

Part-I: T-Shirt White Half Sleeves Round Neck

1.0 SCOPE

- 1.1 This specification prescribes the requirements of "T-Shirt White Half Sleeves Round Neck" herein referred as "T-Shirt".

2.0 REFERENCE SPECIFICATIONS/STANDARDS

Table 1

SI No.	SPEC./TEST METHOD No.	Description
a	IS 667:1981	Method for identification of textile fibers
b	IS 1390:2019	Determination of pH of Aqueous Extract
c	IS 2454:1985, RA 2006	Methods of determining of colour fastness of textile material to artificial light (xenon lamp)
d	IS 6359: 1971, RA 2004	Method of conditioning of Textiles
e	IS 14759:2000,	Textiles-Fabric, cotton, rib-knitted-specification
f	AATCC Test method 110: 2015e2	Whiteness Index of textiles
g	IS:10789:1983	Classification and terminology of stitch types used in seams
h	IS:11161:1985	Textiles: seam types-Classification and terminology
i	IS:9543:1980	Spun polyester sewing threads
j	IS 1964:2001	Method for determination of Mass per unit area of fabric
k	IS 1966:1976 (RA-1999)	Method for determination of Bursting strength and Bursting distention of fabric: Diaphragm method
l	IS 4905:2015	Method for random sampling.

Note: The BIS specification given above is for reference and latest version will have to be referred and applied in all cases.

3.0 MATERIAL

3.1 The "T-Shirt" shall be manufactured using materials specified below and shall conform the test requirement as specified in table 2.

Table 2

S.No.	Components	Materials
A	Body including sleeves and neck binding portion.	Fibre content: 50% Cotton,50% Polyester Type of fabric: Single Jersey knitted Count: 24s (for guidance only) GSM: 190 GSM
B	Neck Rib	Fibre content : 49% Cotton, 49% Polyester, 2% Polyurethane Type of fabric: 1x1 rib knitted Count: 24s (for guidance only) GSM: 190 GSM (Minimum)
C	Sewing Thread	100% Spun Polyester 36 tex (3 folded)
D	Label	A woven label with good wash fastness property
E	Taffeta label	Polyester narrow woven taffeta

4.0 DESIGN

4.1 The Round Neck Short Sleeve Bleached White Knitted T-Shirt shall be manufactured as per the style and shape as given in the figure-1.

5.0 DIMENSIONS AND TOLERANCE:

5.1 The T-Shirt shall confirm to the dimensions and tolerance as given in the table 3

Table 3

All measurements are in cm

Measurement Code	Description	Size					
		S	M	L	XL	XXL	Tolerance
A	Length from High Point Shoulder (HPS) to bottom	68.6	71.1	73.7	76.2	78.7	1.0
B	Across Shoulder	40.6	43.2	45.7	48.3	50.8	1.0
C	Chest Width	45.7	48.3	50.8	53.3	55.9	2.0
D	Bottom Width	45.7	48.3	50.8	53.3	55.9	1.0
E	Sleeve Length	20	21	22	23	24	0.5
F	Sleeve Open	13.5	14	14.5	15	15.5	0.5
G	Neck Width	16.5	17.5	18.5	19.5	20.5	0.5
H	Back Neck Drop	2.5	2.5	2.5	2.5	2.5	--
I	Front Neck Drop	6.5	6.8	7.1	7.4	7.7	0.5
J	Shoulder Slop	5	5	5	5	5	---
K	Rib Width	2.54	2.54	2.54	2.54	2.54	---
L	Arm Hole Depth	25	26	27	28	29	0.5
M	Under Arm Sleeve Length	8.5	9.5	10.5	11.5	12.5	0.5

Note: a) Chest width coded as 'C' shall be measured 5 cm below the bottom of arm hole from one side to the other side seam.

b) Measurements coded as A, B, C, D & E are important measurements and must be measured for all samples drawn for visual inspection as per column 2 of table 4, and at least ten percentage of sample per size should be measured for remaining measurement codes.

6.0 MANUFACTURING

6.1 GENERAL

- 6.1.1 T-shirt shall be manufactured in accordance with the details specified in the design (Ref: Figure-1) and also to match the standard sample approved by the Quality Assurance Authority.
- 6.1.2 Product shall be manufactured based on the size requirement of the Buyer and each product should match size specified in the measurement chart given in the table 3
- 6.1.3 T-shirt shall be free from fabric defects, oil stains and stitching defects

