



Greening Testing Laboratories, Inc.

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26 February 2014

Thermal Technology Services, Inc.
13130 56th Court North Bldg 602
Clearwater, Florida 33760

Attention: Mr. Frank Masyada

Reference: Comparison of Brake Drum Wear

Dear Mr. Masyada,

With regard to the above captioned subject and our conference call of 24 February 2014, below is a summary of the brake drum wear measured during the inertia brake dynamometer tests conducted at Greening Testing Laboratories, Inc. (GTL) under our test numbers M02-158-02 (Report 144263-1) and M02-158-07 (Report 144303-1).

1. DESCRIPTION OF TESTS

- a. Report 144263-1
 - i. GTL Test Number: M02-158-02
 - ii. Test dates: 21 – 29 January 2014
 - iii. Parts received 20 January 2014
 - iv. Brake Drum Part Number: 3600AX (Treated)
 - v. Lining Edge Code: GB 4707Q 23K HD-FF (Treated), Edge Coat Color: Red

- b. Report 144303-1
 - i. GTL Test Number: M02-158-07
 - ii. Test dates: 12 – 20 February 2014
 - iii. Parts received 11 February 2014
 - iv. Brake Drum Part Number: GBD3600AX (Untreated)
 - v. Lining Edge Code: GB 4707Q 23K PREM-FF (Untreated), Edge Coat Color: Gold

- c. Both tests were conducted using the SAE J2115 Section 7 – Wear and Effectiveness at Temperature test procedure.

- d. Both tests were conducted under the following test conditions:
 - i. Gross Axle Weight Rating of 23,000 lbs
 - ii. Static Loaded Radius of 20.8 inches
 - iii. Inertia of 1072.5 slug-ft²
 - iv. Type 30/30 Air Chamber (GTL Serial Number 489)
 - v. 5.5 inch Meritor Automatic Slack Adjuster

2. SUMMARY OF DRUM WEAR

- a. Mass
 - i. Report 144263-1 showed a total drum mass loss of 0.093 kg.
 - ii. Report 144303-1 showed a total drum mass loss of 0.716 kg.

- b. Drum Diameter
 - i. Report 144263-1 showed an average drum diameter change of + 0.003 inches
 - ii. Report 144303-1 showed an average drum diameter change of + 0.011 inches

- c. Drum Wall Thickness
 - i. Report 144263-1 showed an average thickness reduction of 0.0033 inches
 - ii. Report 144303-1 showed an average thickness reduction of 0.0224 inches

3. SUMMARY

- a. Comparing both the loss in drum mass and reduction of the drum wall thickness, the treated drum had approximately one-seventh (15%) the wear of the untreated drum. The drum diameter increase also supports this comparison, but an increase in the drum diameter is not always indicative of the degree of drum wear because of changes in drum shape during the test. These results are based on one test and one test condition. Changing the test conditions (axle load, static loaded radius, etc.) may affect the wear results.

Please note that GTL is an ISO/IEC 17025 Accredited laboratory by the A2LA, an internationally recognized accreditation institute.

Thank you for this opportunity to be of service. Please do not hesitate to contact us with any questions you may have.

Best regards,



Kevin C. Machus



Cc: Chuck Greening, Jr. – GTL
Paul Aurand – GTL
GTL File Copy