# BFF-5 Stand-Alone Beam Flexural Fatigue Apparatus



**Brand:** GCTS
**Product Code:** 389-00
**Availability:** Call for availability
**Call for Price**: 832-320-7300

## Description

The GCTS Stand-Alone Beam Flexural Fatigue Apparatus is an advanced Hot Mix Asphalt (HMA) testing system used to determine the fatigue life of the pavement layer. The fatigue life is an important indicator of the field performance of asphalt subject to repeated flexural loading. The fatigue test on the asphalt beam can be conducted in two modes: constant strain/deflection or constant stress/load; both utilizing haversine, sine, square, triangular or user defined waveform. The constant strain mode is recommended for thinner pavement layers (< 5" thickness); while in thicker pavements (> 5" thickness) constant stress loading simulates the field conditions more closely. The BFF-5 can perform the fatigue test in both modes at frequencies up to 60 Hertz*.

The BFF-5 stand-alone apparatus is a self-contained system featuring cradle support for the asphalt beam, clamps with controlled clamping force, LVDT, strain gauge and servocontrolled pneumatic actuators. The BFF-5 is controlled with the GCTS Signal Conditioning and Control Unit (SCON-2000) which is interfaced through Windows© Computer Aided Testing Software (CATS) package. The software automatically obtains the fatigue life parameters such as: initial stiffness, maximum tensile stress/strain, flexural stiffness, phase angle, dissipated energy per cycle, cumulative dissipated energy to failure and number of cycles to failure.

The standard beam fatigue test is performed at intermediate temperatures of 20°C (68°F). GCTS offers an optional environmental chamber capable of controlling the specimen temperature throughout the test. The environmental

chamber control accuracy is better than ±0.5°C. Temperatures of -30° to +150° (with liquid nitrogen boost) can be achieved with this option.

## Features

- Advanced testing for Hot Mix Asphalt (HMA) to determine the pavement fatigue life
- Stand alone apparatus with compact design, does not require a Universal Testing Machine
- Electro-pneumatic digital servo control
- Frequencies up to 60 Hz*
- Meets AASHTO, SHRP, ASTM and European EN standards
- Complete "turn-key" system

*Amplitudes reduced at high frequencies. Also, amplitudes dependent on material stiffness and compressed air supply. Please contact GCTS for frequency response performance chart.