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Materials Testing Needs*

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## SRC Engineers uses ADMET MTESTWindows – Benefits from ADMET support

SRC Engineers, Inc. is a Louisiana-based engineering and consulting company that offers process facility design analysis, product design, development and testing, patent assistance, and metallurgical testing. Staff includes top mechanical engineers, civil engineers, chemical engineers, petroleum engineers, metallurgists, and computer programming specialists, supplemented by a capable engineering support staff.

SRC Engineers' testing lab performs metallurgical and mechanical tests, such as tensile and compression testing, bend/nick break testing, Charpy V-notch impact testing and CTOD testing to evaluate materials and welds for pressure vessels, pipes and other materials used in the petrochemical, transportation and other industries. It employs four universal testing machines equipped with ADMET MTESTWindows materials testing systems. The MTESTWindows systems, all retrofitted onto existing universal test frames, have increased flexibility and productivity. This performance, coupled with ADMET's unsurpassed support, has won the respect of SRC Engineers testing lab manager, Barry Bernard.

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As an engineering and consulting company based in the heart of the Gulf petrochemical industry, SRC Engineers provides engineering services to the supply companies, contractors and fabricators that support the majors' off-shore oil rigs, oil and chemical processing plants, as well as transmission facilities and pipelines.

The company tests materials to ASTM standards and reports findings to customers through printed and emailed reports. The lab has six operators who machine and test specimens.

SRC Engineers' services include tensile, compression, bend/nick, Charpy V-notch impact toughness, CTOD (Crack Tip Opening Displacement) and other tests. The lab has Riehle and Tinius Olsen universal testing frames, with

10K, 60K and 120K lb ratings for tensile and compression testing.

### **The process**

Specimens are sent in from the field and are prepared by SRC lab operators. A typical test would be of a pipe weld. The specimen is prepared as a dog bone or 505, whichever is appropriate. The weld, positioned at the middle, is then tested to failure.

The expected tensile strength of the weld or base metal dictates which universal test frame is used. "We're looking for varying load rates and results based on the test and the material being tested, so we need the three calibration ranges," explained Barry Bernard, testing laboratory manager.

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## **SOLUTION OVERVIEW**

**Industry:** Testing lab for petrochemical industry  
**ADMET Product:** MTESTWindows Materials Testing System

**Application:** Retrofits of universal test frames  
**Customer:** SRC Engineers, Inc.

Large specimen tests, such as full section tensile testing of pipe connections, are conducted on the Riehle machine, which has a 16 in. test bed that can accommodate 2 ft. long sections.

SRC Engineers also conducts other tests including shear tests on pipes, as well as compression tests for materials, such as rubber for boat bumpers.

### **Old frames – new controls**

All of SRC Engineers' machines are older mechanical frames. Typical of universal test frames, the mechanics of the frames themselves last virtually forever. The electromechanical components, however, do fail and, even if they remain operable, updating to digital controls can bring older machines up to current standards.

Over the years, SRC Engineers gradually upgraded the machines' controls and measurement capabilities. Its first purchase from ADMET, which occurred in the early 1990s, was a DC-12 load and stress indicator. The DC-12 was a major step forward. However, it predated the Microsoft Windows-based systems that ADMET now offers. ADMET's current software systems are easier to use, more capable and provide more flexible and graphical reporting.

SRC Engineers has since retrofitted its machines with ADMET's MTESTWindows Materials Testing System. MTESTWindows is available in two versions, one for manually operated machines and one for machines capable of performing tests automatically through closed loop servo control. SRC Engineers chose to keep their machines manually controlled in order to upgrade as economically as possible.

MTESTWindows also automatically calculates all common mechanical test parameters and produces reports in tabulated form with accompanying stress/strain curves.

SRC Engineers lab operators continue to manually control the load rate guided by the numeric readout from MTESTWindows. Results are either manually transferred or directly imported from MTESTWindows to the lab's Excel reporting system. The Excel database calculates results, retains the test data and generates pre-formatted customer reports.

"Some of our customers request the stress/strain graph, so we also give them the actual report from MTESTWindows," added Bernard.

### **ADMET service support shines**

Bernard is happy with ADMET support. In the past, ADMET has responded to Bernard's requests for program modifications and to add or keep features that they use in upgrades.

On a few occasions, SRC Engineers has required special test programs that were not already pre-programmed into MTESTWindows. In one instance, for a CTOD test, "We actually sent the test to them and they wrote the software. They did the custom programming development for us," said Bernard.

"I am 100 percent satisfied," concluded Bernard. "You couldn't ask for better. ADMET's equipment is solid and when I call them, they are so helpful."

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## ***For More Information***

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

For additional information on SRC Engineers, visit <http://www.srcengineers.com>, call 337-837-3810 or email [info@srcengineers.com](mailto:info@srcengineers.com).

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