	1	
Process	GTAW	
Amps	180	
Volts	8	
Weld Speed (mm/s)	3	
Arc Energy (kJ/mm)	0.48	
Polarity	DC Positive to Earth	
Pulse Freq.	2.5	
Pulse Low %	50	
Pulse Duty %	50	
Tungsten Dia. (mm)	2.4	
Electrode Stickout. (mm)	6	
Parent 1 Material Group	K	
Parent 1 Material	Refer to Materials Map	
Parent 2 Material Group	K	
Parent 2 Material	Refer to Materials Map	
Filler Material Group	F6	
Filler Material	316/316L	
Filler Size Dia. (mm)	1.6	
Flux	N/A	
Weld Position	2F	
Weld direction	Forwards	
Torch Shielding Gas	100% Argon	
Gas Flow Torch (l/min)	12	
Purge Shielding Gas	N/A	
Gas Flow Purge (l/min)	0	
Number of Runs	1	
Pre Heat Temperature Minimum	N/A	
Interrun Temperature Maximum	N/A	
Intermediate heat treatment	N/A	
Post weld heat treatment	N/A	
Interrun Cleaning	N/A	
Back Gouging	N/A	
Notes		

Note: Weld photo is indicative only and may be of another item in the same batch.

NDT Results

Check ID	Description	Technician	Date Performed	Result
41819	Axial Dynamics 100% Through Dye Pen.	TF	25/05/2018	PASS

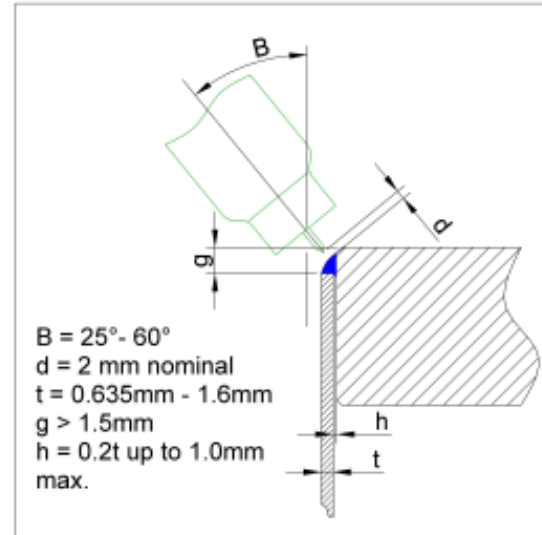


Weld W-21

Weld Procedure Specification (WPS)

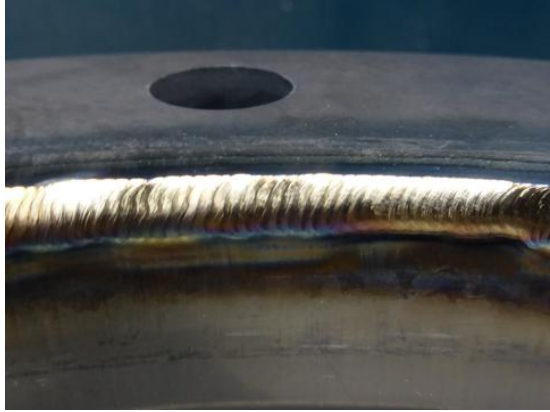
Weld Description	W-21 - Bellows Outlet to Flange
WPS Name	Group A1/K Bellows Attachment
WPS ID	30
Based On PQR ID	12969
Applicable Code	AS3992:1998
Process	GTAW
Amps Min	170
Amps Max	215
Volts Min	8
Volts Max	12
Weld Speed Min (mm/s)	3
Weld Speed Max (mm/s)	5.5
Arc Energy Min (kJ/mm)	0.45
Arc Energy Max (kJ/mm)	0.47
Polarity	DC Positive to Earth
Pulse Freq. Min	1.8
Pulse Freq. Max	2.5
Pulse Low %	40
Pulse Duty %	40
Tungsten Dia. (mm)	2.4
Electrode Stickout. (mm)	6
Minimum Pipe Diameter	0
Maximum Pipe Diameter	0
Parent 1 Material Group	A1
Parent 2 Material Group	K
Filler Material Group	F6
Filler Material	AWS ER309/309L
Filler Size Min (mm)	1.6
Filler Size Max (mm)	2.4
Flux	
Weld Position	2F
Weld direction	Forwards
Torch Sheilding Gas	100% Argon
Gas Flow Torch (l/min)	12
Purge Sheilding Gas	N/A
Gas Flow Purge (l/min)	0
Pre Heat Temperature Minimum	N/A
Interrun Temperature Maximum	N/A
Intermediate heat treatment	N/A
Post weld heat treatment	N/A
Interrun Cleaning	N/A
Back Gouging	N/A
Notes	

