

S.No	Particular	Requirement	Method of Testing
1	Material Blend Composition (%)	Cotton – 60 % $\pm$ 3% Viscose – 25% $\pm$ 3% Polyester – 15% $\pm$ 3%	IS: 3416 (Part-1) Clean Dry Mass Method
2	Weave	2/1 Twill	Visual
3	Width (Minimum) excluding selvedge	150 cm + 2cm	IS: 1954
4	Count of Yarn (approx) Warp Weft	2/32s Ne $\pm$ 2% 2/32s Ne $\pm$ 2%	IS: 3442
5	Threads/cm Warp Weft	37 $\pm$ 5% 21 $\pm$ 5%	IS: 1963
6	Mass/m <sup>2</sup> (g)	220 (+5% & -2.5%)	IS: 1964 Method A
7	Breaking Load 'N' (Min.) (5 cm X 20 cm between grip) Warp Weft	1080 495	IS: 1969 Ravelled-Strip test method
8	Relaxation Shrinkage or Elongation % (max) Warp Weft	1.5 %	IS : 2977
9	Heat Shrinkage % (max) (160 $\pm$ 4 Deg. C – for 15 min) Warp Weft	1 %	Annexure 'A' of this specification
10	Tearing strength 'Kgf' (min) Warp Weft	3.0 2.5	IS:6489 Method B
11	Pilling Resistance (18,000 revolutions)#	Rating 4 or better	IS:10971
12	Crease recovery (Min.)	155°	IS: 4681
13	pH value of aqueous extracts	6.0 – 8.5	IS: 1390 (Cold method)
14	Colour Fastness to Light	Rating 5 or better	ISO: B02-2014
15	Colour Fastness to washing a) change in shade b) staining on cotton	a) Rating 4 or better b) Rating 4 or better	ISO-C10:2006
16	Colour Fastness to Perspiration Acid solution a) change in shade b) staining on cotton Alkali solution a) change in shade b) staining on cotton	Rating 4 or better Rating 4 or better  Rating 4 or better Rating 4 or better	ISO E04:2013

17	Colour Fastness to Rubbing Dry:		ISO 105-X12:2016
	Ground: Khaki Print: Green & Brown	Rating 4 or better	
	Print: Black	Rating 3/4 or better	
	Wet: Ground: Khaki	Rating 4 or better	
	Print: Green & Brown	Rating 3/4 or better	
	Print: Black	Rating 3 or better	
18	Scouring Loss	2% (Max)	IS: 1383 Mild Method
19	Dye identification	Vat & Disperse Dyes	IS 477

#### General specification:

1. In Appearance, Feel, Finish and all other respects including **shade**, material shall conform to corresponding sealed sample held in the custody of Controller customer service centre, OCFAV.
2. Width of selvedge shall not exceed 8mm.
3. The manufacturer shall supply the material duly flagged for all type of defects.

#### Packing & Making:

As per CQA (T&C) Kanpur Schedule No. CQA (T&C)/PMS/35(D), except that

1. Fabric in roll form shall not be less than 40 meters in running length without stitching/basting in between.
2. Roll weight shall not exceed 50 kgs
3. Each roll of fabric shall be wrapped separately with polypropylene plain sheet.  
Final packing of 1 rolls in one water proof Gunny/HDPE sheet.
4. Dimension for paper tubes of fabric roll:

Outer Dia – 3.5cm,

Inner Dia – 2.5 cm

Thickness – 0.5cm

5. Fabric selvages shall be wound evenly at one edge.

#### Sampling plan:

##### 1. Formation of lots:

The delivery shall be visually inspected by the Quality Assurance Officer on the spot in the first instance to ascertain its homogeneity in respect of nature, source, year of manufacture, batch, uniformity of production etc. If the product units are homogeneous, the delivery shall be treated as one lot. If not, the product units shall be segregated by supplier into separate group so that each group is homogeneous within itself so as to form a sub lot. The supplier shall arrange the

units of the homogeneous lot in such a way that all the product units are easily accessible to the sampling officer from all the sides to enable him to draw samples at random from any portion of the homogenous lot.

**2. Sampling procedure:**

Sampling of the stores shall be carried out by adopting appropriate sampling method as per IS: 4905.

**3. Sample Size:**

The scale of sampling as given in Annexure-B shall be followed in respect of physical and chemical parameters.

**4. Lot Size:** 25,000 meters maximum.

  
Ht. UN1/R&D

## **Annexure – B**

### **SAMPLING PLAN (BASED ON AQL OF 4% ISO – 2859)**

Lots size in Bolts of 40 m or as agreed	Sampling Plan for					
	Visual Parameters		Physical Parameters (for laboratory tests)		Chemical Parameters and other physical parameters Requiring long testing time (for lab. Tests)	
	Sample Size	Acceptance No.	Sample Size	Acceptance No.	Sample Size	Acceptance No.
1	2	3	4	5	6	7
Below 151	13	1	13	1	3	0
151 to 280	13	1	13	1	5	0
281 to 500	20	2	13	1	5	0
501 to 1200	32	5	20	2	5	0
1201 to 3200	50	5	32	3	3	1

**Note:**

- Sample drawn as per column (2) to be first examined visually. If found satisfactory, the samples for lab testing as per the column (4) be drawn out from the samples originally drawn as per column (2) by the sampling officer and marked by him accordingly.
- Samples for lab testing will be drawn from the samples drawn as mentioned in column (2) only.
- For chemical parameters samples to be drawn at random as per IS: 4905 from those samples drawn as per column (4).

## Annexure – A

### METHOD FOR DETERMINING SHRINKAGE WHEN HEATED

A sample fabric shall be cut 30 cm square and brought to equilibrium by conditioning in the standard atmosphere for testing i.e.  $65 \pm 2\%$  RH and  $27^\circ \pm 2^\circ$  Temp. A 25 cm square shall be marked on the fabric. On each side of the square, four reference points shall be marked at five centimetre intervals, so that by including the side of the square, six determinations in each of the warp and weft directions may be made. Two slits shall be made 1.25 cm from opposite edges of the fabric and a rod passed through the slits. The sample shall be mounted in a ventilated oven by means of the rod so that air circulates freely around the sides of the sample. The oven shall be brought up to a temperature of  $160 \pm 4^\circ$  C. The sample shall then be withdrawn, removed from the rod and laid flat upon a smooth surface to cool. The distance between each pair of marks shall then be measured to the nearest 0.25 cm and the change in dimensions recorded. The average of the six determinations in the warp and weft directions shall be calculated and expressed as a percentage of the original length.