



**उत्पाद मैनुअल
कन्वेयर और एलिवेटर टेक्सटाइल बेल्टिंग
भाग 4 हाइजीनिक बेल्टिंग
आईएस 1891 (भाग 4): 1978**

**PRODUCT MANUAL FOR
Rubber Conveyor and Elevator Belting
Part 4 Hygienic Belting
ACCORDING TO IS 1891 (Part 4): 1978**

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो) अनुरूपता मूल्यांकन (विनियम, 2018 की योजना -I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity 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.

1.	मानक संख्या IS No.	:	IS 1891 (Part 4): 1978
	शीर्षक Title	:	Rubber Conveyor and Elevator Belting Part 4 Hygienic Belting
	संशोधनों की संख्या No. of amendments	:	02
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Fabric – Type 28 or Type 32 of IS 5996
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer ANNEX – A
c)	नमूने का परिमाण Sample Quantity	:	2 m
d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in	:	Carcass Construction Belt type Grades of Rubber Cover Width

	Test Request		Length
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer ANNEX – B
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer ANNEX – C
5.	एक दिन में संभावित परीक्षण Possible tests in a day	:	As per IS 1891 (Part 4) i. Construction – Cl. 5 ii. Breaking strength – Cl. 6.1 iii. Elongation at break – Cl. 6.1 As per IS 1891 (Part 1) iv. Length – Cl. 4.1 v. Width – Cl. 4.2 vi. Transverse Joints– Cl. 6.3 vii. Longitudinal Joints – Cl. 6.4 viii. Rubber Cover – Cl. 6.4
6.	लाइसेंस का दायरा /Scope of the Licence:		
“License is granted to use Standard Mark as per IS 1891 (Part 4): 1978 with the following scope:			
Name of the product		Rubber Conveyor and Elevator Belting Part 4 Hygenic Belting	
Carcass Construction		Full width Ply / Stepped Fly	
Belt Type		As per Table 5 of IS 1891 (Part 1): 1978	
Grades of Rubber Cover		M-24 / N-17	
Width		As per Table 1 of IS 1891 (Part 1): 1978 or as agreed between manufacturer and user	

ANNEX -A
Grouping Guidelines

1. The variety of Hygenic Belting are classified based on the following:
 - i. Carcass Construction
 - ii. Belt type
 - iii. Grades of Rubber Cover
 - iv. Width
2. For considering GoL / CSoL, sample from each of the variety of Hygenic Belting specified above shall be tested. However, the following relaxation may be considered:

Hygenic Belting having belt type of highest tensile strength and maximum width of any length shall be tested to cover belt type upto and including the highest tensile strength and maximum width tested in the scope of the licence.

3. The Scope of License may be restricted based on the Manufacturing and testing capabilities of the manufacturer.
4. During the operation of License, it shall be ensured that all the varieties covered in the License are tested in rotation, to the extent possible.

ANNEX- B**List of Test Equipment & Documents****Major test equipment required to test as per the Indian Standard**

Sr No	Tests used in with clause reference	Test equipment
	As specified in IS 1891 (Part 4)	
1.	Breaking Strength, Elongation at Break and hardness of rubber cover, Cl. 6.1	Tensile testing Machine with extensometer, Sample Cutting Die and punching machine.
2.	Adhesion, Cl. 6.2	Heating Chamber with timer, Tensile testing machine
3.	Ageing, Cl. 6.3	
4.	Troughability, Cl. 6.4	Troughability Tester
	As specified in IS 1891 (Part 1)	
5.	Dimensions and Tolerances	Vernier, Measuring tape, Scale
6.	Length, Cl. 4.1	
7.	Width, Cl. 4.2	
8.	Rubber Cover thickness, Cl. 6.5.1	Thickness Gauge
9.	Cover thickness, Cl. 14.3.1	Optical Micrometer/Travelling microscope
10.	Full thickness breaking strength, Cl. 7.3	Tensile testing Machine, Sample Cutting Die, Extensometer
11.	Rubber Cover Tensile Strength & Elongation at break (Top & Bottom Cover), Cl. 7.1 & Cl. 7.2	Tensile testing Machine with extensometer, Sample Cutting Die and press, Thickness gauge
12.	Change in Rubber Cover Tensile Strength & Change in Elongation at break (Top & Bottom Cover), After ageing Cl. 7.3	Hot air oven Tensile testing Machine with extensometer, Sample Cutting Die and punching machine, Thickness gauge

