

CIRAS AND IOWA STATE'S CENTER FOR NONDESTRUCTIVE EVALUATION (CNDE) GUIDES GRINDING IMPROVEMENT AT WEILER

ABOUT WEILER. Founded in 2000, Weiler is a cutting-edge manufacturer with 400,000 square feet of manufacturing space and approximately 450 employees located in Knoxville, Iowa. Weiler manufactures equipment for the asphalt paving market, including commercial pavers, remixing transfer vehicles, screeds, tack distributors, soil stabilizers, windrow elevators, compactors, and force feed loaders. Weiler also manufactures rock drills for the mining industry. The facility is equipped with machining tools, welding, powder and wet paint and assembly, allowing Weiler to better control quality and delivery for the majority of their machine components.

THE CHALLENGE. Weiler took control of a new grinding process for making components for its rock drills in 2018 - only to find cracks in the shafts that they made. Company engineers, many of them Iowa State University graduates, turned to CIRAS, the Iowa Center for Industrial Research and Service and part of the MEP National Network™, for help diagnosing the problem. The company didn't have the testing equipment in-house to know what was happening on the surface or just below the surface of the part, because the company had never done it before and changing things wasn't improving the situation.

MEP CENTER'S ROLE. Dave Utrata, project manager with CIRAS and Iowa State's Center for Nondestructive Evaluation (CNDE), used a combination of ultraviolet light and tiny magnetic particles to help the company pinpoint sources of cracking and understand what was going wrong. Utrata's expertise helped the company to zero in on correct grinding procedures. Weiler experimented with new techniques, regularly taking parts to CIRAS for evaluation. This allowed the company to solve the problem by revising the grinding process.

"To make rock drills, you need really hard materials," Utrata said. "When you grind that material into final shape, it's really tricky to grind it properly... If you don't do it exactly right, it will overheat, then contract too much - and that leads to cracking."

"CIRAS helped us zero in on the specific issue that we were seeing. It helped us develop our grinding process and in-house NDA inspection techniques. Through the CIRAS analysis we found there is an art to the grinding process. The resources that CIRAS provided helped us find a timely solution and expertise we can call on again in the future."

-Mark Prachar, Project Engineer

RESULTS



\$10,000,000 in increased or retained sales



\$500,000 in cost savings



\$45,000 in new investment



2 created or retained jobs

CONTACT US



Iowa State University
1805 Collaboration Place,
Suite 2300
Ames, IA 50010



(515)294-3420



www.ciras.iastate.edu

