



**PRODUCT MANUAL FOR  
AUTOMOTIVE VEHICLES- BRAKE HOSE ASSEMBLIES FOR  
HYDRAULIC BRAKING SYSTEMS USED WITH  
NON - PETROLEUM BASE BRAKE FLUID  
ACCORDING TO IS 7079:2008**

*This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence.*

1.	<b>Product</b>	:	IS 7079 : 2008
	<b>Title</b>	:	AUTOMOTIVE VEHICLES- BRAKE HOSE ASSEMBLIES FOR HYDRAULIC BRAKING SYSTEMS USED WITH NON PETROLEUM BASE BRAKE FLUID
	<b>No. of Amendments</b>	:	Two
2.	<b>Sampling Guidelines:</b>		
a)	<b>Raw material</b>	:	---
b)	<b>Grouping guidelines</b>	:	Each Type of Brake Hose Assembly (Clause 3.2.1, 3.2.2 and 3.12) shall be tested separately for considering GoL. For CSoL, the provisions of clause 8.2 shall apply.
c)	<b>Sample Size</b>	:	15 Nos
3.	<b>List of Test Equipment</b>	:	Please refer ANNEX – <a href="#">A</a>
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer ANNEX – <a href="#">B</a>
5.	<b>Possible tests in a day</b>	:	Please refer ANNEX – <a href="#">C</a>
6.	<b>Scope of the Licence</b>	:	Please refer ANNEX – <a href="#">D</a>

**ANNEX A****List of Test Equipment***Major test equipment required to test as per the Indian Standard*

<b>Sl. No.</b>	<b>Tests used in with Clause Reference</b>	<b>Test Equipment</b>
1	Test Conditions as per Cl <b>5.1</b>	Air conditioner Temperature indicator
2	Constriction Test as per Cl <b>5.4</b>	Gauge plug Stopwatch
3	Expansion Test as per Cl <b>5.5</b>	Apparatus for expansion test including pressure gauge as given in Cl <b>B-1.1</b> 6.35mm diameter soft seamless steel tubing Stopwatch
4	Pressure Test as per Cl <b>5.6</b>	Pressure gauge Stopwatch
5	Bursting Strength Test as per Cl <b>5.7</b>	Pressure system Pressure gauge Stopwatch
6	Whip Test as per Cl <b>5.8</b>	Measuring scale Hour meter Whip test apparatus and whip slack setting fixture as per Cl <b>D-2.1</b>
7	Tensile Test as per Cl <b>5.9</b>	Tensile testing machine
8	Water Absorption Test as per Cl <b>5.10</b>	Water Bath with temperature controller Hour meter
9	Salt Spray Test as per Cl <b>5.11</b>	Fog Chamber with temperature controller Salt solution reservoir Compressor Salt solution as per Cl <b>E-3.1</b>

10	Cold Bend Test as per Cl <b>5.12</b>	Cold Chamber Hour meter Mandrels
11	Static Ozone Resistance Test as per Cl <b>5.13</b>	Mandrels Hour meter Magnification lens 7x Test chamber with source of ozonised air
12	Dynamic Ozone Resistance Test as per Cl <b>5.14</b>	Conditioning chamber Dynamic ozone test apparatus Ozone chamber Stopwatch Hour meter
13	Hot Impulse Strength Test as per Cl <b>5.15</b>	Counter Pressure gauge Pressure cycling apparatus Oven Stopwatch
14	Brake Fluid Compatibility Test as per Cl <b>5.16</b>	Conditioning chamber Hour meter Stopwatch Glassware

*The above list is indicative only and may not be treated as exhaustive.*

**ANNEX B**

**Scheme of Inspection and Testing**

**1. LABORATORY** - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

**1.1** The manufacturer shall prepare a calibration plan for the test equipments.

**2. TEST RECORDS** – The manufacturer shall maintain test records for the tests carried out to establish conformity.

**3. LABELLING AND MARKING** – As per the requirements of IS 7079:2008.

**4. CONTROL UNIT** – All brake hose assemblies of the same type, size and diameter, having the same number of plies, produced under essentially similar conditions of manufacture (such as those from single batch of raw material or from components obtained from a single source or from a single production method or undergoing a single curing process) in a day shall constitute a control unit.

