



उत्पाद मैनुअल

DERBY SHOES

IS 17043 : 2018 के अनुसार

**PRODUCT MANUAL FOR
DERBY SHOES
ACCORDING TO IS 17043 : 2018**

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना- I के तहत प्रमाणन के संचालन में अभ्यास और पारदर्शिता के संचालन में पारदर्शिता सुनिश्चित करने 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 लाइसेंस/प्रमाणपत्र 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 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.	उत्पाद Product	:	IS 17043 : 2018
	शीर्षक Title	:	Derby Shoes — Specification
	संशोधनों की संख्या No. of amendments	:	2
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Please see Annex – A

b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please see Annex – B
c)	नमूने का आकार Sample Size	:	4 Pairs Note : During the operative period of one year, one factory sample to be tested for all requirements [including Chemical Requirements as per Cl. 5 (innocuousness test)], and other samples are to be tested for tests other than innocuousness test. Sample for innocuousness test shall be sent to laboratories which have lower testing charges for innocuousness test.
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please see Annex – C
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please see Annex – D
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	(i) Weight (ii) Height of upper (iii) Insoles thickness (iv) Outsole thickness (v) Midsole hardness (vi) Lace length		
6.	लाइसेंस का दायरा /Scope of the Licence:		
	“Licence is granted to use Standard Mark as per 17043: 2018 with the following scope:		
	Name of the product	Derby Shoes — Specification	
	Sizes	4 to 12 (UK) for men and/or 2 to 10 (UK) for women (as applicable)	

BUREAU OF INDIAN STANDARDS
Manak Bhawan, 9, Bahadur Shah Zafar
Marg, New Delhi – 110002

ANNEX-A
RAW MATERIAL

- 1) **Upper Material** - The upper shall be made of finished grain leather of bovine origin with minimum thickness of 1.2 mm. In addition to the requirements of upper leather specified in this standard, the upper leather shall also meet the requirements prescribed in IS 5677. If, for a particular characteristic, the requirement prescribed in IS 5677 differs from that prescribed in this standard, the requirement prescribed in this standard shall apply (CI 4.6.1)
- 2) **Lining Material:** The lining for all parts except vamp shall be made of combination tanned lining leather conforming to type 1 of IS 3840, with minimum thickness of 0.7 mm. If, for a particular characteristic, the requirement prescribed in IS 3840 differs from that prescribed in this standard, the requirement prescribed in this standard shall apply. Vamp lining shall be made of textile (non- woven). (CI 4.7.1)
- 3) **Insole Material:** The insole shall be made of strobil fabric/cloth (woven or non-woven) of minimum thickness 2.0 mm for strobil construction (CI 4.8.1)
- 4) **Insocks Material:** Insocks shall be made out of rubber/polymer/elastomer compound with non-woven nylon fabric as top covering (CI 4.9.1)
- 5) **Toe Puff and counter stiffener:** The toe puff and counter stiffener shall be made of thermoplastic material with minimum thickness of 1 mm and 1.4 mm, respectively. (CI 4.10)
- 6) **Tongue:** The tongue shall be made of finished grain leather of bovine origin with minimum thickness of 1.2 mm (CI 4.11.1)
- 7) **Sewing thread:** The sewing thread used for upper closing shall be 3 ply nylon with minimum breaking load of 35 N when tested according to the method prescribed in IS 4910(Part 3) (CI 4.12)
- 8) **Outsole material:** The outsole shall be made of PU midsole and rubber outsole. The sole fixation process for midsole shall be direct moulding process, and the outsole shall be direct vulcanized rubber (CI 4.13.1)
- 9) **Eyelets** : The eyelets are recommended to be made of materials specified in 4 of IS 5041 (CI 4.14)
- 10) **Laces:** The laces shall be round shaped nylon with minimum length of 80 cm (CI 4.15.1).