6.2 SEAMS AND STITCHES:

- 6.2.1 T-shirt shall be sewn using 100% Spun Polyester 36 tex (3 folded) of matching colour to the fabric shall be used for all the seams and stitches.
- 6.2.2. Shoulder seam, Neck seams shall to be stitched with 5 thread over lock and single needle lock stitch for finishing the raw edges of seam.
- 6.2.3 Sleeve arm hole, side seam shall be stitched with 5 thread over lock
- 6.2.4 Bottom hem and Sleeve hem shall be stitched with 2 needle Chain stitch of not less than 6 mm width, with hem folding at sleeve ends and bottom shall be depth of 20 mm $\pm$ 2 mm using Flat lock machine.
- 6.2.5 Suitable reinforcement (Neck binding) of 10 mm $\pm$ 2 mm shall be provided to cover the raw seam edges of Neck rib and back panel attachment by using the same body fabric.
- 6.2.6 A hanger loop piece made of narrow woven twill tape of half (folded) length 03 cm and width not less than 4 mm shall be attached to the Neck binding and back panel attachment seam. It shall be positioned at right side of the label with clear gap of about 03 cm apart.
- 6.2.7 All the seams and stitches shall be uniform and even sewing thread tension throughout the product.
- 6.2.8 The number of stitches shall not be less than 40 stitches per dm and all the stitches shall be fasted off.

7.0 LABELLING

- 7.1 A woven label with black coloured letters on white colour background (Colour from the label shall not bleed on to the T-Shirt during storage or use) of size measuring 1.5 cm (Length) x 5 cm (Width) shall be provided with the following details on it:
 - (a) Size indicated in appropriate alphabetical notation like S, M, L, XL, XXL.
 - (b) Name of the manufacturer/Contactor (In English).
 - (c) Any other information as required by the buyer in contact.
- 7.2 The label shall be positioned at the Inner side of back panel in such a way that the label is placed centrally in the neck opening by covering the neck binding and shall be stitched firmly on two short sides (length side) by folding raw edges to inner side so that no raw edges are visible by using single needle lock stitch.

- 7.3 **Wash care Instruction label:** A Polyester narrow woven taffeta of size measuring 6 cm (length) x 3 cm (width) shall be attached at the left side seam 10 cm above the bottom hem. The label shall be printed on both the sides with the following information:

One side in English	Other side in Hindi दूसरी तरफ हिंदी में
50 % Cotton 50% polyester Machine wash at 40°C(Normal Cycle) Wash separately Do not wring Iron at 110°C (low Iron)	50% कॉटन 50% पॉलिएस्टर 40°C पर मशीन वॉश (सामान्य गती) करें। धुलाई अलग से करें। निचोड़ नहीं। 110°C पर इस्त्री करें (कम ताप)।

8.0 PRE-INSPECTION BY THE MANUFACTURER

- 8.1 Manufacturer/contractor must satisfy themselves first that the store (T-Shirt) manufactured are in accordance with the contract and shall confirm to the specification by duly caring out through pre-inspection of each lot before tendering for inspection to the Inspecting officer/Quality assurance officer nominated under the terms of the contract. A self-declaration by the Manufacturer/contractor that the necessary pre-inspection has been carried out on the stores tendered and same are fit for final inspection and test carried out shall be rendered along with the inspection call letter/application.
- 8.2 If the Inspection officer/Quality assurance officer finds that pre-inspection of the consignment as required has not been carried out, the consignment is liable for rejection.

9.0 PACKING & MARKING

- 9.1 Before packing, each T-shirt shall be duly pre-inspected as given in the pre-inspection clause (Ref: 8.0)
- 9.2 T-shirt shall be properly pressed/Ironed using a steam press in such a way that the packed T-shirt shall not have any crease and shall be placed inside a self sealing polyethylene bag of thickness not less than 40 microns or transparent bio-degradable bag of suitable thickness.
- 9.3 50 such T-Shirt of same size shall be placed inside a 5 ply corrugated box to form a unit pack (each unit pack must be marked with name of the manufacturer, size of the store) and such four unit shall be packed in 7 ply corrugated fibre board Box and further wrapped into water proof hessian/HDPE sheet (as per buyer requirements) and stitched with not less than 10 stitches/dm.

- 9.4 Each such final package shall be strapped (with suitable strap width and strength) bound with two parallel strips (45 cm distance between straps) on each direction; each package shall be clearly marked with the following details:
- (a) Name of Product;
 - (b) Size(s);
 - (c) Quantity in Numbers;
 - (d) Manufacturer name and Address;
 - (e) Consignee name and Address
 - (f) Package number & total no. of packages.
 - (g) Purchase Order/Contact Number

10.0 INSPECTION/QUALITY ASSURANCE

- 10.1 The inspecting officer/agency as nominated by the purchasing authority of the concern CAPFs shall inspect the consignment strictly as per the specification and no deviation from the specification is permitted/allowed without the written consent of the purchasing authority.
- 10.2 The manufacturer/Contactor shall offer the duly pre-inspected store serially numbered and arranged in such a way that the entire lot is easily accessible to the inspecting officer.

