Agenda

Definition of Construction Defect 3
What is a Construction Defect Claim 4
Background Information 8
Montrose Decision 11
Policy Changes 13
Data Segmentation and Actuarial Issues 15
Methodologies 20
Recent Trends 21
Definition of Construction defect

A construction defect is “the failure of the building or any building component to be erected in a reasonably workman like manner or to perform in the manner intended by the manufacturer or reasonably expected by the buyer, which proximately causes damage to the structure.”

— CA State Jury Instructions
What is a Construction Defect Claim?

There are two types of defects, patent and latent. Most construction defect claims fall into the latent category.

- **Patent Defect**
  - Patent defects are defects detectable through reasonable inspection.
  - An example of a patent defect is a wall is moldy due to leaking pipes. This is something that would be expected to be readily detectable.
  - In most jurisdictions, the Statute of Limitations for filing suit for patent defects is generally two to four years.

- **Latent Defect**
  - Latent defects are defects that are not detectable through reasonable inspection and are manifested over a period of time.
  - An example of a latent defect is the pipes freezing in a house because the plumbing was not properly insulated. This is something that would be not be expected to be readily detectable.
  - The time limit for presenting latent claims is often governed by a state’s Statute of Repose, which begins running on the date that construction is completed. More time is allowed to submit a claim. The Statute of Repose is generally 6-10 years.
  - The difference between a statute of repose and statute of limitations is that a statute of limitations is triggered by an injury, while a statute of repose is triggered by the completion of an act. For example, if a defective product sold to a consumer more than ten years ago injures someone, a ten-year statute of repose (which starts on the product's purchase date) might bar a claim even if the statute of limitation (which starts on the date of injury) does not.
Traditional General Liability Claims vs. Construction defect Claims

Traditional General Liability Claims:
- One or few plaintiffs
- Few defendants
- Known loss date
- Few damages / injuries
- One policy period triggered
- Shorter Statute of Limitation (BI 1-6 years; PD 1-10 years)
- Typically the primary focus is on Liability, rather than Coverage or Damages

Construction defect Claims:
- Multiple plaintiffs – sometimes 100’s of homeowners
- Multiple defendants – design professional, developer, general contractor, multiple subcontractors
- Undetermined loss date
- Multiple damages
- Multiple policy periods
- Longer Statute of Limitation (breach of contract 3-20 years)
- Typically the primary focus is on Damages and Coverage, rather than Liability
The vast majority of non-construction defect claims are reported as of 4 years of development, while construction defect claims have a significantly slower development pattern.
Accident Year Incurred Loss Development: CD vs. Non-CD

- Similar to the claim reporting pattern, the vast majority of non-construction defect losses are reported as of 4 years of development, while construction defect losses develop slower.
Background: It all began in California

- **Population Growth:**
  - Between the 1970s and the early 1990s, California experienced extraordinary population and housing growth

- **Building Boom:**
  - Demand for housing exceeded supply
  - Shift in type of residence, population growth, coupled with the price of real estate, caused the construction market to turn largely to townhomes and condominiums

- **Builders increase production:**
  - Shortage of skilled workers
  - “Cut corners”, used cheaper materials and built quicker
  - Less supervision

- **Construction industry unprepared:**
  - Relatively unsophisticated risk management programs
  - Significantly contributed to the rise in CD claims
Background: It all began in California

• Aggressive Plaintiffs Bar:
  • Lawyers were very aggressive in getting homeowners associations to sue the contractors responsible for defects arising in multi-unit developments.

• Success in early suits:
  • Successful verdicts are likely to be large, highly publicized events, thus encouraging other homeowner associations to file lawsuits in hopes of reaching a similar conclusion.

• Construction of multi-family units (condos, townhomes) encouraged large cases:
  • Multi-family units more likely to sue

• Focus on Homeowners Associations (HOAs):
  • Sold on idea to sue by aggressive lawyers
  • Unlike decades ago, home buyers expect perfection
  • Potential suits against condo Board if Board does not sue

• Spreads to other western states
Background: It all began in California

- Plaintiff construction defect attorneys became experts at tracking, canvassing and soliciting HOAs.