**5. LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

**6. REJECTIONS** – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

**TABLE 1**

<b>(1)</b>				<b>(2)</b>	<b>(3)</b>		
<b>Test Details</b>				<b>Test equipment requirement R: required (or) S: Sub- contracting permitted</b>	<b>Levels of Control</b>		
<b>Cl.</b>	<b>Requirement</b>	<b>Test Method</b>			<b>No. of Sample</b>	<b>Frequency</b>	<b>Remarks</b>
		<b>Clause</b>	<b>Reference</b>				
<b>4.1</b>	<b>Material</b>						
4.1.1	Lining	4.1.1	IS 7079	S	Conformity to relevant requirements may be established for each roll.		
4.1.2	Reinforcement	4.1.2	IS 7079	S			
4.1.3	Cover	4.1.3	IS 7079	S			
4.1.4	Metal parts	4.1.4	IS 7079	S	Conformity to relevant requirements may be established for each consignment.		
<b>4.2</b>	<b>Construction</b>						
4.2.1	Lining	4.2.1	IS 7079	S	Conformity to relevant requirements may be established for each roll.		
4.2.2	Reinforcement and Reinforcement Plies	4.2.2	IS 7079	S			
4.2.3	Cover	4.2.3	IS 7079	S			
<b>5</b>	<b>Tests on Assembled Hose</b>						
5.3	Visual Test	5.3	IS 7079	-	Each hose	---	
5.4	Constriction Test	5.4, Annex A	IS 7079	R	Each hose assembly	---	

5.5	Expansion Test	5.5, Annex B	IS 7079	R	One	Each Control Unit	---
5.6	Pressure Test	5.6	IS 7079	R	Each hose assembly		---
5.7	Bursting Strength Test	5.7, Annex C	IS 7079	R	One	Each Control Unit	---
5.8	Whip Test	5.8, Annex D	IS 7079	R	One	Every fifth control unit	#
5.9	Tensile Test	5.9	IS 7079	R	One	Each Control Unit	---
5.10	Water Absorption Test	5.10	IS 7079	R	One	Every Tenth Control Unit	#
5.11	Salt Spray Test	5.11, Annex E	IS 7079	R	One	Every Fifth Control Unit	#
5.12	Cold Bend Test	5.12	IS 7079	R	One	Every Tenth Control Unit	#
5.13	Static Ozone Resistance Test	5.13	IS 7079	S	One	Once in six months or whenever there is any change in material, whichever is earlier	---
5.14	Dynamic Ozone Resistance Test	5.14, Annex F	IS 7079	S	One		
5.15	Hot Impulse Strength Test	5.15, Annex G	IS 7079	R	One	Every Tenth Control Unit	#
5.16	Brake Fluid Compatibility Test	5.16, Annex H	IS 7079	R	One	Every Tenth Control Unit	#

# In case of any failure, frequency shall be changed to 'alternate control unit' and original frequency shall be restored only if samples from five consecutive units tested are passing.

Note-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.

**ANNEX C****Possible Tests in a day**

<b>Sl. No.</b>	<b>Test</b>
1.	Visual Test as per Cl 5.3
2.	Constriction Test as per Cl 5.4
3.	Expansion Test as per Cl 5.5
4.	Pressure Test as per Cl 5.6
5.	Bursting Strength Test as per Cl 5.7
6.	Tensile Test as per Cl 5.9
7.	Hot Impulse Strength Test as per Cl 5.15

**ANNEX D****Scope of the Licence**

“Licence is granted to use Standard Mark as per IS 7079:2008 with the following scope”:	
Name of the product	Automotive vehicles- Brake hose assemblies for hydraulic braking systems used with non-petroleum base brake fluid
Variety	<ul style="list-style-type: none"> <li>• Type A Hose/Type B Hose</li> <li>• Material of Hose</li> <li>• Type of Braiding</li> <li>• Fitting crimp/ Swaging Area</li> <li>• Bore Diameter</li> <li>• Section dimensions of hose</li> <li>• End Fittings material</li> </ul>