11.0 SAMPLING AND CRITERIA OF CONFORMITY

- 11.1 **Lot:** The lot tendered for inspection shall be homogenize and must be manufactured from same count and quality of yarn and delivered to a consignee against one dispatch note shall constitute a lot. The Lot size is restricted to 10,000 numbers.
- 11.2 **Sampling:** sample shall be drawn as per table 4 by adopting random sampling method as per IS 4905:2015 and sample so drawn must be truly representative of the lot.
- 11.3 The confirmation of the lot to the requirement of the specification shall be on the basis of the visual inspection and laboratory testing carried out on the samples selected from the lot as per table 4.
- 11.4 All the samples selected as per column 2 of table 4 shall be visually inspected by the inspecting officer for dimension, freedom from fabric/ manufacturing defects and also for other requirements of the advance sample (sealed by the Indenter). The lot shall be confirming to the above requirements, if the total number of defective found in the sample is less than or equal to the acceptance number given in column 3 of table 4. Otherwise, the lot shall be rejected.
- 11.5 If the samples are found satisfactory and meeting the requirements as per clause 15.4, then the inspecting officer will randomly draw sample as per column 4 of table 4 for testing of physical parameters from the originally drawn samples as per Column 2 of table 4.
- 11.6 For testing of chemical parameters sample shall be as per column 6 of table 4 randomly from the column 4 of table 4.
- 11.7 Acceptance number mentioned in the physical parameters (column 5) is inclusive of chemical parameter (column 7) that is total acceptance number should not exceed acceptance number mention in column 5 of table 4.

- 11.8 The lot is deemed to be confirming to the specification, only if it meet both the requirements of visual inspection as per clause 11.4 and laboratory testing for physical and chemical parameters as per table 5.

Table 4

Sample Size and Permissible Number of Non-Confirming T-Shirt

Lots Size in Nos	Visual Inspection, Dimension, Freedom from Defect, etc.,		Physical Parameters		Chemical Parameters	
	Sample Size	Acceptance No.	Sample Size	Acceptance No.	Sample Size	Acceptance No.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Upto 280	13	1	13	1	5	0
281-500	20	2	13	1	5	0
501-1200	32	3	20	2	5	0
1201-3200	50	5	32	3	8	1
3200-10000	80	7	32	3	8	1

Table 5:

(a) Requirements for Knitted fabric for body & Sleeves, Collar and cuff Rib

Sr. No.	Test Parameter	Requirement	Tolerance	Method of Test
Physical parameters				
1	Thread per unit length Wales/dm Course/dm	150 220	+5%, -2.5% +5%, -2.5%	B-3 of IS 14759
2	Weight per square meter (g)	190	Minimum	IS 1964:2001
3	Bursting strength (Kpa)	800	Minimum	IS 1966-1976 (RA 1999)
Chemical parameters				
1	% Composition i) <u>Body portion</u> Polyester Cotton ii) <u>Collar and cuff Portion</u> Cotton Elastane Polyester	50 % 50 % 49% 2% (Min) Remainder	± 3 units ± 3 units ± 3 units ----- -----	IS 3416 (Part 1) PU dissolved in DMF, IS 3416 (Part 1)
2	Dimensional change (due to relaxation) Wales direction Course direction	5.0 % 5.0 %	Maximum Maximum	B-2 of IS 14759
3	pH of aqueous extract	6.0 to 8.0	----	IS 1390 (Cold method)
4	Whiteness Index	110	Minimum	AATCC 110 CIE (D65/10°)
5	Colour fastness to light	4 or better	---	IS 2454
6	Colour Fastness to perspiration	4 or better	---	IS 971

(b) Requirement of sewing thread used for seams and stitching

Sr. No.	Test Parameter	Requirement	Tolerance	Method of test
Chemical parameter				
1	Identification of Fibre	100% Polyester Spun sewing thread 36 Tex (3 ply)	-----	IS 667-1981

12.0 TERMINOLOGY

For the purpose of this standard the definition as given in IS: 3596-latest version shall apply.

13.0 WARRANTY

13.1 "Except as otherwise provided in the invitation to the tender, the contractor/ seller hereby declare that the goods, store, articles sold/ supplied to the purchaser under this contract shall be of the best quality, workmanship and new in all respects and shall be strictly in accordance with the specification and particulars contained/ mentioned in the contract.

