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Materials Testing Needs**

Habasit Tests Conveyor and Power Transmission Belts

Habasit, a Switzerland-based company with North American headquarters in Atlanta, GA, manufactures a wide selection of industrial conveyor and flat power transmission belts. The belts are typically multi-layer composites consisting of polyester, nylon, polyamides, nitrile rubber and other synthetics. It tests its products to customer specifications and to European National standards. The Habasit plant in Suwanee, GA had been using a digital Zwick tensile testing machine but the electronics failed. Bart Natoli, Chief Engineer and Technical Manager, determined that the best solution was to replace the unit with an ADMET eXpert 2611 Universal Testing Machine. Now, the ADMET machine performs tensile, elastic modulus, rupture, shear and peel tests of production runs and for custom product development.

The Habasit facility in Suwanee, GA manufactures a number of standard and custom conveyor and flat power transmission belts using multi-layer composites. It receives the power transmission and conveyor belting in large coils that are slit and cut to the customers' specified size.

Habasit's products are used in power transmission and conveyance in a wide range of industrial applications ranging from automotive and tire industries, food processing, paper and textile manufacturing and finishing, to wood processing and general material handling. The products include high efficiency flat belts, synchronous belts, fabric and plastic modular conveyor belts, belts with tracking guides and belts with profiles for product containment and positioning.

The multi-layer material and the seams that join the continuous belts must meet customer and industry standards. The elastic modulus of the conveyor belting is evaluated in accordance with European National standards for light weight conveyor belting. This is a key measure in establishing the forces that the belt will induce into the conveyor once it has been installed at the proper tension.

Habasit conducts a series of quality tests, as required, during the production process, including strength and elasticity tests of the belt composite, as well as rupture strength and peel tests for measuring adhesion of the substrate materials, cleats and tracking profiles.

Habasit had been using a Zwick universal testing machine (UTM) with digital controls. Ultimately, the digital controls failed and could not be repaired due to the age of the machine. Explained Bart Natoli, Habasit Chief Engineer and Technical Manager, "We had a perfectly good frame that was useless to us because of the controls."

Considers retrofit

Naturally, Natoli's first instinct was to have the machine retrofitted. He checked with Zwick and a few other suppliers but decided against the options they proposed.

He searched the Web and found ADMET, which offers new machines but also specializes in upgrading and retrofitting UTMs. However, Natoli discovered that, for a small price premium over the cost of an ADMET retrofit, and for considerably less than a retrofit from any other vendor, he could go with a new ADMET machine.

SOLUTION OVERVIEW

Industry: Industrial

ADMET Product: eXpert 2611 10kN dual column UTM with eP Digital Controller

Customer: Habasit America

Application: Testing conveyor and power transmission belts and splices

Decides on eXpert 2611

Natoli selected an ADMET eXpert 2611 dual column tabletop electromechanical 10kN testing machine. The machine is equipped with an ADMET eP Digital Controller that stores and executes test routines, and records and reports results.

The eXpert machine was installed by an ADMET engineer who also demonstrated how to program test routines. Habasit now has about eight programmed routines that perform a battery of tests that accommodate the determination of various belt properties.

ADMET machine performs several tests

Several technicians test a range of belting characteristics of the multi-layer composites. They also test the splices, which can often be the weak link.

Habasit employs a diversity of splicing methods from mechanical fasteners to thermal splices such as finger splices, called Flexproof and Thermofix, by which beveled ends of the belts are joined using bonding agents curable under heat and pressure.

"The splice strength can vary depending on the thickness of the belt and the type of materials being bonded. Although it is generally the weak link, using a bonding agent to fuse polyamide together creates a bond of virgin material that has a tensile strength that matches the belt," said Natoli.

The company also uses the ADMET machine to conduct adhesion tests of the belting composite and the fabricated components, such as tracking guides and a range of profiles that are attached to the belt.

To test the peel characteristics of the belt itself, the technician initiates a separation of the layers and then mounts each of the laps in a grip. The eXpert machine pulls the two components apart to measure and report the bond strength.

Habasit also uses the eXpert machine in compression mode to determine cut resistance by pressing a blade through the belt sample, which is placed on a hard PVC block, to measure the cutting force required to separate the material.

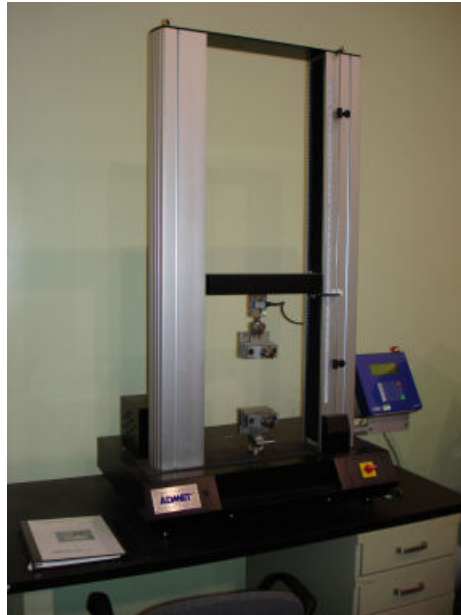
Reporting results

The Suwanee operation primarily conducts tests for its production and development requirements, but also conducts similar tests for other belting fabricators that it supplies.

Rather than just providing raw data to customers, Habasit exports the data to an Excel spreadsheet on a dedicated computer that is connected to the corporate network. The results can then be offered to customers as graphical representations in pie or bar charts in Adobe Acrobat (PDF) format.

The eXpert machine fits Habasit's needs. "The controller does the job that we need. It's a bit more flexible than a lot of what we've seen and requires less training. It performs the same functions as more expensive, more complex machines," said Natoli.

"Quite frankly, the value that ADMET offered in its product was incredible compared to what its competition was offering. It actually has more capabilities than much more expensive machines at our other locations."



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 Habasit, visit <http://www.habasit.com>.

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