

### SEWSS Successfully Integrates with Steelcase's Shop Floor Coordinate Measuring Machine (CMM)

**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.** A team was created to improve process control for automatic die presses and manual press brakes in the Steelcase Core Steel division. They used a technique called Process Qualification, a standardized method developed by Steelcase, to evaluate their processes and products and to "qualify" their processes.

**SOLUTION UTILIZING SEWSS.** Due to the success of SEWSS in its other manufacturing facilities, Steelcase decided to use *STATISTICA Enterprise-wide SPC System (SEWSS) Interactive Quality Control Charts* to monitor inspection results. According to Mike Linde, Quality Engineer at Steelcase, "The enterprise wide feature of SEWSS makes it easy to share data for collaborative problem solving. Current data is available for review almost anywhere in the plant. Real time charts and reports can be reviewed on the shop floor, at an Engineer's desk, or at a team meeting." SEWSS helped quickly identify that measurement error was a key source of variation. The team began the process of changing the inspection method from calipers and checking fixtures to inspection with a shop floor Coordinate Measuring Machine (CMM). Technical support from Statsoft worked with Steelcase and the CMM manufacturer, CNC Engineering of Grand Rapids, to integrate SEWSS with the CMM. This gave the PQ team the ability to output the data collected directly into the SEWSS database. "We found the data to be more reliable and accurate once we had the CMM feeding data directly into the SEWSS database," says Linde. With the data feeding directly in the database, the latest data is always available for quick analysis with any of the SEWSS modules. "Machine operators, using the Pegasys shop floor CMM for inspection, receive immediate feedback on the quality of key part features and engineers have real time access to the CMM inspection data for solving problems, making continuous improvements, and for verifying on-going capability."

**RESULTS.** SEWSS and StatSoft technical support helped the PQ team solve problems and document process improvements. Short-term capability improved 100% for some part characteristics and corrective action requests from downstream operations were reduced by over 80%. On-going capability continues to be monitored with SEWSS Interactive Control Charts. 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.

Short term capability improves by 100%.

Corrective action requests from downstream operations reduced by 80%.

SEWSS helps Steelcase improve process control and document process improvements.



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