



This MatWeb application shows a transformer composed of steel core, copper windings and insulation layers all spiraled into an assembly. The assembly is potted into an aluminum case with a thermally conductive epoxy. This assembly is then mounted to a cold plate.

## Going to the Source

MatWeb material property data is seamlessly available to ANSYS Workbench users.

Because of the ANSYS partnership with MatWeb® announced in May 2006, ANSYS Workbench users can easily import material property data directly from MatWeb ([www.matweb.com](http://www.matweb.com)), which has an on-line library of data sheets on more than 62,000 metal, plastic and ceramic materials — plus online tools including a unit converter, weight and inertia calculator and hardness converter. On each data sheet, MatWeb lists the source of the materials data. About 90 percent of the data originates from testing by material suppliers. Other data is collected from similar materials, professional societies, handbooks and compilations as well as the MatWeb staff.

One of the companies benefiting from this MatWeb library within ANSYS is TDI Power, which develops power systems for computer/networking, telecommunications, military/aerospace, medical and industrial markets.

Sebastian Messina, principle mechanical engineer at TDI, explains that in building uninterrupted power supplies, for example, TDI uses a variety of materials including steel, aluminum, epoxies, RTV (room temperature vulcanization) materials, glass, plastics, copper and Teflon. TDI engineers can export 20 material libraries at a time in ANSYS library format (XML), with material property values in appropriate units automatically added to the XML file.

The idea for MatWeb came from engineers frustrated by having to interrupt the work on their software application and take valuable time telephoning manufacturers for material property data or hunting through handbooks. “When the Internet exploded, it made perfect sense for us to plug our knowledge into it,” says Dale Kipp, who heads up day-to-day operations at MatWeb. “Now engineers have convenient access to property

data for the exact material they need. With just a few clicks, they can import the information right into their ANSYS software application.”

Sebastian Messina at TDI agrees: “If there was no integration between ANSYS and MatWeb, I would be spending extra time creating material property tables. That’s hours per analysis.” He adds that the tools are user-friendly. “I don’t have the time to work in code and become a software guru,” says Messina. “I want to plug and play, and the ANSYS MatWeb tools allow me to do so.”

“The collaboration with MatWeb reflects the ANSYS strategy to team with expert partners to provide integrated solutions in areas outside our core competencies,” says Mike Wheeler, vice president at ANSYS, Inc. “It is an extremely useful extension of the flexible framework of ANSYS Workbench.” ■