

# **CATAS S.P.A.**

## EXPANDING TEST LABORATORY SERVICES WITH SOLIDWORKS SOLUTIONS



With SOLIDWORKS design, simulation, and technical communication solutions, CATAS has expanded its research, testing, and certification services to the wood and furniture industry, and now offers fast, cost-effective design analysis, documentation development, and sustainability assessment services.

**Challenge:**

Incorporate digital technologies to expand offering by providing more cost-effective approaches to testing, certification, machine design, documentation preparation, sustainability, and rapid prototyping services.

**Solution:**

Implement SOLIDWORKS Professional design, SOLIDWORKS Simulation Professional analysis, SOLIDWORKS Composer technical communication, and SOLIDWORKS Sustainability lifecycle assessment software.

**Benefits:**

- Achieved accurate test results using simulations
- Shortened simulation, documentation creation, and design time
- Realized ability to offer rapid prototyping and sustainability services
- Expanded offering to rapid prototyping and sustainability services

CATAS S.p.A. is the most prestigious Italian research institute and test laboratory in the wood and furniture field, with laboratories located in both of Italy's main production areas: San Giovanni al Natisone and Lissone. The testing and certification laboratory's team of experts—including chemists, engineers, and mathematicians—provides applied research and testing and certification services to the wood and furniture industry.

The CATAS Technological and Chemical Departments perform a wide range of tests and research on raw materials and end products, verifying that a product meets both the manufacturer's requirements and governing standards for quality, safety, strength, and durability. Tests comply with national (UNI, DIN, BS, NF, ASTM, ANSI, etc.), European (EN), and international (ISO) standards. CATAS has also expanded into the agricultural and food sector, offering environmental and sustainability research and analysis services.

In order to expand its service offering, CATAS sought to incorporate digital technologies that support more cost-effective approaches to testing, certification, machine design, documentation preparation, sustainability, and rapid prototyping services, according to Managing Director Dr. Andrea Giavon. "We were looking for a solution that would help us reduce the time and cost associated with furniture testing," Dr. Giavon recalls. "In addition to our physical testing services, which include the design and manufacture of test machines and equipment, we sought to offer computer simulation and analysis services to give our clients a faster, less costly option for testing furniture for strength, stability, and safety."

CATAS initially attempted to use software from other brands. "We found those solutions to be difficult and not user-friendly," explains Senior Technician Maurizio Marussi. "That's when we evaluated using the SOLIDWORKS® Simulation solution to analyze the stress and deflection of a shelf support. We found the software

to be much easier to use. It handled the problem quite easily, and the results correlated well with physical test findings."

In 2012, CATAS standardized on SOLIDWORKS solutions, implementing SOLIDWORKS Professional design, SOLIDWORKS Simulation Professional analysis, SOLIDWORKS Composer™ technical communication, and SOLIDWORKS Sustainability environmental assessment software. CATAS chose SOLIDWORKS solutions because they are easy to use; are fully integrated; and support the additional testing, certification, machine design, documentation preparation, sustainability, and rapid prototyping services that the research institute and laboratory wanted to offer.



**"By acquiring SOLIDWORKS design, simulation, documentation, and sustainability solutions, CATAS has added a range of cutting-edge services to meet our clients' future challenges. At CATAS, we are preparing for tomorrow, and SOLIDWORKS solutions are helping us be ready."**

— Dr. Andrea Giavon, Managing Director

**ACCURATE SIMULATIONS INSTEAD OF COSTLY TESTING**

Using SOLIDWORKS Simulation Professional analysis software, CATAS performs finite element analysis (FEA) studies on client products ranging from tables and chairs to desks and cabinets. The software's capabilities enable CATAS to conduct stress and deflection analyses on furniture designs having both linear (steel and wood) and nonlinear (plastics) material properties. The information provided by these simulations helps CATAS clients address potential performance problems more cost-effectively by identifying and resolving issues prior to physical testing, thereby minimizing test iterations.

