



Case Study

Reducing Carpet Defects and Raw Materials Costs Saves Over \$1.3 Million per Year

The Opportunity

A large carpet manufacturer, concerned about manufacturing costs, began to identify some of the sources of these costs. One of the areas of opportunity was in reducing seconds, holds, and claims for bowed carpet. Losses due to bowed carpet were amounting to \$780,000 annually. This had been a problem since day one on certain styles. Managers and operators had been working on the problem for years with little or no success. What could they try that they had not tried before? The answer was to try a new approach. Management called QualPro for help.

The Approach

Operators and line management from the tufting and coating departments were assembled to address the problem of carpet bow. Flowcharts of both departments were constructed. Almost immediately ideas for improvement began to surface. There was other work to be done, but the group understood that breakthrough would come from the use of QualPro's MVT® process.

The Test

Many ideas were generated in multiple brainstorming sessions, but in the end, 14 factors met the practical, fast, and cost-free criteria. The next step was to use QualPro's MVT® process to examine the impact of the ideas on carpet bowing.

<i>Idea</i>	<i>Old</i>	<i>New</i>
Pile Height	Short	Long
Primary Backing	Heavy	Light
Sewing Procedure	A	B
Tufting Machine	16	23
Tenter Adjustment	Normal	Tight
#1 Roll	Low	High
#2 Roll	Low	High
Coater Speed	Spec	Spec -20
Tufting Machine Speed	Fast	Slow
Bow Roller	Out	In
Skew Roller	Out	In
Greige Roll Width	12 ft	15 ft
Shift	Day	Night

The Results

The results of the experimentation revealed that the bow and skew rollers were both significant factors. When both rollers were in the "in" position, carpet bowing decreased. As a result of the project, claims and internal costs to straighten the bows were reduced by \$350,000 per year.

The biggest benefit, however, came from discovering something that was not important to the product. Years earlier the company had changed to a heavier primary backing to reduce bowing. MVT® experimentation showed conclusively that the more expensive heavy backing had no impact on performance. The company was able to go back to the less expensive light backing at a cost savings of approximately \$1 million per year!