Torch Postion / Material Fitup





Weld Record

Weld Identifier	W-21	Photo of weld 
Weld Record ID	30830	
Operator	TF	
Time of Weld	25/05/2018 08:41	
WPS Name	Group A1/K Bellows Attachment	
WPS ID	30	
Process	GTAW	
Amps	170	
Volts	8	
Weld Speed (mm/s)	3	
Arc Energy (kJ/mm)	0.45	
Polarity	DC Positive to Earth	
Pulse Freq.	2.5	
Pulse Low %	40	
Pulse Duty %	40	
Tungsten Dia. (mm)	2.4	
Electrode Stickout. (mm)	6	
Parent 1 Material Group	A1	
Parent 1 Material	Refer to Materials Map	
Parent 2 Material Group	K	
Parent 2 Material	Refer to Materials Map	
Filler Material Group	F6	
Filler Material	AWS ER309/309L	
Filler Size Dia. (mm)	1.6	
Flux		
Weld Position	2F	
Weld direction	Forwards	
Torch Shielding Gas	100% Argon	
Gas Flow Torch (l/min)	12	
Purge Shielding Gas	N/A	
Gas Flow Purge (l/min)	0	
Number of Runs	1	
Pre Heat Temperature Minimum	N/A	
Interrun Temperature Maximum	N/A	
Intermediate heat treatment	N/A	
Post weld heat treatment	N/A	
Interrun Cleaning	N/A	
Back Gouging	N/A	
Notes		

Note: Weld photo is indicative only and may be of another item in the same batch.

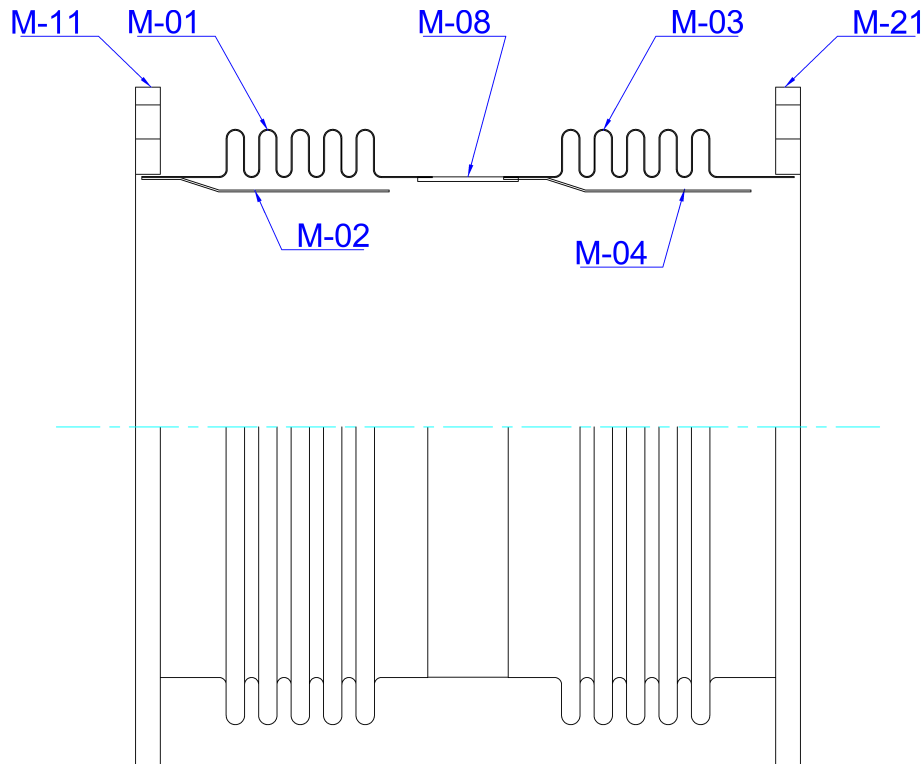
NDT Results

Check ID	Description	Technician	Date Performed	Result
41821	Axial Dynamics 100% Through Dye Pen.	TF	25/05/2018	PASS



