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उत्पाद मैनुअल
वस्त्रादी - सामरिक 3 अंक गोफन यूनिवर्सल - विशिष्टि
IS 16725: 2018 के अनुसार

PRODUCT MANUAL
FOR Textiles - Tactical 3 points sling universal – Specification
ACCORDING TO IS 16725: 2018

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 16725 : 2018
	शीर्षक Title	:	Textiles - Tactical 3 points sling universal – Specification
	संशोधनों की संख्या No. of amendments	:	01
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Raw material shall be in accordance with clause 3 of IS 16725: 2018. Conformity of materials to the requirement of the specification may be established through either of the following or a combination of the same (No testing is required if the material is ISI marked): Test report from a laboratory recognized by the Bureau/ Government laboratories empanelled by the Bureau/NABL accredited laboratories; Material supplier's test certificate; In-house factory test report. Note: This section indicates the requirements for raw material(if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance.
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	NA

c)	नमूने का परिमाण Sample Quantity	:	Ten 'Sling' made into one-unit pack (bundle) Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (in case of market surveillance, effort may be made to procure the required quantity of product sample, as far as possible since raw material sample may not be available in market)
d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	:	• Name of the Product • Colour and Finish of Metallic Parts • Colour or print design of top layer Note: Apart from the above, any other requirements/parameters may also be declared as per the standard, as applicable.
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annex-A
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer Annex-B
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	The following tests are possible to be carried out in a day, provided the conditioned samples are available (where applicable): – Dimensions, – Linear Density, – Mass, – Ends and Picks, – Breaking Strength/Tenacity, – pH value of aqueous extract Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide readyreference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.		
6.	लाइसेंस का दायरा /Scope of the Licence:		
	Licence is granted to use Standard Mark as per 16725: 2018 with the following scope:		
	Name of the product		Textiles - Tactical 3 points sling universal

ANNEX – A
LIST OF TEST EQUIPMENTS
(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests Used In With Clause Reference	Test Equipment/Chemical
1.	Nature of filament, Cl. 3.2.2, 3.2.3	Microscopic and dissolution test given in IS 667 Compound Microscope (100X-500X), Dissecting Needles, glass slides, cover glasses, and cross sectioning device and laboratory reagents as per IS 667 or Staining Test as per IS 667 Mixture of dyestuffs (e.g. Shirlastain A, Detex, Fibre Stain etc.), Known Dyed Samples or Determination of Melting Temperature as per Annex J of IS 16481 Differential Scanning Colorimeter (DSC), Balance, capable of weighing to $\pm 10 \mu\text{g}$
2.	Dimensions of various components i.e. tape, etc., Cl. 3.2.2, 3.2.3	Vernier caliper, measuring tape, thickness gauge, Conditioning Chamber
3.	Denier of Yarn, Cl. 3.2.1	Electronic Weighing Balance — capable of weighing test specimens to an accuracy of 0.1 mg. Drying Oven — provided with forced ventilation and positive valve control and capable of maintaining a temperature of $(105 \pm 3) ^\circ\text{C}$ and an air supply having a relative humidity of 65 percent at $(27 \pm 2) ^\circ\text{C}$, preferably provided with a weighing balance. Wrap Reel — having 1 372 m (1.5 yd) or 1 m girth and capable of reeling known lengths of yarn Yarn Tensioning Device - Skein Gauge
4.	Tenacity of Single Ply Yarn, Cl. 3.2.1, 3.2.2, 3.2.3	Tensile Testing Machine with clamps to grip the sample and means for adjusting the distance between the clamps and for application of pretension, Distilled Water
5.	Number of ends and picks, Cl. 3.2.2, 3.2.3	Thread counter equipped with microscope and a pointer which traverses along a graduated base.
6.	Mass per linear meter of tape, Cl. 3.2.2	Conditioning chamber (65 ± 2 percent RH and $27^\circ \pm 2^\circ\text{C}$), Tensile Testing Machine, Weighing Balance
7.	Breaking strength, Cl. 3.2.2, 3.2.3	Tensile Testing Machine
8.	Colour fastness to light, Cl. 3.2.2, 3.2.3	For Colour Fastness to artificial light (as per - S/ISO 105-B02: 2014 (Superseding IS 2454:1985) – Reference materials – Humidity test control fabric – Light Source (xenon arc lamp) – black-standard thermometer or a blackpanel thermometer – Humidity chamber – Covers

