Job No: M10/3855

ATTAR TEST REPORT NUMBER 10/3855.2

3 March 2010 Total Pages: 4

MATERIALS TESTING - Tensile Test

Prepared for: C.R. Laurence Australia Pty Ltd 23 Jellico Drive SCORESBY VIC 3179		,		
Attention: Mr Ron Bremner Background: Testing holding capacity of 8" Pump Sucker Lift in shear. Test Protocol: Pump sucker lifts were set up in Instron tensile test machine using a specially designed rig to hold pump sucker lift and a glass plate, load was then applied to handle by moving the cross head at a constant rate of 50.8 mm/min, Figure 1. Test Site: ATTAR, Unit 12, 134 Springvale Road, Springvale. Test Date: 25 February 2010 Temperature: 23°C Test Specimens & Size S338 8" Pump Sucker Lift Quantity: 5 off Sampling: Conducted by client. Test Equipment: Instron Tensile test machine with Instron Load cell SN:UK539 with a ACS signal conditioning unit Model AC 9600 – SN:960115, accuracy of unit checked using calibrated Grade A STC load cell SN:W10149 with ACS signal conditioner unit Model AC 2500 SN:250272 calibrated 15/04/2009. Output from AC 9600 was graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz. Specimen preparation: Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test. N/A RESULTS: (See Figures 2 - 6 for graphs) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352213 50.8 mm/min 1.6 2.14 3 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27	Prepared for:	C.R. Laurence Australia Pty Ltd		
Attention:Mr Ron BremnerBackground:Testing holding capacity of 8" Pump Sucker Lift in shear.Test Protocol:Pump sucker lifts were set up in Instron tensile test machine using a specially designed rig to hold pump sucker lift and a glass plate, load was then applied to handle by moving the cross head at a constant rate of 50.8 mm/min, Figure 1.Test Site:ATTAR, Unit 12, 134 Springvale Road, Springvale.Test Date:25 February 2010Temperature:23°CTest Specimens & SizeS338 8" Pump Sucker LiftQuantity:5 offSampling:Conducted by client.Test Equipment:Instron Tensile test machine with Instron Load cell SN:UK539 with a ACS signal conditioning unit Model AC 9600 - SN:960115, accuracy of unit checked using calibrated Grade A STC load cell SN:W10149 with ACS signal conditioner unit Model AC 2500 SN:250272 calibrated 15/04/2009. Output from AC 9600 was graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz.Specimen preparation:Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test.Test Standard:N/ARESULTS: (See Figures 2 - 6 for graphs)Cross head SpeedInitial Slip Load* (kN)Peak Load (kN)1 Serial No. 35221250.8 mm/min1.52.182 Serial No. 35221450.8 mm/min1.62.243 Serial No. 35221550.8 mm/min1.62.244 Serial No. 35221650.8 mm/min1.592.415 Serial No. 35221650.8 mm/min1.62.27 <th></th> <th colspan="3">23 Jellico Drive</th>		23 Jellico Drive		
Test Protocol:		SCORESBY VIC 3179		
Pump sucker lifts were set up in Instron tensile test machine using a specially designed rig to hold pump sucker lift and a glass plate, load was then applied to handle by moving the cross head at a constant rate of 50.8 mm/min, Figure 1. Test Site: ATTAR, Unit 12, 134 Springvale Road, Springvale. Test Date: 25 February 2010	Attention:	Mr Ron Bremner		
a specially designed rig to hold pump sucker lift and a glass plate, load was then applied to handle by moving the cross head at a constant rate of 50.8 mm/min, Figure 1. Test Site: ATTAR, Unit 12, 134 Springvale Road, Springvale. Test Date: 25 February 2010 Temperature: 23°C Test Specimens & Size S338 8" Pump Sucker Lift Quantity: 5 off Sampling: Conducted by client. Test Equipment: Instron Tensile test machine with Instron Load cell SN:UK539 with a ACS signal conditioning unit Model AC 9600 – SN:960115, accuracy of unit checked using calibrated Grade A STC load cell SN:W10149 with ACS signal conditioner unit Model AC 2500 SN:250272 calibrated 15/04/2009. Output from AC 9600 was graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz. Specimen preparation: Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test. Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352213 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27	Background:	Testing holding capacity of 8" Pump Sucker Lift in shear.		
load was then applied to handle by moving the cross head at a constant rate of 50.8 mm/min, Figure 1. Test Site: ATTAR, Unit 12, 134 Springvale Road, Springvale. Test Date: 25 February 2010 Temperature: 23°C Test Specimens & Size S338 8" Pump Sucker Lift Quantity: 5 off Sampling: Conducted by client. Test Equipment: Instron Tensile test machine with Instron Load cell SN:UK539 with a ACS signal conditioning unit Model AC 9600 – SN:960115, accuracy of unit checked using calibrated Grade A STC load cell SN:W10149 with ACS signal conditioner unit Model AC 2500 SN:250272 calibrated 15/04/2009. Output from AC 9600 was graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz. Specimen preparation: Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test. Test Standard: N/A RESULTS: (see Figures 2 - 6 for graphs) Cross head Speed Initial Slip Load* (kN) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27	Test Protocol:			