Materials Information

Materials Map



Drawing not to Scale

Materials Records

Identifier	Material Name	M-ID	Heat Number	Cert Doc ID
M-02	Sheet - 1220 x 2440 1.2mm 316/316L	105726	106030397	43194
M-04	Sheet - 1220 x 2440 1.2mm 316/316L	105726	106030397	43194
M-08	Flat Bar - 65x3 316/316L	102131	TU-YU244763	6249
M-11	Plate - 16mm Carbon Steel	106018		
M-21	Plate - 16mm Carbon Steel	106018		

Bellows Records

Identifier	Material Name	M-ID	Heat Number	Cert Doc ID
M-01	Sheet - 1250 x 3000 0.7mm 321	103349	C4TC	21233
M-03	Sheet - 1250 x 3000 0.7mm 321	103349	C4TC	21233

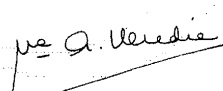
Where applicable, Material Certificates can be found on the following pages...



MDR



Material Certificate 21233 (Page 1 of 2)

ACERINOX EUROPA FABRICA DEL ONIPO DE GIBRALTAR PALMONES (LOS BARRIOS) TFNO. (34) - 956 62 93 00 FAX (34) - 956 62 93 11 P.O. BOX 83 11370 LOS BARRIOS (CADIZ)		 Certified by quality, environmental and safety & health management systems	INSPECTION CERTIFICATE CERTIFICADO DE INSPECCION 3.1													
ACCORDING TO EN 10204		CERTIFICATE N° F0 2013 831354 70002 *														
CUSTOMER CLIENTE		OUR ORDER N° N° PEDIDO AE 94426	YOUR ORDER N° S/ PEDIDO ORD.10/2013 - 3													
TRADE MARK SELLO DEL FABRICANTE 		INSPECTOR'S STAMP SELLO DEL INSPECTOR	STEELMAKING PROCESS PROCESO DE ACERIA A.O.D.													
REQUIREMENTS NORMAS APLICABLES EN 10095:1999 ASTM A240/A480Ed11-ASME Sec.IA SA240/SA480Ed10Addenda2011		INTERGRANULAR CORROSION CORROSION INTERGRANULAR ASTM-A-262 PRACTICA E	GRADE MATERIAL Acx 315 1.4878 Acx 315 TP-321													
COIL / BOX BORNA / CAJA	CONTENT CONTENIDO	DIMENSIONS DIMENSIONES THICKNESS ESPESOR WIDTH ANCHO LENGTH LARGO	MARKS MARCA 25 26	QUANTITY CANTIDAD 1 1	TEST N° PRUEBA 04C4TC 04C4TC	FINISH ACABADO 2B 2B										
CHEMICAL ANALYSIS / COMPOSICIÓN QUÍMICA (%)																
HEAT N° COLADA	C	CR	MN	N	NI	P	S	SI	TI	CO						
C4TC	0,018	17,275	1,100	0,017	9,040	0,025	0,001	0,577	0,341	0,134						
MECHANICAL PROPERTIES / CARACTERÍSTICAS MECÁNICAS																
TEST N° PRUEBA	PROBE SITIO	Rm N/mm2	Rp 0.2 N/mm2	Rp 1.0 N/mm2	A50 %	A80 %	HV2									
04C4TC	C T	554,78	262,04	288,30	54,27	58,27	148,00									
REMARKS / OBSERVACIONES The delivery is in accordance with the order Temperatura de hipertemple entre 1050 y 1100 ° C. NACE-MR0175/ISO 15156:2003; NACE MR0103:2010 (Chem & Mech only).								SURFACE AND DIMENSIONAL CONTROL INSPECCION SUPERFICIAL Y DIMENSIONAL SATISFACTORY SATISFACTORIA WORK INSPECTOR INSPECTOR  A. Heredia Palmones, 29 MAYO 2013								

