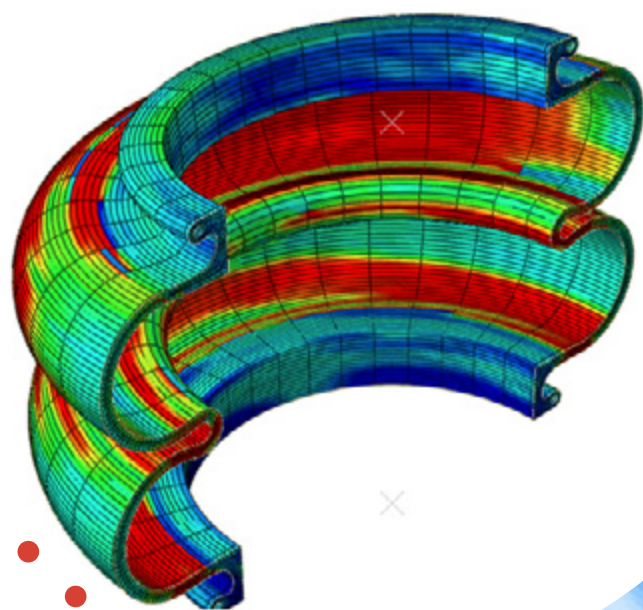


# Endurica CL<sup>TM</sup>

## FATIGUE ANALYSIS SOFTWARE



Give Endurica CL<sup>TM</sup> a finite element simulation of your loading history, specify your material(s), then CL computes the fatigue life of your rubber part.

## BENEFITS

- Calculate fatigue life and failure location on your part.
- Diagnose and resolve material, geometry, and loading issues to get durability right.
- Mobilize quickly with ready-to-use workflows that give you the edge.
- Scope analyses to fit your aim and budget with support for both “draft quality” and “high accuracy” simulations.

## FEATURES

- CL offers the right material models for capturing your elastomer’s behavior.
  - Nonlinear hyperelastic stress-strain behavior, Mullins effect, and cyclic softening.
  - Rate laws for both cycle- and time-dependent crack growth, including threshold effects and ozone attack.
  - R-ratio effects for both strain crystallizing and amorphous materials.
  - Temperature and ageing dependence of material properties.
  - Viscoelastic dissipation.
- CL offers accurate accounting of damage accrual under multiaxial, variable amplitude loading history.
  - Crack precursor growth tracking based on Fracture Mechanics.
  - Critical Plane Analysis checks every potential crack orientation and location to find the true worst case.
  - Rainflow Counting on history of the critical plane.
  - Reports fatigue life as repeats of the given history.

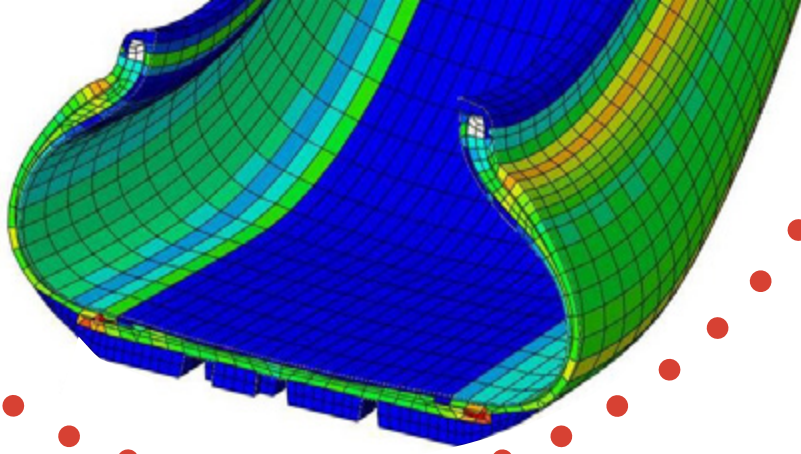


2020 TIBBETTS AWARD WINNER

# Endurica

Get Durability Right<sup>®</sup>

+1.778e+13  
 +4.642e+12  
 +1.212e+12  
 +3.162e+11  
 +8.254e+10  
 +2.154e+10  
 +5.623e+09  
 +1.468e+09  
 +3.831e+08  
 +1.000e+08  
 +1.191e+08  
 PART-1-1.1199



## C-SUITE INSIGHTS

### FOCUS ON PRODUCT TECHNOLOGY

Our tools free you up to focus on getting your product right. Avoid the costs of deep methods development programs.

### UNMATCHED ACCURACY

Don't waste your time with outdated, low-accuracy methods. Critical Plane Analysis is the gold standard for handling realistic load cases.

### SHORT LEARNING CURVE, LARGE USER BASE

Our tried-and-true workflows will have your team winning on durability. We've trained hundreds of "fatigue ninjas," and we can bring your team up to speed in a few days.

### LIGHTWEIGHTING, SUSTAINABILITY, COST-REDUCTION

The trick is to do it without sacrificing durability. Use our code to quickly eliminate non-viable solutions.

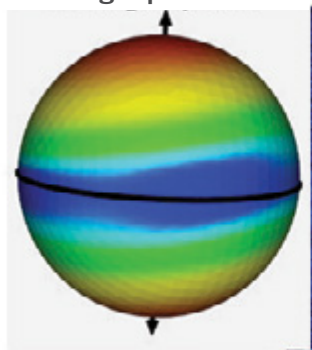
### SUPPORT FOR POPULAR FEA CODES

One license gives you support for all of the major elastomer FEA codes: Abaqus, Ansys and MSC/Marc.

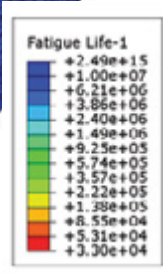
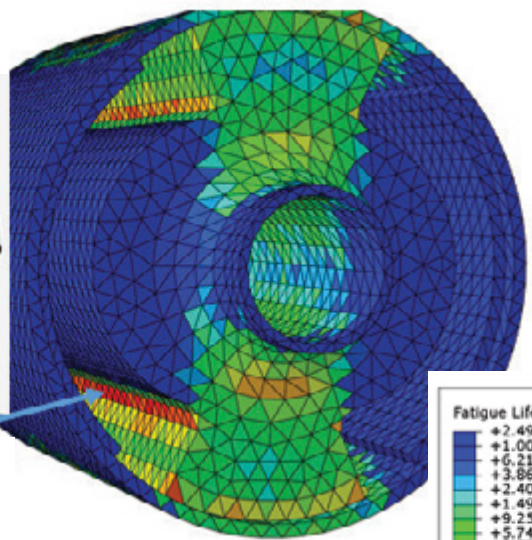
## TECHNICAL NOTES

- Compatible FEA solvers: Abaqus, Ansys, MSC/Marc
  - OS: Windows or Linux
- Licensing: node-locked or network shared; lease or perpetual

Road Load  
Damage Sphere



Critical Location  
Life=36,240



## THE ENDURICA DIFFERENCE

Learn more at:  
[www.endurica.com/fatigue-solver-software/endurica-cl](http://www.endurica.com/fatigue-solver-software/endurica-cl)  
 Call today to request a trial:  
**+1.419.957.0543**

**Endurica LLC**  
 1219 West Main Cross St.  
 Suite 201  
 Findlay, Ohio 45840 USA  
 +1.419.957.0543 | [endurica.com](http://endurica.com)

**SBA** 2020 TIBBETTS AWARD WINNER

**Endurica**  
 Get Durability Right®

