



WEAVING TECHNOLOGY: ADVANCES AND CHALLENGES II

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ABSTRACT

This paper reviews the recent advances in weaving industry and addresses the challenges that face the weaving industry. The paper sheds the light on how the weaving machine manufacturers and woven fabric producers might strengthen the weaving industry by further advance the technology and taking advantages of the current and new advances in weaving technologies.

KEYWORDS: Weaving, Automation, Jacquard, Pattern Change.

INTRODUCTION

Recently weaving machine producers introduced to the woven fabric manufacturers a sizeable number of technological advances. Examples of such advances are higher speeds than seen before, a higher level of automation, a new Jacquard shedding concept, waste reduction, and on-line quality monitoring. These advances may enable the developed nations to drastically lower the labor cost and may be able to compete in the commodity fabric markets. Despite these significant development in weaving, weavers in the developed and developing nations are faced with serious competition from other fabric forming systems such as needlepunching and hydroentanglement nonwoven technologies. These nonwoven technologies established themselves in numerous markets and are expected to seriously compete with weaving industry in carpet and apparel markets. This paper reviews the recent advances in weaving industry. Additionally, it addresses the challenges that face the weaving industry

and how the weaving machine manufacturers and woven fabric producers might strengthen the weaving industry by further advance the technology and taking advantages of the current and new advances in weaving technologies and supporting systems.

ADVANCES IN WEAVING

Weaving Speeds

At recent machinery shows (ITMA' 99, ATME-I' 2001), weaving machine manufacturers showed a broad range of machines with higher speed and rate of filling insertion (RFI) than seen before. The fabric quality, which is significantly impacted by efficiency, is a must for the fabric manufacturers to stay competitive. The interrelationships between machine speed, weaving efficiency, fabric construction parameters and fabric quality must be considered when acquiring new machines. In the following sections, the fastest weaving machines that were