

Know your **test** vendor

Lynn Gregory
Minneapolis, Minn.

As we all know, the search for reliable vendors can be a daunting task. Finding a test vendor is no exception, given the wide variety of tests, standards, equipment, and certifications available today.

To help simplify the process, the first step is to weigh contract testing versus in-house testing. Consider contract testing when:

- You do not have the equipment or personnel to support testing,
- Your test program requires certification, or
- You have in-house test results but need additional data for comparison purposes.

All are solid reasons to seek outside help. However, keep in mind there are some trade-offs. In particular, the vendor typically has

limited knowledge of your product, and you have limited knowledge of how testing is administered.

Finding a qualified vendor can be less painful if you're armed with a little knowledge and ask the right questions. Key points to discuss with potential test vendors include:

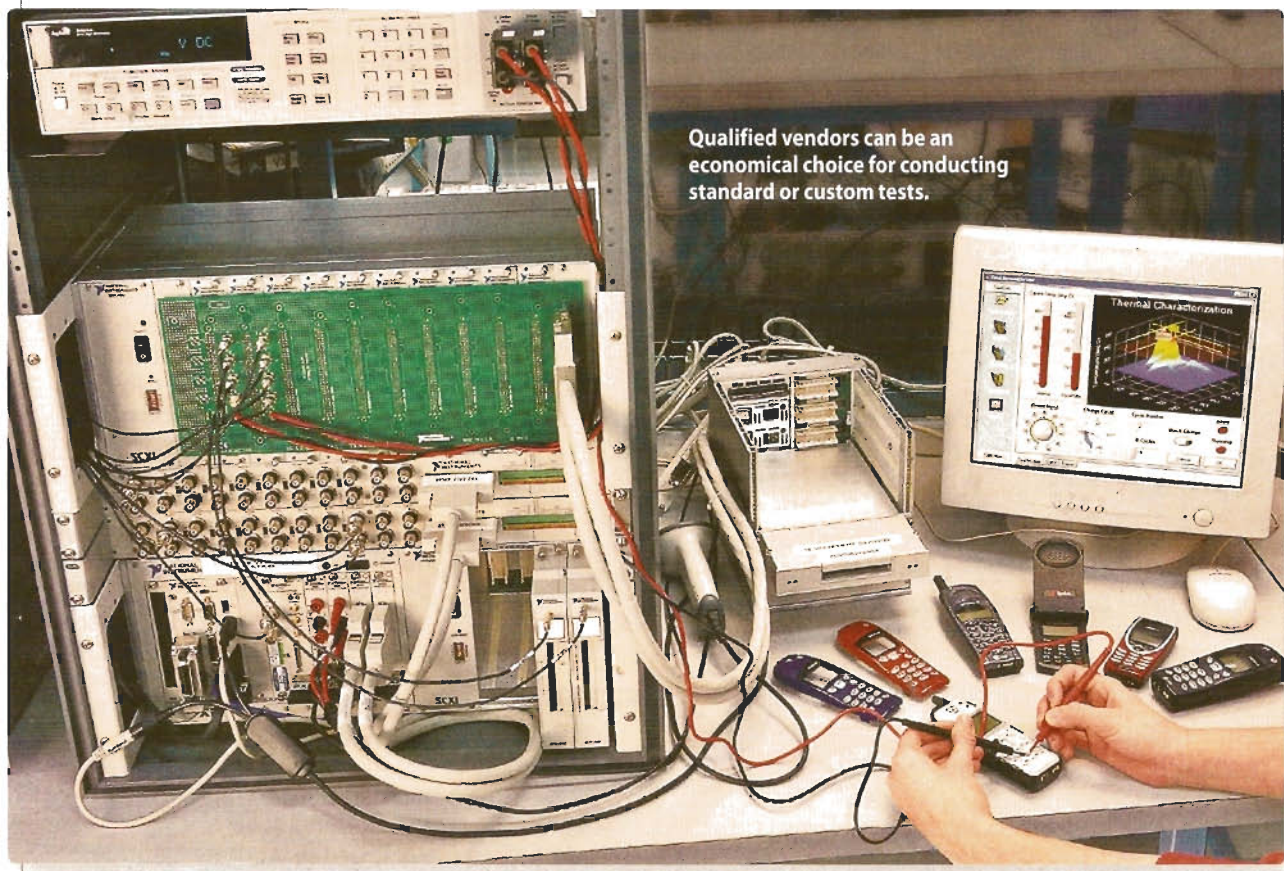
- The company's certification level, and whether or not it fits your needs.
- The material/product being tested, the nature of the test, suitable test methods and, perhaps alternative test methods — if you are not comfortable with initial recommendations.
- Whether or not a test protocol will be needed and who will provide it.
- Details about test equipment and the test lab's capabilities.
- Staff qualifications and capabilities.

