



उत्पाद मानुयल
दंगारोधी उपयोग के लिए जूते
आई एस 17037 : 2018 के अनुसार

PRODUCT MANUAL
FOR
ANTI RIOT SHOES
ACCORDING TO IS 17037 : 2018

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम 2018 की स्कीम-I के तहत यह उत्पाद मैनुअल प्रमाणीकरण की संचालन रीति में सुसंगतता और पारदर्शिता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस लाइसेन्स/प्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग 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 17037 : 2018
	शीर्षक Title	:	दंगारोधी उपयोग के लिए जूते ANTI-RIOT SHOES
	संशोधन संख्या No. of Amendments	:	1 One
2.	नमूनाकरण दिशा निर्देश Sampling Guidelines:		
a)	कच्चा माल Raw material	:	कृ पया ANNEX –A देखें Pease refer Annex - A
b)	समूहिकरण दिशा निर्देश Grouping guidelines	:	कृ पया ANNEX –B देखें Please refer ANNEX –B
c)	नमूने का पररमाण 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	:	कृ पया ANNEX –C देखें Please refer ANNEX –C
4.	निरीक्षण व परीक्षण स्कीम Scheme of Inspection and Testing	:	कृ पया ANNEX –D देखें Please refer ANNEX –D
5.	एक दिन में संभावित परीक्षण Possible tests in a day :		
	(i) Weight (ii) Height of upper (iii) Insocks thickness (iv) Outsole thickness (v) Midsole hardness (vi) Lace length		
6.	लाइसेन्स का कार्यक्षेत्र / Scope of the Licence:		
	IS 17037 : 2018 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेन्स निम्नलिखित कार्यक्षेत्रके लिए प्रदान किया जाता है Licence is granted to use Standard Mark as per 17037 : 2018 with the following scope:		
	उत्पाद का नाम Name of the product	दंगारोधी उपयोग के लिए जूते ANTI-RIOT SHOES	
	Lining Material	Leather/Fabric/textile	
	आकार Sizes	4 to 12 (UK) for men and/or 2 to 10 (UK) for women (as applicable)	

ANNEX-A
TO THE PRODUCT MANUAL FOR ANTI RIOT SHOES
ACCORDING TO IS 17037 : 2018

RAW MATERIALS

1. **Whole footwear** – The vamp and quarter portion of the upper shall be made of black/brown barton printed leater of minimum thickness 1.8 mm. No split leather shall be used.
The toe, jug loop and outside counter portion shall be made of black/brown smooth leather of minimum thickness 1.2 mm.
In addition to the requirements of upper leather specified in IS 17037, 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 IS 17037, the requirement prescribed in is 17037 shall apply.
2. **Collar** – The collar shall be made of plain leather of minimum thickness 0.8 mm with PU foam of 15±2mm thickness and 0.3 to 0.4 g/cm³ density.
3. **Tongue** – The tongue shall be made of black/brown barton printed leather of minimum thickness 1.2 mm, laminated with non-woven textile fabric (minimum 130 GSM). No split leather shall be used.
4. **Lining material** –
 - a) **Vamp and Quuater lining** – It shall be made from textile (non-woven sweat absorbing material).
 - b) **Counter and tongue lining** – It shall be made from materials such as leather or coated fabric or textile (woven or non-woven).
5. **Insock** – Insocks shall be made out of rubber/polymer/elastomer compound with non-woven nylon fabric as top covering.
6. **Counter stiffener** – The counter stiffener shall be made of thermoplastic material with minimum thickness of 1.8 mm.
7. **Closing thread** – The sewing thread used for upper closing shall be 6 ply nylon with minimum breaking load of 40 N when tested according to the method described in IS 4910 (Part 3).
8. **Outsole** – Outsole shall be nitril rubber with anti-slip design, by direct moulding process.
9. **D-rings and Hooks** – The D-rings and hooks shall be made of black/brown enamelled brass.
10. **Laces** – The laces shall be round black/brown nylon with minimum length of 120 cm.
11. **Chemical requirements** – As per clause 5 of IS 17037.