		– Colour matching lamps – Assessment cabinet – Sample mounting card – Assessment mask
9.	Colour fastness to rubbing: a) Dry b) Wet Cl. 3.2.2, 3.2.3	For Colour Fastness to Rubbing as per IS/ISO 105- X12:2016 superseding IS 766 - Suitable Testing Device as per Clause 4.1 of IS/ISO 105 X12 - Cotton Rubbing Cloth - Soft-back waterproof abrasive paper - Grey Scale for Staining
10.	Colour fastness to washing C(3): a) Change in colour b) Staining on adjacent fabric Cl. 3.2.2, 3.2.3	For Colour Fastness to Washing (as per IS/ISO 105- C10 : 2006 superseding IS 3361) – Suitable Mechanical Laundering Device – Weighing Balance with LC 0.01 grams – Mechanical Stirrer – Non-Corrodible (Stainless Steel) Balls, 6 mm dia – Hot plate – Polyester & Cotton Fabric – Standard Soap & Anhydrous Sodium Carbonate – Soap Solution – Grade 3 Water – Adjacent Fabric (Multifibre and Two Single Fibre) – Non-Dyeable Fabric – Sewing Machine – Grey Scale for Colour & Staining – Viewing Cabinet
11.	Dimensional change due to relaxation, both directions, Cl. 3.2.2, 3.2.3	Apparatus • Watertight Tray or Container • Steel Rule, • Means of Marking Reference Points, as specified in 4.3 of IS 10099 : 1982. • Two Pieces of Plate Glass, each measuring at least 600 × 600 mm • Conditioning Chamber Reagents • Sodium Hexametaphosphate, commercially available as 'Calgon'. • An Efficient Wetting Agent, for example, sodium di-octyl sulphosuccinate or dodecyl benzene sodium sulphonate. • Other pure chemicals and distilled water as required

12.	pH value of aqueous extract (Cold method), Cl. 3.2.2, 3.2.3	Reagents • Distilled or deionized water, of at least grade 3 as defined in ISO 3696, having a pH between 5,0 and 7,5. • Potassium chloride solution, 0,1 mol/l, • Buffer solutions, which may be prepared as specified in Annex A of IS 1390 Apparatus • Stoppered glass or polypropylene flasks, chemically resistant, • Mechanical shaker, • Beakers, chemically resistant, with a capacity of 150 ml • Rods, chemically resistant • pH-meter, with a glass electrode, with a resolution of at least 0,01 pH-units. • Balance, with a resolution of at least 0,01 g • 1 l volumetric flasks, of grade A quality
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Annex B

SCHEME OF INSPECTION AND TESTING

1. QUALITY ASSURANCE PLAN

1.1 It is expected that during operation of BIS licence, manufacturers will implement a Quality Assurance Plan (QAP) 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 Assurance Plan (QAP) defining the control unit (i.e. lot/batch etc.), the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and declare the arrangement for testing i.e. whether in-house or subcontracting/sharing for each applicable test and submit the same to BIS Branch Office for information. The manufacturer shall comply with the QAP and maintain test records in accordance with para 2.1.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: The entire quantity of slings manufactured from the same raw materials under similar conditions in a day.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**. Manufacturer has the discretion of declaring their own levels of control or accept the levels of control given in this document.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan.

2. ENSURING COMPLIANCE THROUGH TESTING- manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard for which they may have in-house test facilities. However, there is no obligation to maintain in-house laboratory. Licensee may use alternative arrangements for tests of the production as per the declared QAP. Various alternatives are available for operation of BIS certification as given below and the relevant guidelines for availing such relaxations by the manufacturers, as amended from time to time, are to be referred:

- i) Shared testing resources like common facility,
- ii) Cluster based testing facility,
- iii) Sub-contracting to outside laboratories which may either be:
 - a) BIS recognized/empanelled laboratories, or
 - b) Any accredited laboratory as per ISO/IEC 17025

2.1 TEST RECORDS- The manufacturers shall maintain test records for the tests carried out (either in-house or at a sub-contracted or at shared test facility) to establish conformity of the product to the Standard for operation of licence. For the tests being subcontracted or conducted at a shared test facility, test results issued by the laboratories or test facilities, shall be made available for inspection by BIS.

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

3.1 Packing and Marking shall be done as per the Indian Standard.

3.2 Additional Marking requirements: The material shall also be marked with the following additional requirement on each sling, bundle and bale containing slings.

a) "For BIS certification details please visit www.bis.gov.in"

4. REJECTION - The production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. 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
(Recommended Levels of Control by BIS- For Guidance Only)

