

AUTOMOTIVE INDUSTRY STANDARD

**Automotive Vehicles -
Weather Strips - Specification**

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ON BEHALF OF
AUTOMOTIVE INDUSTRY STANDARDS COMMITTEE

UNDER
CENTRAL MOTOR VEHICLES RULES – TECHNICAL STANDING COMMITTEE

SET-UP BY
MINISTRY OF SHIPPING, ROAD TRANSPORT & HIGHWAYS
(DEPARTMENT OF ROAD TRANSPORT & HIGHWAYS)
GOVERNMENT OF INDIA

December 2005

Status chart of the standard to be used by the purchaser
for updating the record

Sr. No.	Corr- igenda.	Amend- ment	Revision	Date	Remark	Misc.

General Remarks :

INTRODUCTION

The Government of India felt the need for a permanent agency to expedite the publication of standards and development of test facilities in parallel when the work on the preparation of the standards is going on, as the development of improved safety critical parts can be undertaken only after the publication of the standard and commissioning of test facilities. To this end, the erstwhile Ministry of Surface Transport (MoST) has constituted a permanent Automotive Industry Standard Committee (AISC) vide order No. RT-11028/11/97-MVL dated September 15, 1997. The standards prepared by AISC will be approved by the permanent CMVR Technical Standing Committee (CTSC). After approval, the Automotive Research Association of India, (ARAI), Pune, being the Secretariat of the AIS Committee, has published this standard. For better dissemination of this information ARAI may publish this document on their Web site.

The present automotive standard is prepared to provide requirement and methods of testing for weather strips incorporating construction and quality control.

Considerable assistance has been taken from the following National / International standards:

1.	IS:3400(Part 1)	Methods of Test for Vulcanized Rubbers – Tensile Stress-strain Properties
2.	IS:3400 (Part 2)	Methods of Test for Vulcanized Rubber – Hardness
3.	IS:3400 (Part 4)	Methods of Test for Vulcanized Rubbers – Accelerated Ageing
4.	IS:3400 (Part 9)	Methods of Test for Vulcanized Rubbers – Rubber, Vulcanized – Determination of Density
5.	IS:3400 (Part 10)	Methods of Test for Vulcanized Rubbers – Compression Set at Constant Strain
6.	IS:3400 (Part 20)	Methods of Test for Vulcanized Rubbers – Resistance to Ozone Cracking – Static Strain Test
7.	IS:3400 (Part 22)	Methods of Test for Vulcanized Rubbers – Chemical Analysis
8.	ASTM D 2000	Standard Classification System for Rubber Products in Automotive Applications

The Automotive Industry Standards Committee (AISC) responsible for preparation of this standard is given in Annex : I.

Automotive Vehicles – Weather Strips Specification

1. SCOPE

This standard prescribes requirements and methods of testing for weather strips such as Lock Strip Gasket, Rub Rail, Rubber Beading for Mudguards, Rubber Channel made up of materials such as EPDM Rubber.

2. APPLICATIONS

This specification is applicable for above materials used in automobiles.

3. REFERENCES

3.1.	AIS-066	Guidelines for Analysis of Automotive Rubbers by Fourier Transform Infra-red Spectrometry (FTIR) and Thermogravimetry (TGA) Techniques
3.2.	ASTM D 297	Standard Test Methods for Rubber Products - Chemical Analysis
3.3.	ASTM D 2240	Standard Test Method for Rubber Property - Durometer Hardness
3.4.	ASTM D 572	Standard Test Method for Rubber – Deterioration by Heat & Oxygen
3.5.	ASTM D 412	Standard Test Methods for Vulcanised Rubber and Thermoplastic Elastomers – Tension
3.6.	ASTM D 1149	Standard Test Method for Rubber Deterioration – Surface Ozone Cracking in a Chamber
3.7.	ASTM D 1171	Standard Test Method for Rubber Deterioration – Surface Ozone Cracking Outdoors or Chamber (Triangular Specimens)
3.8.	ASTM C 542	Standard Specification for Lock Strip Gaskets
3.9.	ASTM D 395 Method B	Standard Test Methods for Rubber Property- Compression Set

