5 Product Development Questions You've Asked

By Elizabeth White, [TC]²

What is the optimum efficiency for a marker? Which companies sell CAD systems for patternmaking, grading, and marker making? Why does one factory use so much fabric for plaid shirts? What is boiled wool? Where can I learn how to make and grade patterns?

At [TC]², our main goal is to assist companies within the softgoods industry, so we are beginning a series of articles to address product development questions and topics relevant to our industry. Since product development is a broad subject, some articles will provide information on a particular industry issue while others will focus on specific CAD features and/or trends in the field. As part of this effort, I will list available resources, such as [TC]² and other collaborative industry organizations, especially when covering issues that may be difficult to resolve. My background includes experience in woven fabric, apparel, and automotive product development. Since coming to [TC]², I have taught product development seminars in addition to working with our manufacturing, consulting, and research efforts. As an introduction to our series, this is a sampling of the types of questions I receive every day and the kind of insight I provide. Look for future articles addressing these types of topics in greater detail.

1. What is the optimum efficiency for a marker?
Everyone would like to achieve marker efficiency of 100%. But it is virtually impossible to answer this question with a numerical percentage that is achievable across multiple product types, materials, size ranges, and cutters. The real answer is dependent on many kinds of variables. Some of those include the pattern shapes and whether they fit together for common line cutting; fabric width as a multiple of these interlocking pattern groups; ability of pattern pieces to be reoriented on the material; type of cutting blade and its requirements for movement; and tolerance on cut part size and shape. There may be many more variables depending on an individual product's specifications and components. If your company is interested in exploring this topic further, [TC]²'s techexchange.com website includes several articles. One newsletter article from October 2010, Material Utilization, written by Gloria McConnell, covers many of the process variables associated with conserving fabric use. Search marker efficiency or material utilization for links to other articles. Our Industry Services team also works with companies to determine appropriate efficiency goals based on individual products and their respective production processes.

2. Which companies sell CAD systems for patternmaking, grading, and marker making?
There are many CAD vendors for pattern, grading, and marking programs. Several have placed their systems at [TC]² supporting our technology demonstration and research activities as associate members of [TC]². CAD capabilities and technologies for pattern input, grading, manual and automatic marker making, Made to Measure, cutfile generation, 3D visualization, style/fit communication, color management, digital

textile printing, and PLM are regularly demonstrated for visitors to our center in Cary, NC. If you are interested in obtaining information about CAD vendors and/or scheduling a tour of our technology demonstration center, please contact us. Many types of companies are researching CAD systems so CAD vendors will be included in the searchable database when [TC]² relaunches its techexchange.com website in the coming months. The database will provide information for companies seeking to identify technologies for both product development and production processes. Our Industry Services team can facilitate this process by making contacts, reviewing needs, researching needed functionality, and testing out various process scenarios. [TC]² partners with multiple CAD vendors, continuing its vendor-neutral practice in the industry.

3. Why does one factory use so much fabric for plaid shirts?

There are many possible answers to this question. Different factories could be working with different fabric widths, sizes, plaid patterns and repeats, matching rules, and manufacturing process requirements. In the context of this inquiry, the same style shirt was manufactured in more than one factory, but no other factory was using a comparable quantity of fabric. The factory was using a CAD marker making system with an expectation that the markers would be efficient. Further research into the fabric characteristics confirmed the consistency of plaid repeat and minor effect of bow so that utilizing CAD marker capabilities to predict actual fabric consumption was possible. However, an inexperienced marker maker did not understand the matching capabilities of the CAD system and the factory owner was not concerned with fabric efficiency. Because of the lack of CAD training and interest in reducing waste, an excessive amount of fabric was being used to match pocket pieces to body pieces. Resolution to this issue involved sending a CAD trainer to the factory to train users on the marker system capabilities. However, future contracts were not placed with the factory. Occasionally, we receive questions where it appears that a particular process is out of control. Our Industry Services team is able to sort out the possible root causes of these issues to determine appropriate actions to resolve the situation. [TC]² also utilizes its extensive network of contacts to direct companies to additional resources that may be required.

4. What is boiled wool?

We regularly field questions about fabric properties and suitability for end use. In this area, we often direct inquiries to sources of information where our expertise is limited. According to a contact with Australian Wool Innovation, the term boiled wool is used to describe garments which have been heavily milled or felted. Some may use this term because of the belief that this appearance is created by boiling the garment where in practice this is not the case. Because of the greater stiffness, thickness, and density of boiled wool garments, they tend to be restricted to outerwear, such as jackets and vests. [TC]² did not have the answer in-house after consulting numerous fabric resources. However, since we collaborate with many organizations, I was able to direct the requestor to the AWI website and other organizations for future questions. Frequent fabric questions relate to defining terms, processes, materials, test methods, and production issues. For this reason, terminology is an important part of our educational

efforts, both formally and informally. Our seminars emphasize use and understanding of terminology as a strategy that supports successful communication within the product development process.

5. Where can I learn how to make and grade patterns?
[TC]² is a great place to learn about patternmaking and grading. These seminars feature lots of attendee participation, hands-on industry exercises, and discussions on how to solve common problems. All of our seminars are taught by industry specialists using customary industry tools. Two seminars are currently scheduled for this spring: Pattern Development for March 28-30 and Grading for Fit for May 2-4. The seminar dates for How to Build a Tech Pack will be announced in an upcoming newsletter issue. If you are interested in registering for one of these seminars, please contact Debra Gill. We also offer courses on other topics, such as manufacturing, supply chain, costing, and sewing. For a complete list and description of our courses, follow this link to our Course Catalog.

Expect more information on these and other product development topics in future issues of our newsletter. If you have specific product development topic suggestions or an interest in analysis work or customization of our programs for your company, you may send those ideas and inquiries to us by completing the form in this link.

February 2011