

TEST CERTIFICATE

ISSUED BY RKS LABORATORIES LTD

C2475

CERTIFICATE NO: 2475

JOB NO: 2070

ISSUE NO: 1

PURCHASE ORDER NO: Simon Lane

PAGE NO: 1 of 3

DATE: 20 May 2008

Certificate of Test for Brake Hose

Supplied by:-

**HEL Performance Products
Lower Trelake Business Park
Tedburn Road
Whitestone
Exeter
Devon
EX4 2HF**

Prepared by:

L.J.Komatsu

**RKS Laboratories Ltd
Russell House
5 Petworth Industrial Estate
Petworth
West Sussex
GU28 9NR
U.K.**

Certificate of Test for Brake Hose

RKS Laboratories Ltd were contacted by HEL Performance Products of Lower Trelake Business Park Tedburn Rd Whitestone Exeter Devon EX4 2HF to carry out testing on Brake Hose to Federal Motor Vehicle Safety Standard No 106

Identification

Material:	Brake hose
Customer's Identification:	FMVSS-106 03/08 1/8" ID HL
Customer Ref:	Simon Lane
RKS Sample No:	2493-2494
Job No:	2070
Date Received:	03/03/08

Test Data

Brake Hose tested as received from customer.

Brake Hose tested to the following sections of FMVSS-106 Standard

S5.2 Labelling

S5.3 Test Requirements

S5.3.1 Constriction

S5.3.2 Expansion and Burst Strength

S5.3.4 Tensile Strength

S5.3.8 Low Temperature Resistance@ - 40°C

S5.3.9 Brake fluid Compatibility, constriction + burst strength

S5.3.11 End fitting corrosion resistance

Date of Test: 08/04/08 – 19/5/08

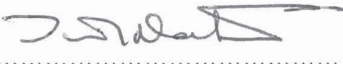
Test Results

Test	Result	Pass/Fail
Labelling	Brake hose labelled with correct details	Pass
Constriction	No Constriction	Pass
Expansion	0.271ml/ft	Pass
Bust Strength	> 345 Bar	Pass
Tensile Strength	184.9Kg	Pass
Low Temperature Resistance	No failures @ - 40°C	Pass
Brake Fluid Compatibility	> 345 Bar	Pass
End Fitting Corrosion Resistance	No Corrosion	Pass

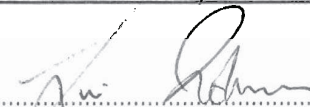
These results refer only to the material tested

Work recorded by the following personnel:-


 L.J. Komatsu ACQI
 Quality Manager


 T J Martin ARCS BSc CPhys FIQA MIMM MSEE MinstP
 Technical Consultant

Work authorised by the following personnel:-


 T.W. Robinson BSc Hons MiBiol CBIol MIQA
 Technical Director

This Test Certificate shall not be reproduced except in full, without the prior approval of RKS Laboratories Ltd in writing.

..... **END**

PRODUCTS:	4 Brake Assemblies Provided by HEL Performance Products
REQUEST:	Perform Whip Test Upon Assemblies
TESTER / POSITION:	Wayne Handley – Quality Lab Technician
DATE:	11/01/04

Introduction

HEL Performance Products provided four complete brake hose assemblies for the purpose of being tested in accordance with section S5.3.3 of FMVSS-106. All four whip tests were required to withstand a minimum whip time of 35 hours.

Investigation

The free length of all three assemblies was measured and the appropriate slack lengths and projected lengths were calculated for each assembly. In turn, each assembly was attached to the rig, ensuring that the assembly was not mounted in a twisted orientation. Water pressure was used to bleed the system of air before applying the correct amount of water pressure to the assembly. Once this had been achieved, the timer was set to zero and the test commenced. Failure of the specimen by water leakage and subsequent loss of pressure terminates the test and stops the timer.

Results

Whip Test Results	
Assembly No.	Whip Test Time (hours)
1	93.14*
2	48.31*
3	47.01*
4	71.89*

Note: * Denotes Removed From Rig Intact

Conclusion

All four assemblies complied and passed far beyond with the requirements of section S5.3.3 of FMVSS-106 with no significant areas of weakness being noted. There are however another of other tests required to be completed and passed along with the above samples for full FMVSS-106 approval.

