

XOMOX Process Valves & Actuators

9423-41 Avenue
Edmonton, AB T6E 5X7
Tel: (780) 462-3100
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Website: www.xomox.com

XOMOX

Procedure for Shell and Seat Test API 598

Exhibit 1 Shell and Seat Test Report

XOMOX	
Shell & Seat Test Report	
Product Code:	9RC745F
Work Order:	S17739
Our Item#:	1
Customer PO:	P-22121
Quantity:	1
Description:	6" 061EG WCB/PFA-WCB/PFA VALVE
Additional Requirement No:	
Test Procedure No:	11.02 M.C.M.
Shell Test	
_____ H ₂ O @ 450 PSI for 120 Seconds	
_____ <u>(Air)</u> /He/N ₂ @ _____ PSI for _____ Seconds	
SHELL ACCEPTANCE STANDARD: NO VISIBLE LEAKAGE	
Seat Test	
_____ Hydrostatics @ _____ PSI for _____ Seconds	
_____ <u>✓</u> <u>(Air)</u> /He/Ne @ 80 PSI for 120 Seconds	
Seat Test Acceptance Standard:	
_____ <u>✓</u> API 598 (no visible leakage)	
_____ ANSI/FCI 70-2 Class VI	
_____ Other	
Gauge No:	Seat: 132062, 132109, 125269 Shell: 132059, 132060, 132061
Xomox Serial #: XEDM5269	
Tester: Chris MacPherson	
Date: Thursday, December 14, 2017	



RADIOGRAPHIC TESTING REPORT

R-237335

CLIENT: XOMOX CANADA LIMITED
9423 41 Avenue
Edmonton, Alberta T6E 5X7

TEST METHOD: ASTM E94
ACCEPTANCE STANDARD: ASME B16.34
RT PROCEDURE #: RTP 01 REV. 3
EQUIPMENT OWNER: XOMOX CANADA LIMITED
LOCATION: Nortech Advanced NDT Ltd.
ENGINEERING REQUIRED: No

DATE: October 01, 2017
INVOICE #:
P.O. #: A0101280
PROJECT: PJ VALVE / S17739

ITEMS TESTED

1) 6" 061EG WCB PLUG VALVE

VALVE	BODY HT #	BONNET HT #	Accept	Reject
Valve-1	NJ236	10TR		

Film Brand/Class: AGFA D5
Film Quantity / Size: 1) 14 x 17" / 7" x 17"
Film Per Cassette: 1
Screens: 0.010"(Pb Front, Back)
Material: WCB
Processing: 5 min @ 20°C (68°F)
I.Q.I.: ASTM B
U.G.: <0.020"
Isotope: Ir-192
Activity: 57Ci
Exp Device: D11576
EFSS: .117"

Defect Legend

IF INCOMPLETE FUSION
IP INCOMPLETE PENETRATION
IC INTERNAL CONCAVITY
EP EXCESS PENETRATION

BT BURN THROUGH
P POROSITY
UC UNDERCUTTING
SH SHRINKAGE

AC ARC BURNS
HL HIGH/LOW
LC LOW COVER
FA FILM ARTIFACT

W WINDOW
HB HOLLOW BEAD
C CRACK
S SLAG
SA SAND

1 SLIGHT
2 MEDIUM
3 SEVERE

Film No.	Size/SCH	Weld Sym	SOD	OFD	Exp. Time	OP1	OP2	Tech #	Accepted	Remarks	Rejected
Valve-1											
X-1	CAP		16"	1"	2min			T05	✓		
X-2	BODY		24"	1"	1min			T03	✓	P1	

SIGNATURES * Client representative's signature indicates acceptance of the reports and results. Nortech Advanced NDT Ltd. is liable for examination costs only.

