

MASSACHUSETTS BAY AREA TRANSIT AUTHORITY - CASE STUDY

SAN FRANCISCO MUNI

INDUSTRY: RAIL (PASSENGER VEHICLE)

PRODUCT: PRIMARY SUSPENSION



PROBLEM

- Unacceptable / Premature Failure rate (under 3 years) through rubber bond failure .
- Premature wearing of subsequent bogie components.
- Unacceptable & unexpected cost burden.

SOLUTION

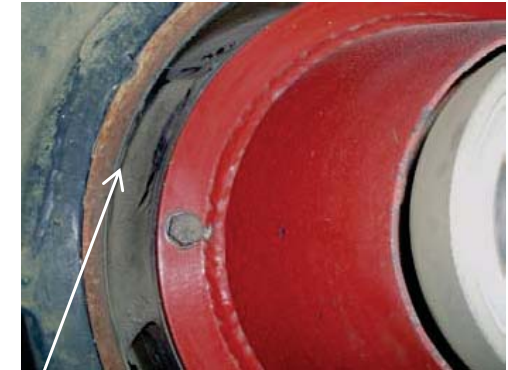
- Vulcanite redesign, develop & validate new component
- New component designed with 'split housing' concept to eliminate residual stresses in the rubber element.

BENEFIT

- Life expectancy of NEW component is now 7 – 10 years.
- Cost of 'per unit' component purchase better than previous failed component.

MAINTENANCE COST REDUCED BY 50%

VULCANITE



Debonding – typical design fault

FEA – Load Parameters and Modes

The same load collective shown below were applied to both designs.

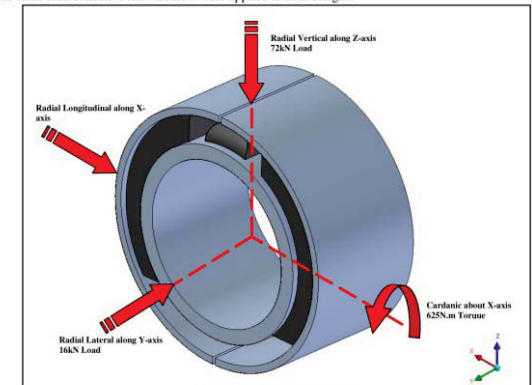


Figure 3. Modes of Loading in the FEA Model

