

Gathering Evidence for Failure Analysis

1. Isolate/identify the failure

- Locate the failure, fracture, defect
- Consider multiple failures or causes
- It might be remote from the location of the worst damage

2. Photograph the scene and all evidence liberally

- Secure the scene
- Set camera to the correct date and time
- Include scale markers in photos to indicate size
- Use the highest quality image settings
- Obtain photographs before disturbing the evidence
- Obtain both overall site photographs and close-up photographs
- Review photograph quality before leaving site

3. Secure evidence

- Preserve failed parts, or full assembly if possible
- Store evidence in clear, labeled plastic bags
- Record the chain of custody (who, what, when, where)

4. Avoid spoliation

- Document location as-found and condition of each item
- Do not alter evidence during extraction
- Document the extraction process (use notes, sequential photographs, video recordings)
- Do not press fracture surfaces together
- Do not unthread connections

5. Gather important site information

- Time of incident
- Pertinent site or evidence conditions pre- and post-incident (changes or adjustments in usage, settings, lighting, weather, etc.)
- Dates of construction, installation, inspections, maintenance
- Product manufacturer, model, serial number
- User or installation/service manuals
- Maintenance/service records
- Invoices for purchase/installation
- Witness statements

6. Talk to an expert early

- Use an expert to help identify potentially relevant and important features of your case

7. Retaining an expert

- Request expert's CV
- Discuss overall investigation approach
- Agree on specific actions
- Give clear, specific instructions
- Discuss deadlines, milestones and budget