CLIENT REPRESENTATIVE* (PRINT/SIGN) Marilyn Melnyk /

Technician (PRINT) John Hermanutz
Assistant (PRINT) Andrew Brown

CGSB: II
CGSB REG#: 9969

CGSB REG#: 9969

SNT-TC-1A: II
SNT-TC-1A:

Technician (SIGN)

John Hermanutz

INSPECTION REPORT

CD-11426



Page 1 of 1

Date: OCT 4, 2017

P.O.# A0101296

Job # _____

Lot 2, 52001 Range Road 275 • Spruce Grove, AB T7X 3V2 • Tel: (780) 968-5672 • Fax: (780) 968-0750

Customer CRANE Test Method Astm E709, E110

Location 9423-41 Ave Edm, AB T6E 5X7 Customer Spec. _____

MPI & HARDNESS REPORT

Inspection Technique:

Black Light Manufacture: LABINO BLACK LIGHT Type: UV3 TORCH Calibration Due Date: 10/04/18

Yoke Manufacture: Electrospect SN# 9740 Type: ES-X Calibration Due Date: 10/04/18

Hardness Manufacture: Krautkramer Sn#34101-5098 Type: MIC 10 Calibration Due Date: 05/02/18

Magnetizing Method: ☒ AC ☐ DC ☒ Continuous ☐ Residual ☒ Yoke ☐ Coil
Magnetic Particle: ☐ Dry ☒ Wet ☒ Fluorescent 14A ☐ 7HF Black ☐ Non-Fluorescent ☐ White Contrast

Liquid Penetrant Method: ☐ Visible ☐ Fluorescent ☐ Water Wash ☐ Post Emulsified ☐ Solvent Removable
Surface Condition: ☐ Machined ☐ Bare Metal ☐ AS Welded ☐ Painted ☐ Sandblasted

ITEMS INSPECTED:

(1) - 6" 061EG WCB Plug Valve

V#1,
Body - (151 BHN)
Cap- (151 BHN)
Xomox Serial #: XEDM5269
Heat #(s): Body: C1F745 Cover: 10TR

RESULTS:

Hardness Results Pass! as per spec.
Hardness Tests were performed with Krautkramer MIC 10 SN: 34101-5098.
Hardness Calibration Reference Block SN: 0805714, 217 Bhn.

Technician: Darren Matheson Signature:

C.G.S.B Level # 2 Certificate # 4618 Accepted by Client Representative:



SANMAR FOUNDRIES LIMITED
87/1, Vadugapatti Village, Viraimalai-621 316 Pudukkottai Dt. India
Phone : 04339 - 220017 Fax : 04339 - 220012
Material Test Certificate According to EN10204 3.1

TC No : C116154262
Heat No : 1F745
Grade : ASTM A216 GR WCB-16
Castings are Manufactured by Electric Induction Melting

Date : 03.03.2017
Foundry Id : SACL
Pouring Date : 30.01.2017

TEST METHODS: ASTM E415:2015

Chemical Elements %	C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	TRE	CE							
Min	-	-	-	-	-	-	-	-	-	-	-	-							
Max	0.250	1.000	0.600	0.035	0.035	0.500	0.500	0.200	0.300	0.030	1.000	0.500							
Actual	0.183	0.912	0.506	0.012	0.017	0.156	0.069	0.013	0.015	0.009	0.262	-							

HEAT TREATMENT: Normalizing - Heated to 920 Deg C(1688 Deg F) soaked for 4.00 hrs and then air cooled.

TEST METHODS: Tensile: ASTM A370:2015

Hardness: ASTM E10:2015A

Bend: ASTM A370:2015

Impact: ASTM A370:2015

MECHANICAL PROPERTIES	Yield Strength (0.2 % offset)		Tensile Strength		% of Elongation (G _L = 50mm)	% Reduction of Area	Hardness (HBW)		Quench Hardness (HBW)	Shear	DI	Bend Mandrel Dia = 2.6t ± mm Angle = °	Impact (ISO-V-2mm) CVN/CUN J or KgfmSq.Cm (SIZE 10 X 10 X 55 MM) I or KgfmSq.Cm			AVG
							I	II					I	II	III	
Min.	250.0	25.5	36.2	485.0	49.4	70.2	22.0	35.0	-	-	-					
Max.	-	-	-	655.0	66.8	94.8	-	-	-	-	-					
Actual	278.5	28.4	40.3	501.0	51.1	72.5	37.2	49.5	149							