13.2 The contractor / seller hereby guarantees that the said goods / stores/ articles would continue to conform to the description and quality aforesaid for a period of 12 months from the date of shipment/ dispatch from the contractors work, whichever is earlier and that notwithstanding the fact that the purchaser (Inspector) may have inspected and / or approve the said goods/ stores/ articles if during the aforesaid period of 12/15 months the said goods/ stores/ articles, be discovered not to conform to the description and the quality aforesaid or not having satisfactory performance and or have deteriorated and the decision of the purchaser in that behalf shall be final and binding on the contractor / seller to rectify replace by acceptable goods / stores / articles as found to be defective the purchaser within reasonable period not exceeding three months or as may be allowed by the purchaser in his discretions on the application made thereof by the contractor / seller and in such an event the above mentioned warranty period shall supply to goods / stores / articles replaced from the date of rectification / replacement thereof otherwise the contractor / seller shall pay to the purchaser such compensation as determined by the purchaser as may arise by the reason of break of the warranty herein contained."

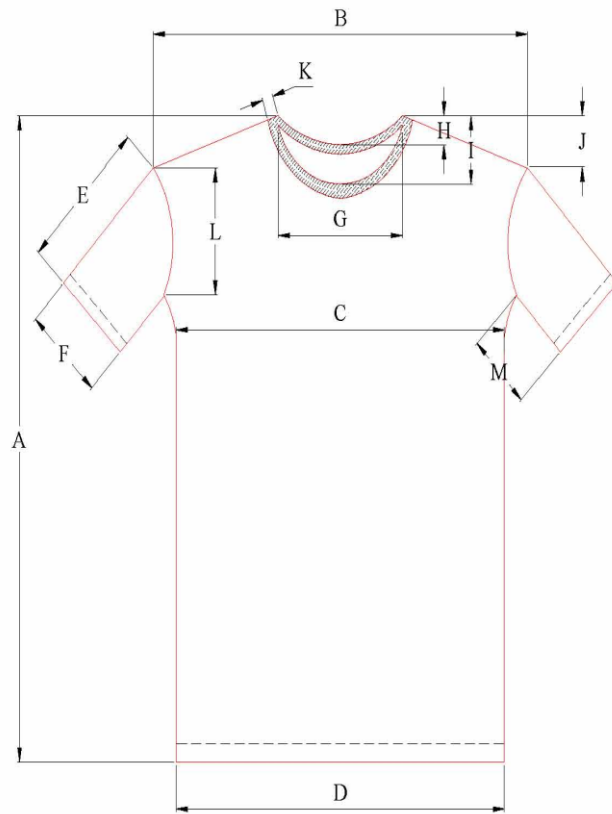
14.0 Annexure A

A-1 Conditioning of test specimens and atmospheric conditions for testing: The test specimen shall be tested in standard atmosphere as given in IS 6359.

A-2 Dimensions:

Take each T-Shirt constituting the test specimen. Lay it flat on a table. Remove by hand all crease and wrinkles without distorting the specimen. Measure nearest to 0.1 cm to the dimension given in Table-3.

15.0 Figure-1



LEGEND:

A- LENGTH FROM HPS
 B- ACROSS SHOULDER
 C- CHEST WIDTH
 D- BOTTOM WIDTH
 E- SLEEVE LENGTH
 F- SLEEVE OPEN

G- NECK WIDTH
 H- BACK NECK DROP
 I- FRONT NECK DROP
 J- SHOULDER SLOPE
 K- RIB WIDTH
 L- ARM HOLE DEPTH
 M- UNDER ARM SLEEVE LENGTH

Part-II: T-Shirt White Half Sleeves with Collar

1.0 Scope

- 1.1 This specification prescribes the requirements of “T-Shirt Whit Half Sleeves with Collar” herein referred as “Sports Shirt”.

2.0 Reference Specifications / Standards

Table 1

S.No	Spec / Test Method No.	Description
a	IS 667:1981	Method for identification of textile fibers
b	IS:1390:2019	Determination of pH of Aqueous Extract
c	IS 2454:1985, RA 2006	Methods of determining of colour fastness of textile material to artificial light (xenon lamp)
d	IS 6359: 1971, RA 2004	Method of conditioning of Textiles
e	IS 14759:2000,	Textiles-Fabric, cotton, rib-knitted-specification
f	AATCC Test method 110: 2015e2	Whiteness Index of Textiles
g	IS:10789:1983	Classification and terminology of stitch types used in seams
h	IS:11161:1985	Textiles: seam types-Classification and terminology
i	IS:9543:1980	Spun Polyester sewing threads
j	IS 1964:2001	Method for determination of Mass per unit area of fabric
k	IS 1966:1976 (RA-1999)	Method for determination of Bursting strength and Bursting distention of fabric: Diaphragm method
l	IS 4905:2015	Method for random sampling.