(1)				(2)		
Test Details				Levels of Control		
Cl.	Requirement	Clause Reference	Test Method	No. of Sample	Frequency	Remarks
3	Material and Manufacture					
3.1	Shape, design and dimensions	3.1	IS 16725	Manufacturer shall put in place adequate inspections & in process controls to ensure that the product meets the requirements of the standard.		
3.2.1	Weave Particular of Tape (Component A), Table 1					
i)	Tenacity of Single Ply Yarn, (Warp, weft and binding end)		IS 7703 (Part 1)	One	Each consignment	
ii)	Number of ends and picks		IS 7703 (Part 2)	One	Each consignment	
3.2.2	Requirements of tape (Component A), Table 2					
i)	Nature of filament		IS 667	One	Each consignment	
ii)	Width		IS 16725	Manufacturer shall put in place adequate inspections & in process controls to ensure that the product meets the requirements of the standard.		
iii)	Mass per linear meter of tape		IS 4727	Manufacturer shall put in place adequate inspections & in process controls to ensure that the product meets the requirements of the standard.		
iv)	Breaking strength (full width × 20 cm),		IS 1969 (Part1)	One	Each control unit	In case where manufacturer is procuring tape from outside, each consignment is to be tested instead of Each Control Unit.
v)	Colour fastness to light		IS/ISO 105- 01	One	Once in a year	Also to be tested when there is a change in supplier or change in colour
vi)	Colour fastness to rubbing: a) Dry b) Wet		IS/ISO 105-X12	One	Once in a week	In case where manufacturer is procuring Dyed Tape from outside, each consignment is to be tested instead of Once in a week.
vii)	Colour fastness to washing C(3): a) Change in colour		IS/ISO 105 C10	One	Once in a week	-do-

	b) Staining on adjacent fabric					
viii)	Dimensional change due to relaxation, both Directions		IS 2977	One	Once in a week	In case where manufacturer is procuring tape from outside, each consignment is to be tested instead of Once in a week.
ix)	pH value of aqueous extract (Cold method)		IS 1390	One	Once in a week	-do-
3.2.2 Requirements of shoulder pad (Component B), Table 4						
i)	Top layer (Disruptive printed):					
a)	Nature of filament yarn		IS 667	One	Each consignment	
b)	Ends		IS 1963	One	Each consignment	
c)	Picks		IS 1963	One	Each consignment	
d)	Width		IS 1954	Manufacturer shall put in place adequate inspections & in process controls to ensure that the product meets the requirements of the standard		
e)	Mass		IS 1964	Manufacturer shall put in place adequate inspections & in process controls to ensure that the product meets the requirements of the standard		
f)	Colour fastness to washing C (3): 1) Change in colour 2) Staining on adjacent fabric		IS/ISO 105 C10	One	Once in a week	In case where manufacturer is procuring Dyed fabric from outside, each consignment is to be tested instead of Once in a week.
g)	Colour fastness to rubbing: 1) Dry 2) Wet		IS/ISO 105- 12	One	Once in a week	-do-
h)	Colour fastness to light		IS/ISO 105- 01	One	Once in a year	Also to be tested when there is a change in supplier or change in Colour.
ii)	Bottom layer (Nylon Tape – 50 mm wide):					
a)	Nature of filament yarn		IS 667	One	Each consignment	
b)	Width		IS 1954	Manufacturer shall put in place adequate inspections & in process controls to ensure that the product meets the requirements of the standard.		
c)	Mass per linear meter		IS 1964	Manufacturer shall put in place adequate inspections & in process controls to ensure that the product meets the requirements of the		

				standard.		
d)	Colour fastness to washing C(3): 1) Change in colour 2) Staining on adjacent fabric		IS/ISO 105 C10	One	Once in a week	In case where manufacturer is procuring fabric from outside, each consignment is to be tested instead of Once in a week.
e)	Colour fastness to rubbing: 1) Dry 2) Wet		IS/ISO 105-X12	One	Once in a week	-do-
f)	Colour fastness to light		IS/ISO 105-B01	One	Once in a year	Also to be tested when there is a change in supplier or change in Colour.
3.2.3 Weave particular of bottom layer of shoulder pad, Table 3						
i)	Tenacity of Single Ply Yarn, (Warp, weft and binding end)		IS 16725	One	Each consignment	
ii)	Number of ends and picks		IS 1963	One	Each consignment	
3.2.1 to 3.2.5	Dimensions and construction of components/sling		3.2.1	Manufacturer shall put in place adequate inspections & in process controls to ensure that the product meets the requirements		
3.2.3	Dyes used for dyeing and printing		IS 15570	One	Each consignment	
3.2.4	Material of woven elastic tape used in the loops (component D)		IS 9686	One	Each consignment	
3.2.5	Metallic parts		IS 2062 (except for the shape and dimensions)	One	Each consignment	
4.1	Stitching	4.1	IS 16725	Manufacturer shall put in place adequate inspections & in process controls to ensure that the product meets the requirements of the standard.		
4.2	Sewing thread		IS 4229	One	Each consignment	
5	Workmanship and finish	5.1 to 5.5	IS 16725	Manufacturer shall put in place adequate inspections & in process controls to ensure that the product meets the requirements of the standard.		