



CANADOIL FORGE LTD.
805 Boul. Alphonse Deshaies
Bécancour, Québec G9H 2Y8 CANADA
Tel : (819) 294-6600 Fax : (819) 294-6189

**MATERIAL
TEST REPORT**
To 3.1 EN 10 204 (2004)

ISO 9001:2015

Certificate Number: 14802 rev.1

Date: **2024-10-15**

Page 1 of 1

Customer: **CFC INC.**

P. O.: **N/A**

Sales Order: **13618**

Product **MSS SP-75 (19) WPHY-65**
Specification

Notes

1. All butt weld fittings were radiographed and were found acceptable to UW-51 of ASME, SECTION VIII, DIVISION 1.
2. Hardness Test Performed ☒ Report Ref. #: 1480201 rev.1
3. Other NDE Performed: ☐ Report Ref. #: **N/A**
4. The Charpy V-Notch impact specimens have 10x10x55mm and were taken transversal to the plate's rolling direction.

Legend

L - Heat (ladle) analysis N/A - Not applicable
P - Product analysis
Long. - Base material, longitudinal
Trans. - Base material, transversal
HAZ. - Heat affected zone
Weld - Weld, Transversal
Base - Base material

		Results of Chemical Analysis (%)														Tensile Test Results				Impact Test Results					
Spec. Limits	Min Max			0,15						0,02							Min	77,00	65,00	20	Min Ave	20			
		0,25	1,6	0,45	0,025	0,015	0,25	0,5	0,25	0,06	0,45	0,1	0,11	0,001	0,04		Max				Min Low	15		F°	
Item	Heat	CE	C	Mn	Si	P	S	Cr	Ni	Mo	Al	Cu	Nb	V	B	Ti	N	Loc.	Tensile [Ksi]	Yield [Ksi]	% Elong	Loc.	Energy [lb-ft]	Shear [%]	Temp
7	L		0,17	1,11	0,34	0,011	0,002	0,18	0,05	0,07	0,034	0,04	0,03	0,04		0,012		Trans.	99,06	78,90	40	Base	73,0- 52,4- 62,7	45 - 35 - 40	-51
PXP-C	P	0,42	0,173	1,09	0,33	0,011	0,002	0,178	0,05	0,07	0,031	0,04	0,03	0,039	0,001	0,012		N/A				N/A			
																		N/A				N/A			

Note: H.T. Instructions for Item #7 (PXP-C) = Quench 1690 Deg. Fahrenheit 47min. & Tempered 1110 Deg. Fahrenheit 47min. & Followed by ambient air cooling. The Fittings in this certificate have been manufactured, sampled, tested, inspected and found acceptable as per MSS SP-75 (19).

Rev.1: Downgrade all pieces from MSS SP-75 (19) WPHY-70 to MSS SP-75 (19) WPHY-65.

CE Formula = $C + Mn/6 + ((Cr + Mo + V)/5) + ((Cu + Ni)/15)$

F-6-009 - Rapport de tests sur le matériel

WE HEREBY CERTIFY THAT THE MATERIALS LISTED ABOVE HAVE BEEN MADE IN STRICT ACCORDANCE WITH STATED SPECIFICATIONS AND THAT THE RESULT OF THE CHEMICAL ANALYSIS (HEAT) IS A TRUE AND CORRECT COPY OF THE MILL CERTIFICATE ISSUED BY THE MANUFACTURER OF THE PLATE.