Constant rate of 50.8 mm/min, Figure 1.		a specially designed rig to hold pump sucker lift and a glass plate,		
Test Site: Test Date: Test Date: 25 February 2010 Temperature: 23°C Test Specimens & Size Quantity: Sampling: Conducted by client. Instron Tensile test machine with Instron Load cell SN:UK539 with a ACS signal conditioning unit Model AC 9600 – SN:960115, accuracy of unit checked using calibrated Grade A STC load cell SN:W10149 with ACS signal conditioner unit Model AC 2500 SN:250272 calibrated 15/04/2009. Output from AC 9600 was graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz. Specimen preparation: Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test. Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) 1 Serial No. 352212 50.8 mm/min 1.6 2.18 2 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.6 2.27				
Test Date: 25 February 2010 Temperature: 23°C Test Specimens & Size S338 8" Pump Sucker Lift Quantity: 5 off Sampling: Conducted by client. Test Equipment: Instron Tensile test machine with Instron Load cell SN:UK539 with a ACS signal conditioning unit Model AC 9600 – SN:960115, accuracy of unit checked using calibrated Grade A STC load cell SN:W10149 with ACS signal conditioner unit Model AC 2500 SN:250272 calibrated 15/04/2009. Output from AC 9600 was graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz. Specimen preparation: Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test. Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) Cross head Speed (kN) Peak Load (kN) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352213 50.8 mm/min 1.6 2.14 3 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27				
Test Specimens & Size Quantity: Sampling: Conducted by client. Test Equipment: Instron Tensile test machine with Instron Load cell SN:UK539 with a ACS signal conditioning unit Model AC 9600 – SN:960115, accuracy of unit checked using calibrated Grade A STC load cell SN:W10149 with ACS signal conditioner unit Model AC 2500 SN:250272 calibrated 15/04/2009. Output from AC 9600 was graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz. Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test. Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352214 50.8 mm/min 1.6 2.14 3 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27				
Test Specimens & Size S338 8" Pump Sucker Lift Quantity: 5 off Sampling: Conducted by client. Test Equipment: Instron Tensile test machine with Instron Load cell SN:UK539 with a ACS signal conditioning unit Model AC 9600 – SN:960115, accuracy of unit checked using calibrated Grade A STC load cell SN:W10149 with ACS signal conditioner unit Model AC 2500 SN:250272 calibrated 15/04/2009. Output from AC 9600 was graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz. Specimen preparation: Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test. Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) Cross head Speed Initial Slip Load* (kN) (kN) (kN) (kN) (2 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352213 50.8 mm/min 1.6 2.14 3 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27				
Quantity:5 offSampling:Conducted by client.Test Equipment:Instron Tensile test machine with Instron Load cell SN:UK539 with a ACS signal conditioning unit Model AC 9600 – SN:960115, accuracy of unit checked using calibrated Grade A STC load cell SN:W10149 with ACS signal conditioner unit Model AC 2500 SN:250272 calibrated 15/04/2009. Output from AC 9600 was graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz.Specimen preparation:Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test.Test Standard:N/ARESULTS: (See Figures 2 - 6 for graphs)Cross head SpeedInitial Slip Load* (kN)Peak Load (kN)1 Serial No. 35221250.8 mm/min1.52.182 Serial No. 35221450.8 mm/min1.62.143 Serial No. 35221550.8 mm/min1.62.264 Serial No. 35221650.8 mm/min1.592.415 Serial No. 35221650.8 mm/min1.62.27	•			
Conducted by client.	-			
Instron Tensile test machine with Instron Load cell SN:UK539 with a ACS signal conditioning unit Model AC 9600 – SN:960115, accuracy of unit checked using calibrated Grade A STC load cell SN:W10149 with ACS signal conditioner unit Model AC 2500 SN:250272 calibrated 15/04/2009. Output from AC 9600 was graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz. Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test. Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) Cross head Speed Initial Slip Load* (kN) (kN)				
