



FAILURE PREVENTION AND ANALYSIS FOR STRUCTURAL COMPONENTS

Solutions for Failure Problems

Baker Engineering and Risk Consultants, Inc. (BakerRisk) offers expertise in isolating the mechanism of failure and determining root cause for failure. Our staff has many years of experience investigating failures in pressure vessels, tanks, piping, aircraft structures, rotating equipment, structural members, and other types of industrial equipment.

Investigations are conducted with the highest level of integrity in order to maintain client confidentiality and to provide recommendations that will prevent costly failures from re-occurring.

BakerRisk engineers use experience from past investigations and multi-disciplined resources to determine failure mechanisms, including:

- High and Low-Cycle Fatigue
- General Corrosion
- Stress Corrosion Cracking
- High Temperature Degradation
- Brittle and Ductile Failure
- Hydrogen Attack and Embrittlement
- Fretting and Wear Degradation Phenomenon



Field and laboratory fracture examinations are conducted to determine origin and cause of failure



Using in-house metallurgical tools, BakerRisk engineers identify failure mechanisms



BakerRisk focuses on improving reliability, reducing risk, and determining the cause of failures. We are widely known and respected in private industry and government, as well as in the legal and insurance industries, for providing answers and solutions to difficult failure problems. We have also supported clients by serving as expert witnesses.



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About BakerRisk

Baker Engineering and Risk Consultants, Inc. is one of the world's leading explosion analysis, structural design, and risk engineering companies. BakerRisk provides comprehensive consulting, engineering, laboratory and range testing services to government agencies and private companies who are involved with dangerous, highly hazardous, reactive, or explosive materials.



Blast Effects & Explosion Testing



**Dynamic Structural Analysis
and Design**



Risk Engineering



Process Safety



Incident Investigations



**Reactive Chemicals Testing &
Management Systems**



**Materials Engineering and
Failure Analysis**

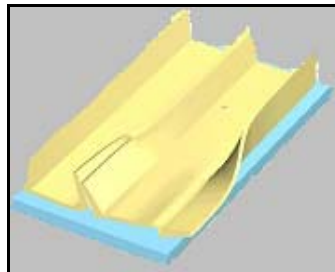
www.BakerRisk.com

On-Site Accident Investigations



During an on-site investigation, BakerRisk's multi-disciplined engineering staff works together to effectively evaluate and solve a particular problem supported by significant capabilities and experience in incident and accident investigations, root cause analysis, risk reduction, blast effects and structures response, process safety, and chemical hazards testing and

evaluations. We use our experience and expertise to support the control and management of the accident site, preserve evidence, prove or disprove accident scenarios, determine the cause of the accident, provide effective solutions, and to develop the plans and safety programs for post-accident operations. BakerRisk provides the appropriate technical recommendations and engineering design support to understand and prevent failure.



Finite Element Analysis is used to model rupture in a support fixture

Additional Engineering Services

- Finite Element Stress Analysis
- Structural Analysis and Design Engineering
- Metallurgical Engineering
- Risk and Reliability Engineering
- Life Assessment Evaluations
- Mechanical Testing and Material Characterization
- Non-Destructive Inspection

For more information on Failure Prevention and Analysis, contact:

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