

October 21, 2019

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## New Endurica Testing Service Quantifies Likelihood of Failure

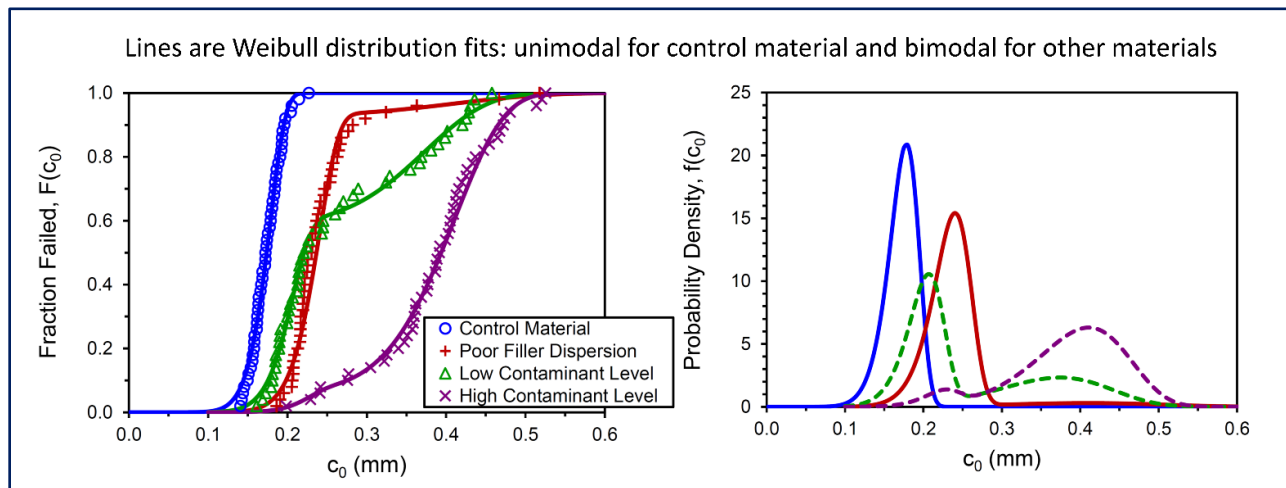
Provides expanded support for reliability analysis

Endurica LLC (Findlay, Ohio, USA) announces the addition of the Reliability Module to its family of Fatigue Property Mapping™ testing services. The new module offers raw materials suppliers and rubber product manufacturers a validated method to measure dispersion and contaminant effects on durability and reliability. It also offers users of Endurica fatigue solvers the ability to extend component durability analysis to compute statistics on product reliability and warranty.

The Reliability Module quantifies failure statistics from a population of 50 replicate experiments. It provides Weibull failure statistics derived from the distributions of tensile strength and crack precursor size ( $c_0$ ). The results can be used to calculate what probability of occurrence is associated with a given crack precursor size and fatigue life.

The module was validated in a collaboration between Endurica LLC, Birla Carbon, and Axel Products. The work was presented by Endurica's Sales Director and Materials Expert, Dr. Chris Robertson, as part of the symposium on *Testing and Predicting Behavior of Rubber and Tires* at the International Elastomer Conference in Cleveland, OH on October 9, 2019. The study looked at variations of a control compound that was mixed in batches with poor filler dispersion, and with low and high levels of a particulate contaminant. The identified statistical distributions from the module properly ranked the compounds, and also correctly identified known crack precursor size distributions.

“The distribution of precursor sizes in a rubber compound governs variability in strength and fatigue experiments”, said Dr. Will Mars, President of Endurica. “The new Reliability Module is an efficient way to get this information. It translates into greater control over materials and processes, and ultimately, into improved product reliability.”



Failure statistics obtained using the Endurica Reliability Module reveal differences in the distribution of crack precursor size for 4 materials.

[Endurica LLC](http://www.endurica.com) provides pre-prototype solutions for developers seeking durability in elastomer applications. Endurica is focused on durability of elastomers and developed the world's first numerical fatigue life solver for elastomers. Endurica's solver is used to predict fatigue life based on the results of Finite Element Analysis. Solutions provided by Endurica LLC include software, characterization services, testing instruments, and training for engineers and analysts.