

TEST REPORT



Attention: Mr. S Valentine

VC8053

Midas Group
294 Brickfield Rd
Meadowdale
Germiston
Private Bag X10028
Edenvale
1610
South Africa

REPLACEMENT BRAKE LINING ASSEMBLIES FOR ROAD VEHICLES

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Report Number:
2711/C6648

Sample Tested: **CVD047**

**FRASLE AF/700 CV LININGS
4515**

Date:
03 August 2010

Tested by: *B.H. Mthombeni*
B.H. Mthombeni
(Technical Signatory)

Authorized by: *S.D. Nqini*
S.D. Nqini
(Technical Signatory)

Approved by: *X.F. Mpahlwa*
X.F. Mpahlwa
(Manager)



Conclusion:

The sample tested complies with the requirements of the compulsory specification VC8053 specific to the tests mentioned in this report.

Number of pages 9

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428-7911, Fax: +27 (012) 344-1568.

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T0400

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1.6 General information

Table 1: Original Equipment component (Benchmark)

OE part number	4515 Cam and Anchor
OE manufacturer	Dynotherm
OE component description	Dynotherm Henred Fruehauf (HF) 4515 CAM (C) and ANC (A) TC3
Vehicle description	Henred Fruehauf
Vehicle category	O ₄
Gross axle mass	11000 kg
Torque benchmark for replacement linings	12342 Nm

Table 2: Replacement component

Replacement part number	4515 Cam and Anchor
Replacement supplier	Midas Group
Replacement manufacturer	Frasle
Replacement component description	Frasle AF/700 4515 CV linings
Replacement component batch number	25535072
Date sample received	19/07/2010
Date testing commenced	21/07/2010
Date testing completed	30/07/2010

2. TEST RESULTS

Summary of the results

The symbols referred to in the results column are as follows:

N/A = not applicable	P = compliance
N/T = not tested	F = non compliance
N/R = not requested	I = inspected
N/F = not fitted	* = see remark
N/I = not inspected	
T = tested	

Table 3: Summary of the results

Test	Clause	Details on page	Result
Laboratory tests	3.2	5	T/P
Brake lining attachment - bonded	3.3.1	5	N/A
Brake lining attachment - riveted	3.3.2	6	N/A
Packing	6.1	6	I/P
Marking	6.2	6	I/P

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Clause	Description	Result
3. DESCRIPTION OF THE CLAUSES		
Laboratory test		
3.2	When a replacement brake lining assembly is tested in accordance with clauses 4.3.2 and clause 4.3.3:	
3.2 a)	the mean braking torque recorded during the type O test, using the value of test speed 2 relevant to the category of vehicle given in table 1, shall for the same input force, be within 15 % of the mean braking torque recorded when the original brake lining assembly is tested in the same way. The mean braking torque recorded with the original brake lining assembly is the average of the braking torques recorded during at least five tests on the original brake lining assembly.	T/P
3.2 b)	The difference in the mean braking torque recorded during the type O test on the replacement brake lining assemblies, at the three different speeds, shall be within: <ol style="list-style-type: none"> 1) In the case of vehicles of categories M₁, M₂ and N₁, 15 % of one another and 2) In the case of vehicles of categories M₃, N₂ and N₃, 25 % of one another 	N/A
3.2 c)	The residual performance after the type 1 test shall be not less than 60 % of the figure recorded in the type O test.	T/P
	Upon completion of the test, the replacement brake lining shall be subjected to visual inspection, to check that it is in a satisfactory condition for continued use under normal working conditions.	I/P

Brake lining attachment

3.3.1	When a bonded replacement brake lining assembly is tested in accordance with clause 5:	
3.3.1 a)	Failure shall not occur before the shearing force reaches the appropriate of the following values; <ol style="list-style-type: none"> 1) Pad assembly: 2.5 N per square millimeter of surface area of the brake lining; and 2) Shoe assembly: 1.0 N per square millimeter of surface area of the brake lining; 	N/A
3.3.1 b)	Depending on the actual value of the ultimate shearing force, the failure pattern of the sheared surface shall comply with the following requirements: <ol style="list-style-type: none"> 1) Pad assembly: if the ultimate shearing force is less than 1.8 times the minimum value given in (a)(1) above, the bond over at least 70 % of the interface between the brake lining and the back plate shall not have failed. The bond shall not have failed anywhere at the edge; and 2) Shoe assembly: if the ultimate shearing force is less than twice the minimum value given in (a)(2) above, the bond over at least 65 % of the interface between the brake lining and the brake shoe shall not have failed, and no single area of failed adhesion shall exceed 15 % of the total area. The bond shall not have failed anywhere at the edge. 	N/A

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Clause	Description	Result
Brake lining attachment (continued)		
3.3.2	When riveted replacement brake lining assemblies are inspected, they shall comply with the following requirements:	
3.3.2 a)	There shall be no evidence of cracks in the lining;	N/A
3.3.2 b)	The lining shall not be askew to the back plate;	N/A
3.3.2 c)	There shall be no separation of the lining from the brake shoe;	N/A
3.3.2 d)	The leading edge of the lining shall be on the correct side;	N/A
3.3.2 e)	The diameter of the rivet head shall not be obviously smaller than the diameter of the lining hole when correctly seated;	N/A
3.3.2 f)	The rivet head shall not be flush or proud of the lining;	N/A
3.3.2 g)	There shall be no damage to the rivets;	N/A
3.3.2 h)	The rivets shall not be loose; and	N/A
3.3.2 l)	There shall be no sign of the rivet hole on the underside of the brake shoe.	N/A

