

**ACCELERATED DIMENSIONAL STABILITY TEST
METHOD DESIGNED FOR 100% COTTON SINGLE
JERSEY WEFT KNIT FABRIC IN URGENT SITUATIONS**

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Sri Lanka

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DECLARATION

“I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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ABSTRACT

Standard dimensional stability test methods have higher lead times. In a manufacturing environment a dimensional stability test method with shorter lead time is an option provided under some international standards. Such test methods have been developed based on one specific machine designed exclusively for this purpose. As a solution, an alternative test procedure was developed in an existing washing machine for industrial use.

The Miele automatic front loading washing machine was selected for this research. A washing and drying procedure developed with 30-minute washing procedure and 30-minute tumble drying procedure. This research related only to 100% cotton single jersey products. The key features of the BS EN ISO 6330:2012 washing and drying procedure was compared with those of the proposed washing and drying procedure.

A pilot run with five samples was done with three different weights against proposed washing and drying procedure for conditioned, unconditioned states and BS EN ISO 6330:2012 washing and drying procedure. Thirty samples were tested in one material to confirm the consistency of the new washing and drying procedure. Twelve samples representing four different GSM values were tested according to BS EN ISO 6330:2012 and proposed washing and drying procedure and a satisfactory correlation was obtained.

DEDICATION

I lovingly dedicate this dissertation to my parents, wife and two sons, who supported and encouraged me in every way during my studies.

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TABLE OF CONTENTS

DECLARATION	i
ABSTRACT	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
LIST OF FIGURES AND TABLES	vi
Figures.....	vi
Tables.....	vi
LIST OF ABBREVIATIONS AND ANNEXURE	vii
Abbreviations	vii
Annexure	vii
1 INTRODUCTION	1
1.1 Objectives	3
1.2 Significance of the study	3
1.3 Scope of the study	3
2 LITERATURE REVIEW	4
3 METHODOLOGY	8
3.1 Research plan	8
3.2 Materials used.....	10
3.3 Equipment used	10
3.4 Wash and drying program	12
3.5 Sample preparation.....	13
3.6 Testing and data analyzing procedures	14
4 RESULTS AND ANALYSIS.....	16
4.1 Study 1: Proposed wash program-A trial run	16
4.2 Study 2: Hydro extraction RPM.....	19
4.3 Study 3: Performance of the new procedure	22
4.4 Study 4: Five washes trial	25
4.5 Study 5: Relationship between two procedures	27
4.6 Test procedure	28
5 CONCLUSION.....	29
6 REFERENCES	32

LIST OF FIGURES AND TABLES

Figures

Figure 1: FOM 71 CLS	11
Figure 2: Miele professional PW 6055 Vario	11
Figure 3: Precision tumble dryer (M 223/2) SDL Atlas	12
Figure 4: Test specimen size and drawing method	14
Figure 5: Length shrinkage test results: Rapid Wash 60°C vs. BS EN ISO 6330:2012	17
Figure 6: Width shrinkage test results: Rapid Wash 60°C vs. BS EN ISO 6330:2012	18
Figure 7: 120 GSM-hydro extraction RPM versus shrinkage % performances.....	19
Figure 8 :145 GSM-hydro extraction RPM versus shrinkage % performances.....	20
Figure 9 :160 GSM-hydro extraction RPM versus shrinkage % performances.....	21
Figure 10: Rapid Wash 60°C vs. BS EN ISO 6330:2012 performance.....	24
Figure 11: Five washes length shrinkage	26
Figure 12: Five washes width shrinkage.....	26

Tables

Table 1: Proposed test procedure performance table	9
Table 2: Fabric material details of study1 to study5	10
Table 3: Washing & drying parameter comparison	12
Table 4: Additional information for washing & drying parameter comparison	13
Table 5: Determination of Rapid Wash 60°C tumble dry cycle	16
Table 6: Initial washing trial length shrinkage test results.....	17
Table 7: Initial washing trial width shrinkage test results.....	18
Table 8:120 GSM fabric hydro extraction RPM and shrinkage %	19
Table 9:145 GSM fabric hydro extraction RPM and shrinkage %	20
Table 10:160 GSM fabric hydro extraction RPM and shrinkage %	21
Table 11: Washing & drying parameter comparison	22
Table 12: Additional information for washing & drying parameter comparison	22
Table 13: Rapid Wash 60°C vs. BS EN ISO 6330:2012 test results	23
Table 14: Rapid Wash 60°C vs. BS EN ISO 6330:2012 statistical data summary.....	24
Table 15: Five washes performance of Rapid Wash 60°C Vs BS EN ISO 6330:2012	25
Table 16: Test results for different fabric GSM's	27
Table 17 : ANOVA table for length shrinkages without conditioning	28
Table 18 : ANOVA table for width shrinkages without conditioning	28

LIST OF ABBREVIATIONS AND ANNEXURE

Abbreviations

AATCC	American Association of Textile Chemists and Colorists.
BS	British Standard
cV%	Coefficient of variation
EN	European Norm
ISO	International Organization for Standardization
M&S	Marks & Spencer
RPM	Revolutions per minute
5N ^h	50 °C Normal washing procedure in BS EN ISO 6330:2012
GSM	Grams per square meter
CPI	Courses per inch
WPI	Wales per inch
TPI	Twist per inch
μ	Mean
σ	Standard deviation

Annexure

Annexure	Description	Page
Annexure-i	Accelerated dimensional stability test procedure	34