- Plaintiff construction defect attorneys also became experts at exploiting the traditional coverage structure utilized in the construction insurance industry.
Montrose Decision

Montrose Chemical Corp vs. Admiral Insurance:

- July 1995 California Supreme Court Decision

- Pollution liability coverage case that determined that a continuous (coverage) trigger applied during the time that the pollution occurred, effectively triggering all policies in force during that time period

- The California Supreme Court rejected insurer defense of “Known Loss” and “loss in progress” doctrine

- The Montrose Decision, while providing some clarity on the issue of coverage allocation, caused frequencies to increase dramatically because multiple insurers were named on virtually every lawsuit filed. At the same time, severities generally decreased because each insurer was deemed only partially involved.

- Post Montrose, the cost and complexity of California construction defect claims increased significantly
The "trigger spread" approach to allocation refers to the time period of an insured's exposure, and recognizes the tendency of courts to allocate losses "horizontally", meaning that carriers are required to respond to latent claims on a pro rata or shared basis.

By spreading losses to all polices in force from commencement of construction to manifestation, the insured’s available coverage is maximized.

Primary insurers are more exposed to losses, and reinsurers are less exposed.
Policy Changes

• Many carriers placed “known and continuing” endorsements or Montrose endorsements on policies starting as early as 1996:
  • Standard ISO Form denies coverage for claims that were known prior to the policy period (Montrose Exclusion)
  • Prior work exclusions – no coverage for work completed prior to stated date
  • Some carriers are even more restrictive, excluding claims first occurring prior to the policy period

• Economic Loss Doctrine & “Your Work” Exclusions:
  • Economic loss = Breach of contract
  • Business risk exclusion = “Damage to contractors own work”

• Additional Policy changes:
  • Exterior Insulation Finishing System (EIFS) exclusions
  • Mold exclusions
  • Residential construction exclusions
  • Additional Insured endorsements
Policy Changes: Additional Insured Endorsement

The ALAE to loss ratio for construction defect claims is typically above 100%. The ratio is significantly impacted by additional insured exposure, particularly subcontractor claims where we have observed ratios well above 150%. For this reason, we typically recommend that ALAE for general contractors and sub-contractors be analyzed separately, because they have shown considerable differences in the ultimate ratio.

• Additional insured endorsement – subcontractor policy covers general contractor for work performed on his behalf

• With additional insured status, general contractors look to the subcontractors’ insurer for defense and indemnification. General contractors typically want to be protected financially from lawsuits resulting from the subcontractors’ work.

• Residential CD claims and suits often name numerous parties as defendants, including: general contractors, trade subcontractors, manufacturers of building components, and material distributors

• Allocation of defense costs: since each policy is obligated to answer, most courts require cost sharing by equal shares; some courts allow sharing on a pro-rata basis

• 2004 – ISO revised standard additional insured endorsements to require at least contributory negligence on the part of the NAMED insured, e.g., subcontractor, for the additional insured’s coverage to apply.
Data Segmentation

As an actuary, it is important to understand how your company is defining construction defect. Knowing what types of claims are being included in your data will enhance the assumptions you make about development patterns and tail selection. Construction defect claims come from a variety of sources; most defects are attributed to faulty workmanship. Most often these defects are related to the following:

Building and Structure
- Door, window and exterior wall deficiencies
- Roof leaks
- Damp proofing and waterproofing deficiencies
- Foundation movement

Infrastructure
- Drainage deficiencies
- Road and driveway deficiencies
- Electrical and HVAC deficiencies
- Plumbing and other leaks to internal systems
- Sound, odor, vapor transmission and code compliance deficiencies
## Data Segmentation

Data segmentation is a key factor for a construction defect reserve analysis in order to isolate the areas of focus and identify trends. Credibility and stability also need to be considered when determining data segments. With these factors in mind, the actuary should consider the categories below during the data segmentation process.

