Steelcase

STATISTICA™ CASE STUDY

Steelcase Inc. Reduces Paint Millage Variation with *STATISTICA Enterprise-wide SPC System* (*SEWSS*)

BACKGROUND. Steelcase Inc. helps individuals and organizations around the world work more effectively by providing knowledge, products and services that enable customers and their consultants to create work environments that harmoniously integrate architecture, furniture and technology. Founded in Grand Rapids, Michigan, in 1912, the company has led the office furniture industry in sales every year since 1974. Its product portfolio includes interior architectural products, furniture systems, technology products, seating, lighting, storage and related products and services.

MISSION. Steelcase engineers and quality professionals are charged with designing and maintaining processes, with the objective of producing consistently conforming equipment that meets customer requirements, while at the same time minimizing the associated costs. Since 1999, Steelcase Inc. plants have been introducing new technology to their production facilities, with dramatic success stories, both in the short-term and the long-term, and to the benefit of both Steelcase Inc., from a business perspective, and their customers, from a product quality perspective. Steelcase currently implements Lean Manufacturing, also called the Steelcase Production System (SPS), where a flow-manufacturing environment means production is pulled by customer demand.

CHALLENGE: REDUCING PAINT MILLAGE. This project began by evaluating the state of three existing paint lines, two powder coat operations and a liquid line, which are used to apply paint from a widely varying palette of colors to the Office Systems. Steelcase customers require that millage be enough to provide sufficient coverage of the systems. Traditionally, reports on the paint millage had summarized the performance of these lines with the average of the paint thickness, and the variation in this process was not largely considered. As such, using the prior SPC and monitoring tools, the average millage was consistently within customer specifications. However, commonly more paint was applied than necessary to satisfy customer requirements, at significant material expense to Steelcase.

SOLUTION UTILIZING *SEWSS*. A team was created for the purpose of improving the paint process across these three lines. Specifically, the objective was to lower the average millage, and more importantly, to reduce the variation in the application of paint for the five most commonly used paint colors. The team consisted of the paint superintendent, finishing tech engineer, and quality assurance. They used a technique called Process Qualification, a standardized method developed by Steelcase, to evaluate their processes and products and to "qualify" their processes. The team used the Data Collection and Database Management tools provided by *SEWSS* to collect and store the data; they then used the Statistical and Graphical Data Analysis tools of *STATISTICA* to learn from the data that they collected, and to better understand the sources of variation in their process. Specifically, analysis tools such as Analysis of Variance and Box-and-Whisker Plots were used to identify sources of variation caused by inconsistencies in the process, and the team was able to use this information to introduce major process improvements.

RESULTS. This effort was a tremendous success. The average paint millage on one powder coat line was reduced by 40%. More importantly, the variation was reduced dramatically. The paint process continues to provide Steelcase customers with desirable coverage of their systems, but at much less expense to Steelcase as a result of eliminating wasteful overages in the paint application. In the first year following these process improvements, in these three paint lines alone, the Steelcase Systems Plant was able to document material savings of more than 3 times the total investment in all of the *SEWSS* software, training, and implementation services purchased. Steelcase continues to implement *SEWSS* throughout its manufacturing facilities and train its engineering and quality professionals in statistical process control techniques, as well as higher-end statistical methodologies.

Average paint millage on one powder coat line reduced by 40%.

Documented Savings: in one year a material savings of more than 3 times the total investment in all of the *SEWSS* software, training, and implementation services purchased.

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