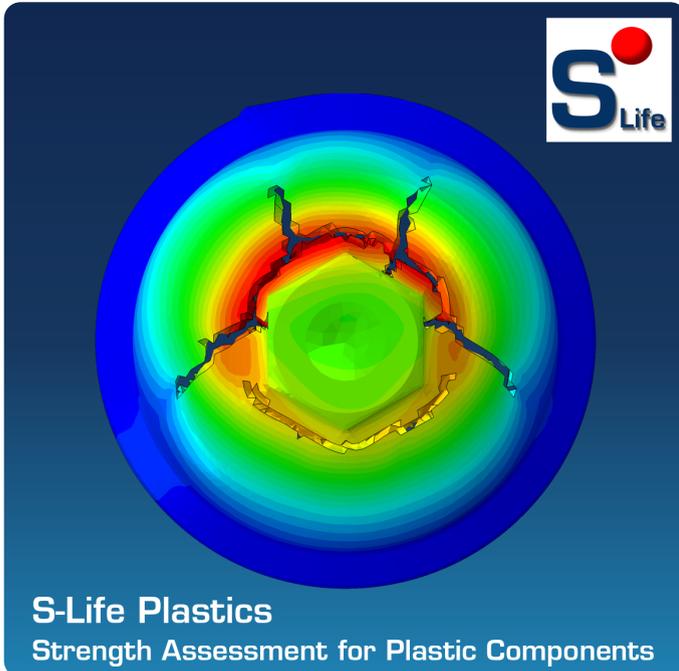


# Strength Assessment for Plastic Components

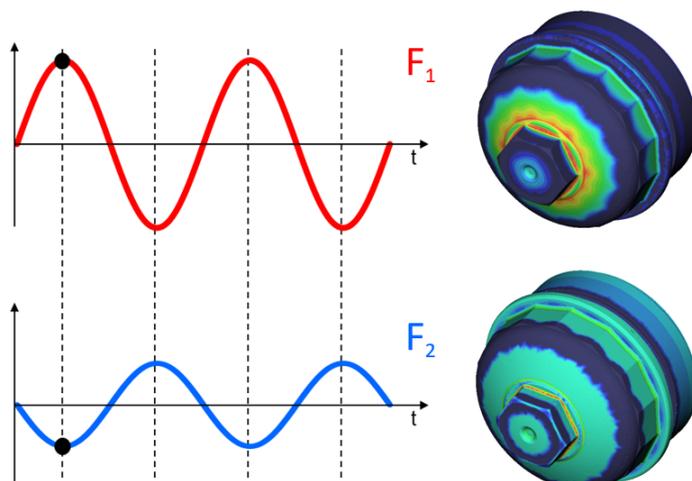
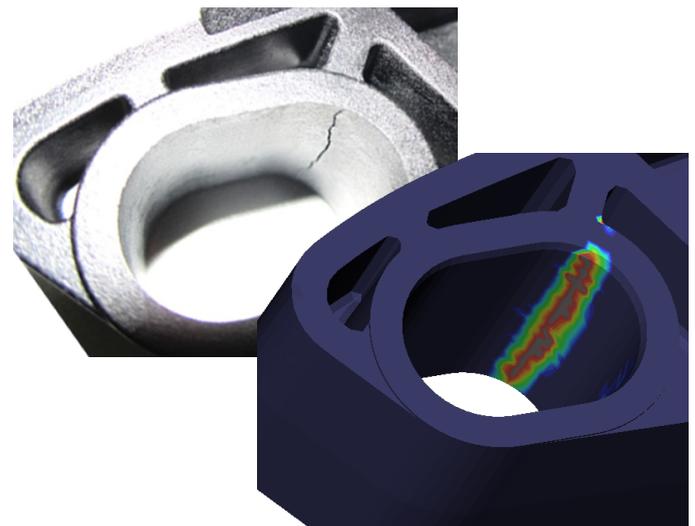


## What is S-Life Plastics?

S-Life Plastics is an easy-to-use software that conducts a static and fatigue strength assessment based on FEA results for plastic components made out of unreinforced or reinforced thermoplastic materials. In order to conduct a strength assessment S-Life Plastics only needs the local stress tensor, provided by the appropriate result file of the particular FE solver. Additionally the user has to enter some basic information about the material and loading conditions. With that S-Life Plastics provides the resulting static and cyclic utilization ratios as contour plots. For every individual node a comprehensive numerical report of the most important assessment variables can be requested for documentation purposes.

