# PRODUCT MANUAL
# FOR
# CYCLE CHAINS – CHARACTERISTICS AND TEST METHODS
# ACCORDING TO IS 15511: 2004

***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 15511 : 2004 |
| | **Title** | : | Cycle Chains – Characteristics and Test methods |
| | **No. of Amendments** | : | 1 |
| | | | |
| 2. | **Sampling Guidelines:** | | |
| a) | **Raw material** | : | N.A. |
| b) | **Grouping guidelines** | : | Cycle Chain of each ISO Chain Number and Chain Structure shall be tested to cover that particular variety in the scope of licence. |
| c) | **Sample Size** | : | Two Chains |
| | | | |
| 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 :** | | |
| | All Tests | | |
| 6. | **Scope of the Licence :** | | |
| | "Licence is granted to use Standard Mark as per IS 15511 : 2004 with the following scope: | | |
| | Name of the product | Cycle Chains | |
| | ISO Chain Number and Chain Structure | • 081 C, Type I<br>• 082 C, Type I<br>• 082 C, Type II | |

## ANNEX A

# List of Test Equipment

***Major test equipment required to test as per the Indian Standard***

| Sl. No. | Tests used in with Clause Reference | Test Equipment |
|---|---|---|
| 1 | Dimensions (Clause 4.2) | (i) Digital Vernier Caliper<br>(ii) Micrometer<br>(iii) Scale<br>(iv) Suitable Gauges<br>(v) Test bench to measure length |
| 2 | Tensile Testing (Clause 4.3) | Tensile Testing arrangement |
| 3 | Push-out Force (Clause 4.4) | Test apparatus for measurement of pin push-out force |
| 4 | Length Accuracy (Clause 4.6) | Test apparatus for measurement of length accuracy |
| 5 | Determination of Twist (Clause 5) | Test apparatus for determination of twist |
| 6 | Determination of Lateral Deviation (Clause 6) | Straightedge |
| 7 | Detection of a Stiff Link (Clause 7) | Test fixture for determination of stiff link |
| 8 | Determination of Side Bow (Clause 8) | Test fixture for determination of side bow |

***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 requirement of IS 15511: 2004.

**4. CONTROL UNIT –** The entire quantity of Chains of same ISO Chain Number and Chain Structure manufactured every 4 hours 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 Standards 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 R: required (or) S: Sub-contracting permitted | Levels of Control | | |
| Cl. | Requirement | Test Method | | | No. of Sample | Frequency | Remarks |
| | | Clause | Reference | | | | |
| 4 | Dimensions | 4.2, Table 1, Figure 1 | IS 15511 : 2004 | R | Five chains | Each control unit | In case of failure, 5 samples shall be tested after every hour. Original frequency shall be restored only if all the samples from 3 consecutive hour meet the requirements. |
| 4.3 | Tensile Testing | 4.3, Table 1 | IS 15511 : 2004 | R | One chain | Each control unit | In case of failure the control unit may be re-heat-treated and shall be retested at twice the original frequency. The material shall be marked only if both the samples pass. |
| 4.4 | Push-out Force | 4.4, Table 1, Figure 2 | IS 15511 : 2004 | R | Two chains | Each control unit | In case of failure the particular control unit shall be rejected |
| 4.6 | Length Accuracy | 4.6, Table 1 | IS 15511 : 2004 | R | Two chains | Each control unit | In case of failure, all the chains in the control unit shall be checked and only such chains which pass shall be marked. |
| 5 | Determination of Twist | 5.1, 5.2 | IS 15511 : 2004 | R | One chain | Each control unit | |
| 6 | Determination of Lateral Deviation | 6.1, 6.2 | IS 15511 : 2004 | R | One chain | Each control unit | |
| 7 | Detection of a Stiff Link | 7.1, 7.2 | IS 15511 : 2004 | R | Two chains | Each control unit | |
| 8 | Determination of Side Bow | 8.1, 8.2 | IS 15511 : 2004 | R | Two chains | Each control unit | |

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.