FDT0009



Material Certificate 21233 (Page 2 of 2)

ACERINOX EUROPA FABRICA DEL CAMPO DE GIBRALTAR PALMONES (LOS BARRIOS) TFRD. (34) - 956 62 93 00 FAX (34) - 956 62 93 11 P.O. BOX 83 11370 LOS BARRIOS, (CA012)		 Certified by quality, environment and safety & health management systems		Abnahmeprüfzeugnis INSPECTION CERTIFICATE ACCORDING TO EN 10204 3.1 Nach Prüf-Nr. F0 2013 831354 70001 C Inspection No.									
Besteller - Customer:		Auftrags Nr. - Our order n°: AE 94426		Bestellung Nr. - Your order n°: ORD.10/2013 - 3									
Prüfgegenstand - Article: BAND (COIL)		Werkstoff Nr und Lieferzustand - Material n° and Condition of Delivery: 1.4541 2B											
Werkstoff - Normbez Standard - Grade of Material: X6CrNiTi18-10		Werksbez - Works Grade: Acx - 315		Erschmelzungsart - Steelmaking Process: A=AOD Verfahren AOD Process A									
Anforderungen - Technical requirements: EN 10028-7/TRB 100/AD-2000-MERKBLATT W2/W10 DGR 97/23/EG (PED)				Kennzeichnung - Marking: Schmelznummer - N° of coil									
Zeichen des Lieferwerks - Brand of the manufacturer:		Stempel des Sachverständigen - Inspector's stamp:											
													
Pos Nr. Item N°	Stückzahl Quantity	Abmessung - Dimensions mm		Schmelze Nr Heat N°	Probe Nr Test N°								
25	1	0,700 x 1.250,00		C4TC	04C4TC								
26	1	0,700 x 1.250,00		C4TC	04C4TC								
					C								
					C								
Chemische Analyse - Chemical Composition (%)													
Schmelze Nr Heat N°	C	CR	MN	NI	P	S	SI	TI	CO				
Anforderungen Requirements	0,080	17,000 19,000	2,000	9,000 12,000	0,045	0,015	1,000						
C4TC	0,018	17,275	1,100	9,040	0,025	0,001	0,577	0,341	0,134				
Mechanische Eigenschaften - Mechanical Properties Pr. Temp/T. Temp. 20° C													
Probe Nr Test N°	Prob.-Lage Pos of Test	Abmessungen des Probestabs Dim. of specimen		Rm N/mm2	Rp 0.2 N/mm2	Rp 1.0 N/mm2	A80 %						
Anforderungen Requirements		Breite x Dicke Width x Thickness mm		520,00 720,00	220,00	250,00	40,00						
04C4TC	C T	20,000	0,70	554,78	262,04	288,30	58,27						
Besichtigung und Masskontrolle wurden durchgeführt: O.B. Surface and dimensions controlled: O.K. Der Werkstoff ist beständig gegen interkristalline Korrosion gemäss EN ISO 3651-2 The material is resistant to intergranular corrosion test according to EN ISO 3651-2 Spektroskopische Identitätsprüfung: O.B. Spectrometrical identity test: O.K. Wärmebehandlung: Glühen bei 1050 - 1100 °C Heat treatment: Und Abschrecken mit Luft cooling with air. Die Lieferung entspricht der Bestellung The delivery is in accordance with the order													
												WERKSACHVERSTÄNDIGER WORK INSPECTOR A. Heredia	
												Palmones, 29 MAYO 2013	



MDR



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裕笙工業股份有限公司
YUE SENG INDUSTRIAL CO., LTD.
ISO 9001 · ISO14001 · OHSAS18001

