PRODUCT MANUAL FOR BICYCLE –FRONT FORKS ACCORDING TO IS 2061:1995

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 2061 :1995
	Title	:	BICYCLE –FRONT FORKS
	No. of Amendments	:	3
2.	**Sampling Guidelines:**		
a)	**Raw material**	:	As per clause 3 of IS 2061:1995
b)	**Grouping guidelines**	:	Front fork of any one size (preferably highest) shall be tested to cover all the sizes in the scope of Licence.
c)	**Sample Size**	:	Two piece of Bicycle Front Fork
3.	**List of Test Equipment**	:	Please refer ANNEX – A.
4.	**Scheme of Inspection and Testing**	:	Please refer ANNEX – B.
5.	**Possible tests in a day :**		
	i) Manufacture and Finish (*Clause* **5.2**) ii) Load Test (*Clause* **7.1.1**) iii) Expansion test (*Clause* **7.1.2**) iv) Test for Finish (*Clause* **7.1.3.1**) v) Chemical Test (*Clause* **7.1.3.2**) vi) Impact Test (falling mass) (*Clause* **7.1.4**) vii) Impact Test (falling frame/ fork assembly) (*Clause* **7.1.5**)		
6.	**Scope of the Licence :**		
	"Licence is granted to use Standard Mark as per IS 2061:1995 with the following scope:		
	Name of the product	Bicycle Front Fork	
	Size	---	
7.	Any other Product Specific Guuidelines	Please refer ANNEX-C on Guidelines on sharing of manufacturing facilities between BIS licensees	

ANNEX A

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.	Load Test as per *clause* **7.1.1**	a) Universal Load Testing Machine b) Stop watch
2.	Expansion Test as per *clause* **7.1.2**	a) Expansion tester with Mandrel
3.	Test of Finish as per *clause* **7.1.3**	a) Solid Steel Ball b) Scale
	Chemical Test as per *clause* **7.1.3.2**	a) Mild Steel Tank with rubber lining b) Thermocouple c) Temperature Controller d) NaCl Solution e) Stop Watch
4.	Impact Test (Falling Mass) as per *clause* **7.1.4**	a) Mass 22.5 kg b) Scale c) Roller 1 kg Max.
5.	Impact Test (Falling Frame/ Fork Assembly) as per *clause* **7.1.5**	a) Mass 70 kg b) Scale

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

ANNEX - **B**

Scheme of Inspection and Testing

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit i.e. Batch and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4 below.

1.3 **RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT**:

1.3.1 **Control Unit/Batch No./Code No.**: For the guidance of manufacturers, the recommended definition of Control Unit is quantity of All front forks manufactured, enameled and baked together in the oven under identical conditions in a day.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1 below**.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively,the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

1.5 In case of supplying the semi-finished product under agreement between 2 manufacturers (both holding BIS license for this product), guidelines given in ***Annex C*** of this Manual shall be followed.

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in-house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer, and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in-house as "R" or other tests which can be sub-contracted as "S". Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as "R" in Column 2 of Table 1) is also optional.

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 **Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as "R" in Column 2 of Table 1)**, where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 **TEST RECORDS**- The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS. Please refer ANNEX-C also regarding guidelines on Sharing of manufacturing facilities between BIS licensees for carrying out certain specific manufacturing activities.

3. LABELLING AND MARKING – As per the requirements of IS 2061: 1995. In addition, each front fork shall carry Batch number or code number for traceability. The Standard Mark, as given in the Schedule of the licence, shall be marked on each Front fork provided always that the frame thus marked conforms to all the requirement of the specification. In addition, the licence no. CM/L-_____ and details of BIS website shall be marked at an appropriate place as follows: "For details of BIS certification please visit www.bis.gov.in".

4. REJECTION - All the production which conforms to the Indian Standard and covered under scope of the licence shall be marked with Standard Mark. 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	MATERIAL	3	IS 2061	S	One	Each Consignment	No further testing is required, if accompanied with test certificate or ISI marked
5	Manufacture and Finish	5	IS 2061	R	Firm should exercise adequate control so that whole production should meet the requirements. Appropriate records shall be maintained		
	Solder		IS 2927	S		Each Consignment	No further testing is required, if accompanied with test certificate or ISI marked

7	**TESTS**						
7.1.1	Load Test	7.1.1	IS 2061	R	One Fork	Every Control unit	In case of failure, two samples shall be tested for all requirements. In the event of further failure whole control unit shall be rejected.
7.1.2	Expansion Test	7.1.2	IS 2061	R			
7.1.3	Test of Finish	7.1.3	IS 2061	R			
7.1.3.2	Chemical Test	7.1.3.2	IS 2061	R			
7.1.4	Impact Test (Falling Mass)	7.1.4	IS 2061	R			
7.1.5	Impact Test (Falling Frame/ Fork Assembly)	7.1.5	IS 2061	R			

NOTE-1: In case of agreement between 2 manufacturers (holding BIS license for this product) for supplying the semi-finished product, then the supplier licensee will carry out all tests as per Cl. 3, 5, 7.1.1, 7.1.2, 7.1.4 and 7.1.5 of IS 2061. Receiver licensee will carry out all tests as per SIT in his factory and bear the responsibility for the final quality of the product dispatched and sold with BIS Standard Mark. Please refer ***ANNEX-C*** of this Manual for details.

ANNEX-C

Guidelines on sharing of manufacturing facilities between BIS licensees for carrying out certain specific manufacturing activities for Bicycle Front Forks as per IS 2061

Definitions:

a) **Pre- Painting stages**: Manufacturing processes including Cutting of Tubes, Assembly and Brazing, etc. till the stage, from where the surface preparation for finishing operation starts.

b) **Painting stages**:- Manufacturing processes including Surface preparation, phosphating, painting and final labeling and marking.

c) **Supplier licensee**:- Licensee who shares his pre-painting facility and supplies semi-finished goods (up to Pre-painting stages) to another licensee (called Receiver licensee) for painting operations.

d) **Receiver licensee**: Licensee who carries out painting activities on semi-finished goods received from another licensee (called Supplier licensee).

Guidelines:

If two or more than two BIS licensees agree among themselves to share their manufacturing facilities for Pre-painting and Painting stages among each other, then the same may be permitted, subject to fulfillment of the following:

i) All such manufacturers who intend to share the facilities, shall have BIS licence for Bicycle Front Forks as per IS 2061: 1995.

ii) The product shall be marked with BIS Certification Marks licence no. of the receiver licensee.

iii) Information for all such semi-finished products shall be submitted by both supplier as well as receiver licensee to BIS. List of consignees along with details of goods shall be submitted by supplier licensee on quarterly basis to BIS. The receiver licensee shall also submit the list of all suppliers with details of goods received to BIS on quarterly basis.

iv) There shall be proper record maintenance of all such semi-finished products indicating quantity, Batch No./ Date of manufacturing, date of supply and receipt etc. both at supplier as well as receiver licensee end. Records of in-process inspections shall be maintained. The supplier licensee will carry out all tests as per Cl. 3, 5, 7.1.1, 7.1.2, 7.1.4 and 7.1.5 of IS 2061. Receiver licensee will carry out all tests as per SIT in his factory and bear the responsibility for the final quality of the product dispatched and sold with BIS Standard Mark.

v) In case of failure of products or complaints on quality of products, actions as per BIS Rules shall be taken against the receiver licensee as the product is to be marked with his licence number and he bears the onus for final quality of the product.