Direct Current Potential Drop (DCPD) Training and Consulting

Benefits

» Speed time to test productivity by reducing DCPD test setup time
» Integrate hardware and software into the optimal solution
» Get expert guidance to be confident that your test setup is designed for your specific application

Direct Current Potential Drop (DCPD) is a powerful technique for measuring crack size. The DCPD technique measures the change in electrical resistance of the specimen, which directly correlates to crack growth. For tests involving high temperatures, corrosive environments and other challenging conditions, DCPD is often an effective alternative to contact extensometers and compliance calculations.

MTS offers a full array of training and consulting services to help ensure that your tests, whether conducted with MTS or other test equipment, provide the information you need. These services will help you maximize the utility and efficiency of your test equipment and software by integrating them to meet your specific testing requirements. The consulting services are provided by MTS engineers who have extensive materials testing expertise across a wide range of industries.
DCPD Training and Consulting Packages

MTS offers DCPD training and consulting services through a set of pre-defined packages for a range of typical needs, plus the flexibility to provide services that are uniquely tailored to your specific requirements.

**Package A: MTS TestSuite DCPD Fatigue Crack Growth Template Operation**

This package includes hands-on training on the operational fundamentals of the DCPD hardware and the MTS TestSuite™ DCPD Module test templates. The system is operated at room temperature and focuses on Stage II, K-increasing fatigue crack growth. Participants will use the MTS DCPD Measurement System to conduct fatigue crack growth tests with the MTS TestSuite DCPD Module. If needed, MTS provides the specimens, the hardware to electrically isolate the specimen, and the use of MTS clevis grips.

**Includes:**
- Onsite system training using MTS DCPD hardware and MTS TestSuite template for testing to the ASTM E 647 fatigue crack growth standard. For scheduling purposes, onsite training is usually completed in one to two days.
- Specimen kit with aluminum compact tension specimens; isolation hardware, as required; and use of MTS clevis grips, if needed.

**Prerequisites:**
- Participants must complete training courses in MTS 793 Controller Software and MTS TestSuite MP Software, or have equivalent experience with these MTS products.
- MTS DCPD System Level 1 Installation or Field Assessment must be completed by MTS Field Service to validate system functionality.

**Package B: DCPD System Operation Consulting**

This package provides customized onsite consulting for the setup or operation of tests that have complexities beyond what is covered in Package A. MTS consultants provide one-on-one, hands-on support in the following areas:

- Configuring and running tests with
  - Custom or non-standard specimens
  - Elevated temperatures
  - Non-MTS DCPD hardware, software or test-flow templates
  - Fatigue crack growth threshold and K-decreasing tests
  - Application of DCPD to tests other than fatigue crack growth
- Assessing test results
- Minor test template customization

(Note: MTS also offers a **Custom Test Template Development Service** for full template writing and customization)

**Includes:**
- Consultant pre-review and planning session via phone/web-based conference prior to your onsite visit.
- Expert onsite test configuration, review of test results and minor customization of test templates, as needed. This package provides up to three days of onsite support. Additional consulting days can be purchased (see Package D).

**Prerequisites:**
- Participants must complete training courses in MTS 793 Controller Software and MTS TestSuite MP Software, or have equivalent experience with these MTS products.
Learn more today about how you can seamlessly and cost-effectively integrate advanced DCPD techniques into your material testing.

Package C: DCPD Application Seminar

This one day seminar covers operation principles of the DCPD technique and the test standards most commonly applied. This package provides a solid understanding of the methodologies and concepts behind the tests, rather than hands-on use of the equipment. It is often purchased together with either Package A or Package B.

Includes:

» Onsite, one-day seminar for up to 8 people that includes the following topics:
  • Content review of applicable fatigue crack growth test standards (ASTM E 647, ISO 12108)
  • Considerations in planning DCPD tests, applying the DCPD method and achieving optimal results with this technique
  • Comparison of DCPD crack size measurement with alternative techniques
  • Overview of relevant fracture mechanics concepts
  • The use of DCPD crack measurement in fracture toughness testing

Package D: DCPD Daily Onsite Consulting

This package can be used as an add-on to Package B to provide additional daily onsite consulting for unique DCPD challenges. The scope of work and days required are mutually agreed upon in advance of this engagement. Work is billed based on actual days, with a minimum of one 8-hour day. Work is billed in daily increments and includes zone travel expenses.

Package E: DCPD Hourly Remote Consulting and Support

Gain access to expert consultants for on-going support questions, system troubleshooting and minor test template modifications. Remote consulting support is provided on an hourly basis by phone, email or Web. For internet-connected test computers, secure web-based consulting sessions are available to provide real-time guidance and support. Consulting support is pre-paid in ½ day increments and can be used in convenient hourly increments. This package includes a 24-hour acknowledgement of request and a maximum 72-hour response time. This service is available during US central time zone business hours.

Consulting offers include expert support as described above. Hardware and software sold separately.