Packing and marking

6.1	Packing Replacement brake lining assemblies shall be so packed as to prevent damage or contamination during transportation and storage.	I/P
6.2	Marking Replacement brake lining assemblies shall be so marked as to clearly identify the manufacturer and the vehicle model and any derivative for which they are intended. A parts numbering system that corresponds to the vehicle parts list shall be deemed to satisfy these requirements.	I/P

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4. SUMMARY OF TEST DATA

Run No.	Type-O Cold performance test at 40km/h				Residual performance after Type-I test at 40km/h			
	Mean torque within 15% of prescribed value				Mean torque not less than 60% of the figure recorded during type-O Cold performance			
	Req Type O	Act. Type O	Variance	Result	Req Res.	Act. Res.	Variance	Result
	Nm	Nm	%		Nm	Nm	%	
2	12342	10602	14	P	10602	7343	69	P

5. REMARKS

- The sample was identified as FRASLE 4515-G-F AF/700 25535072 and FRASLE 4515-G-G AF/700 25535072.

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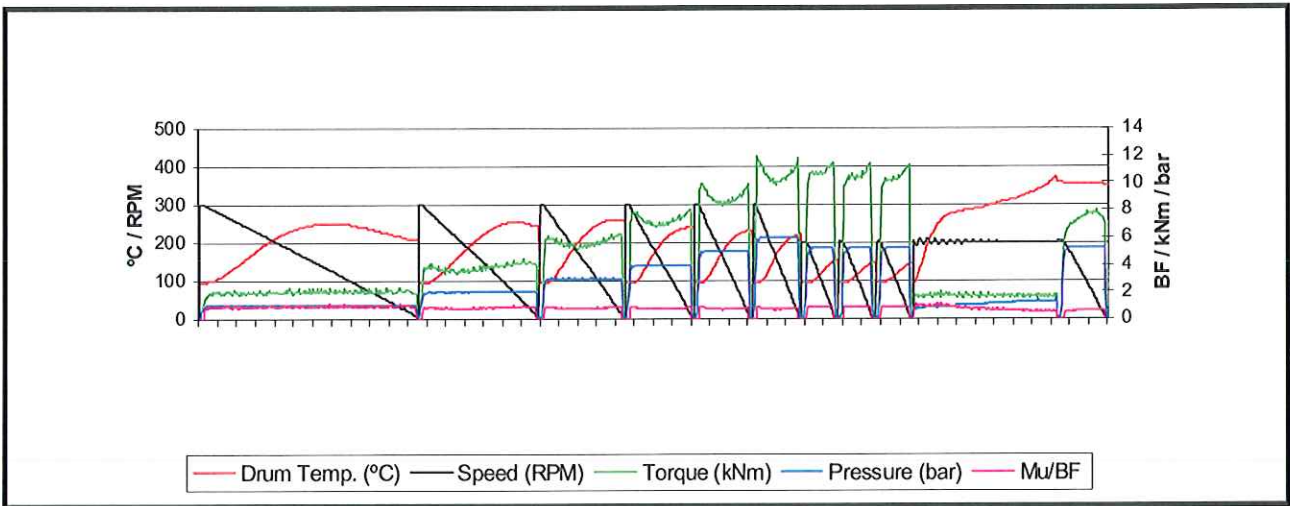
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6. DETAILED DATA

Performance Tests							
Sequence	Stop No	Speed V1	Press bar	Torque Nm	Temp (°C) Drum (Initial)	Temp (°C) Drum (Final)	Stop Dist m
Press. Sens. 60km/h	1	59	1	2005	98	209	192.1
Press. Sens. 60km/h	2	60	2	3838	95	246	104.0
Press. Sens. 60km/h	3	59	3	5646	96	259	69.7
Press. Sens. 60km/h	4	59	4	7294	94	240	53.0
Press. Sens. 60km/h	5	60	5	8954	95	231	43.4
Press. Sens. 60km/h	6	59	6	10608	95	219	35.8
Type0 40 km/h	1	40	5	10818	95	150	15.6
Type0 40 km/h	2	40	5	10558	95	146	16.3
Type0 40 km/h	3	39	5	10429	95	145	16.6
Residual 40 km/h	1	40	5	7343	360	353	24.7



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7. CONDITIONS

The acceptance of an item for test and the issue of a test report are subject to the SABS's CONDITIONS OF TEST, from which the following have been extracted:*

1. If published or reproduced by the client, a test report shall be reproduced in full, i.e. the reproduction shall contain the printed as well as the typed parts of the report, nothing excepted. In special circumstances, an abridged form of the report or certain parts of the report may be published or reproduced, provided that the abridged form or partial version of the report is approved in writing by the CEO of the SABS before publication or issue.

2. A test report relates only to an item submitted for the actual test. It furnishes or implies no guarantee whatsoever in respect of a similar item that has not been tested.

3. The performance of a test and the issue of a test report do not imply approval by the SABS of the quality and/or performance of the item that has been tested. This does not authorize the use of a certification mark.

NOTE An unlawful statement implying that an item has been approved by the SABS constitutes a punishable offence in terms of Section 21(1) of the Standards Act.

4. While every endeavour will be made to ensure that a test is representative and accurately performed, and that a report is accurate in the quoted results and conclusions drawn from the test, the SABS or its officers shall in no way be liable for any error made in carrying out the test or for any erroneous statement, whether in fact or in opinion, contained in a report issued pursuant to a test.

**Obtainable upon request from the President and CEO, SABS, Private Bag X191 Pretoria, 0001.*

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