



**For a Total Solution to all of your
Materials Testing Needs**

Riddell Takes Advantage of ADMET's Multiple Plot and Graphics Capabilities

Riddell, a subsidiary of Easton-Bell Sports, is known primarily for its quality football helmets used by the NFL, college and high school teams. Its reputation is well-deserved since the company developed the first plastic suspension helmet in 1939 and has continually improved on the design ever since.

Riddell's R&D and corporate quality lab, located in Rosemont, Illinois, certifies both the materials and the components that are used in the helmets. Among other tests, it conducts tensile, compression and cyclic tests. Until recently, the lab used an analog test frame from the '70s that ultimately failed. Riddell's Director of Quality Jim Tansey turned to ADMET for an eXpert 2611 universal testing machine equipped with the MTESTWindows materials testing software system. Now, the new digital system collects, stores and analyzes test data and enables Riddell to easily compare results to specifications and past tests.

Riddell is synonymous with quality in sports helmets. With a commanding share of the professional, college and high school football equipment market, the Rosemont, Illinois, subsidiary of Easton-Bell Sports rigorously tests materials and components before they are certified to be used in its products.

In addition to testing against National Operating Committee on Standards for Athletic Equipment (NOCSAE), Riddell uses a universal testing machine to measure the tensile strength of materials and finished components that go into football, baseball and lacrosse helmets.

The universal testing machine is primarily used for tensile strength testing, although the lab also conducts compression and cyclic tests. Ninety-nine percent of the lab's finished goods testing involves the 12 components that make up Riddell's football helmets.

The lab had been using a vintage analog test machine dating from the '70s. Consequently, the lab staff had to follow a work routine straight out of the

'70s. Explained Jim Tansey, Director of Quality, "Everything was handwritten and required somebody to watch a needle on a dial and catch it [the test] at the right moment."

Qualifying new products

Tansey's lab qualifies new vendors and finished components before they are accepted for use in Riddell products. Samples are submitted and compared to the established specifications and to current components.

Typical tests would be of chin strap webbing and the snaps that attach to the helmet. The straps are tested for tensile strength; they are also tested to see if the teeth on the snap dig in and "deglove" the vinyl coating off the straps.

Once the testing is completed, Tansey and his staff either pass or fail the submission.

Moving to digital testing

The old analog machine ultimately failed and Tansey began searching for a replacement that, at minimum, had some type of electronic data recording

SOLUTION OVERVIEW

Industry: Sports Equipment

ADMET Product: eXpert 2611 with
MTESTWindows Materials Testing System

Customer: Riddell

Application: Qualify helmet components

and transfer. The manufacturer of his current equipment was no longer in business and it was determined that a retrofit was not practical.

Tansey turned to the Test & Measurement World catalog to review several offerings. He checked into a few vendors, but ADMET caught his eye. It helped that he also received a reference from an Indiana steel company.

An ADMET sales engineer visited with a portable version of the eXpert machine and a notebook computer. Tansey was impressed at how easy it was to set up and operate. He made the decision to buy the eXpert 2611 based on its ease of use, size and price.

The capital request was submitted and the purchase order issued. The machine arrived fully assembled about eight weeks later.

Tansey set up the machine and installed the MTESTWindows software on a personal computer. Relying on phone support by the ADMET sales engineer, Tansey established the interface between the eXpert machine and the MTESTWindows software and he defined the first test routines.

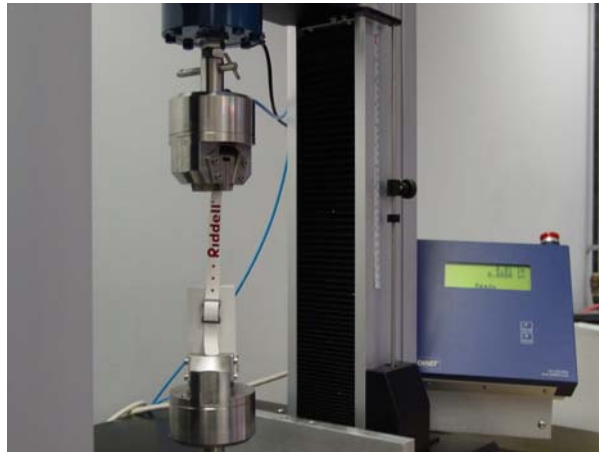
Training was easy. Tansey had the other operators join in on his calls to ADMET and they were able to pick up on the operation. Now, in addition to Tansey, an engineering technician also runs tests and develops new routines.

Graphical comparisons

MTESTWindows both controls the test pre-load, load rate and reset, and records the results. The technician no longer has to watch an analog dial, making the operation much more accurate and efficient.

The lab technician is able to categorize and name the tests before they are archived in a spreadsheet on a server. This brought the lab up to the digital standard that Tansey sought.

However, Tansey included a multiple plot module for the MTESTWindows package that allows the staff to view multiple tests in the same numeric or graphic report, adding a new dimension to their test analysis.



He explained, "We instantly see the comparison – Here's the new product – Here's what we've specified – We can show somebody the graph without talking numbers. A picture's worth a thousand words."

Given the advanced electronics, he is also thinking about adding a foam compression deflection test to the machine. His current foam test machine uses microswitches to trigger the readings, but he expects that a built-in force trigger could be used with the ADMET machine to automate the process and provide more accurate results.

Tansey is happy with the eXpert/MTESTWindows combination for both its operation and flexibility. It meets his current needs and has already contributed new analysis capabilities that make the lab's operations more efficient.

For more information:

For more information about ADMET products or services, please call us at 800-667-3220 or 781-769-0850, email sales@admet.com or visit our Web site at <http://www.admet.com>.

For additional information on Riddell, visit <http://www.riddell.com>.

All brands and product names are the trademarks of their respective owners.