ANNEX B
GROUPING GUIDELINES

To apply for grant of licence and Inclusion accordingly following Grouping Guideline is to be followed for grant of licence and inclusion

Group	Size (English System)	Sample to be tested
1	4 to 12 (for men)	Samples of minimum and maximum size, from the size range intended to be covered in the scope of the licence.
2	2 to 10 (for women)	Samples of minimum and maximum size, from the size range intended to be covered in the scope of the licence.

Notes:

1. However, while considering grant of licence/inclusion of additional sizes/designs, it will be ensured that the applicant/licensee has got the complete manufacturing and testing facilities for all the sizes and designs intended to be covered.
2. During operation of the licence, BO will ensure that all the sizes/designs covered in the licence are tested in rotation. The above guidelines may be followed for Grant of Licence as well as inclusion of new variety.

ANNEX C

List of Test Equipment

Major test equipment required to test as per the Indian Standard

Sr. No.	Tests used in with Clause Reference	Test equipment
1	Size, 4.3.1	Measuring Tape
2	Height of Upper, 4.4	Steel Scale
		Digital Vernier Caliper
3	Weight, 4.3.2	Weighing Scale
4	Upper/Out Sole bond strength Tensile /Inter Layer Bond Strength, 4.5.3.1, 4.5.3.2	Tensile Testing Machine with flat jaws with 100±20 mm/min speed as per cl.5.2.2 of IS-15298 (part-1)
		Steel Scale
		Knife
5	Electrical Resistance, 4.5.5	Surface Resistivity Meter as per clause 5.10.2 IS 15298 part 1
		Steel Balls of diameter 5 mm, Weight 4 kg
6	Heat Insulation of Sole Complex, 4.5.6	Heat Insulation apparatus with Steel balls and sandbath 1.c -400 'c Steel Balls as per clause 5.12.1 IS 15298 Part 1
7	Cold Insulation of Sole Complex, 4.5.7	Insulation apparatus with Steel balls and -20.c 120 'c Steel Balls as per clause 5.13.1 of IS 15298 Part 1
8	Energy Absorption of seat region, 4.5.8	Punching Compression Testing M/c Speed (10+-3mm /minute) and Punch
9	Tear Strength/Upper, 4.6.2	Press Knife
		Scissors
		Tensile Testing Machine(jaws as per ISO-3377- 2)
		Conditioning Chamber

10	Water Vapor Permeability and coefficient, 4.6.3	Permeability Appts as per cl 6.6 & 6.8 of IS-15298(part-1)
		Jars or Bottles
		Holder
		Fan
		Silica Gel
		Mesh
		Conditioning Chamber
		Oven
		Balance
		Stop Watch
		Vernier Caliper
		Flexometer as per cl. 6.6.2.8 of IS-15298 (part 1)
		Circular Metal Container
		Hygrometer
		Thermometer
		Air conditioner
11	Water Penetration and Water Absorption,4.6.4	Water Penetration and Absorption apparatus as per clause 6.13.2 of IS 15298 Part 1
		Two Cylinders
		Absorbent Cloth
		Balance
12	Vamp Lining Tear Strength, 4.7.2	stop watch
		Conditioning Chamber
		Tensile Testing Machine(same as above 5.3.1.2)
		Press Knife
13	Abrasion Resistance of Lining Material, 4.7.3	Steel Scale
		Martindale Abrasion Machine as per cl. 6.12.2 of IS-15298 (part 1)
		Reference Abradant Pad
		Backing
		Fabric Punch
		Weight
		Specimen Holder
		Abrading Base
		Balance
		Conditioning Chamber
		Dial Gauge
		Filler Gauge
		Woven felt
		Hygrometer
		Air conditioner
		Thermometer

