PRODUCT MANUAL FOR
V-BELT - ENDLESS V- BELTS FOR INDUSTRIAL PURPOSES – FIRE RESISTANT AND ANTISTATIC V-BELT
ACCORDING TO IS / 2494 (Part 2): 1993

उत्पाद मैन्यूअल
V पट्टे - औधोगिक प्रयोजन के लिए निरन्त पट्टे - अग्नि प्रतिरोधी और प्रतिस्थैतिक V पट्टे
आईएस 2494 (Part 2): 1993

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 हैI

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 2494 (Part 2): 1993
	शीर्षक **Title**	:	V-Belt - Endless V- Belts for Industrial Purposes – Fire Resistant and Antistatic V-Belt
	संशोधनों की संख्या **No. of amendments**	:	3
2.	**नमूना दिशानिर्देश** **Sampling Guidelines**		
a)	**कच्चामाल** **Raw material**	:	As per Cl. 4 of IS 2494 (Part 1)
b)	**समूहीकरण दिशानिर्देश** **Grouping Guidelines**	:	Please refer **ANNEX – A**
c)	**नमूने का परिमाण** **Sample Quantity**	:	10 V-Belts
3.	**परीक्षण उपकरणों की सूची** **List of Test Equipment**	:	Please refer **ANNEX – B**
4.	**निरीक्षण और परीक्षण की स्कीम**	:	Please refer **ANNEX – C**

	Scheme of Inspection and Testing		
5.	**एक दिन में संभावित परीक्षण Possible tests in a day**	:	• Cross section Dimensions – Cl 5 of IS 2494 (Part 1) • Designation – Cl 6 of IS 2494 (Part 1) • Belt pitch length and tolerances – Cl 7 of IS 2494 (Part 1) • Fire resistance test – Cl 7.1 of IS 2494 (Part 2)
6.	**लाइसेंस का दायरा /Scope of the Licence:**		

"License is granted to use Standard Mark as per ***IS 2494 (Part 2) :1993*** with the following scope:

Name of the product	V-Belt - Endless V- Belts for Industrial Purposes – Fire Resistant and Antistatic V-Belt
Type	Fire resistant Anti-static V-Belt/ Anti-static V-Belt
Cross section	Z/A/B/C/D/E
Pitch Length	

ANNEX -A

Grouping Guidelines

1. V- Belts - Endless V- Belts for Industrial Purposes – Fire Resistant and Antistatic V-Belts" as per IS 2494 (Part 2):1993 are classified based on the following:

   i. Type: Fire resistant anti-static V-Belt/ Anti-static V-Belt
   ii. Cross Section: Z/A/B/C/D (D1 / D2) /E (E1 / E2)
   Note: Z cross section is of anti-static V-belt
   iii. Pitch Length: As per Table 3A and Table 3B of IS 2494-1
   Note: Belts with pitch length other than given in Table 3A and Table 3B may be supplied as agreed to between the purchaser and the supplier. For such belts, the nominal pitch length shall be declared by the manufacturer

2. For considering GoL/CSoL, V- Belt of any Pitch Length from each Cross Section and for each Type of V-Belt shall be tested for all applicable requirements to cover the complete range of pitch length, cross-section and type of V-belt. In addition to above, tensile testing is to be done on each category of 'D' and 'E' cross section i.e. D1/D2 & E1/E2.

3. Firm shall declare the varieties of V- Belts that they intend to be covered in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.

4. During the operation of the Licence, BO shall ensure that all the varieties of V- Belts covered in the Scope of the Licence 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

Sl. No.	Tests used in with Clause Reference	Test Equipment
1.	Workmanship and Material as per Clause 4.2 of IS 2494-1	Cord testing equipment Dial Gauge Glassware
2.	Cross Section Dimensions as per Clause 5 of IS 2494-1	Vernier Caliper Angle Protractor Pulleys Force measuring device
3.	Belt pitch length and tolerances as per Clause 7 of IS 2494-1	Test Bench Scale or measuring tape
4.	Fire resistance test, Cl. 7.1	Apparatus as per Annex A of IS 2494-2
5.	Electric resistance test, Cl. 7.2	Apparatus as per Annex B of IS 2494-2
6.	Tensile Test per Clause 7.3	Conditioning chamber (with hour meter, humidity controller and temperature controller) Tensile Testing Machine

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: *V-belts of the same type having same cross section and same nominal pitch length manufactured from the same type of materials under similar conditions in a day* 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 durably on the outer non-working face of V- Belts provided always that the material so marked conforms to each requirement of the specification.

3.1 Marking on V- belts shall be done as per Cl. 9 of IS 2494 (Part 2): 1993.

3.2 **Additional Marking requirements**: The material shall also be marked with the following additional requirement on the packing of the V-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**				
5	**Requirements**						
	Material	4.2 4.3	IS 2494 (Part 1)	S	One	Each Consignment	No further testing is required, if accompanied with test certificate
	Workmanship	4.1	IS 2494 (Part 1)	R	Firm to have adequate in-process controls to check compliance of this parameter as given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
	Cross Section Dimensions	5	IS 2494 (Part 1)	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
	Belt Pitch Length	7.1 7.1.1 7.1.2	IS 2494 (Part 1)	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
	Matched Belts	7.2.1 7.2.2	IS 2494 (Part 1)	R			
7.1	Fire Resistance Test	7.1 Annex A	IS 2494 (Part 2)	S	6	Once in a month	For each type and cross section of any length manufactured during that period
7.2	Electrical Resistance Test	7.2 Annex B	IS 2494 (Part 2)	S	6		
7.3	Tensile Test	7.3.1 7.3.2 7.3.3	IS 2494 (Part 2)	S	3 – For Z,A,B,C 6 – For D & E	Once in a month	