"We've found SOLIDWORKS Simulation Professional results to be both fast and accurate," Dr. Giavon stresses. "For example, the deflection predicted by the software on a metal shelf bracket under specific loading matched test findings almost perfectly, and the analysis only took us a day to run. The feedback that we've received from customers who we've supplied with simulation results has been overwhelmingly positive, and this service will help our clients achieve certifications more quickly and cost-effectively."



## FASTER TEST MACHINE DEVELOPMENT

Part of CATAS' operations involves the design and manufacture of testing machines and equipment, working with manufacturing partners, for sale to client companies. With the combination of SOLIDWORKS Professional design and SOLIDWORKS Composer technical communication software, CATAS has accelerated machine development and the creation of supporting documentation, including user, instructional, service, and maintenance manuals.

"Using SOLIDWORKS Professional design software has improved communication and collaboration with our design and fabrication partners," Marussi notes. "With SOLIDWORKS Composer software, it's easier to create high-quality documentation materials, which are more accurate and up-to-date."

## SUSTAINABILITY AND RAPID PROTOTYPING

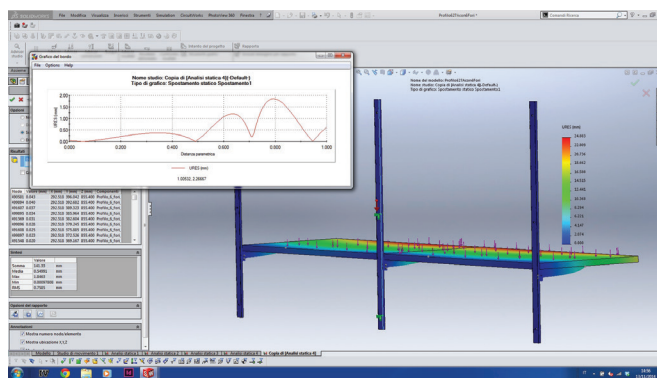
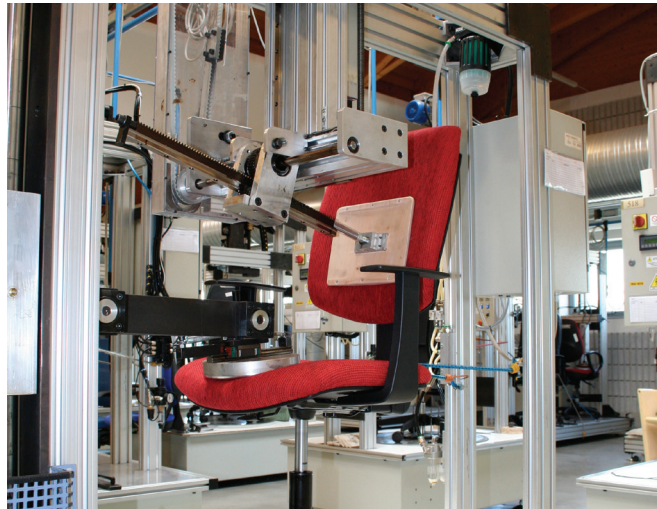
The implementation of SOLIDWORKS Sustainability environmental assessment software allows CATAS to offer clients a quick, preliminary Life Cycle Assessment (LCA) of the environmental impact of a particular design, which provides environmental guidance faster and at less cost than a full-blown LCA. With SOLIDWORKS Professional software, CATAS has added rapid prototyping services, using SOLIDWORKS design models to create prototypes on the firm's Stratasys® Elite® 3D printer and giving clients a fast, inexpensive option for solving critical design issues instead of creating costly molds.

"By acquiring SOLIDWORKS design, simulation, documentation, and sustainability solutions, CATAS has added a range of cutting-edge services to meet our clients' future challenges," Dr. Giavon says. "At CATAS, we are preparing for tomorrow, and SOLIDWORKS solutions are helping us be ready."

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CATAS leverages SOLIDWORKS design and simulation tools to accelerate development of its testing machines.

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