PRODUCT MANUAL FOR AUTOMOTIVE VEHICLES-TUBES FOR PNEUMATIC TYRES ACCORDING TO IS 13098: 2012

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/certificate.

1.	**Product**	:	IS 13098: 2012
	Title	:	AUTOMOTIVE VEHICLES –TUBES FOR PNEUMATIC TYRES
	No. of Amendments	:	NIL
2.	**Sampling Guidelines:**		
a)	**Raw material**	:	-
b)	**Grouping guidelines**	:	Please refer ANNEX – A
c)	**Sample Size**	:	3 tubes along with 3 valves, 1 tyre of same size as that of tube for form and fit test (*Cl.* 3.3).
3.	**List of Test Equipment**	:	Please refer ANNEX – B.
4.	**Scheme of Inspection and Testing**	:	Please refer ANNEX – C.
5.	**Requirements which can be tested in a day :**		
	(i) Form and fit test (*clause* **3.3**) (ii) Thickness uniformity (*clause* **3.3.1, 3.3.2**) (iii)Elongation (*clause* **4.1.1**) (iv)Strength of splice (*clause* **4.1.2**) (v) Air tightness (*clause* **5**)		
6.	**Scope of the Licence :**		
	"Licence is granted to use Standard Mark as per IS 13098 : 2012 with the following scope:		
	Name of the product	Tubes for pneumatic tyres for Automotive vehicles	
	Class	*Class* **A** or *Class* **B**	
	Size	Range of sizes to be declared	

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ANNEX A

Grouping Guidelines

1. The parameters as given below shall be considered for grouping of Tubes for pneumatic tyres for Automotive vehicles as per IS 13098 : 2012 for GOL/Inclusion:

   Class of Tubes- *Class* **A** or *Class* **B**

2. The Firm shall declare the Class of various tubes they intend to cover in the Licence.

3. Tubes with different sizes shall be considered as one group, provided the Class remains the same. Any one Size from each Class shall be tested for covering all the sizes of tubes in that group.

4. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.

5. During the operation of the Licence, BO shall ensure that all the types and sizes covered in the Licence are tested in rotation, to the extent possible.

ANNEX B

List of Test Equipments

Major test equipment required to test as per the Indian Standard

Sl. No.	**Tests used in with Clause Reference**	**Test Equipment**
1.	Form and fit as per *clause* **3.3**	a) Tyre of marked size b) Air compressor and pressure gauge
2.	Thickness Uniformity as per *clause* **3.3.1, 3.3.2**	a) Dial thickness gauge
3.	Elongation as per *clause* **4.1.1**	a) Dumb-bell cutter b) Tensile testing machine c) Vernier caliper d) Extensometer e) Micrometer
4.	Strength of splice as per *clause* **4.1.2**	
5.	Set after Ageing as per *clause* **4.1.3**	a) Dumb-bell cutter b) Tensile testing machine c) Vernier caliper d) Extensometer e) Micrometer f) Hot air oven (thermostatically controlled) with Digital temperature indicator g) Stop watch
6.	Accelerated Ageing as per *clause* **4.1.4**	
7.	Air tightness as per *clause* **5**	a) Air Compressor or vacuum pump with pressure indicator b) Water tank of suitable size to accommodate inflated tube
8.	Lab conditions for Tensile test	a) Air conditioner

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

ANNEX - C

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 equipment.

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 13098: 2012.

4. CONTROL UNIT – All tubes produced in a day, from each rubber compound 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.

5.1 All the production which conforms to the Indian Standard and covered by the licence should be marked with Standard Mark.

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

(1)				(2)	(3)		
Test Details				**Test equipment requirement**	**Levels of Control**		
Cl.	Requirement	Test Methods		**R:** required (or) **S:** Sub-contracting permitted	No. of Sample	Frequency	Remarks
		Clause	Reference				
3.1	Tube Valve or Spud		IS 9081	S	—	Each Consignment	No further testing is required, if accompanied with test certificate or ISI marked
3.3	General & Form and Fit	3.3	IS 13098	R	At the time of initial approval or whenever there is any inclusion of new variety —		
3.3.1 & 3.3.2	Thickness Uniformity	3.3.1, 3.3.2	IS 13098	R	One	Every Tyre Size Designation from each Control Unit	In case of failure, the entire production from particular die shall be rejected, failure investigated and corrective actions shall be taken. After resetting the die, 10 pieces from continuous production shall be checked and if found satisfactory, original frequency may be restored.
4.1.1	Elongation	4.1.1, Annex A	IS 13098 IS 3400 (Part 1)	R	Two	Every Control unit	In case of failure, the entire production of such control unit shall be rejected.

4.1.2	Strength of Splice	4.1.2 , Annex A	IS 13098 IS 3400 (Part 1)	R	Two	Every Control unit	
4.1.3	Set After Ageing	4.1.3, Annex B	IS 13098	R	Two	Every 6th Control unit	—
4.1.4	Accelerated Ageing	4.1.4, Annex C	IS 13098 IS 3400 (Part 1) and IS 3400 (Part 4)	R	Two	Every 6th Control unit	—
5	Air Tightness	5	IS 13098	R	Each tube		In case of failure the tube shall be rejected.

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

NOTE-2: The control unit and levels of control as decided by the Bureau are obligatory to which the licensee shall comply with.