

1 x 1 RIB 85

Knitting Production - 14 and 18 gauge

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## 1. INTRODUCTION

In order to supplement and extend the STARFISH 1 x 1 rib data base a series of fabrics were knitted at Meridian Fabrics of Nottingham.

Twenty five qualities were produced on 2 gauges of 1 x 1 rib machine, 14 gauge, and 18 gauge, using 5 counts of yarn, Ne 20's, 26's, 32's, 36's and 42's at five different stitch lengths. Each piece is approximately 25 metres in length.

The yarn used in these trials was that remaining from previous trials on rib and single jersey and therefore should be compatible with the existing data base.

Approximately 5 metres from each roll were tested in the greige state, which will leave approximately 20 metres on each roll for finishing.

The exact finishing route will be decided upon later.

## 2. DETAILS OF YARNS

Five yarns were used:

<u>Count</u>	<u>Quality</u>	<u>Supplier</u>
1/20'scc	KCW	Courtaulds - Kent Mills
1/26'scc	-	Carrington Viyella
1/32'scc	KCW	Courtaulds - Mars Mills
1/36'scc	KCW	Courtaulds - Mars Mills
1/42'scc	-	Carrington Viyella

Note: All the yarns were supposed to be combed. However the poor appearance of the 1/20'scc was not consistent with a good quality combed yarn.

As the yarns had been in storage for a long period they were re-tested for count, friction, twist and strength.

In order to obtain enough cones for these trials, a great deal of rewinding had to be carried out.

### Comparison of new and old yarn count test results

	<u>New Test</u>	<u>Old Test</u>
1/20'scc	19.6'scc	19.8'scc
1/26'scc	26.3'scc	26.97'scc
1/32'scc	32.0'scc	31.6'scc
1/36'scc	37.2'scc	37.0'scc
1/42'scc	41.1'scc	42.42'scc

### 3. KNITTING PLAN

Machine No. 283 - 14 gauge 1 x 1 rib  
Model: Monarch LRB  
26" diameter, 1148 x 2 needles, 48 feeders  
Yarns used: Ne 1/20's, 1/26's

	<u>Stich Length cms</u>					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
1/20's	-	.285	.306	.326	.350	.368
1/26's	.267	.285	.306	.326	.350	-

Machine No. 159 - 18 gauge 1 x 1 rib  
Model: Monarch LRB  
30" diameter, 1680 x 2 needles, 59 feeders in use.  
Yarns used: Ne 1/32's, 1/36's, 1/42's

	<u>Stich Length cms</u>					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
1/32's	-	.275	.289	.303	.318	.334
1/36's	-	.275	.289	.303	.318	.334
1/42's	.260	.275	.289	.303	.318	-

The tightest possible stitch lengths were established by taking the machine setting adjustment to a point where it starts to give trouble and then slackening by approximately 5% which should ensure a commercially viable tightness. This was repeated with both gauges.

Once the tightest stitch length had been established the others were set at 5% intervals (slacker).

#### Samples produced

##### 14 gauge

5 samples 25 metres long from 1/20'scc  
5 samples 25 metres long from 1/26'scc  
10 samples

##### 18 gauge

5 samples 25 metres long from 1/32'scc  
5 samples 25 metres long from 1/36'scc  
5 samples 25 metres long from 1/42'scc  
15 samples

Total 25 samples = 625 metres

4. FABRIC CODES

Each piece was marked at the beginning and end of every piece with an identification number:

e.g. Code R18/1-32/289/1

Decode Rib, 18 gauge/yarn Ne 1/32's/stitch length .289cms/piece No. 1.

5. WEIGHTS KNITTED

14 gauge

<u>Piece Code</u>	<u>Piece Weight Kg</u>
14/1-20/285	8.25
14/1-20/306	7.6
14/1-20/326	6.8
14/1-20/350	6.95
14/1-20/368	6.7
14/1-26/267	5.6
14/1-26/285	6.0
14/1-26/306	6.5
14/1-26/326	5.2
14/1-26/350	5.05
1 roll scrap	<u>2.25</u>
	<u>66.9kg</u>

18 gauge

18/1-32/275	5.55
18/1-32/289	6.0
18/1-32/303	5.7
18/1-32/318	5.0
18/1-32/334	5.3
18/1-36/275	6.55
18/1-36/289	5.0
18/1-36/303	4.6
18/1-36/318	5.2
18/1-36/334	5.1
18/1-42/260	4.6
18/1-42/275	5.10
18/1-42/289	4.6
18/1-42/303	4.2
18/1-42/318	<u>4.4</u>
	<u>76.9kg</u>

6. PIECE WEIGHTS AFTER GREIGE SAMPLING

Approx. length 20m

14gauge 26" diameter 1148 x 2 needles

<u>Piece Code</u>	<u>Piece Weight Kg</u>
14/1-20/285/1	6.5
14/1-26/285/2	4.5
14/1-26/267/3	4.25
14/1-26/306/4	5.5
14/1-20/306/5	6.0
14/1-20/326/6	5.75
14/1-26/326/7	4.00
14/1-26/350/8	4.00
14/1-20/350/9	5.5
14/1-20/368/10	<u>5.5</u>
	<u>51.5</u>

18gauge 30" diameter 1680 x 2 needles

18/1-36/275/1	5.5
18/1-32/275/2	4.5
18/1-42/275/3	4.0
18/1-42/260/4	3.5
18/1-42/289/5	3.75
18/1-32/289/6	5.0
18/1-36/289/7	4.0
18/1-36/303/8	4.0
18/1-32/303/9	4.75
18/1-42/303/10	3.25
18/1-42/318/11	3.75
18/1-32/318/12	4.25
18/1-36/318/13	3.75
18/1-36/334/14	4.25
18/1-32/334/15	<u>4.5</u>
	<u>62.75</u>

7. COMMENTS

The knitting was carried out in the WN department at Meridian and as far as possible, standard procedures regarding machine adjustments were adhered to. The way in which this was carried out on their rib machines was as follows:-

The dial cams were kept at a constant depth, just deep enough to knock over the old loop. Adjustments to the loop length were mainly achieved by raising or lowering the dial and then levelling up on the cylinder cams.