Item Details

S.No	Description	Heat Code	Drawing No with Revision/Part No	P.O. References	Quantity
1	6"061 BODY	A1F745	NU236 REV F/02J236	PO69945 - 1	1
2	6"061 BODY	B1F745	NU236 REV F/02J236	PO69945 - 1	1
3	6"061 BODY	C1F745	NU236 REV F/02J236	PO69945 - 1	1

Casting Checked dimensionally and visually accepted as per MSS SP-55 and free from Radioactive contamination.

We Confirm that the castings covered by this certificate were manufactured, sampled tested and inspected in accordance with purchase order requirements and material specification. ASTM A216 GR WCB-16 and was found to meet the requirements.

Checked By

M. Jayapal
ENGINEER-QC

Approved By

K.B. Biju
GEN.MANAGER-QUALITY

F-QAD-10-06-Oct-2016

The test report shall not be reproduced except in full without written approval of Sanmar Foundries Limited.



SANMAR FOUNDRIES LIMITED(Investment)
87/1, Vadugapatti Village, Viralmalai-621 316 Pudukkottai Dt. India
Phone : 04339 - 220017 Fax : 04339 - 220012
Material Test Certificate According to EN10204 3.1

FC No : C117104016

Heat No : 10TR

Grade : ASTM A216 GR WCB-16

Castings are Manufactured by Electric Induction Melting

Date : 24.04.2017

Foundry Id



Pouring Date : 18.04.2017

Customer

TEST METHODS:ASTM E1086:2014

Chemical Elements %	C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	TRE								
Min	-	-	-	-	-	-	-	-	-	-	-								
Max	0.300	1.000	0.60	0.035	0.035	0.500	0.500	0.200	0.300	0.03	1.00								
Actual	0.205	0.923	0.481	0.012	0.027	0.485	0.086	0.117	0.035	0.016	0.739								

HEAT TREATMENT:Normalising - Heated to 930 Deg C(1706 Deg F) soaked for 2.50 hrs and then air cooled.

EST METHODS: Tensile:ASTM A370:2015

Hardness:ASTM E10:2015A

Bend: ASTM A370:2015

Impact:ASTM A370:2015

MECHANICAL PROPERTIES	Yield Strength (0.2 % offset)			Tensile Strength			% of Elongation (50mm)	% Reduction of Area	Hardness (HBW)		Bend Mandrel Dia = 2.6t t = mm Angle = °	Impact (ISO-V-2mm)CVN/CUN at:°C (SIZE 10 X 10 X 55 MM) J or Kgfms/Sq.Cm			AVG
	Mpa	Kgf/Sq. mm	Ksi	Mpa	Kgf/Sq. mm	Ksi			I	II		I	II	III	
Min.	275.0	28.0	39.8	485.0	49.4	70.2	22.0	35.0	-	-					
Max.	-	-	-	665.0	66.8	94.8	-	-	-	-					
Actual	392.0	40.0	56.7	556.0	56.7	80.5	25.0	56.0	156						

Item Details

S.No	Description	Heat Code	Drawing No with Revision/Part No	P.O. References	Quantity
1	6"150/300 COVER CASTING	10TR	N-3226 REV J/023226	PO48201 - 3	20

We hereby certify that the product is free from radioactive contamination."Castings checked visually & accepted as per GP-QA-040 REV4

We Confirm that the castings covered by this certificate were manufactured, sampled tested and inspected in accordance with purchase order requirement and material specification.ASTM A216 GR WCB-16and was found to meet the requirements.

-QAD-10-06-Oct-2016

Checked By

Arul Vadivelan

Arul Vadivelan

EXE MANAGER-QUALITY

Approved By

D. Madheswaran

D Madheswaran

ASST.GEN.MANAGER.QUALITY

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