APPROVED BY: Quality Assurance Manager

Date **2024-10-15**



Canadoil Forge Ltd.
 805 BOUL. ALPHONSE-DESHAIES
 BÉCANCOUR (QUEBEC) G9H 2Y8
 CANADA
 Phone: (819) 294-6600 Fax: (819) 294-6189

WE ARE CERTIFIED ISO 9001:2015

DATE	REPORT
2024-10-15	1480201 rev.1

Hardness Testing report

Customer		Customer PO	Canadoll Sales Order	Canadoll MTR																																								
CFC INC.		N/A	13618	14802 rev.1																																								
Item	Piece	Description	Base Material	Weld Material	Heat Affected Zone																																							
7	serial: 227718	CAP 24" 0.500" WPHY65	<table><tr><td colspan="3">READINGS</td></tr><tr><td>221</td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td>HRB</td><td></td></tr><tr><td>221</td><td>96.7</td><td></td></tr></table>	READINGS			221			AVERAGES			HB (HLG)	HRB		221	96.7		<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)			<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)		
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7	serial: 227720	CAP 24" 0.500" WPHY65	<table><tr><td colspan="3">READINGS</td></tr><tr><td>249</td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td>HRC</td><td></td></tr><tr><td>249</td><td>23.1</td><td></td></tr></table>	READINGS			249			AVERAGES			HB (HLG)	HRC		249	23.1		<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)			<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)		
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7	serial: 227721	CAP 24" 0.500" WPHY65	<table><tr><td colspan="3">READINGS</td></tr><tr><td>210</td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td>HRB</td><td></td></tr><tr><td>210</td><td>95.0</td><td></td></tr></table>	READINGS			210			AVERAGES			HB (HLG)	HRB		210	95.0		<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)			<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)		
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7	serial: 227726	CAP 24" 0.500" WPHY65	<table><tr><td colspan="3">READINGS</td></tr><tr><td>233</td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td>HRB</td><td></td></tr><tr><td>233</td><td>98.1</td><td></td></tr></table>	READINGS			233			AVERAGES			HB (HLG)	HRB		233	98.1		<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)			<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)		
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7	serial: 227730	CAP 24" 0.500" WPHY65	<table><tr><td colspan="3">READINGS</td></tr><tr><td>218</td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td>HRB</td><td></td></tr><tr><td>218</td><td>95.0</td><td></td></tr></table>	READINGS			218			AVERAGES			HB (HLG)	HRB		218	95.0		<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)			<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)		
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7	serial: 227733	CAP 24" 0.500" WPHY65	<table><tr><td colspan="3">READINGS</td></tr><tr><td>210</td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td>HRB</td><td></td></tr><tr><td>210</td><td>95.0</td><td></td></tr></table>	READINGS			210			AVERAGES			HB (HLG)	HRB		210	95.0		<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)			<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)		
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7	serial: 227734	CAP 24" 0.500" WPHY65	<table><tr><td colspan="3">READINGS</td></tr><tr><td>212</td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td>HRB</td><td></td></tr><tr><td>212</td><td>95.0</td><td></td></tr></table>	READINGS			212			AVERAGES			HB (HLG)	HRB		212	95.0		<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)			<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)		
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7	serial: 227736	CAP 24" 0.500" WPHY65	<table><tr><td colspan="3">READINGS</td></tr><tr><td>213</td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td>HRB</td><td></td></tr><tr><td>213</td><td>95.0</td><td></td></tr></table>	READINGS			213			AVERAGES			HB (HLG)	HRB		213	95.0		<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)			<table><tr><td colspan="3">READINGS</td></tr><tr><td></td><td></td><td></td></tr><tr><td colspan="3">AVERAGES</td></tr><tr><td>HB (HLG)</td><td></td><td></td></tr></table>	READINGS						AVERAGES			HB (HLG)		
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Signed:

Anthony Davis

Date:

