A NuDURA PRESS FOR COTTON AND BLENDED POLYESTER/COTTON FABRICS

BIRO PENYELIDIKAN DAN PERUNDINGAN
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ABSTRACT

Ten new recipes of Durable Press were developed and experimental trial run on 100% cotton shirting fabric at the Textile Chemistry Laboratory, Programme of Textile Technology, Faculty of Applied Science (FAS), Universiti Teknologi MARA (UiTM), Shah Alam. The treated fabrics were tested and analyzed for properties related to Durable Press such as width, thickness, weight, crease recovery angle, stiffness, tensile and tearing strength, drape coefficient and abrasion resistance. The results showed that recipe 9 was the most suitable for cotton shirting fabric.

Each new recipe of Durable Press contains chemicals of micro emulsion softener, functional poly-siloxane with reactive polyoxyal-kylenes softener, alkyl modified dihydoxy ethylene urea cross-linking agent, magnesium chloride and acetic acid of certain concentration.

This research started with the trial run of the manufacturing process of recipe 9 together with recipes 7, 8 and 10 at the Dyeing And Finishing Mill, Textile Division, AMDB Berhad, Kamunting, Perak. The four were chosen as they had similar concentration of chemicals in the recipes.

The fabrics chosen for the research were 100% cotton and, 65/35 blended polyester/cotton of light and medium weight fabrics. Each fabric was treated with recipes 7, 8, 9 and 10. These treated fabrics were then tested and analyzed for the same properties as the ten new Durable Press recipes experimented earlier, with the additional testing and analyzing of fabric density, yarn count and appearance. The untreated fabric and fabric treated with normal resin of Durable Press were also

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CHAPTER I

INTRODUCTION

1.1 Background

Durable Press finish has been applied on to cellulosic-based fabrics namely cotton or blended polyester/cotton for quite sometimes since 1930. It was widely used on such fabrics so as to overcome the existing of wrinkles and to retain good shape with pressed smooth appearance and soft, comfortable texture. These improved properties enhance the use of the fabrics. However, the application of the Durable Press tends to reduce the tensile strength and abrasion resistance of the fabrics. Thus more studies were conducted to develop and further improve the Durable Press until a most suitable one was achieved. A normal resin, thereby termed as a standard Durable Press was established, and used by many dyeing and finishing textile mills.

A standard Durable Press finish consists mainly of resin, softening agent, an acid and a salt. The resin and softening agent vary in trade names, nevertheless the function of the resin is to cross-link the fibre molecules and together with the softening agent, they are able to improve the aesthetic qualities of the fabric. The acid functions as a catalyst and normally acetic acid is used; while the salt acts as fillers, and magnesium chloride is commonly used in the process.

The fabric properties related directly to Durable Press are stiffness, appearance, crease recovery angle, drape coefficient, abrasion resistance, tensile strength and tearing strength. These properties need to be improved