

SUCCESS STORY 83

AUTOMOTIVE AIRBAG SILICONE COATING CURE VERIFICATION



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How did a manufacturer of airbag materials guarantee the quality and safety characteristics of the product?

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Situation and background

For an airbag to function correctly, it must inflate quickly and efficiently. To aid this process, the nylon substrate of the airbag material is coated with a low friction silicone layer. The silicone coating, as part of its application to the nylon substrate, goes through a critical thermal cure process. This is often performed in a tenter (stenter) oven, where the fabric is passed through a convection oven with a very low height restriction. If the silicone is under-cured, there is a risk that the surfaces of the airbag will stick together, preventing correct inflation of the airbag.

The winning solution

- Using a customized Datapaq® Oven Tracker® system (Datapaq StenterPac System), even this difficult varying width stenter oven could now be profiled quickly and safely.
- System allows profiling at full process speed.
- No need for the system to sit on the material, so no risk of fabric damage or the profiler falling through the unsupported fabric.
- Repeatable thermocouple positioning across the fabric.

Savings made

- Process profiling is now performed without downtime, maximizing productivity and eliminating fabric burn.
- Uniform curing has reduced rejects, scrap and their associated costs.
- Line speeds can now be optimized for maximum productivity.
- Process traceability provides protection against costly liability and litigation issues.

KEY FACTS

Customer's End Product
Automotive airbags

Max Temperature Reached
175°C/347°F

Duration of Process (Cure)
1.5 mins.

PRODUCT AND BENEFITS



Datapaq Oven Tracker DQ1860
Datapaq StenterPac
Oven Tracker Insight™
software

- Product temperature uniformity can be measured easily and thus optimized.
- Production throughput can be maximized.