3.0 Material

- 3.1 The "Sports Shirt" shall be manufactured using materials specified below and shall conform the test requirement as specified in table 2.

Table 2

S.No	Components	Material
a	Body including sleeves and neck binding portion.	Fibre content: 50% Cotton, 50% Polyester Type of fabric: Single Jersey knitted Count: 24s (for guidance only) GSM: 190 GSM
b	Collar, Sleeve end cuff	Fibre content: 49% Cotton, 49% Polyester, 2% Polyurethane Type of fabric: 1x1 Rib Flat knitted Count: 24s (for guidance only) GSM: 220 GSM
c	Sewing Thread	100% Spun Polyester 36 tex (3 folded)
d	Plastic Button	Thermoset Button of Size 18 Ligne (11.4 mm diameter) with four holes (good trade quality)
e	Neck and side slit Reinforcement piece	Narrow woven twill tape of width 12 mm . (good trade quality)
f	Woven Label	A woven label with good wash fastness
g	Taffeta label	Polyester narrow woven taffeta

4.0 Design

- 4.1 The "T-Shirt White Half Sleeves with Collar" shall be manufactured as per the style and shape as given in the figure-1 and as per the standard sample for general appearance, feel and other parameter/characteristic not specified/illustrated in this standard.

5.0 Dimensions and Tolerance:

5.1 The Sports Shirt shall be confirmed to the dimensions and tolerance as given in the table 3.

Table 3

Measur- ement Code	Description	Size					Tolerance (+/-)
		S	M	L	XL	XXL	
A	Length from HPS*	68.6	71.1	73.7	76.2	78.7	1.0
B	Back Length from HPS*	68.6	71.1	73.7	76.2	78.7	1.0
C	Chest Width	45.7	48.3	50.8	53.3	55.9	1.0
D	Bottom Width	45.7	48.3	50.8	53.3	55.9	1.0
E	Sleeve Length including cuff rib	20	21	22	23	24	0.5
F	Sleeve Open	13.5	14	14.5	15	15.5	0.5
G	Arm Hole Depth	25	26	27	28	29	0.5
H	Placket Length	18	18	18	18	18	--
I	Placket Width	3	3	3	3	3	--
J	Front Neck Drop	7	7.5	8	8.5	9	0.5
K	Shoulder Slope	4	4	4	4	4	--
L	Neck Width	16.5	17.5	18.5	19.5	20.5	0.5
M	Underarm Sleeve Length	8.5	9.5	10.5	11.5	12.5	0.5
N	Side seam Slit Length	5	5	5	5	5	--
O	Across Shoulder	40.6	43.2	45.7	48.3	50.8	1.5
P	Collar Rib Height	7	7	7	7	7	--
Q	Cuff Rib Height	2	2	2	2	2	--

Note: a) HPS: High Point Shoulder

b) Chest width coded as 'C' shall be measured 5 cm below the bottom of arm hole from one side seam to the other side seam.

c) Measurements coded as A, C, D, E & O are important measurements and must be measured for all samples drawn for visual inspection as per column 2 of table 4, and at least ten percentage of sample per size should be measured for remaining measurement codes.

6.0 Manufacturing

6.1 General

- 6.1.1 Sports Shirt shall be manufactured in accordance with the details specified in the design (Ref: Figure-1) and also to match the standard sample approved by the Quality Assurance Authority.
- 6.1.2 Sports Shirt shall be manufactured based on the size requirement of the Buyer and each product should match size specified in the measurement chart given in the Table 3
- 6.1.3 Sports Shirt shall be provided with a collar made of 1x1 Rib Flat knitted fabric with a matching colour of body fabric.
- 6.1.4 Sports Shirt shall be free from fabric defects, oil stains and stitching defects.

6.2 Seams and Stitches:

- 6.2.1 Sports Shirt shall be sewn using 100% Spun Polyester 36 tex (3 folded) of matching colour to the fabric shall be used for all the seams and stitches.
- 6.2.2 Shoulder seam, Sleeve attaching with arm hole, Side seam and Collar seams shall be stitched with 5 threads over lock and single needle lock stitch for finishing the raw edges of seam.
- 6.2.3 Sleeve ends will be attached with rib tightening, *shall be stitched with 5 thread over lock.*
- 6.2.4 Bottom hem of the Sports Shirt shall be stitched with 2 needle Chain stitch of not less than 6 mm width, with hem folding at bottom shall be depth of 20 mm $\pm$ 2 mm using Flat lock machine.
- 6.2.5 Bottom of the both side seam shall be provided with slit opening and opening edges shall be reinforced with twill tape of width 12 mm of matching colour.
- 6.2.6 Suitable reinforcement (Neck binding) of 12 mm $\pm$ 2 mm shall be provided to cover the raw seam edges of collar and back panel attachment by using the narrow woven twill tape of matching colour.
- 6.2.7 Sports Shirt shall be provided with left over right front opening and closing by means of button and button holes, opening plackets are made of double layered self fabric for holding button and button holes.
- 6.2.8 Sports Shirt shall be provided with three numbers of buttons of 4 hole 18 Ligne (11.4mm diameter) Size and shall be fastened to the right side placket with not less than 16 stitches per hole, and shall be positioned at equidistance from each other.
- 6.2.9 The left side placket shall be provided with three button holes to match the position and button size of the corresponding button on the right side placket. The buttons holes shall be secured fastened with no raw edges.