Note: if the dial height was kept constant it would be difficult to cover the five stitch lengths by adjusting the cylinder cams only.

On the 18 gauge the fabric was getting very difficult to control at the slack end of the spectrum, in other words it would appear that this could be on the limit of slackness. So, at least as far as the 18 gauge is concerned, both the tightest and slackest fabrics had been produced.

The course length was measured on the knitting machines by the Welmstar meter (IIC). As Meridian also had a Welmstar it was decided to take readings with both instruments to see if they differed. These readings are shown on the production sheets and the conclusion drawn is that both instruments gave similar readings, allowing for the fact that these instruments have a  $\pm 1\%$  tolerance.

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International Institute For Cotton,  
Kingston Road, Didsbury,  
Manchester M20 8RD.  
TECHNICAL RESEARCH DIVISION.

NAME: J.T. Ealan  
SAMPLE NO: .....

Knitting Ref. No.		Testing Lab. Ref. No.				Date Submitted		Date Returned		
		1158				26-6-85				
Yarn Details:										
		Kewt Mill 20 <sup>s</sup>		CV 42	RESULTS		CV 26	Hars. 36	TESTED BY	
FRICTION		0.09	0.01	0.09	0.01	0.09	0.01	0.08	0.01	BA
COUNT	Tex.	30.2	0.5	14.4	0.4	22.5	0.8	15.9	0.2	BA
	C.C.	19.6	0.3	41.1	1.0	26.3	0.9	37.2	0.5	
TURNS/ <del>mm</del> metre	SINGLE	611.0	34.6	889.5	58.8	725.5	61.5	796.0	66.5	
	FOLDED									
TWIST FACTOR		33.6		33.7		34.4		31.7		
	AlphaTex. Eng.	3.5		3.5		3.6		3.3		
TWIST LIVELINESS		38.3	4.1	70.7	4.7	54.1	2.7	59.5	5.0	
USTER BREAKING LOAD										
USTER EXTENSION										
USTER EVENNESS										
SES		382.3	14.9	164.2	7.2	273.3	9.5	216.6	7.4	EM
	<del>mm</del> metre	6.7	0.2	6.1	0.2	6.8	0.2	6.6	0.1	

COMMENTS:

Kewt Mill-friction - 1 cone gave readings of 0.2  
4 other cones were 0.08 → 0.13



International Institute For Cotton,  
 Kingston Road, Didsbury,  
 Manchester M20 8RD.  
TECHNICAL RESEARCH DIVISION.

NAME: .....

SAMPLE NO: .....

Knitting Ref. No.	Testing Lab. Ref. No.	Date Submitted	Date Returned	
	1158			
Yarn Details:				
	Mars 32	RESULTS		TESTED BY
FRICTION	0.08 0.01			
COUNT Tex cc	16.4 0.7			
	32.0 1.3			
TURNS/ <del>mm</del> SINGLE netre FOLDED	797.5 48.1			
TWIST FACTOR AlphaTex	34.3			
	Eng. 3.6			
TWIST LIVELINESS	55.3 3.3			
USTER BREAKING LOAD				
USTER EXTENSION				
USTER EVENESS				
SES g. %act.	243.5 9.4			GM
	6.6 0.2			

COMMENTS:

48 FEEDERS

Machine: MONARCH 26" No 283  
L-R B

Gauge: 14-6-1 X 1213  
WELMSTAR READINGS  
110 / MERIDIAN

Number of Needles: 1148 X 2  
2支 needle change

Piece No.	Course Length Target	Mean Start of Piece	Mean End of Piece	C/3cm on Machine	Width at Roller	Width on Roll	Revs Produced	Piec Weigh Kg
14/1-20/285/1	654		<del>649</del> 647	46 (50)			860	8.25
14/1-26/285/2	654		<del>650</del> 652	40/41 (45)			780	5.6
14/1-26/267/3	613		<del>612</del> 612	44 (48)			830	6.0
14/1-26/306/4	702		<del>700</del>	37 (44)			712	6.5
14/1-20/306/5	702		<del>700</del>	40 (44)			764	7.6
14/1-20/326/6	748		<del>747</del> 748	35 (39)			677	6.8
14/1-26/326/7	748		<del>748</del> 747	32 (36)			625	5.2
14/1-26/350/8	804		<del>804</del> 805	29 (33)			573	5.05
14/1-20/350/9	804		<del>802</del>	31 (35)			608	6.95
14/1-20/368/10	845		<del>844</del> 843	29 (33)			573	6.7

↑

NO IN BRACKETS ARE CAL. C/3CMS @ 110 M/C

FIGURE 3

