

CUSTOM MODIFICATIONS



MODELING AND SIMULATION HELPS JECO LAND NEW OPPORTUNITIES

Jeco Plastic Products is a small custom-mold manufacturer of high-tolerance products with a customer base that includes large U.S. and international original equipment manufacturers (OEMs) in the automotive, aerospace, printing and defense industries. When faced with a very difficult situation in its ability to quickly change a product design for a major large German automotive OEM, Jeco needed to upgrade its modeling and simulation from tedious physical testing to a quicker, HPC-based strategy.

Jeco then joined the National Digital Engineering and Manufacturing Consortium (NDEMC) program to gain access to the Ohio Supercomputer Center's (OSC) AweSim initiative. Through this partnership, Jeco gained access to training, experience, expertise, software and hardware

"The complex High Performance Computing (HPC) calculations and our access to supercomputing power enables Jeco to verify the structural integrity of uniquely designed industrial pallets and other structures employing layered thermoplastic materials with unidirectional carbon fiber reinforcement."

— Craig Carson, Jeco Plastics CEO

VIRTUAL DESIGNS. REAL BENEFITS.

that allowed them to go head-to-head with large foreign competitors. Those HPC resources ultimately made the difference in Jeco earning a multi-year major contract to design a complex custom pallet for the German automotive OEM.



LOGISTICS



THE CHALLENGE

Jeco ran into a major technical challenge in its simulation of complex, high tolerance designs. Tedious trial-and-error physical design and testing had become inefficient and could not meet the expectations of a large automotive OEM client. A last-minute requirement for a multi-year project with a major German OEM required immediate action to upgrade or lose out on this major contract.

THE APPROACH

Though the requested change was a small cosmetic alteration, Jeco understood it could possibly result in massive alterations to critical specifications. Jeco had to find a solution quick, so it became part of the NDEMC Midwest Project, which gave them access to supercomputers at OSC and Purdue University. Access to HPC allowed Jeco to quickly analyze a very complex design before making expensive, irreversible tool changes.

THE SOLUTION

Though it took a frightening situation to spur Jeco to jump into HPC, the company has now demonstrated its ability to use HPC modeling and simulation, which has helped pave the way for lucrative projects with major aerospace, automotive and joint product development projects. Those projects include a multi-year contract with annual orders of \$2.5 million during the next five to 10 years along with 15 more jobs and a capital investment of more than \$500,000.