14	Water Vapour Permeability and coefficient, 4.7.4	Permeability Appts as per cl. 6.6.2 of IS-15298 (part 1)
		Jars or Bottles
		Holder
		Fan
		Silica Gel
		Technometer
		Conditioning Chamber
		Oven
		Balance
		Stop Watch
		Vernier Caliper
		Flexometer as per cl. 6.6.2.8 of IS-15298- part 1
		Air conditioner
		Thermometer
		Hygrometer
		Circular Metal Container
15	Insole Thickness	Dial Thickness gauge
16	Water Absorption & Desorption, 4.8.3	Water Absorption & Desorption Tester as per 7.2.2 of IS-15298 part 1
		Brass Roller
		Platform
		Clamp (D) and clamp (E) IS-15298 part-1
		Cotton gauge
		Water Supply through flow meter
		Press Knife
		Balance
		Clock
		Silicone grease
17	Abrasion of Insole, 4.8.2	Finger Abrasion Tester as per cl. 7.3.2 IS-15298 part 1
		Wool pads
		Abradant fabric
		Conditioning Chamber
		Distilled Water
		other details as per cl. 7.3 of IS-15298 (part 1)

18	Insocks Thickness, 4.9	Dial Thickness gauge
19	Water Absorption & Desorption of Insocks, 4.9.2	Water Absorption & Desorption Tester as per 7.2.2 of IS-15298 part 1
		Brass Roller
		Platform
		Clamp (D) and clamp (E) IS-15298 part-1
		Cotton gauge
		Water Supply through flow meter
		Press Knife
		Balance
		Clock
20	Abrasion resistance of insocks, 4.9.3	Silicone grease
		Martindale Abrasion Machine as per cl. 6.12.2 of IS-15298 (part 1)
		Reference Abradant
		PadBacking
		Fabric Punch Weight
		Specimen Holder
		Abrading Base
		Balance
		Conditioning Chamber Dial Gauge
21	Thickness of Toe Puff and Counter Stiffner, 4.10	Filler Gauge
		Woven felt
		Hygrometer
22	Tongue/Tear Strength, 4.11.2	Dial Thickness Gauge
23	Breaking strength of Closing Thread, 4.12	Press Knife
		Scissors
		Tensile Testing M/c
24	Outsole / Thickness, 4.13.2	Conditioning Chamber
25	Sole Density, 4.13.3	Tensile Testing M/c
		Dial Thickness Gauge
		Weighting Scale
		Vernier Caliper
		Dial Thickness Gauge
		Distill Water
		Beaker

26	Outsole / Tear Strength, 4.13.6	Press Knife
		Tensile Testing M/c conformity to cl. 5.3 of IS-34-1
27	Abrasion Resistance/outsole, 4.13.7	Abrasion Testing M/c as per ISO-4649
		Conditioning Chamber
		Analytical Balance
		Cutting Die
28	Sole Hardness, 4.13.4	Weight
		Abrasion Sheet
		Shore A and IRHD Hardness Tester
29	Sole Ageing Test, 4.13.5	Oven
30	Flexing Resistance/Outsole, 4.13.8	Flexing Testing M/c - Bennwert with Clamping Device & Hinged Plate per IS-15298 fig-45
		Cutting Tool(as per ISO-5423)
		Mandrel
31	Other equipment	Humidifier
		Blower for temperature maintenance
		Air conditioner

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

ANNEX D
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 and implement 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. **PACKING AND MARKING**– The Standard Mark as given in the Schedule of the Licence, shall be marked on each shoe provided always that the shoes to which the mark is thus applied, conforms to therequirements of the specification.

3.1 Packing and Marking shall be done as per provisions of the Indian Standard. In addition, BIS licence number and BIS website details (for BIS certification details please visit www.bis.gov.in) shall be marked on the shoes or the packaging.

4. **CONTROL UNIT** – For the purpose of this scheme, 10,000 pairs or a fortnight's production of the shoes, whichever is higher, manufactured from the same consignment of the raw material constitute a control unit.

