

Fatigue Crack Growth Rate Software (ASTM E647)



Bulletin 300-01

The FTA FCGR software is specifically designed for fatigue crack growth testing and analysis for both constant-amplitude and variable-amplitude.

FCGR Software

The FTA fatigue crack growth (FCGR) software allows for performing automated fatigue crack growth tests in full accordance with ASTM E647 or custom requirements. FTA's FCGR testing application is designed to run with the ADwin-Gold and any closed loop servo-hydraulic mechanical test machine and controller suitably configured for fatigue crack growth rate testing. The FCGR software has been considered the gold standard in fatigue crack growth testing since 2001. It provides complete flexibility for test setup, execution, and analysis with either PD or compliance and provides the highest accuracy for da/dN tests in the industry.

Software Features

- ▲ Constant-amplitude and variable-amplitude
- ▲ Threshold (Region I), Region II (Paris) and Region III
- ▲ Load control, K-control and Constant K_{max} testing
- ▲ Dwell testing and custom user-defined waveforms
- ▲ Compliance and DC potential difference (PD) methods of monitoring crack length
- ▲ Up to 8 channels of simultaneous crack growth measurement
- ▲ The ability to use a reference PD specimen
- ▲ Standard geometries: C(T), M(T), SEN(T), SEN(B), and Kb Bar
- ▲ User-defined K lookup and PD lookup tables
- ▲ Precise force control
- ▲ High-precision 16-bit data acquisition
- ▲ Visualization of Load Scan, Load-Displacement, and Load-DCPD graphical displays
- ▲ Optimized FTA command-feedback tuning parameters for variable amplitude testing
- ▲ Online damage parameter determination for characterizing command-feedback response
- ▲ Soft run-stop to minimize the effect of test interruptions
- ▲ Crack closure measurement using ASTM opening load
- ▲ Adjusted compliance ratio "ACR" integration
- ▲ Sine or triangle standard waveforms
- ▲ User-defined test frequency via full function generator
- ▲ Digital filtering and load-displacement phase shift control
- ▲ Data acquisition and analysis optimized according to crack growth rates
- ▲ Actual maximum load and cyclic load included in the analysis file for each data point
- ▲ Versatile analysis software
- ▲ Automated testing via a Matrix utility
- ▲ Custom applications
- ▲ Run-stop detection from test controller
- ▲ Ability to resume testing in the event of a PC crash
- ▲ Secant or 7-pt polynomial analysis of da/dN data
- ▲ Post-test correction of actual crack lengths
- ▲ Support of English and SI units



Request a Quote

Contact us at FTAsales@labtesting.com to learn more.