6.2.10 A hanger loop piece made of narrow woven twill tape of half (folded) length 03 cm and width not less than 4 mm shall be attached to the Neck binding and back panel attachment seam. It shall be positioned at right side of the label with clear gap of about 03 cm apart.

6.2.11 All the seams and stitches shall be uniform and even sewing thread tension throughout the product.

6.2.12 The number of stitches shall not be less than 40 stitches per dm and all the stitches shall be fastened off.

7.0 Labelling

7.1 A woven label with black coloured letters on white colour background (Colour from the label shall not bleed on to the Sports Shirt during storage or use) of size measuring 1.5 cm (Length) x 5 cm (Width) shall be provided with the following details on it:

- (a) Size indicated in appropriate alphabetical notation like S, M, L, XL, XXL.
- (b) Name of the manufacturer/Contactor (In English)
- (c) Any other information as required by the buyer in contract.

7.2 The woven label shall be positioned at the Inner side of back panel in such a way that the label is placed centrally in the neck opening by covering the neck binding (Ref 10.2.6) and shall be stitched firmly on two short sides (length side) by folding raw edges to inner side so that no raw edges are visible by using single needle lock stitch.

7.3 **Wash care Instruction label:** A Polyester narrow woven taffeta of size measuring 6 cm (length) x 3 cm (width) shall be attached at the left side seam 10 cm above the bottom hem. The label shall be printed on both the sides with the following information:

One side in English	Other side in Hindi दूसरी तरफ हिंदी में
50 % Cotton 50% polyester Machine wash at 40°C (Normal Cycle) Wash separately Do not wring Iron at 110°C (low Iron)	50% कॉटन 50% पॉलिएस्टर 40°C पर मशीन वॉश (सामान्य गती) करें। धुलाई अलग से करें। निचोड़ नहीं। 110°C पर इस्त्री करें (कम ताप)।

8.0 Pre-Inspection by the Manufacturer

- 8.1 Manufacturer/contractor must satisfy themselves first that the store (Sports Shirt) manufactured are in accordance with the contract and shall confirm to the specification by duly caring out through pre-inspection of each lot before tendering for inspection to the Inspecting officer/Quality assurance officer nominated under the terms of the contract. A self-declaration by the Manufacturer / contractor that the necessary pre-inspection has been carried out on the stores tendered and same are fit for final inspection and test carried out shall be rendered along with the inspection call letter/application.
- 8.2 If the Inspection officer/Quality assurance officer finds that pre-inspection of the consignment as required has not been carried out, the consignment is liable for rejection.

9.0 Packing & Marking

- 9.1 Before packing, each Sports Shirt shall be duly pre-inspected as given in the pre-inspection clause (Ref: 8.0).
- 9.2 Sports Shirt shall be properly pressed/Ironed using a steam press in such a way that the packed Sports Shirt shall not have any crease and shall be placed inside a self sealing polyethylene bag of thickness not less than 40 microns or transparent bio-degradable bag of suitable thickness.
- 9.3 50 such T-Shirt of same size shall be placed inside a 5 ply corrugated box to form a unit pack (each unit pack must be marked with name of the manufacturer, size of the store) and such four unit shall be packed in 7 ply corrugated fibre board Box and further wrapped into water proof hessian/HDPE sheet (as per buyer requirements) and stitched with not less than 10 stitches/dm.
- 9.4 Each such final package shall be strapped (with suitable strap width and strength) bound with two parallel straps (45 cm distance between straps) on each direction; each package shall be clearly marked with the following details:
- (a) Name of Product;
 - (b) Size(s);
 - (c) Quantity in Numbers;
 - (d) Manufacturer name and Address;
 - (e) Consignee name and Address
 - (f) Package number & total no. of packages.
 - (g) Purchase Order/Contact Number

10.0 Inspection / Quality Assurance

- 10.1 The inspecting officer/agency as nominated by the purchasing authority of the concern CAPFs shall inspect the consignment strictly as per the specification and no deviation from the specification is permitted/allowed without the written consent of the purchasing authority.
- 10.2 The manufacturer/Contractor shall offer the duly pre-inspected store serially numbered and arranged in such a way that the entire lot is easily accessible to the inspecting officer.