ANNEX – B
TO PRODUCT MANUAL
FOR ANTI RIOT SHOES ACCORDING TO IS 17037 : 2018

GROUPING GUIDELINES

To apply for grant of licence and Inclusion the following Grouping Guideline is to be followed :

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. Separate sample shall be tested for change in lining material of Counter and Tongue.
2. 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.
3. 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
TO PRODUCT MANUAL
FOR ANTI RIOT SHOES ACCORDING TO IS 17037 : 2018

LIST OF TEST EQUIPMENT

Major test equipment required to test as per the Indian Standard

S.No.	Test used in with clause reference	Test Equipment
1	Size Cl. 4.3.1	Measuring Tape
2	Height of Upper Cl. 4.4	Steel Scale, Digital Vernier Caliper.
3	Weight Cl. 4.3.2	Weighing Scale
4	Upper/Out Sole bond strength Tensile / Inter Layer Bond Strength Cl. 4.5.3.1 and 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 Cl. 4.5.7	Surface Resistivity Meter as per clause 5.10.2 IS 15298 part 1, Steel Balls of Dia 5MM, Weight 4 KG.
6	Heat Insulation of Sole Complex Cl. 4.5.8	Sand bath - the size of the bath holding the sand shall be (40±2) cm×(40±2) cm with a height of at least 5cm. The volume of sand shall be (5000±250) cm ³ , with a granular size of 0.3mm to 1.0 mm. Thermal transfer medium, comprising stainless steel balls with 5 mm diameter and a total mass of (4000±40) g. Temperature probe with an accuracy of ±0.5°C, soldered to a copper disc (2±0.1) mm thick and (15±1) mm diameter. Temperature measuring device, with a compensator, suitable for use with the temperature probe.
7	Cold Insulation of Sole Complex Cl. 4.5.9	Insulated cold box, the internal air temperature of which can be regulated to (-17±2)°C Thermal transfer medium, comprising stainless steel balls with 5 mm diameter and a total mass of (4000±40) g. Temperature probe with an accuracy of ±0.5°C, soldered to a copper disc (2±0.1) mm thick and (15±1) mm diameter. Copper plate, of length (350±5) mm, width (150±1) mm and thickness (5±0.1) mm.
8	Energy Absorption of seat region Cl. 4.5.10	Punching Compression Testing M/c Speed (10± 3mm /minutes) and Punch as per clause 5.14.1.1 of IS 15298 Part 1.

9	Tear Strength/Upper Cl. 4.6.2	Press Knife, Scissors, Tensile Testing Machine (jaws as per ISO-3377-2), and Conditioning Chamber.
10	Water Vapour Permeability and coefficient Cl. 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 Cl. 4.6.4	Water Penetration and Absorption apparatus as per clause 6.13.2 of IS 15298 Part 1, Two Cylinders, Absorbent Cloth, Balance, stop watch.
12	Vamp Lining Tear Strength Cl. 4.7.3	Conditioning Chamber, Tensile Testing Machine, Press Knife, Steel Scale.
13	Abrasion Resistance of Lining Material Cl. 4.7.4	Martindale Abrasion Machine as per cl. 6.12.2.1 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 Cl. 4.7.5	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	Water Absorption & Desorption Cl. 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.
16	Abrasion of Insole Cl. 4.8.2	Finger Abrasion Tester as per cl. 7.3.2.1 IS 15298 part 1, Wool pads, Abradant fabric, Conditioning Chamber, Distilled Water, other details as per cl. 7.3 of IS 15298 (part 1).
17	Insocks Thickness	Dial Thickness gauge
18	Abrasion of Insocks Cl. 4.9.2	Abasion Machine as per cl. 6.12.2.1 of IS 15298 Part 1, Wool pads, Abradant fabric, Conditioning Chamber, Distilled Water other details as per cl. 7.3 of IS 15298 (Part 1).
19	Water Absorption & Desorption of Insocks Cl. 4.9.3	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.

20	Collar /Tear Strength Cl. 4.11.2	Press Knife, Scissors, Tensile Testing M/c, Conditioning Chamber.
21	Tongue/Tear Strength Cl. 4.12.2	Press Knife, Scissors, Tensile Testing M/c, Conditioning Chamber.
22	Thread /Tear Strength Cl. 4.13	Tensile Testing M/c
23	Outsole / Thickness Cl. 4.14.2	Dial Thickness Gauge
24	Sole Density Cl. 4.14.3	Weighing Scale, Vernier Caliper, Dial Thickness Gauge, Distil Water, Beaker.
25	Outsole / Tear Strength Cl. 4.14.6	Press Knife, Tensile Testing M/c conformity to cl. 5.3 of ISO 34-1.
26	Abrasion Resistance/outsole Cl. 4.14.7	Abrasion Testing M/c as per ISO 4649, Conditioning Chamber, Analytical Balance, Cutting Die, Weight, Abrasion Sheet.
27	Sole Hardness Cl. 4.14.4	Shore A Hardness Tester
28	Sole Ageing Test Cl. 4.14.5	Oven, Shore A Hardness Tester
29	Flexing Resistance/Outsole Cl. 4.14.8	Flexing Testing M/c - Bennwert with Clamping Device & Hinged Plate per clause 8.4.1.1 of IS 15298 Part 1, Cutting Tool (as per ISO 5423), Mandrel.
30	Resistance to Hot Contact 4.14.9	Hot Contact Machine
31	Resistance to fuel and oil Cl. 4.14.10	Conditioning Chamber, Beaker, Press Knife, Shore A Hardness Tester, 2.2.4 Trimethyl pentane general purpose Reagent, humidifier, Blower for temperature maintenance Air conditioner.
32	Breaking Load and Tag Retention in Laces Cl. 4.16.2	CRE machine conforming to clause 6.1 of IS 1969 (Part 1)
33	Impact resistance of footwear Cl. 4.5.6.3	Impact apparatus as per clause 5.4.1.1 of IS 15298 Part 1, Clamping device, Cylinder, Dial gauge.
34	Compression resistance of footwear Cl. 4.5.6.4	Compression testing machine as per clause 5.5.1.1 of IS 15298 Part 1, Clamping device, Cylinder, Dial gauge.

