



Sample Lab Test Report

Link Test Report: 110691-1
Test Description: SAE J661 Rev Feb 1997 Brake Lining Quality
Purpose of Test: To Evaluate the Characteristics of Brake
Materials
Program: J661noinsp.chp
Lining Material: 8257-D1147
Test Date(s): 2/23/2011 to 2/23/2011

Requested By

HARDEX BRAKES LTD
Harry D
200-1311 Howe Street
Vancouver, Bc V6Z 2P3,

CANADA

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Test Number
110691-1

Customer Reference
8257-D1147

SAE J661 Rev Feb 1997 Brake Lining Quality Test

Test Information

Customer Name	Hardex Brakes Ltd
Requestor	Harry D
Test Procedure	SAE J661
Program Number	J661noinsp.chp
Test Coordinator	FOREN, TODD
Test Equipment	Chase Machine 0013
Test Dates	2/23/2011 to 2/23/2011
Datalogger	v1.0.10
Template Version	2.00

Setup Details

Sample Material	8257-D1147
Sample Size	1" X 1"
Sample Manufacturer	Hardex Brakes Ltd
Test Pressure	150 psi

Sample Test Summary

Normal Friction Coefficient	0.458	Pass
Normal Friction Class	G	
Hot Friction Coefficient	0.426	Pass
Hot Friction Class	F	
Minimum Bold Coefficient	0.423	Pass
Max Variation Below Average	0.000	Pass
Max % Variation for Bold Readings	0%	Pass

Pass / Fail

Pass

Comments:

Created by:	Todd Foren (313) 933-4900	Title	Test Engineer	Date	2/24/2011
Reviewed by:	Todd Foren (313) 933-4900	Title	Test Engineer	Date	2/24/2011

Data applicable to the materials tested. **Valid if signed by the test engineer.** Report can be copied in full.
Bilateral uncertainty of measurements 0.63% of FS. Coverage factor of 2. Confidence of 95%. Details available upon request.



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Customer Reference
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Test Number
Sample 1 Sample 2 Sample 3 Sample 4 Sample 5
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Manufacturer
HARDEX BRAKES

Initial Baseline
Application Sample 1 Sample 2 Sample 3 Sample 4 Sample 5
1 0.388
20 0.426

Material
8257-D1147

Normal **0.458** **G**

First Fade
Temp (F) Sample 1 Sample 2 Sample 3 Sample 4 Sample 5
200 0.437
500 0.415
(or Temp @ 10min)

Hot **0.426** **F**

First Recovery
Temp (F) Sample 1 Sample 2 Sample 3 Sample 4 Sample 5 Average Norm/Hot
500 0.398 0.398
400 0.423 0.423 Hot
300 0.424 0.424 Hot
200 0.456 0.456

Wear
Application Sample 1 Sample 2 Sample 3 Sample 4 Sample 5
1 0.435
100 0.437

Second Fade
Temp (F) Sample 1 Sample 2 Sample 3 Sample 4 Sample 5 Average Max Var.
< Average Norm/Hot % Var
200 **0.468** **0.468** **0.000** **Normal**
250 **0.469** **0.469** **0.000** **Normal**
300 **0.457** **0.457** **0.000** **Normal**
350 **0.449** **0.449** **0.000** **Normal**
400 **0.446** **0.446** **0.000** **Normal**
450 **0.451** **0.451** **0.000** **Hot**
500 **0.432** **0.432** **0.000** **Hot**
550 **0.423** **0.423** **0.000** **Hot**
600 0.413 0.413 0.000 Hot
650 0.413 0.413 0.000 Hot
(or Temp @ 10min)

Second Recovery
Temp (F) Sample 1 Sample 2 Sample 3 Sample 4 Sample 5 Average Max Var.
< Average Norm/Hot % Var
600 0.384 0.384 0.000
500 0.404 0.404 0.000 Hot
400 0.419 0.419 0.000 Hot
300 **0.441** **0.441** **0.000** **Hot**
200 **0.441** **0.441** **0.000**

Final Baseline
Application Sample 1 Sample 2 Sample 3 Sample 4 Sample 5
1 0.465
20 0.468



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Customer Reference
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Manufacturer: HARDEX BRAKES
Material: 8257-D1147
Test Pressure: 150 psi

Normal **0.458** **G**
Hot **0.426** **F**

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Wear

	Initial	Final	Loss		Specific Wear	
Weight (gr)	11.128	10.921	0.207	2%	1.39E-03	gr/hp-hr
Thickness (in)	0.241	0.236	0.005	2%	3.36E-05	in ³ /hp-hr

Baseline

Event	Initial		Final	
	Force (lb)	μ	Force (lb)	μ
1	59	0.388	69	0.465
5	61	0.399	72	0.477
10	62	0.413	71	0.470
15	64	0.420	71	0.470
20	64	0.426	71	0.468

Wear

Event	Force (lb)	μ
1	66	0.435
10	62	0.409
20	62	0.410
30	64	0.425
40	66	0.434
50	64	0.432
60	65	0.428
70	65	0.439
80	67	0.449
90	66	0.439
100	65	0.437

First Fade

Time (sec)	Force (lb)	μ	Temp (°F)
0	65	0.437	231
30	66	0.433	266
60	71	0.473	317
90	72	0.477	357
120	75	0.495	398
150	71	0.468	443
180	65	0.431	477
210	62	0.405	507
240	60	0.399	540
270			
300			
330			
360			
390			
420			
450			
480			
510			
540			
570			
600			

Second Fade

Time (sec)	Force (lb)	μ	Temp (°F)
0	70	0.468	210
30	70	0.463	249
60	69	0.455	292
90	70	0.463	332
120	67	0.446	372
150	68	0.454	412
180	68	0.452	451
210	65	0.434	490
240	64	0.427	522
270	63	0.420	553
300	63	0.424	583
330	61	0.408	609
360	59	0.392	632
390			
420			
450			
480			
510			
540			
570			
600			

First Recovery

Event	Force (lb)	μ	Temp (°F)
1	62	0.398	499
2	62	0.423	400
3	61	0.424	301
4	67	0.456	202

Second Recovery

Event	Force (lb)	μ	Temp (°F)
1	61	0.384	599
2	60	0.404	499
3	62	0.419	400
4	65	0.441	301
5	65	0.441	202



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Test Pressure: 150 psi

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Coefficient of Friction

