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|----------------------------------------------------------------------------------|---------------------------------------------------------|----------------------|
|  | <b>SURFACE<br/>VEHICLE<br/>RECOMMENDED<br/>PRACTICE</b> |                      |
|                                                                                  | <b>SAE</b>                                              | <b>J1873 FEB2012</b> |
|                                                                                  | Issued<br>Revised                                       | 1988-03<br>2012-02   |
| Superseding J1873 JUL2003                                                        |                                                         |                      |
| Moisture Transmission Test Procedure - Hydraulic Brake Hose Assemblies           |                                                         |                      |

## RATIONALE

Sections 2.1.1 and 4 of this specification have been updated to create a reference to SAE J1703 and J1704 where previous revisions listed the referee brake fluid formulation for DOT 3 fluid only. The industry is trending towards use of both DOT 3 and DOT 4 for global applications, and the formulation of the referee fluids is changing more rapidly. A direct reference to the brake fluid specifications will provide more accurate information as these referee brake fluid formulations change.

### 1. SCOPE

This SAE Recommended Practice is intended for all vehicle hydraulic brake hoses. It is an accelerated test which is intended to provide the user with a method of comparing the ability of hydraulic brake hose designs to retard the ingress of moisture into brake fluid.

This document specifies a laboratory performance requirement. ASTM D 1364 interlaboratory reproducibility and correlation of data have not been defined, nor has correlation been established between field vehicle brake fluid moisture content and data obtained by this document.

#### 1.1 Purpose

The purpose of this document is to simulate in the laboratory the transmission of moisture into a brake hose.

### 2. REFERENCES

#### 2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

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[http://www.sae.org/technical/standards/J1873\\_201202](http://www.sae.org/technical/standards/J1873_201202)

### 2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), [www.sae.org](http://www.sae.org).

SAE J1703 Motor Vehicle Brake Fluid

SAE J1704 Borate Ester Based Brake Fluids

### 2.1.1 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, [www.astm.org](http://www.astm.org).

ASTM D 1364 Test Method for Water in Volatile Solvents (Fischer Reagent Titration Method)

## 3. NOTE

This procedure is extremely sensitive and care must be taken to minimize the amount of unwanted moisture introduced into the system due to experimental error.

## 4. TEST APPARATUS

### 4.1 Brake Hose Assemblies

305 mm  $\pm$  5 mm (12.0 in  $\pm$  0.2 in) free length with female threaded fittings no longer than 40 mm (1-1/2 in) on each end.

4.2 Threaded end plugs tapered to match fitting eyelet.

4.3 Sample glass vials with appropriate caps to insure seal.

4.4 Glass water bath container.

4.5 Karl Fischer test apparatus (Reference ASTM D 1364).

4.6 Squeeze bottle with "J" tube.

4.7 Deionized or distilled water.

4.8 Desiccator.

4.9 Unopened can of brake fluid. Use the Compatibility Fluid as described in the latest revision of SAE J1703 or J1704.

4.10 Isopropyl Alcohol

4.11 Standard room environmental conditions of 23.0 °C  $\pm$  2.0 °C (73.4 °F  $\pm$  3.6 °F), 50% RH  $\pm$  5% RH.

## 5. TEST PREPARATION

5.1 Precondition all the brake hose assemblies at 100 °C  $\pm$  2 °C (212 °F  $\pm$  3.6 °F) for 24 h  $\pm$  2 h. Precondition all glass sample vials and the "J" tube squeeze bottle at 70 °C  $\pm$  2 °C (158 °F  $\pm$  3.6 °F) for a minimum of 1 h. This will assure that the hoses, vials, and bottle initially will be relatively dry.