- Deliverables and pricing for all items: per sample, test setup, fixturing, reporting, test protocols, and any engineering (time and materials) needed for custom testing.

Be prepared

A critical preparation step is knowing the various test methods that apply to your product or material. Use the product's characteristics to determine the appropriate test method during discussions with potential test vendors. Moving into product testing with a specific test method in mind and some predicted performance outcomes is critical — yet you would be surprised how often people ignore these issues.

Understand the test methods and know what each one has to offer before picking up the phone.



Qualified vendors can be an economical choice for conducting standard or custom tests.

Relying on the test vendor to interpret your expectations may cause frustration and delays for you and the vendor. More importantly, it could potentially disrupt your product-to-market time line. Bottom line: Know your objective well and contract the test vendor who

can deliver those results.

Test methods

In some cases, the choice of proper test method will be relatively straightforward, as for instance, with ASTM F 1306 Standard Test Method for Slow Rate

Penetration Resistance of Flexible Barrier Films and Laminates. Here force, energy, and elongation to perforation are determined using a tensile/compression test setup. Other cases may require reviewing several methods to determine which best suits the product, and the choice isn't always straightforward.

For example, when testing plastic films for impact resistance, ASTM D 1709 represents failure initiated energy, whereas ASTM D 4272 represents initiation plus completion energy. My point is that determining the energy that causes plastic film to fail is the focus, and various test methods view this determination differently.

Variability also relates to the equipment used to test the impact resistance of plastic film. ASTM D 3420 requires a pendulum-type impact tester, usually for thinner materials. But ASTM D 1709 uses free-falling darts for materials in packaging products such as trays. Both methods define mass, impinging surface diameter, and specimen diameter. Additionally, both offer procedures 'A' and 'B.' To further add to the decision-making process, there are ISO (ISO 7765-2) and Chinese (GB9639) equivalent test methods.

Keep in mind that test methods can be purchased for a small fee. This can save a lot of time and money in the end, especially if the test type is new to you or the industry.

Statistically, define the number of samples needed to get the desired outcome. It is all about numbers. Additional samples will be needed for setup.

Determine whether fixturing is required to secure the product. Do not confuse this with the method test fixture referenced by the test procedure. (They are two different mechanical apparatuses.) If needed, decide who will provide the fixturing. Most test vendors are equipped to fabricate fixturing.



Rugged speed and temperature sensing

Pre-calibrated, proven solutions install fast and perform anywhere

When you need rugged and reliable monitoring solutions for your toughest machine environments, go with proven, solid-state temperature transmitters and shaft tachometers from Electro-Sensors.

- NO CALIBRATION—Ready to go!
- 2-wire loop powered
- Outputs standard 4-20mA signal
- Intrinsically safe design
- Applies to virtually any machinery and PLC
- Simple installation and retrofitting

TT420 Temperature Transmitters:

- Surface-mount and 1/8" or 1/4" NPT taps models with or without grease zerk

ST420 Shaft Tachometers:

- M18 stainless steel, NEMA 4X/IP67
- Uses shaft mounted pulser disc or wrap

The affordable, easy-to-install monitoring solution for:

- Conveyors • Bucket Elevators • Motors • Gearboxes • Pumps • Turbines • Fans • Curing Ovens • Centrifuges • Agitators • Hammermills

FREE CATALOG & APPLICATION ASSISTANCE:

1-800-328-6170

www.electro-sensors.com



The original machine monitoring experts

©2009 ELECTRO-SENSORS INC. • 6111 BLUE CIRCLE DRIVE • MINNETONKA, MN 55343

RS# 135

Testing details

Once testing kicks off, be patient, for this is where the rubber meets the road. Project management in this world is a game of details. All equipment must be calibrated and traceable back to NIST (assuming certification is the goal). Calibration frequency is typically one year depending on the equipment's calibration history and frequency of use.