<table>
<thead>
<tr>
<th>Category</th>
<th>Considerations</th>
</tr>
</thead>
</table>
| Geography              | Leading practice is to analyze California separately due to the mature and unique legal environment for Construction defect claims. For additional geographic segmentations, we typically review the number of claims and claim reporting patterns by state.  
  • Segment states deemed to be “high cost” because of the volume of claims relative to exposure and/or the severity of claims. |
| Mix of Claim Types      | Leading practice is to analyze General Contractors and Subcontractors claims separately if possible. It may be necessary to segment data further by SIC code or separate claims related to multi-family units (condo, town-homes, etc.) and tract developments.  
  Isolating these claims removes a large portion of the volatility in the analysis of the remaining claims. |
| Size of Claim           | General contractors appear to have significantly higher severities than subcontractors. In some cases, the severities are as much as five times higher. We attribute this phenomenon to the fact that the general contractors are in control of the entire project, while the subcontractors are only performing a portion of the work on each project and therefore may not be subject to the total claim value. While producing higher severities, the claim count emergence is lower for general contractors than for subcontractors.  
  Again, we believe that the larger number of projects that a subcontractor works on gives rise to the higher number of claims. |
### Actuarial Issues

Due to the continually changing environment surrounding construction defect exposure, problems arise with the application of traditional reserving methods to general liability or commercial multiple peril lines of business that contain construction defect claims.

<table>
<thead>
<tr>
<th>Key Points</th>
<th>Implications</th>
</tr>
</thead>
</table>
| **Uncertain Determination of Accident Date** | Varies by company and frequently within a company. Two main philosophies:  
- Assign a claim to each accident year where there is believed to be potential exposure  
- Determine one appropriate accident year to which the claim would be coded. | While neither method is preferable over the other, it is important that one method be applied consistently. It is also important for the actuary to have an understanding of the accident date determination used in a particular company. It may require interviews with claims handlers and other construction defect claims specialists. |
| **Uncertain Determination of Future Development Pattern** | It is difficult to determine the loss development pattern because the impact of litigation surrounding construction defect affect an accident year triangle along the diagonal. | Because of these difficulties, leading practice is to use report year data and methods. Report year data is beneficial for two reasons. The first is that the report date will be consistently applied to all claims. The second is that report year data allows the number of claims in each year to be set; development on these claims is more readily determinable. |
| **Uncertain Determination of Tail Factor Selection** | The future construction defect environment is so uncertain that it is extremely difficult to develop a deep enough understanding of the loss emergence to determine at what point any tail factor would become unreasonable. | In general it seems reasonable to assume that there will be no more claims reported after the Statute of Repose for reporting the discovery of a defect. |
Questions to Ask Before Starting Construction defect Analysis

• What is the exposure mix (general contractor, designer/builders, subcontractors)?

• Is the exposure residential or commercial construction?

• Which states have construction defect exposure?

• Is exposure information available?

• What is the definition of a construction defect claim?

• How is accident date determined?
Difficulties with Traditional Actuarial Methods

• Very long reporting lag:
  • “Pure” IBNR dominates outstanding loss estimates

• Construction defect Development Differs significantly:
  • Not ideal to combine with other book of general liability claims. Development pattern is different from typical general liability pattern.

• Exposure Base:
  • If construction defect loss triangles are broken out separately, exposure base for Bornhuetter-Ferguson approach is subjective as there is no “construction defect” premium since triangles broken out by cause of loss.

• Legislative Impact:
  • Legislation has calendar year effect, affecting all accident years along a given diagonal.

• Concern that the past may not be predictive of the future:
  • Development methodologies assume that past experience is indicative of future emergence.
Methodologies

Because traditional accident year based actuarial methods may not produce optimal results, separate estimation of the development on known claims versus the cost of future reported claims is the preferred approach for Construction defect exposures.

Development on Known Claims ("IBNER")

- Review several data diagnostics, such as claim closure rates and average costs per claim, to identify trends and anomalies in historical data.

- Perform the following methods on a report year basis (as necessary):
  
<table>
<thead>
<tr>
<th>Method</th>
<th>Loss</th>
<th>ALAE</th>
<th>Claim Counts</th>
</tr>
</thead>
<tbody>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Bornhuetter-Ferguson</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Berquist-Sherman</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Adler/Kline</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

- Advantage of this approach is that because claims are aggregated on a report year basis, the number of claims attaching to a particular year is known. The resulting development patterns for the emergence and settlement patterns are considerably shorter than on an accident year basis and, therefore, are easier to select.

Cost of Future Reported Claims ("Pure IBNR")

- Preferred Pure IBNR methodology is count times severity approach

- Two approaches to estimating IBNR counts
  - Exposure Emergence Approach
  - Estimate reporting pattern of the remaining claims based on curve fitting approach
    - Fitted Distribution
    - Empirical Distribution

- Exposure emergence approach is the ideal method if data is available. This approach attempts to connect remaining exposure to construction defect claim experience

- Using the exposure base (number of closings) and a selected reporting pattern, allocate the exposure to future report years.