4.1 On the basis of test result, the decision regarding conformity or otherwise of a control unit to a given requirement shall be made as follows:

4.1.1 No. of sample shall be drawn from each control unit and to be tested for all the requirements asspecified in Table 1 of the scheme.

4.1.2 If the sample fails to confirm in any of the requirements laid down in the specification, such, entire control unit represented by the sample shall be considered unfit for the purpose of marking.

5. **LEVELS OF CONTROL** – The test 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 bemarked 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

6.1 A separate record providing the detailed information regarding the rejected control units and mode of their disposal shall be maintained, such material shall in no case be stored together with that conforming to the specification.

TABLE 1
LEVELS OF CONTROL

(Para 5 of the Scheme of Inspection and Testing)

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Clause	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
4.2	Design	Fig. 1	IS 15298 (Part 4)	R	1 from each of 3 sizes	Each control unit	-
4.3.1	Size	4.3.1	IS 17043	R	1 from each of 3 sizes	Each control unit	-
4.3.2	Weight	4.3.2	IS 17043	R	1 from each of 3 sizes	Each control unit	-
4.4	Height of upper	6.2	IS 15298(Part 1)	R	1 from each of 3 sizes	Each control unit	-
4.5	Properties of Whole Footwear						
4.5.1	Construction	4.5.1	IS 17043	R	1 from each of 3 sizes		-
4.5.2	Ergonomic feature	5.1	IS 15298(Part 1)	R	1 from each of 3 sizes	Each control unit	-

4.5.3	Bond strength	4.5.3	IS 17043	R	3 pairs from 3 different sizes	Alternate control unit	-
4.5.3.1	Upper outsole Bond strength	5.2	IS 15298(Part 1)	R	1 from each of 3 sizes	Alternate control unit	-
4.5.3.2	Interlayer bond strength	5.2	IS 15298(Part 1)	R	1 from each of 3 sizes	Alternate control unit	-
4.5.4	Slip Resistance	5.11	IS 15298(Part 1)	S	3 pairs from 3 different sizes	Once in a month	-
4.5.5	Electrical properties						
4.5.5.1	Antistatic footwear	5.10	IS 15298(Part 1)	R	1 pair from each of 3 sizes	Alternate control unit	-
4.5.6	Heat Insulation of sole complex	5.12	IS 15298(Part 1)	R	2 from different sizes	Alternate control unit	-
4.5.7	Cold Insulation of sole complex	5.13	IS 15298(Part 1)	R	2 from different sizes	Alternate control unit	-
4.5.8	Energy absorption of seat region	5.14	IS 15298(Part 1)	R	1 pair from each of 3 sizes	Alternate control unit	-
4.6	Upper						
4.6.1	Material	4.6.1	IS 17043	R	1 from each of 3 sizes	Each control unit	-
4.6.1	Additional test for upper leather	-	IS 5677	S		Once in six months	One consignment from each source (i.e. Supplier) shall be tested once every six months
4.6.2	Tear strength	6.3	IS 15298(Part 1)	R	1 from each of 3 sizes	Alternate control	-

						unit	
4.6.3	Water vapour permeability and coefficient	6.6 and 6.8	IS 15298(Part 1)	R	1 from each of 3 sizes	Alternate control unit	-
4.6.4	Water penetration and water absorption	6.13	IS 15298(Part 1)	R	1 from each of 3 sizes	Alternate control unit	-
4.7	Lining material						
4.7.1	Thickness of lining material	4.7.1	IS 17043	R	1 from each of 3 sizes	Each control unit	-
4.7.1	Additional requirement for lining material	-	IS 3840	S		Once in six months	One consignment from each source (i.e. Supplier) shall be tested once every one month
4.7.2	Tear strength	6.3	IS 15298(Part 1)	R	1 from each of 3 sizes	Each control unit	-
4.7.3	Abrasion resistance	6.12	IS 15298(Part 1)	R	1 from each of 3 sizes	Each control unit	-
4.7.4	Water vapour permeability and coefficient	6.6 & 6.8	IS 15298(Part 1)	R	1 from each of 3 sizes	Alternate control unit	-
4.8	Insole						
4.8.1	Material	4.8.1	IS 17043	R	1 from each of 3 sizes	Each control unit	-
4.8.2	Abrasion resistance	7.3	IS 15298(Part 1)	R	1 from each of 3 sizes	Alternate control unit	-