11.0 Sampling and Criteria of Conformity

- 11.1 Lot:** The lot tendered for inspection shall be homogenize and must be manufactured from same count and quality of yarn and delivered to a consignee against one dispatch note shall constitute a lot. The Lot size is restricted to 10,000 numbers.
- 11.2 Sampling:** sample shall be drawn as per table 4 by adopting random sampling method as per IS 4905:2015 and sample so drawn must be truly representative of the lot.
- 11.3** The confirmation of the lot to the requirement of the specification shall be on the basis of the visual inspection and laboratory testing carried out on the samples selected from the lot as per Table 4.
- 11.4** All the samples selected as per column 2 of Table 4 shall be visually inspected by the inspecting officer for dimension, freedom from fabric / manufacturing defects and also for other requirements of the advance sample (sealed by the Indenter). The lot shall be confirming to the above requirements, if the total number of defectives found in the sample is less than or equal to the acceptance number given in column 3 of table 4. Otherwise, the lot shall be rejected.
- 11.5** If the samples are found satisfactory and meeting the requirements as per clause 11.4, then the inspecting officer will randomly draw sample as per column 4 of table 4 for testing of physical parameters from the originally drawn samples as per Column 2 of table 4.
- 11.6** For testing of chemical parameters sample shall be as per column 6 of table 4 randomly from the column 4 of table 4.
- 11.7** Acceptance number mentioned in the physical parameters (column 5) is inclusive of chemical parameter (column 7) that is total acceptance number should not exceed acceptance number mention in column 5 of table 4.
- 11.8** The lot is deemed to be confirming to the specification, only if it meet the both the requirements of visual examination/inspection as per clause 15.4 and laboratory testing for physical and chemical parameters requirements as per Table 5.

Sample Size and Permissible Number of Non-Confirming Sports Shirt

Table 4

Lot Size in Nos.	Visual Inspection, Dimension, Freedom from Defect, etc.,		Physical Parameters		Chemical Parameters	
	Sample Size	Acceptance No.	Sample Size	Acceptance No.	Sample Size	Acceptance No.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Upto 280	13	1	13	1	5	0
281-500	20	2	13	1	5	0
501-1200	32	3	20	2	5	0
1201-3200	50	5	32	3	8	1
3200-10000	80	7	32	3	8	1

Table 5:**a) Requirements for Knitted fabric for body & Sleeves, Collar and cuff Rib**

S. No	Test Parameter	Requirement	Tolerance	Method of Test
Physical parameters				
1	Thread per unit length Wales/dm Course/dm	150 220	+5%, -2.5% +5%, -2.5%	B-3 of IS 14759
2	Weight per square meter (g)	190	Minimum	IS 1964:2001
3	Bursting strength (Kpa)	800	Minimum	IS 1966-1976 (RA 1999)
Chemical parameters				
1	% Composition i) <u>Body portion</u> Polyester Cotton ii) <u>Collar and cuff portion</u> Cotton Elastane Polyester	50 % 50 % 49% 2% (Min) Remainder	± 3 units ± 3 units ± 3 units ---- -----	IS 3416 (Part 1) PU dissolved in DMF, IS 3416 (Part 1)
2	Dimensional change % (due to relaxation) Wales direction Course direction	5.0 % 5.0 %	Maximum Maximum	B-2 of IS 14759
3	pH of aqueous extract	6.0 to 8.0		IS 1390 (Cold method)
4	Whiteness Index	110	Minimum	AATCC 110 CIE (D65/10°)
5	Colour fastness to light	4 or better	--	IS 2454
6	Colour Fastness to perspiration	4 or better	--	IS 971

b) Requirement of sewing thread used for seams and stitching

Sr. No.	Test Parameter	Requirement	Tolerance	Method of test
Chemical parameter				
1	Identification of Fibre	100% Polyester Spun sewing thread 36 Tex (3 ply)	--	IS 667-1981

12.0 Terminology

- 12.1 For the purpose of this standard the definition as given in IS: 3596-latest version shall apply.

