

CONCLUSIONS.

- (1) 1 Wet relaxed < 1 Dry relaxed
- (2) (a) When the loop length increases, dry relaxed width of the fabric increases (ie: shrinkage of the machine decreases)
- (b) When the loop length increases, wet relaxed width of the fabric increases. (ie: shrinkage off the machine decreases)
- (c) Shrinkage from production stage to Dry relaxed stage is around 18%
- (d) Total shrinkage from the production stage to wet relaxed state is around 30%.

Already it is known, by past experience of garment manufacturers, that the shrinkage of knitted fabric is a great problem to be solved.

Following statements can be deduced from (a) and (b)

- (i) The fabric lay should be relaxed prior to cutting.
- (ii) The fabric knitted from small loop lengths may give higher shrinkages.
- (3) g/m^2 decreases as the loop length increases. (when yarn count is constant)
- (4) The relation between c/cm w/cm and loop length can be represented as follows:

$$c/cm = \frac{A}{l^m} \qquad w/cm = \frac{B}{l^n}$$

A, B, m, n are constants.

A large range of loop length should be used to find more acceptable numerical values for A, B, m, n.

This experiment gives;

$$(c/cm)_{\text{Dry}} = \frac{79.07}{1.45} \quad (c/cm)_{\text{Wet}} = \frac{117.5}{1.896}$$

$$(w/cm)_{\text{Dry}} = \frac{17.54}{1.3} \quad (w/cm)_{\text{Wet}} = \frac{22.59}{1.414}$$

- (5) The loop length is a very useful variable to identify plain knit fabrics, and it can be used to reproduce a given plain knit fabric. In this case, it is more reliable than w/cm value and g/m^2 since;
- (a) It is not affected by the distortions.
 - (b) The loop length can be found easily.
 - (c) There are several methods to set the required loop length
 - (d) These methods produce less substandard fabric when the required loop length is being set.
- (6) The project could be developed by spreading the range of loop length.
It is the time to construct another project to find out the effects of width spreader.

APPENDIX

Weight of 100 m of yarn

1.327g 1.355g 1.348g 1.368g 1.348g

Average : 1.3492g Table 1

Time for one revolution of the machine

4.74 sec 4.76 sec 4.74sec 4.75 sec 4.78 sec 4.72 sec

Average : 4.748 sec Table 2



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FB setting	Yarn speed (m/min)					Average
29.5	64.6	64.4	64.2	64.4	64.5	64.42
34.5	66.2	66.0	66.3	66.0	66.3	66.16
39.5	68.1	68.1	68.3	68.4	68.1	68.2
44.5	69.9	69.9	69.8	69.8	69.9	69.86
49.5	71.5	71.5	71.6	71.5	71.5	71.52
54.5	73.2	73.1	73.2	73.3	73.6	73.28

Table 3

FD SETTING	LENGTH OF 100 LOOPS(CM)										AVERAGE			
29.5	22.5	22.4	22.5	22.5	22.5	22.65	22.5	22.6	22.6	22.7	22.7	22.7	22.6	22.58
34.5	22.9	22.9	23.0	22.95	22.95	23.25	23.4	23.1	23.05	23.3	23.1	23.0	23.0	23.08
39.5	23.7	23.7	23.6	23.6	23.6	23.6	23.65	23.5	23.9	23.8	23.7	23.8	23.8	23.68
44.5	24.4	24.3	24.2	24.3	24.2	24.3	24.4	24.1	24.4	24.5	24.3	24.4	24.4	24.32
49.5	25.0	24.9	25.0	24.85	24.75	24.75	24.8	24.8	24.9	24.9	25.0	24.75	24.75	24.86
54.5	25.3	25.3	25.7	26.1	25.75	25.7	25.3	25.2	25.8	25.6	25.8	24.75	25.3	25.57

TABLE 4

FB setting	Number of courses in 10 cm				dry relaxed fabric	Average
29.5	253	253	255	258	253	254.4
34.5	242	238	243	241	245	241.8
39.5	232	225	228	226	226	227.4
44.5	218	217	216	221	222	218.8
49.5	212	210	210	210	210	210.4
54.5	203	204	204	203	204	203.6

Table 5

FB setting	Number of wales in 10 cm				dry relaxed fabric	Average
29.5	138	137	136	144	136	138.2
34.5	137	137	136	137	137	136.8
39.5	135	139	133	135	136	135.6
44.5	133	136	125	136	136	133.2
49.5	133	131	133	134	134	133.0
54.5	132	133	135	133	128	132.2

Table 6

FBS	29.5	34.5	39.5	44.5	49.5	54.5
Weight of 25x25 cm ²	6.425	6.253	6.126	5.838	5.745	5.601
	g	g	g	g	g	g

Dry relaxed
fabric

Table 7



FB SETTING	LENGTH OF 100 LOOPS (cm) (Wet relaxed)											AVERAGE	
29.5	22.45	22.45	22.35	22.3	22.7	22.4	22.7	22.9	22.9	22.75	22.75	22.3	22.50
34.5	22.8	23.0	22.7	22.8	23.1	23.0	23.2	23.0	23.2	23.1	23.0	22.8	22.98
39.5	23.3	23.7	23.8	23.7	23.7	23.75	23.7	23.5	23.85	23.8	24.0	23.9	23.66
44.5	24.3	24.2	24.4	24.5	24.3	24.3	24.35	24.4	24.2	24.3	24.2	24.3	24.31
49.5	24.8	25.0	24.9	24.8	24.7	24.7	24.75	24.9	24.9	24.8	24.7	24.8	24.81
54.5	25.4	25.3	25.7	25.7	25.55	25.6	25.4	25.6	25.5	25.5	25.6	25.8	25.55



FB setting	Number of courses in 10cm (wet relaxed)					Average
29.5	255	258	255	263	254	257
34.5	248	247	234	248	246	244.6
39.5	234	236	234	233	231	233.6
44.5	224	225	223	229	227	225.6
49.5	216	219	218	218	217	217.6
54.5	209	212	208	207	206	208.4

Table 9

FB Setting	Number of wales in 10cm (wet relaxed)					Average
29.5	166	163	163	161	160	161.0
34.5	163	156	165	162	156	160.4
39.5	157	160	157	162	156	158.4
44.5	158	155	160	157	153	156.6
49.5	150	156	153	158	153	150.4
54.5	155	150	153	148	153	151.8

Table 10

FB setting	29.5	34.5	39.5	44.5	49.5	54.5
weight of 25x25cm ²	7.682 g	7.437 g	7.075 g	7.056 g	6.76 g	6.9 g

Table 11

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