Additionally, all equipment used must be verified, validated, and documented. Samples need to be prepared for test, whether environmental conditioning or cut to a specified sample size, and it all needs to be documented and performed with care and forethought.

Technicians need to run sample tests to define measurement equipment. Take, for example, the above ASTM D 1709 method. Sample tests determine the appropriate dart weight. Or, in another case, sample tests will determine which load cell for tensile/compressive testing best matches the test range. Providing extra samples aids in the overall success of the project.

As testing gets underway, be readily available to discuss and resolve in a timely manner any issues that arise. Otherwise, the project's time line could be compromised.

Reporting and deliverables

Depending on your requirements, discuss how the test vendor reports results. A simple letter of acknowledgement stating the testing took place may be sufficient. Alternatively, you may need a complete test report spelling out details such as sample ID, lot ID, serial numbers, preconditioning, room conditions at test, sample size, sample preparation, equipment details, test intervals, explanation of the test(s), compiled test data, graph and image data, conclusion, summary, and acknowledgement.

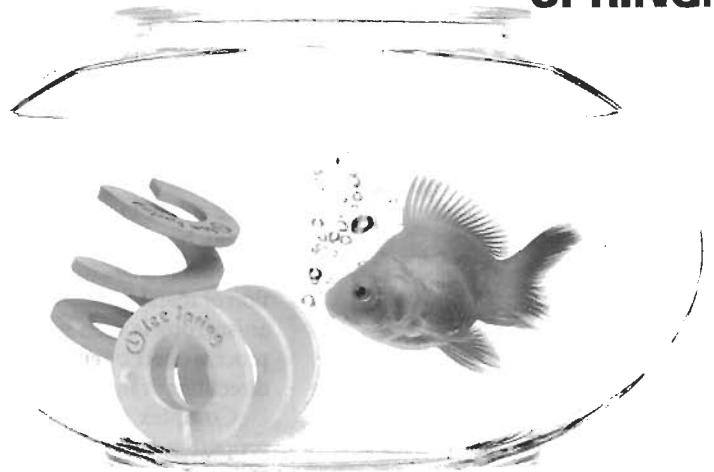
The main point is, after your discussion with a potential test ven-

dor, do you feel comfortable with their capabilities and offerings? Will they be able to deliver your test objective? Following these key points helps ensure a fruitful test-vendor search. **MD**

Lynn Gregory is a 25-year veteran

of the testing industry, with experience testing products ranging from medical hardware and materials to mobile-wireless devices and photoelectric and solid-state sensors. He can be reached at lgregory4321@gmail.com.

INTRODUCING THE NON-METALLIC NON-CORRODING NON-CONTAMINATING SPRING.



REVOLUTIONARY NEW LeeP™ PLASTIC COMPOSITE SPRINGS.

At last! Compression springs that combine the strength of metal with the special attributes of high-performance thermoplastics. LeeP™ Plastic Composite Springs feature patent pending designs molded in Ultem® resins. This ground-breaking line meets the needs of applications such as medical, food-processing, marine, and electronics where

non-corroding, high temperature resistant, non-conductive, inert materials are preferred. LeeP springs are stocked in a variety of standard sizes, each in an easy-to-identify rainbow of strengths. Call or email us today to learn more and request your FREE 2010 Catalog.



Lee Spring®

Not just a better spring,
a better spring company.

*Trademark of SABIC Innovative Plastics IP BV.

RS# 136



Call: 888.SPRINGS (888.777.4647) / Fax: 888.426.6655 / sales@leespring.com / www.leespring.com