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

ANNEX - D
SCHEME OF INSPECTION AND TESTING
FOR ANTI RIOT SHOES ACCORDING TO IS 17037 : 2018

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. **LABELLING AND MARKING**– The Standard Mark as given in Schedule of the license shall be marked on each piece of Anti Riot footwear and the outer packaging for each pair of footwear, provided always that the Footwear to which this mark is thus applied conforms to every requirement of the specification. All markings shall be made inside of tongue or at top outer face of the boot so that least damage is done during working.

3.1 Each boot shall be permanently marked with the following:

- a) Size;
- b) Manufacturer's name and brand;
- c) Year and month of manufacture;
- d) Shelf life (1 year from month of manufacture);
- e) Number and year of the standard, based upon which the boots are produced, and
- f) Any other statutory marking.

3.2 Each pair of boot shall be supplied with the following information in Hindi and English:

- a) Name and full address of manufacturer,
- b) Details of customer care service provider,
- c) Instruction for storage and maintenance,
- d) Drying procedure for wet boots and proper cleaning of boots,
- e) Time period for obsolescence,
- f) Wherever applicable, declaration to be made stating footwear is not for use in fire hazard/ explosion prone areas and in hot contact areas, and
- g) The footwear is not a 'GREEN' footwear and not bio-degradable.
- h) BIS Licence No. (CM/L -----) and
- i) BIS website details: "For details of BIS Certification please visit www.bis.gov.in" (These details also to be marked on the box).

4. **CONTROL UNIT** – For the purpose of this scheme, 10,000 pairs or Fortnight production of the safety footwear, whichever is earlier and manufactured from the same consignment of the raw material shall 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 as specified in Table 1 of the scheme.

4.12 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 shall be marked with the BIS Certification 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. 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

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Clause	Requirement	Test Method Cl. Ref.	Test Method IS		No. of Sample	Frequency	Remarks
4.2	Design	4.2	IS 17037	R	1 from each of 3 sizes	Each Control unit	
4.3	Size and Weight						
4.3.1	Size	4.3.1	IS 17037	R	1 from each of 3 sizes	Each control unit	
4.3.2	Weight	4.3.2	IS 17037	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 17037	R	1 from each of 3 sizes	Each control unit	
4.5.2	Ergonomic feature	5.1	IS 15298 (Part 1)	R	3 pairs from 3 different sizes	Alternate control unit	
4.5.3	Bond Strength						
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	Penetration Resistant Inserts		IS 15298 (Part 1), EN 12568				
4.5.5.1	Dimensions	5.8.1	IS 15298 (Part 1)	R	1 pair from each of 3 sizes	Alternate control unit	
4.5.5.2	Flex Resistance	5.9	IS 15298 (Part 1)	R	1 pair from each of 3 sizes	Alternate control unit	

