

Endurica's production-ready workflows for mastering rubber durability are used throughout the world by leading firms in many business sectors. Endurica CL is the original and only commercial fatigue simulation application that accurately predicts elastomer durability.



# SOLUTIONS FOR DEVELOPERS

## FATIGUE & DURABILITY FOR RUBBER

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### ELASTOMER FATIGUE ANALYSIS SOFTWARE FOR FINITE ELEMENT MODELS

Endurica's fatigue simulation software:

**Endurica CL**™ Our original, full-featured solver for elastomer fatigue analysis.

**Endurica DT**™ Digital Twin option for incremental analysis of multiple load histories and residual life.

**Endurica EIE**™ Efficient Interpolation Engine option – speeds lengthy calculations from days to minutes.

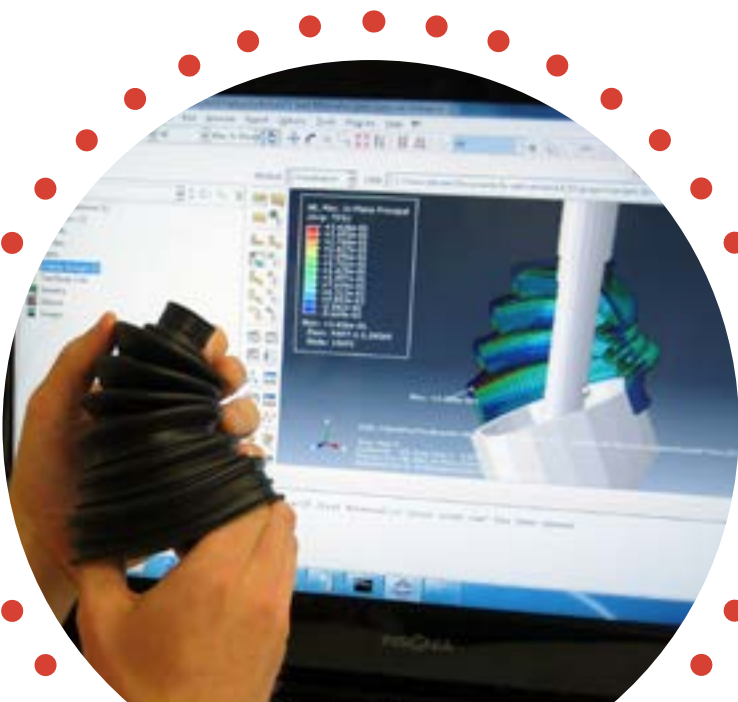


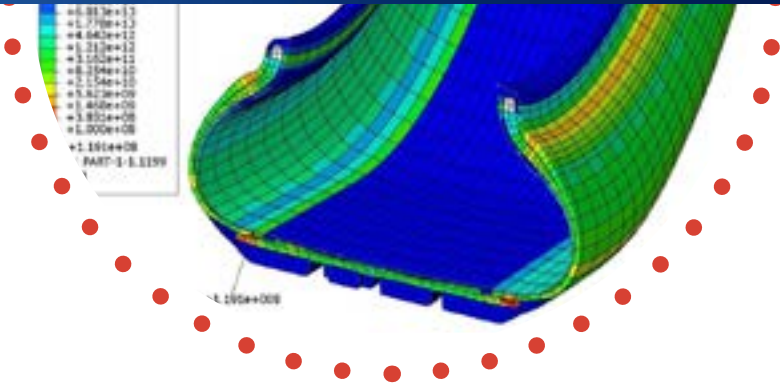
### MASTER TRAINING

Principles and practices for reliable design of rubber components:

- Application of Rubber Fatigue Analysis
- Characterizing Elastomer Fatigue Behavior for Analysis & Engineering
- Rubber Compounding for Durability
- Viscoelastic Effects in Elastomers and Impact on Durability

**Become an Endurica #FatigueNinja:** a highly-skilled engineer who understands the fatigue fundamentals of rubber and is trained in the use of Endurica solutions to: **#GetDurabilityRight**





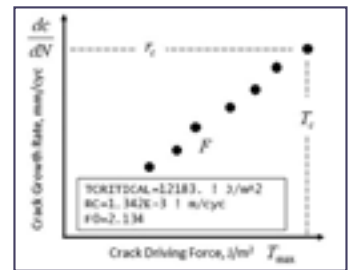
## TESTING SERVICES

### Fatigue Property Mapping™

Know your material

Inventory of the fatigue capabilities of your material:

- Material parameters ready to use with nonlinear finite element codes: Abaqus, ANSYS and MSC/MARC through fe-safe/Rubber™ and Endurica CL™.
- Full support for both nucleation ( $\epsilon$ -N or  $\sigma$ -N) and crack propagation ( $dc/dN$ ) analysis methods.
- Accurate and timely results via uniquely reliable and productive test strategies.
- Take your material's fatigue capabilities into account to reduce risk and cost of development iterations.



## TESTING INSTRUMENTS

Endurica methods in your own lab. Our testing solutions provide time-efficient, high-accuracy, reliable results.

Our partnership with instrument producer Coesfeld GmbH & Co. KG offers you proven, fully supported testing systems that are specialized for engineering analysis of elastomer durability.

For more information:

[endurica.com/testing-instruments](http://endurica.com/testing-instruments)



Intrinsic Strength Analyser (ISA)



Tear & Fatigue Analyser (TFA)



Instrumented Chip & Cut Analyser (ICCA)

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**“In the automotive industry, from design to launch is becoming more and more of a time crunch. This is what the Endurica software does in conjunction with our testing. It allows us to cut that timing down, and allows our customer base – the automotive, heavy truck and off-highway engineering staffs – to do their job and not worry about if they have a durability problem.”**

Steve Pohlman, Tenneco Inc.,  
Vice President and General Manager of Global Elastomers

As reported by Kyle Brown in *Rubber & Plastics News*, July 24, 2017

### Endurica offers:

- 100% Focus on Elastomers and Durability
- Leading Technology
- Deep Experience
- Legal Sensitivity

Submit your samples today:  
call us at **419-957-0543**

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