2024/10/15

7	serial: 227740	CAP 24" 0.500" WPHY65	READINGS 219 AVERAGES HB (HLG) HRB 219 96.7	READINGS AVERAGES HB (HLG)	READINGS AVERAGES HB (HLG)
7	serial: 227745	CAP 24" 0.500" WPHY65	READINGS 206 AVERAGES HB (HLG) HRB 206 93.5	READINGS AVERAGES HB (HLG)	READINGS AVERAGES HB (HLG)
7	serial: 227748	CAP 24" 0.500" WPHY65	READINGS 219 AVERAGES HB (HLG) HRB 219 96.7	READINGS AVERAGES HB (HLG)	READINGS AVERAGES HB (HLG)
7	serial: 227752	CAP 24" 0.500" WPHY65	READINGS 217 AVERAGES HB (HLG) HRB 217 95.0	READINGS AVERAGES HB (HLG)	READINGS AVERAGES HB (HLG)
7	serial: 227754	CAP 24" 0.500" WPHY65	READINGS 216 AVERAGES HB (HLG) HRB 216 95.0	READINGS AVERAGES HB (HLG)	READINGS AVERAGES HB (HLG)
7	serial: 227756	CAP 24" 0.500" WPHY65	READINGS 209 AVERAGES HB (HLG) HRB 209 95.0	READINGS AVERAGES HB (HLG)	READINGS AVERAGES HB (HLG)
7	serial: 227757	CAP 24" 0.500" WPHY65	READINGS 209 AVERAGES HB (HLG) HRB 209 95.0	READINGS AVERAGES HB (HLG)	READINGS AVERAGES HB (HLG)
7	serial: 227764	CAP 24" 0.500" WPHY65	READINGS 211 AVERAGES HB (HLG) HRB 211 95.0	READINGS AVERAGES HB (HLG)	READINGS AVERAGES HB (HLG)
7	serial: 227767	CAP 24" 0.500" WPHY65	READINGS 213 AVERAGES HB (HLG) HRB 213 95.0	READINGS AVERAGES HB (HLG)	READINGS AVERAGES HB (HLG)
7	serial: 227770	CAP 24" 0.500" WPHY65	READINGS 214 AVERAGES HB (HLG) HRB 214 95.0	READINGS AVERAGES HB (HLG)	READINGS AVERAGES HB (HLG)

Signed:



Date:

2024/10/15

7	serial: 227772	CAP 24" 0.500" WPHY65	READINGS				READINGS				READINGS			
			197				AVERAGES				AVERAGES			
			HB (HLG)		HRB		HB (HLG)		HB (HLG)		HB (HLG)		HB (HLG)	
			197		91.5									

7	serial: 227773	CAP 24" 0.500" WPHY65	READINGS				READINGS				READINGS			
			210				AVERAGES				AVERAGES			
			HB (HLG)		HRB		HB (HLG)		HB (HLG)		HB (HLG)		HB (HLG)	
			210		95.0									

7	serial: 227774	CAP 24" 0.500" WPHY65	READINGS				READINGS				READINGS			
			208				AVERAGES				AVERAGES			
			HB (HLG)		HRB		HB (HLG)		HB (HLG)		HB (HLG)		HB (HLG)	
			208		93.5									

7	serial: 227775	CAP 24" 0.500" WPHY65	READINGS				READINGS				READINGS			
			209				AVERAGES				AVERAGES			
			HB (HLG)		HRB		HB (HLG)		HB (HLG)		HB (HLG)		HB (HLG)	
			209		95.0									

7	serial: 227777	CAP 24" 0.500" WPHY65	READINGS				READINGS				READINGS			
			218				AVERAGES				AVERAGES			
			HB (HLG)		HRB		HB (HLG)		HB (HLG)		HB (HLG)		HB (HLG)	
			218		95.0									

7	serial: 227778	CAP 24" 0.500" WPHY65	READINGS				READINGS				READINGS			
			223				AVERAGES				AVERAGES			
			HB (HLG)		HRB		HB (HLG)		HB (HLG)		HB (HLG)		HB (HLG)	
			223		96.7									

7	serial: 227779	CAP 24" 0.500" WPHY65	READINGS				READINGS				READINGS			
			232				AVERAGES				AVERAGES			
			HB (HLG)		HRB		HB (HLG)		HB (HLG)		HB (HLG)		HB (HLG)	
			232		98.1									

Rev.1: Downgrade all pieces from MSS SP-75 (19) WPHY-70 to MSS SP-75 (19) WPHY-65.

Signed:



Date:

2024/10/15