4.5.5.3	Performance	5.8.3	IS 15298 (Part 1)	R	1 pair from each of 3 sizes	Alternate control unit	
4.5.5.4	Stability against ageing and Environmental influence	6.2.1.5.2	IS 15298 (Part 2)	R	1 pair from each of 3 sizes	Alternate control unit	
4.5.6	Toe Caps						
4.5.6.1	General	4.5.6.1	IS 17037	R	1 pair from each of 3 sizes	Alternate control unit	
4.5.6.2	Internal length of toecap	5.3	IS 15298 (Part 1)	R	1 pair from each of 3 sizes	Alternate control unit	
4.5.6.3	Impact Resistance of footwear	Clause 5.4	IS 15298 (Part 1)	R	1 pair from each of 3 sizes	Alternate control unit	
4.5.6.4	Compression Resistance of footwear	Clause 5.5	IS 15298 (Part 1)	R	1 pair from each of 3 sizes	Alternate control unit	
4.5.7	Electrical properties						
4.5.7.1	Antistatic footwear	5.10	IS 15298 (Part 1)	R	1 pair from each of 3 sizes	Alternate control unit	
4.5.8	Heat Insulation of sole complex	5.12	IS 15298 (Part 1)	R	2 from different sizes	Alternate control unit	
4.5.9	Cold Insulation of sole complex	5.13	IS 15298 (Part 1)	R	2 from different sizes	Alternate control unit	
4.5.10	Energy absorption of seat region	5.13	IS 15298 (Part 1)	R	1 pair from each of 3 sizes	Alternate control unit	
4.5.11	Water Resistance	5.15.1 or 5.15.2	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 17037	R	1 from each of 3 sizes	Each control unit	
4.6.1	Toe, jug loop, counter portion thickness	4.6.1	IS 17037	R	1 from each of 3 sizes	Each control unit	
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 & 6.8	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	
4.6.4	Water penetration and absorption	6.13	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	
4.6.1.	Additional tests for upper	4.6.1	IS 17037	S		Once in a six months	One consignment from each source (i.e. Supplier) shall be tested once every six months,
4.7	Lining Material						
4.7.1	Vamp and quarter lining	4.7.1	IS 17037	R	1 from each of 3 sizes	Alternate control unit	
4.7.2	Counter and tongue lining	4.7.2	IS 17037	R	1 from each of 3 sizes	Alternate control unit	
4.7.3	Tear Strength	6.3	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	
4.7.4	Abrasion resistance	6.12	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	
4.7.5	Water vapour permeability and coefficient	6.6 & 6.8	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	
4.7.2	Additional test for counter and tongue lining	4.7.2	IS 17037	S		Once in a six months	One consignment from each source (i.e. Supplier) shall be tested once every six months, Applicable only for leather linings
4.8	Insole						
4.8.1	Material	4.8.1	IS 17037	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	water absorption and desorption	7.2	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	

4.9	Insocks						
4.9	Dimension	4.9	IS 17037	R	1 from each of 3 sizes	Each control unit	
4.9.1	Material	4.9.1	IS 17037	R	1 from each of 3 sizes	Each control unit	
4.9.2	Abrasion resistance	6.12	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	
4.9.3	Water absorption and desorption	7.2	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	
4.10	Counter Stiffener	4.10	IS 17037	R	1 from each of 3 sizes	Each control unit	
4.11	Collar						
4.11.1	Material	4.11.1	IS 17037	R	1 from each of 3 sizes	Each control unit	
4.11.2	Tear Strength	6.3	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	
4.12	Tongue						
4.12.1	Material	4.12.1	IS 17037	R	1 from each of 3 sizes	Each control unit	
4.12.2	Tear Strength	6.3	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	
4.13	Closing thread	4.13	IS 17037	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 months
4.14	Outsole						
4.14.1	Material	4.1.4.1	IS 17037	R	1 from each of 3 sizes	Each control unit	
4.14.2	Thickness	8.1	IS 15298 (Part 1)	R	1 from each of 3 sizes	Each control unit	
4.14.3	Moulded density	Method A	IS 3400 (Part 9)	R	1 from each of 3 sizes	Alternate control unit	
4.14.4	Sole hardness-mid sole	4.14.4	IS 17037	S	1 from each of 3 sizes	Once in a month	
4.14.4	Sole hardness-out sole	4.14.4	IS 17037	S	1 from each of 3 sizes	Once in a month	
4.14.5	Ageing test	4.14.5	IS 17037	S	1 from each of 3 sizes	Once in a month	
4.14.6	Tear Strength	8.1	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	
4.14.7	Abrasion resistance	8.3	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	

4.14.8	Flexing Resistance	8.4	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	
4.14.9	Resistance to hot contact	8.7	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	
4.14.10	Resistance to fuel oil	4.14.10	IS 15298 (Part 1)	R	1 from each of 3 sizes	Alternate control unit	
4.15	D-Rings and Hooks	4.15	IS 17037	R	1 from each of 3 sizes	Each control unit	
4.16	Laces						
4.16.1	Material	4.16.1	IS 17037	R	1 from each of 3 sizes	Alternate control unit	
4.16.2	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
4.16.2	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. Sub-contracting 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.