ANNEX C

Scheme of Inspection and Testing

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Control 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 Control system defining the control unit (i.e. lot/batch etc.) 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 2.5.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: *Hygienic Belts of same Belt type and width having same type of Carcass construction manufactured from same type of materials under similar conditions in a day of continuous length shall constitute a control unit.*

1.3.2 As mentioned above, recommended levels of control are given in **Table 1 for guidance only.**

1.3.3 The tests as indicated in Table 1 and at the levels of control in column 3 of Table 1 or the Quality Assurance Plan as submitted by the manufacturer to BIS may be carried out on the whole production of the factory which is covered by this plan and records maintained in accordance with para 2.5.

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

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 where test equipment is required in house i.e “R” or whether it can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility is 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 (including foreign manufacturers) shall maintain an in-house laboratory, which shall be suitably equipped (as given in column 2 of Table 1) and staffed, 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 test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, these manufacturers can also utilize the provisions of Sharing of testing facilities as per the Annexure-X (Relaxation in test facilities) of the guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process)

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 accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. PACKING AND MARKING - The Standard Mark as given in the Schedule of the licence shall be marked legibly and indelibly on the Hygienic Belts provided always that the belts so marked conforms to each requirement of the specification.

3.1 Marking on Hygienic Belts shall be done as per Cl. 8 of IS 1891 (Part 4): 1978.

3.2 **Additional Marking requirements:** The following additional requirement shall also be marked on the packaging of the Hygienic Belts:

- a) “For BIS certification details please visit www.bis.gov.in”

3.3 All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark.

4. HYGIENIC CONDITIONS (if applicable) – NA.

5. REJECTION - 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				
	Material						
3	Fabric		IS 1891 (Part 1)	S	One	Each Consignment	No test certificate is required if accompanied with ISI mark or test certificate
4	Rubber Cover	Appendix - A	IS 1891 (Part 4)	S	One	Each Consignment	
5	Construction	6	IS 1891 (Part 1)	R	Firm to have adequate in-process controls to check compliance of this parameter as per the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
6.1	Breaking strength Elongation at break	6.1	IS 1891 (Part 4) IS 3400 (Part 1)	R	One	Each control unit	
6.2	Adhesion	Table 1 App-F	IS 1891 (Part 4) IS 1891 (Part 1)	S	One	Once in every three month	For each of the variety manufactured during that period
6.3	Ageing	6.3	IS 1891 (Part 4) IS 3400 (Part 4)	S	One	Once in every three month	For each of the variety manufactured during that period
6.4	Troughability	6.4	IS 17090 / ISO 703	S	One	Once in every three month	For each of the variety manufactured during that period
	As per IS 1891 (Part 1)						
7.3	After ageing – Cover Properties (Tensile Strength, Elongation at Break)		IS 3400 (Part 4) / ISO 188	S	One	Once in every three month	For each of the variety manufactured during that period
6.3	Transverse Joints	6.3	IS 1891 (Part 1)	R	Firm to have adequate in-process controls to check compliance of this parameter as per the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
6.4	Longitudinal Joints	6.4	IS 1891 (Part 1)	R			
6.5	Rubber Cover	6.5	IS 1891 (Part 1)				
4	Dimensions and Tolerances						

4.1	Length	4.1	IS 1891 (Part 1)	R	Firm to have adequate in-process controls to check compliance of this parameter as per the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
4.2	Width	4.2	IS 1891 (Part 1)	R			
Full Thickness Tensile Strength And Elongation							
7.3.1 7.3.2	Full Thickness Tensile Strength and Elongation	App F	IS 1891-1	R	One	Each control unit	