13.0 Warranty

- 13.1 "Except as otherwise provided in the invitation to the tender, the contractor/ seller hereby declare that the goods, store, articles sold/ supplied to the purchaser under this contract shall be of the best quality, workmanship and new in all respects and shall be strictly in accordance with the specification and particulars contained/ mentioned in the contract.
- 13.2 The contractor/ seller hereby guarantees that the said goods / stores/ articles would continue to conform to the description and quality aforesaid for a period of 12 months from the date of shipment/ dispatch from the contractors work, whichever is earlier and that notwithstanding the fact that the purchaser (Inspector) may have inspected and / or approve the said goods/ stores/ articles if during the aforesaid period of 12/15 months the said goods/ stores/ articles, be discovered not to conform to the description and the quality aforesaid or not having satisfactory performance and/or have deteriorated and the decision of the purchaser in that behalf shall be final and binding on the contractor / seller to rectify replace by acceptable goods / stores / articles as found to be defective the purchaser within reasonable period not exceeding three months or as may be allowed by the purchaser in his discretions on the application made thereof by the contractor / seller and in such an event the above mentioned warranty period shall supply to goods / stores / articles replaced from the date of rectification / replacement thereof otherwise the contractor / seller shall pay to the purchaser such compensation as determined by the purchaser as may arise by the reason of break of the warranty herein contained."

14.0 Annexure-A

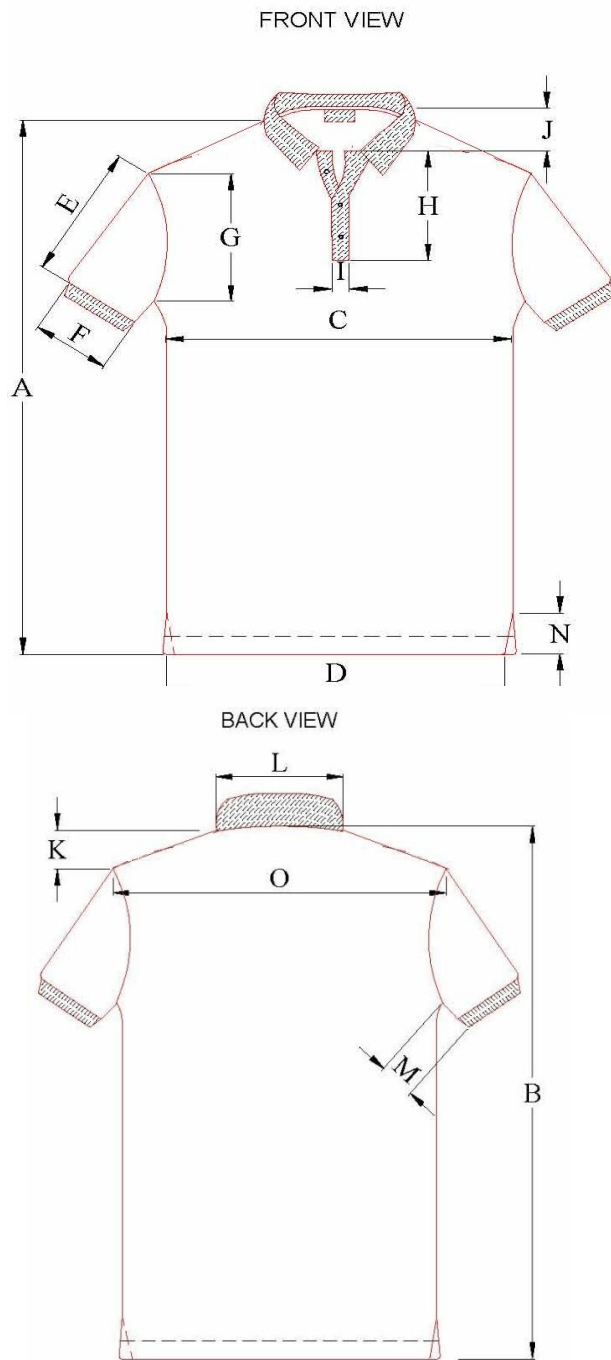
A-1 Conditioning of test specimens and atmospheric conditions for testing:

The test specimen shall be tested in standard atmosphere as given in IS 6359.

A-2 Dimensions:

Take each Sports Shirt constituting the test specimen. Lay it flat on a table. Remove by hand all crease and wrinkles without distorting the specimen. Measure nearest to 0.1 cm for the dimension given in Table 3.

15.0 Figure - I



LEGEND

- A- FRONT LENGTH FROM HPS
- B- BACK LENGTH FROM HPS
- C- CHESTWIDTH
- D- BOTTOM WIDTH
- E- SLEEVE LENGTH
- F- SLEEVE OPEN
- G- ARM HOLE DEPTH
- H- PLACKET LENGTH
- I- PLACKET WIDTH
- J- FRONT NECK DROP
- K- SHOULDER SLOPE
- L- NECK WIDTH
- M- UNDER ARM SLEEVE LENGTH
- N- HEM SLIT LENGTH
- O- ACROSS SHOULDER LENGTH