

**Application of fluorocarbon and fluorine free finish on
textile substrate for enhanced hydrophobicity**



By

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Statement of Submission

The title of my research project “Application of fluorocarbon and fluorine free finishes on the textile substrate for enhanced hydrophobicity“is being submitted for completion of MS Textile degree from School of Textile and Design, University of Management and Technology, Lahore, Pakistan.

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Declaration

I hereby declare that all the information in this thesis is the result of my concerted efforts and my original work. This research work, to the best of my knowledge and belief, reproduces no material previously published or written, or that has been accepted for the award of any other degree or diploma, except where due acknowledgement has been made in the text.

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Abstract

Development of water repellent fabric with fluorine free and fluorocarbon finish. Pad-dry-cure method was used for the application of finish. Mechanical and comfort properties have tested and comparative study was conducted between fluorine free finish and fluorocarbon finish. Different concentrations of fluorocarbon and fluorine free finish are applied onto the fabric. Tensile and tear strength was measured for both fluorine free and fluorocarbon finished fabric. Fluorine free finished fabrics shows less tensile and tear strength as compared to fluorocarbon finish fabric. The comfort property of fluorine free finish was also more as compared to fluorocarbon. According to environmental attributes fluorocarbon is considered as carcinogenic and toxic whereas fluorine free finish was eco-friendly in nature and not harmful to human health.

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Chapter 1

Introduction

1.1 Background

To understand the term water repellency, it is important to know that what it is and what is the importance of water repellency. It is done or applied in the form of finish by means of a chemical. To know that how this finish is applied it is important to know what is a finish. Finishing is the last manufacturing step in the production of textile fabric as it is an integral part of wet processing. It is the stage where the final properties of the fabric are developed. This process is not restricted to only wet processing alone since any operation for improving the appearance or use fullness of a fabric after it leaves the loom and knitting machine can be consider a finishing step. Finish can be either chemical that changes the physical properties aesthetic of fabric and texture change or characteristic of surface brought about by manipulating the fabric physically with mechanical devices[1].