

# Design and Development of Casing Hanger Elastomer Seal and Test fixture

## CHALLENGE

- Frequent replacement of elastomer seals resulted in higher cost of operations
- Workforce safety was compromised while trying to retrieve the jammed seals
- Casing hanger made of elastomer material gets compressed extensively and couldn't be retrieved because of the adverse working condition
- A need of new design of casing hanger seals which can withstand adverse pressure and compressions

A leading American oil field equipment company

**25%**  
reduced  
service cost

Improved  
Elastomer seal  
life by **50%**

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## SOLUTION

The project was end-to-end owned by the ITC Infotech right from concept design to testing & validation along with test fixture.

- Detailed study carried out by SMEs to understand the requirement and critical parameters
- Parameters like space restriction, higher pressure of the order of 15000 psi and casing loads up to 2 Million lbf were considered to generate design concepts of the slip casing hanger and its test fixtures
- Design verification packages creation, design validation through FEA studies and material selection were done
- New design was made in compliance with design for manufacturability (DFM) handbook

## RESULTS

- Ease of retrieving the seals during the service time, reduced scraping of seals
- Improved elastomer seals life by **> 50%**