



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

Terracon's high volume concrete compressive strength testing demands reliability

Terracon is a leading provider of geotechnical, environmental, paving and construction materials, as well as facilities engineering services. Based in Lenexa, Kansas, the employee-owned firm has been providing quality services since 1965. Terracon has more than 60 offices in 24 states and has completed projects nationwide for clients in agriculture, commercial development, finance, industry, oil & gas, site redevelopment, telecommunications and transportation. Terracon has a major facility in Denver where, in addition to engineering and project management, the company maintains a large materials testing lab. Headed by Mary Hayden, Lab Manager, the facility conducts compressive strength tests on concrete cylinders, grout, mortar, and prisms. The high volume operation demands reliability from every step of the testing process. That's why Terracon's test equipment sales and service provider, Cal-Cert, of Clackamas, Oregon, recommended an ADMET Digital Indicator to capture compressive strength testing data.

Terracon designs and manages a wide range of construction projects throughout the U.S. It supports these projects with 57 regional testing labs that help ensure that the materials delivered to the construction sites are correct and in accordance with ASTM (American Society for Testing and Materials) standards.

The regional Terracon office in Denver is a full-service facility that has a staff of about 100. It includes the largest construction testing lab in the Denver area. Lab Manager, Mary Hayden, oversees a staff of 12 testing technicians who conduct compressive strength tests on concrete cores, grout, mortar, and masonry blocks (prisms) for projects in the Denver area.

High volume testing laboratory

During the construction season Terracon's Denver lab tests up to 150-200 concrete cylinders per day and conducts an additional 10-20 grout, mortar or prism tests.

"We run a high-volume, heavy duty operation," said Hayden. "During the construction season we can't afford to be down."

Marshall Doyle, President of Cal-Cert, Terracon's calibrator, said, "Seldom have I seen a higher volume operation. Terracon is a leading firm for performing compressive strength tests."

SOLUTION OVERVIEW

Industry: Concrete testing

ADMET Product: Gauge Buster Load Indicator

Calibrator: Cal-Cert

Application: Compressive strength testing

Customer: Terracon

Efficient testing process

Terracon's primary compressive test frame is a Testmark 600,000 lb. machine; the Denver lab also maintains a 250,000 lb. Forney machine as a backup. Both units are equipped with privately branded versions of the ADMET digital indicators to measure compressive strength.

Doyle recommended the ADMET indicators because they are reliable, simple to use and more accurate than analog gauges. ADMET produces a family of digital indicators including the pi Peak Load Indicator, the Gauge Buster Load Stress and Load Rate Indicator, the DC16 Load and Stress Indicator and the Precise Digital controller.

Each indicator automatically calculates compressive strength and displays it on its screen. With the higher-end indicators, compressive strength results are stored to permanent memory so that you can generate a hardcopy printout of the results at the machine; or download the results to a remote computer for import into a Laboratory Information Management System (LIMS) or database program.

In such a high volume operation as Terracon's, the ability to verify that each test was performed according to specification becomes that much more important. ASTM C39 Standard Practices for the Compressive

Strength of Concrete specifies how the tests are to be performed. A 20% increase in compressive strength of high strength concrete is possible when loading rates exceed C39 limits. To verify proper loading rates, ADMET indicators can be set up to report the average load rate for a test and/or generate a Load/Stress vs. Time curve.

ADMET digital indicators are rugged and are easy to calibrate. They all exceed ASTM E4 standards for accuracy. Commented Doyle, "We've been called in to recalibrate machines that have been moved from one lab to another and found that the calibration is still perfect."

A variety of specimen sizes and types are tested with the 600,000 lb. testing machine. All tests are compressive tests to failure. Depending on the application and the mix, concrete cylinders are tested to 100,000-200,000 lbs. Mortar and grout are tested to 15,000 lb. while masonry prisms are tested to 500,000 lb. The ADMET indicator has the dynamic range to simply and accurately measure them all.

Reliability and accuracy are key. "With the volume of tests that we're running, our equipment has to be up and running every day," concludes Hayden.

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 or visit our Web site at <http://www.admet.com>.

For information on Cal-Cert visit <http://www.cal-cert.com>, call 800-356-4662 or email info@cal-cert.com.

Additional information on Terracon is available at <http://www.terracon.com>.

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