



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

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## ADMET eXpert machine tests Verdepack compostable products

*The Instone Group is a Durango, Colorado-based entrepreneurial company that was established in the 1980s. The company has always reflected Founder Giles Instone's, entrepreneurial spirit. This is evidenced in its latest venture, New Ice, Inc., which is bringing to market a new approach for compostable trays that promises to revolutionize the food packaging industry.*

*The new class of products is the result of years of research. In 1999, Instone contacted Joe Bowden, Ph.D., a consulting research biochemist, who began developing a patentable new process for a compostable formulation for use in food packaging.*

*Now, as New Ice moves to full-scale production, it turned to ADMET and its eXpert 5603 universal testing machine outfitted with the eP Digital Controller to test various products and shapes for overall flexibility, crushability and strength in order to fine tune formulations.*

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The Instone Group, based in Durango, Colorado, is an entrepreneurial company with the flexibility and creativity to pursue new ventures. In 1999, Dr. Joe Bowden began developing a new type of compostable material to replace paper, plastic and Styrofoam trays and packaging in food services industries. A new company, called New Ice, Inc., was created to focus efforts on completing the development and marketing of the new class of compostable products, called Verdepack.

### **A better package**

Bowden developed formulations that accomplished the goals. The result is a patented (Pat. #6,878,199 and 7,083,673) formulation that can be formed into various products that compost after the surface is broken and the inner core is exposed to moisture.

The new product has an impermeable surface and is stable until it is snapped or broken. Once the surface is broken, the product quickly breaks down and composts. The environmental benefits are obvious since virtually every food product sold today is packaged in a disposable container.

Early markets for the new product include college and corporate food service operations, quick service restaurants (QSRs) and organic produce. Many people in the food industry have become aware of the product and are excited about its potential to reduce the industry's impact on the environment. Still, the prototype had to be proven.

Explained Bowden, "The people who package tray-ready products want to know, can you toss it onto a conveyor and can you bang it around without breaking it?"

"Also, each customer has different requirements. One may need a product that can be frozen cryogenically, thawed and put in a microwave, and then refrozen. Others may want something that can be case-ready wrapped and put in a produce display, or handed over a counter at a deli. Each of these uses has different requirements."

### **Materials development moves to product testing**

As Bowden moved toward product testing, he wanted to simulate how the various uses would affect the product –

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## **SOLUTION OVERVIEW**

**Industry:** Compostable packaging

**ADMET Product:** eXpert 5603 universal testing machine with eP Digital Controller

**Customer:** New Ice, Inc.

**Application:** Testing crushability, flexibility and strength of Verdepack compostable food packaging

uses such as lifting a tray with a thumb and forefinger at the corner, or grabbing a cup.

He was not able to find any industry-standard tests, nor had he heard of any food packaging suppliers that were testing for flexibility, crushability and strength. So, he decided to develop his own test procedures using a universal testing machine to flex the trays to breaking.

He considered several machines but found that they were expensive and didn't meet his needs. "We wanted a machine that was not locked into specific tests. We were testing stuff that had never been tested before, so we're basically developing the methodologies for testing these things as we're going."

They came across ADMET with its eXpert 560x line of machines equipped with the eP Digital Controller. "We called and talked to the President of the company who was very helpful and very open. They presented us with a proposal which we liked due to its price and to the relative simplicity and flexibility of the equipment. Because we're developing tests, we don't need to buy a bunch of jigs that will just sit in a box."

### **ADMET – Flexibility/Simplicity**

New Ice now uses the ADMET machine to carry out tests that determine the strength of specific product permutations using various formulations. Operators rig up custom platforms to hold various products in orientations that mimic typical usage. Based on the findings, they are able to specify exact formulations for individual products.

"We like the ADMET machine because it allows us to custom-develop tests," explained Bowden. New Ice does a series of crushability tests, cantilever tests and direct

penetration tests. "A majority of the tests have been devised by us taking advantage of the versatility of the ADMET machine and our specialized jigs.

"For instance, we used the ADMET machine yesterday to run a breakaway test that simulates what happens if you grab a tray by its corner and measures how fast it would break away."

Results and raw data are uploaded to a PC with ADMET's WinCOM Plus Data Communications Program. Results are

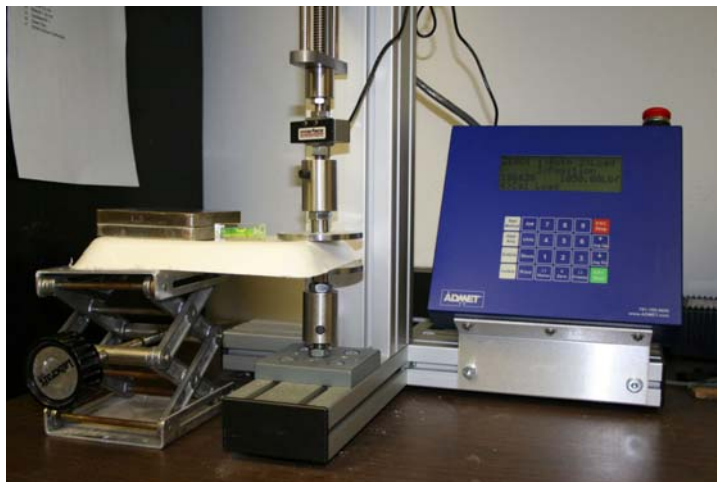
then exported to an Excel spreadsheet and load-deflection curves are viewed from WinCOM Plus. "We thought [the ADMET machine] was very good because we could plot ten replicates on the same graph. It was more difficult to do that with other machines that we looked at."

In addition to the data analysis, test results will eventually be used to generate customer data sheets.

For New Ice, the entire ADMET experience has been positive. The machine was shipped as promised and was operational within ten minutes.

"We had a couple of quick calls back to make sure that we understood some of the processes with loading the software, which were answered the same day. Since that time the only contact that we've had was at trade shows telling them how good the machine is."

Now, as the Verdepac line transitions to production, the ADMET eXpert 5603 will take on an expanded role that includes production testing. Additional units will be purchased to support each manufacturing location.



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### ***For more information***

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

For additional information on New Ice, Inc., visit <http://www.verdepac.com>, call 970-382-0002 or email [info@verdepac.com](mailto:info@verdepac.com).

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