## Benefits

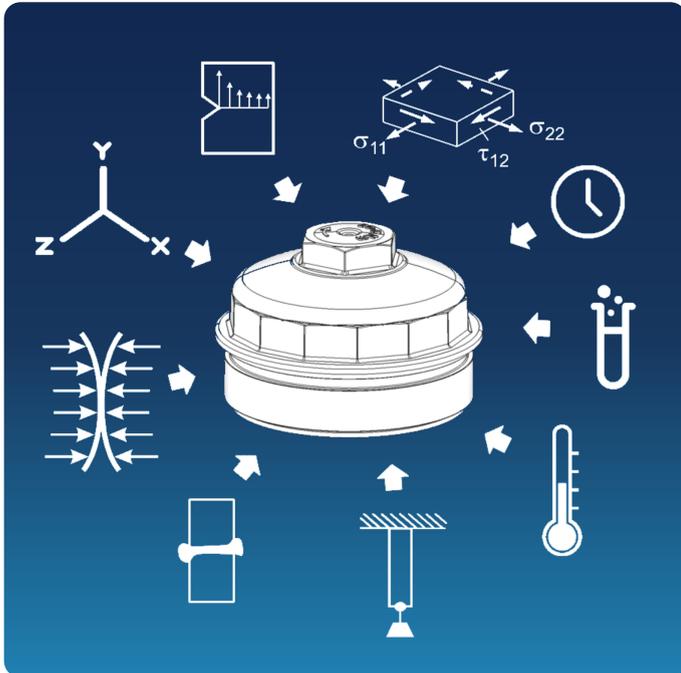
- Distinct strength assessment through systematic approach
- Comprehensive documentation of the results of the strength assessment through numerical report for the reference point
- Prevention of errors through easy and automated handling
- Identification of the critical hotspot through contour plot of the utilization ratios on the part surface
- Significant time saving through automated determination of the critical load case combination if multiple loads are applied



## Features

- Interfaces: Abaqus, ANSYS, MSC Nastran, MSC Marc, Simcenter Nastran, OptiStruct & Radioss
- Integrated and extendable material data base
- Automatic identification of critical load case combinations
- Static and fatigue strength assessment based on the concept of local strength
- Output of static and cyclic utilization ratios as contour plot
- Comprehensive reporting of nodal computation results
- Consolidation of results from different FEA
- 3D-Viewer for result evaluation

# Strength Assessment for Plastic Components



## How does S-Life Plastics add Value to your Simulation

In order to judge the strength of a component correctly, there is more to consider than the raw result of a FE Analysis, e.g. the stress or strain contour plot and a maximum material strength. Due to several influencing factors the local component strength is to be reduced.

- Geometry Induced:  
Multiaxiality & Stress Gradient
  - Process Induced:  
Orientation, Weld Lines & Seam Lines
  - Material Induced:  
Aging, Condition, Temperature & Load Duration
- With S-Life Plastics these influences are considered in an easy and effective way and help assessing the parts real potential.

## How does S-Life Plastics Save Time and Money?

The design of plastic components is challenging due to the complex material behavior and the dependencies of the material properties on manufacturing, environment and load situation. In engineering practice often approximative approaches are applied or not considered at all. Which in turn increases costs and development times through rework on the mold or on oversized parts. By using S-Life Plastics these problems are solved since the accuracy of the simulation is increased significantly thus enabling the user to assess the part's full potential at an early state.