4. TESTS AND REQUIREMENTS

Sr. No.	Test Parameters	Test Method	Lock Strip Gasket	Rub Rail	Rubber Beading For Mudguards	Rubber Channel
1.	Visual Examination	-----	It shall have good workmanship, free from porosity, surface defects and dimensional irregularities.	-Do-	-Do-	-Do-
2.	Type of Polymer	ASTM D 297, AIS-066	EPDM/ any other rubber meeting the requirement	-Do-	-Do-	-Do-
3.	Hardness, Shore A	ASTM D 2240	65 ±5	75 ± 5	60 ± 5	65 ± 5
4.	Specific Gravity, max.	ASTM D 297	1.25	1.25	1.25	1.25
6.	Lip Opening pressure, kg/linear cm, Min.	ASTM C 542	0.7	NA	NA	NA
7.	(a)Tensile Strength, kg/cm ² , Min. (b) %Elongation at break, Min.	ASTM D 412	*70 *250	*70 *200	70 250	70 250
8.	Resistance to Ozone, 100 pphm, 40 ± 2° C, 20% elongation	ASTM D 1149, ASTM D 1171	No cracks shall be observed till 100 hours	-Do-	-Do-	-Do-
9.	Resistance to Heat, 100 ± 2°C, 70 hours. (a)Change in Hardness in points *(b)Change in Tensile Strength, %,Max *(c) Change in elongation at break%, Max	ASTM D 572	0 to + 10 -25 -25	0 to +10 -25 -25	0 to +10 -25 -25	0 to +10 -25 -25

Sr. No.	Test Parameters	Test Method	Lock Strip Gasket	Rub Rail	Rubber Beading For Mudguards	Rubber Channel
10.	**Compression Set %, max. at 70 hours/100° C	ASTM D 395, Method B	50	50	50	50
11.	Rubber content %, w/w, Min	ASTM D 297, AIS -066	25	25	25	25

* Tensile strength and % Elongation at break to be carried out on standard test slabs made from the rubber compound having composition identical to the corresponding item.

** Compression set test to be carried out on standard test buttons made from the rubber compound having composition identical to the corresponding item.

ANNEX : I

(See Introduction)

COMMITTEE COMPOSITION ***Automotive Industry Standards Committee**

Chairman	
Shri B. Bhanot	Director The Automotive Research Association of India, Pune
Members	Representing
Shri S. K. Mishra	Ministry of Shipping, Road Transport & Highways, New Delhi
Shri Sushil Kumar	Department of Heavy Industry, Ministry of Heavy Industries & Public Enterprises, New Delhi
Shri Chandan Saha	Office of the Development Commissioner, Small Scale Industries, Ministry of Small Scale Industries, New Delhi
Shri S. Dasgupta Shri P. C. Joshi (Alternate)	Bureau of Indian Standards, New Delhi
Shri A. S. Lakra Shri D. P. Saste (Alternate)	Central Institute of Road Transport, Pune
Director	Indian Institute of Petroleum, Dehra Dun
Dr. C. L. Dhamejani Dr. N. Karuppaiah (Alternate)	Vehicles Research & Development Establishment, Ahmednagar
Shri Dilip Chenoy	Society of Indian Automobile Manufacturers
Shri T.C. Gopalan Shri Ramakant Garg (Alternate)	Tractor Manufacturers Association, New Delhi
Shri K.N.D. Nambudirip	Automotive Components Manufacturers Association New Delhi
Shri G. P. Banerji	Automotive Components Manufacturers Association New Delhi

Member Secretary
Mrs. Rashmi Urdhwareshe
Deputy Director

The Automotive Research Association of India, Pune

* At the time of approval of this Automotive Industry Standard (AIS)