a ACS signal conditioning unit Model AC 9600 – SN:960115, accuracy of unit checked using calibrated Grade A STC load cell SN:W10149 with ACS signal conditioner unit Model AC 2500 SN:250272 calibrated 15/04/2009. Output from AC 9600 was graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz. Specimen preparation: Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test. Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352213 50.8 mm/min 1.6 2.14 3 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27	. •	,		
accuracy of unit checked using calibrated Grade A STC load cell SN:W10149 with ACS signal conditioner unit Model AC 2500 SN:250272 calibrated 15/04/2009. Output from AC 9600 was graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz. Specimen preparation: Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test. Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27	Test Equipment:			
SN:W10149 with ACS signal conditioner unit Model AC 2500 SN:250272 calibrated 15/04/2009. Output from AC 9600 was graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz. Specimen preparation: Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test. Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.6 2.27		·		
SN:250272 calibrated 15/04/2009. Output from AC 9600 was graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz. Specimen preparation: Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test. Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) Cross head Speed Initial Slip Load* (kN) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352213 50.8 mm/min 1.6 2.14 3 Serial No. 352214 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27				
graphed and recorded using a computer via 16 bit analogue to digital converter sampling at 100 Hertz. Specimen preparation: Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test. Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352213 50.8 mm/min 1.6 2.14 3 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352216 50.8 mm/min 1.6 2.27				
Description				
Specimen preparation: Pump sucker lifts were tested as received, glass plate was wiped with rag saturated with methylated spirits then allowed to dry before each test. Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) Cross head Speed Initial Slip Load* (kN) Peak Load (kN) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352213 50.8 mm/min 1.6 2.14 3 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27		, , , , , , , , , , , , , , , , , , , ,		
with rag saturated with methylated spirits then allowed to dry before each test. Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) Cross head Speed Initial Slip Load* (kN) Peak Load (kN) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352213 50.8 mm/min 1.6 2.14 3 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27				
before each test. Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) Cross head Speed (kN) Initial Slip Load* (kN) Peak Load (kN) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352213 50.8 mm/min 1.6 2.14 3 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27	Specimen preparation:			
Test Standard: N/A RESULTS: (See Figures 2 - 6 for graphs) Cross head Speed Initial Slip Load* (kN) Peak Load (kN) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352213 50.8 mm/min 1.6 2.14 3 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27		, , ,		
RESULTS: (See Figures 2 - 6 for graphs) Cross head Speed Initial Slip Load* (kN) Peak Load (kN) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352213 50.8 mm/min 1.6 2.14 3 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27				
(See Figures 2 - 6 for graphs) Cross nead Speed (kN) (kN) 1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352213 50.8 mm/min 1.6 2.14 3 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27		N/A		
1 Serial No. 352212 50.8 mm/min 1.5 2.18 2 Serial No. 352213 50.8 mm/min 1.6 2.14 3 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27		Cross head Speed	-	
2 Serial No. 352213 50.8 mm/min 1.6 2.14 3 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27		•		` '
3 Serial No. 352214 50.8 mm/min 1.6 2.26 4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27				
4 Serial No. 352215 50.8 mm/min 1.59 2.41 5 Serial No. 352216 50.8 mm/min 1.6 2.27				
5 Serial No. 352216 50.8 mm/min 1.6 2.27				
Mean Result: 1.58 kN (161 kg) 2.25 kN (230 kg)	5 Serial No. 352216	50.8 mm/min	1.6	2.27
	Mean Result:		1.58 kN (161 kg)	2.25 kN (230 kg)

