

SolidWorks COSMOS Use | SolidWorks COSMOS Analysis | Plastics Application | Elastomer Application | Metal-Forming Applications

Plastics Application:

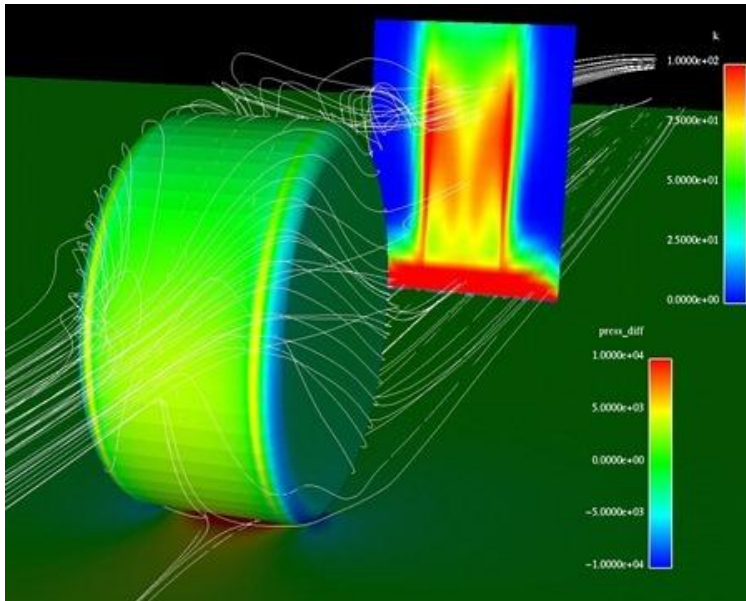


Household appliances, medical devices, electrical fittings among others incorporate numerous plastic product designs that need critical design validation to meet functional requirements. COSMOS finds extensive use in validating plastic product designs for functional efficiency and optimal usage of materials.

Capabilities of COSMOS include:

- Snap-fit simulation for stresses and deflections
- Limit load analysis of critical load bearing components
- Strength calculations of reinforced plastics
- Kinematic analysis of actuation systems and mechanisms
- Optimization of designs for least cost and weight

Elastomer Applications:

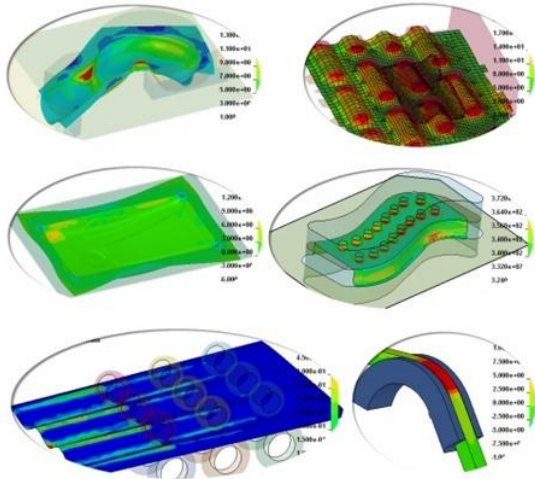


Elastomers such as rubber require special treatment due to material non-linear behavior, COSMOS provides a rich set of resources for accurately modeling real-world problems involving high geometric and material non-linearities. Applications of COSMOS in non-linear domain are wide ranging.

Some of the functionalities include:

- Seal behavior subjected to pre-stress due to assembly and operational loading
- Inflation of tyres with steel / Nylon chord reinforcements
- Assembly and operational strains in boots, bellows, gaskets, door-seals, bushings, mounts and other visco-elastic materials
- On-road condition simulation of wheel-tyre assembly, for contact patch calculations and wheel radial fatigue life
- Contact Stress analysis of seals subjected to pressure, temperature and frictional effects

Metal Forming Applications:



COSMOS enables users to simulate elasto-plastic deformations of metals subjected to contact and large strains, within the realm of implicit integration.

Some of the applications include:

- Forging of cylindrical billets
- Sheet-metal drawing of simple geometries
- Roll forming of metal sections

Source:

<http://www.mechanicalengineeringblog.com/category/cad-design-2/cosmos/>