4.8.3	Insole water absorption and desorption	7.2	IS 15298(Part 1)	R	1 from each of 3sizes	Alternate control unit	-
	Insocks						
4.9	Dimension	4.9	IS 17043	R	1 from each of 3sizes	Each control unit	-
4.9.1	Material	4.9.1	IS 17043	R	1 from each of 3sizes	Each control unit	-
4.9.2	Water absorptionand desorption	7.2	IS 15298(Part 1)	R	1 from each of 3sizes	Alternate control unit	-
4.9.3	Abrasion resistance	6.12	IS 15298(Part 1)	R	1 from each of 3sizes	Alternate control unit	-
4.10	Toe puff and Counter stiffener	4.10	IS 17043	R	1 from each of 3sizes	Each control unit	-
4.11	Tongue						
4.11.1	Material	4.11.1	IS 17043	R	1 from each of 3sizes	Each control unit	-
4.11.2	Tear Strength	6.3	IS 15298(Part 1)	R	1 from each of 3sizes	Alternate control unit	-

4.12	Closing thread	-	IS 4910 (Part 3)	S	1 from each of 3 sizes	Once in a month	One consignment from each source (i.e. Supplier) shall be tested once every one month
4.13	Outsole						
4.13.1	Material	4.13.1	IS 17043	R	1 from each of 3 sizes	Each control unit	-
4.13.2	Thickness	8.1	IS 15298(Part 1)	R	1 from each of 3 sizes	Each control unit	-
4.13.2	Energy absorption	4.5.8	IS 17043	R	1 from each of 3 sizes	Each control unit	-
4.13.3	Moulded density	Method A	IS 3400 (Part 9)	R	1 from each of 3 sizes	Alternate control unit	
4.13.4	Sole hardness-midsole	-	IS 13360 (Part 5/Sec 11)	R	1 from each of 3 sizes	Each control unit	--
4.13.4	Sole hardness-outsole	-	IS 3400 (Part 2)	R	1 from each of 3 sizes	Each control unit	-
4.13.5	Ageing test	-	IS 3400 (Part 2) and (Part 4)	R	1 from each of 3 sizes	Once in a month	--
4.13.6	Tear Strength	8.2	IS 15298(Part 1)	R	1 from each of 3 sizes	Alternate control unit	-
4.13.7	Abrasion resistance	8.3	IS 15298(Part 1)	R	1 from each of 3 sizes	Alternate control unit	-
4.13.8	Flexing Resistance	8.4	IS 15298(Part 1)				
4.14	Eyelet						

4.14	Pull out requirement of Eyelet	Anne xB	IS 17043	R	1 from each of 3 sizes	Alternate control unit	-
4.14	Change in colour of eyelet	Anne xC	IS 17043	R	1 from each of 3 sizes	Each control unit	-
4.15	Laces						
4.15.1	Material and Length	4.15.1	IS 17043	R	1 from each of 3 sizes	Alternate control unit	-
4.15.2	Breaking load		IS 1969(Part1) or IS 1969(Part2)	S	1	Once in a six months	One consignment from each source (i.e. Supplier) shall be tested once every six months
4.15.2	Tag retention	Annex H	IS 15844	S	1	Once in a six months	One consignment from each source (i.e. Supplier) shall be tested once every six months
5	Chemical Requirements		IS 17011	S	1 of any size	Once in a six months	One consignment from each source (i.e. Supplier) shall be tested once every six months

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Subcontracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by B.O. Head.