

4. CONCLUSIONS

1. The Project work clearly indicates the immense importance of the setting and control of yarn tension in the Knitting process.
2. Low yarn tensions provide better results in the production of knit fabrics in single jersey machines.
3. Optimum value of yarn tension for 32^S (18.45 Tex) Poly/Cotton single jersey fabric is in the range of 5 gf. to 7 gf. at this tension.
 - (a) Production rate is generally higher due to less machine stoppages.
 - (b) Less fabric faults and hence better quality.
4. Mill standard of a particular fabric should always be referred to two of the following together :
 - (a) Fabric yield (m/kg)
 - (b) Areal density (g/m²)
 - (c) Fabric width (m)
5. The quality controllers and the knitters should specify the relaxation method used for controlling fabric dimensions.



APPENDIX

TABLE - 1

TENSION (gf)	WALES / CM.
4.00	12.48
7.00	12.56
10.00	12.80
15.00	12.92
20.00	13.48
30.00	13.61

Measuring Distance - 5 cm.
 State = (Before Washing)

TABLE - 2

TENSION (gf)	COURSES / CM.
4.00	21.48
7.00	21.82
10.00	21.80
15.00	21.76
20.00	21.60
30.00	21.51

Measuring Distance - 5 cm.
 State = (Before Washing)

LOOP LENGTHS BEFORE WASHING


TENTION (gt)	LOOP LENGTHS IN (MM.)											AVERAGE VALUE
4.00	2.56,	2.52,	2.53,	2.51,	2.54,	2.53,	2.50,	2.50,	2.49,	2.55,	2.56 2.49	2.523
7.00	2.61,	2.55,	2.54,	2.53,	2.60,	2.57,	2.55,	2.55,	2.58,	2.59,	2.55 2.58	2.570
10.00	2.50,	2.57,	2.53,	2.57,	2.57,	2.56,	2.54,	2.55,	2.58,	2.58,	2.58	2.550
15.00	2.60,	2.56,	2.57,	2.58,	2.57,	2.55,	2.55,	2.56,	2.60,	2.58,	2.57 2.55	2.569
20.00	2.57,	2.59,	2.57,	2.61,	2.52,	2.60,	2.53,	2.57,	2.56,	2.54,	2.56 2.58	2.566
30.00	2.59,	2.54,	2.55,	2.50,	2.56,	2.58,	2.60,	2.57,	2.57,	2.57,	2.50 2.55, 2.62	

TABLE - 3

MEASURED AREAL DENSITY
(BEFORE WASHING)

TABLE - 4

TENSION (gt)	A (gm^{-2})
4.00	243.23
7.00	243.22
10.00	243.24
15.00	243.23
20.00	243.23
30.00	243.20

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Method: A circular part of radius of 1.5 cm.
of fabric was weighed.

Weight of (100 wales x 120 courses)

Number of stitches before washing = 0.608 g.

TABLE - 5

TENSION (gf)	WALES / CM.
4.00	13.48
7.00	13.49
10.00	13.60
15.00	13.81
20.00	13.96
30.00	14.24

(After Washing - Measuring distance 5 cm.)



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TABLE - 6

TENSION (gf)	COURSES / CM.
4.00	22.44
7.00	22.40
10.00	22.38
15.00	22.30
20.00	21.84
30.00	21.62

(After Washing - Measuring Distance 5 cm.)

LOOP LENGTHS AFTER WASHING

TENSION (gt)	LOOP LENGTHS IN (MM.)									AVERAGE VALUE
4.00	2.53,	2.52,	2.56,	2.51,	2.54,	2.56,	2.54, 2.52,	2.52, 2.56,	2.54, 2.50	2.533
7.00	2.50,	2.48,	2.54,	2.50,	2.50,	2.50,	2.49,	2.49, 2.60	2.53, 2.54	2.514
10.00	2.59,	2.55,	2.54,	2.51,	2.50,	2.55,	2.51, 2.51,	2.50, 2.56,	2.55, 2.54	2.534
15.00	2.57,	2.52,	2.60,	2.55,	2.57,	2.52,	2.55, 2.49,	2.55, 2.52,	2.53, 2.57	2.544
20.00	2.57,	2.50,	2.52,	2.52,	2.50,	2.54,	2.48, 2.53,	2.55, 2.54,	2.53, 2.55	2.527
30.00	2.54,	2.51,	2.55,	2.52,	2.49,	2.41,	2.52, 2.49,	2.55, 2.54,	2.50, 2.53	2.521

TABLE - 7

Measured Area Density after washing

Method - A circular part of radius of 1.5 cm.
of fabric was weighed

TABLE - 8

TENSION	A (gm^{-2})
4.00	268.685
7.00	268.686
10.00	268.684
15.00	268.680
20.00	268.686
30.00	268.681

Weight of 100 Wales x 120 courses number of stitches

= 0.593 g.

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