INSPECTION CERTIFICATE
EN 10204-3.1 2005

NO. 12, LIU KING NORTH 1ST ROAD,
LU-KANG TOWN CHANG HUA HSIEN,
TAIWAN
HTTP://WWW.YUESENG.COM.TW
TEL: 886-4-7812883 FAX: 886-4-7812688

CUSTOMER: SANWA PTY LTD
INVOICE NO.: YS-03272017-2
PO NO.: SICO-1702039

CERTIFICATE NO.: YS-106-0133-2
STEEL GRADE: SUS 316L
SPECIFICATION: ASTM A240/480
DATE: 27 MAR, 2017

DESCRIPTION: COLD ROLLED STAINLESS STEEL SHEETS AND COILS AS PER SANWA ORDER 27289

P/L NO.	HEAT NO.	PRODUCTION DESCRIPTION				CHEMICAL COMPOSITION (%)											TENSION TEST				HARDNESS TEST		REFERENCE NO.	
		SIZE	QTY (PCS)	N.W. (KGS)	FINISH	C	SI	Mn	P	S	NI	Cr	N	Cu	Mo	V.S. (0.2%) N/mm ²	T.S. N/mm ²	El %	HRB	HV				
SPECIFICATION																								
						Min												Mpa						
						Max																		
11	106030397	1.20MM X 1219MM X COIL	1	3130	316L-2B/PAPER	0.013	0.330	1.430	0.030	0.001	10.040	16.790	0.030	0.240	2.030	342	643	44	-	165	VSSAU10602B-118			
12	106030398	2.50MM X 1500MM X COIL	1	3230	316L-2B/PAPER	0.024	0.590	1.290	0.033	0.002	10.120	16.700	0.015	0.210	2.030	282	595	53	80.0	154	VSSAU10602B-123			
13	106030400	3.00MM X 1500MM X COIL	1	4800	316L-2B/PAPER	0.027	0.690	0.600	0.034	0.001	10.070	16.890	0.013	0.400	2.030	329	611	52	84.0	167	VSSAU10602B-138			
23	106030403	2.00MM X 1219MM X 2438MM	11	498	316L-2B/FL-PE	0.020	0.300	1.380	0.024	0.002	10.040	16.790	0.031	0.260	2.050	329	646	48	84.0	-	VSSAU10602B-238			
24	106030403	2.00MM X 1219MM X 2438MM	12	543	316L-2B/FL-PE	0.020	0.300	1.380	0.024	0.002	10.040	16.790	0.031	0.260	2.050	329	646	48	84.0	-	VSSAU10602B-248			
25	106030605	2.00MM X 1500MM X 3000MM	15	1037	316L-2B/FL-PE	0.012	0.650	0.390	0.035	0.001	10.090	16.560	0.013	0.290	2.010	324	613	52	81.0	157	VSSAU10602B-255			
53	106030601	1.50MM X 1500MM X 3000MM	20	1030	316L-2B/PAPER	0.012	0.560	0.350	0.037	0.001	10.120	16.590	0.034	0.260	2.050	314	608	54	77.0	145	VSSAU10602B-538			
54	106030601	1.50MM X 1500MM X 3000MM	20	1031	316L-2B/PAPER	0.012	0.560	0.350	0.037	0.001	10.120	16.590	0.034	0.260	2.050	314	608	54	77.0	145	VSSAU10602B-548			
55	106030601	1.50MM X 1500MM X 3000MM	20	1032	316L-2B/PAPER	0.012	0.560	0.350	0.037	0.001	10.120	16.590	0.034	0.260	2.050	314	608	54	77.0	145	VSSAU10602B-558			
56	106030403	2.00MM X 1219MM X 2438MM	17	770	316L-2B/PAPER	0.020	0.300	1.380	0.024	0.002	10.040	16.790	0.031	0.260	2.050	329	646	48	84.0	-	VSSAU10602B-568			
Remark: 1. We hereby certify that the products described herein have been manufactured and tested with satisfactory results in accordance with the requirement of the above material specification. 2. The material described above has been detected with free irradiation. 3. Visual inspection (surface) and dimension check: OK																						Q.C. MANAGER <i>C. S. Sheng</i>		



ORIGINAL



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