^{*}The initial slip load was recorded visually on the signal conditioning unit during the test and is approximate only. These results apply only to the specimens tested.

Marcus Braché

Senior Engineering Technician



ATTAR TEST REPORT NUMBER 10/3855.2

3 March 2010 Total Pages: 4

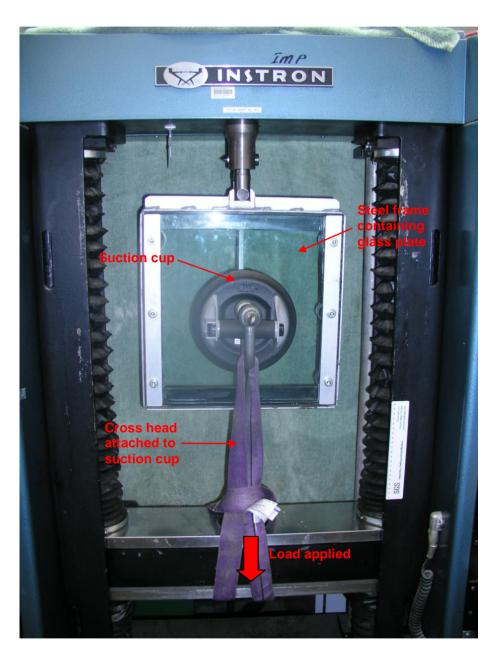


Figure 1. Set up of shear test in Instron Machine



ATTAR TEST REPORT NUMBER 10/3855.2

3 March 2010 Total Pages: 4

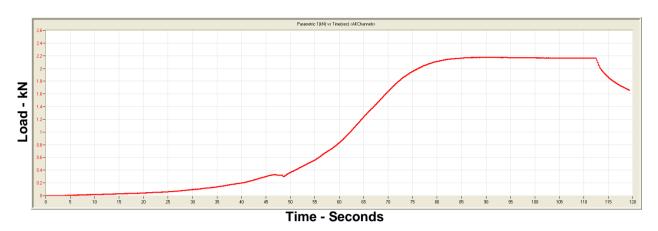


Figure 2. Specimen No 1 - Serial No. 352212

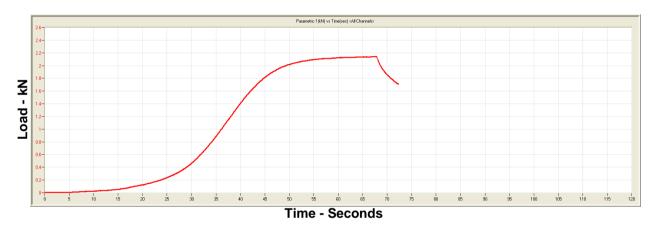


Figure 3. Specimen No 2 - Serial No. 352213

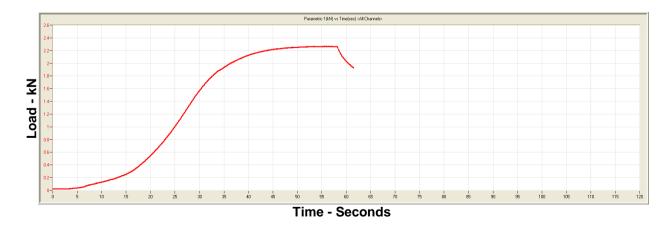


Figure 4. Specimen No 3 - Serial No. 352214

This report may not be reproduced except in its entirety.



ATTAR TEST REPORT NUMBER 10/3855.2

3 March 2010 Total Pages: 4

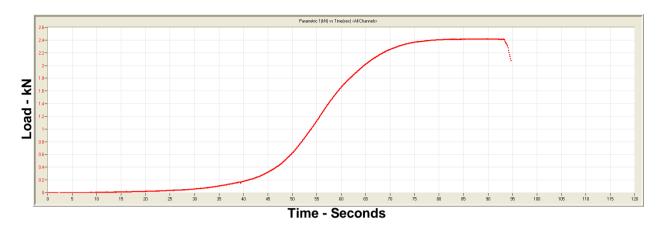


Figure 5. Specimen No 4 - Serial No. 352215

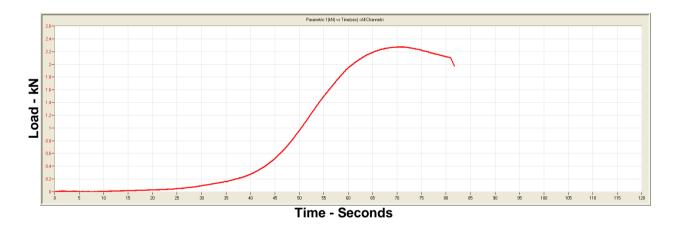


Figure 6. Specimen No 5 - Serial No. 352216