- Based on results of the report year analysis, review the historical frequency and then select a future frequency assumption.

- Apply the selected frequency against the future report year exposures to estimate future claim emergence

The pure IBNR component typically requires the most actuarial judgment. The primary area of uncertainty is understanding the number of future reported claims, which is influenced by both internal and external factors.
Recent Trends

• Observations:
  • Increasing loss severity in recent accident years
  • Carriers switching from residential to commercial exposure, latent claims are less likely
  • Increased sophistication of claims adjusters, able to identify CD claims sooner

• Potential Risk Areas:
  • Increase in future reopened claims
  • Claims reported after the statute of limitations
  • Adverse development due to future state legislation or judicial rulings

• Industry Trends:
  • California less of an issue, more volatility in other states particularly in coastal regions (Florida, Mississippi, Texas and Louisiana)
  • Emergence of Green Construction
  • ALAE to loss ratios increasing, generally over 100%
  • Closed without payment counts increasing
Emergence of Green Construction

There are a lot of construction products coming to the market that advertise themselves as green. Since the products are new, their potential for risk is unknown.

• Vegetative Roof Damage:
  • One increasingly common green building element that creates concern from a risk management standpoint is vegetative roofing.
  • Large potential for water damage claims.
  • There have already been severe claims resulting from leaks from vegetative roofs.
  • Technology causes concern because it really hasn’t had a lot of history.

• Recycled Materials:
  • Certain green certified construction materials that are said to be recyclable or made from recycled materials are also raising concerns.
  • Specifically, there have been a number of claims related to bamboo surfaces.

• Buyer Expectations:
  • The failure of new products to meet promoted performance levels.
Report Year: Subcontractors Expense Ratio

• ALAE to loss ratios for construction defect claims above 100% are not uncommon. Typically, the ALAE to loss ratios for additional insured claims is significantly higher than ratio for non-AI claims. In our experience, this ratio has recently increased.
A significant number of reported construction defect claims close without payment. Closed claims without payment to reported claims ratios above 75% are not uncommon. In our experience, this ratio has steadily increased.
Impacts of the “Great Recession”

The economic downturn impacted the housing industry significantly. There were both positive and negative outcomes. With additional workers available, contractors may use more highly skilled workers, which could lead to fewer claims in the future. However, with United States home prices down 20% from the peak in 2006, the building industry may see a continued rise in claims.

• Possible Positives:
  • May improve the quality of home construction currently taking place.
  • Builders “slow down” and use their more highly skilled trade contractors to work on the homes they do build.

• Possible Negatives:
  • With fewer resale opportunities and diminished equity, unhappy homeowners may be more susceptible to plaintiff lawyers that promise easy money
  • Strained financial condition of builders may force builders to cut back on quality control efforts and customer service.
  • Backlogged inventory of homes and weakened financial situation may make builders less likely or able to make necessary repairs in response to buyers’ demands.
  • Contractor bankruptcies have increased probability that insurers will face lawsuits with no defense assistance from contractor.
Key Takeaways

• Construction defect exposure is very volatile:
  • Subject to extreme changes based on litigation and legislation
  • Highly market driven
  • Plaintiff attorneys have developed an expertise in exploiting the traditional coverage structure utilized in the construction insurance industry

• Actuarial Analysis:
  • Requires research and homework into company’s exposure and claims handling practices
  • Analysis requires thoughtfulness, creativity and a considerable amount of judgment, particularly tail selection
  • Claims adjusters have become much more sophisticated in handling construction defect claims.

• Coverage is highly impacted by:
  • Macro-economic trends
  • Changes in technology
  • Changes in future legislation
Questions?
Appendix
Methodologies: Exposure Emergence Approach

Exposure Count Method

Distribution of Exposures

<table>
<thead>
<tr>
<th>Months of Development</th>
<th>Distribution of Reported Counts</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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<tr>
<td>12</td>
<td>15%</td>
<td>750</td>
<td>750</td>
<td>750</td>
<td>750</td>
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<td>600</td>
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<td>-</td>
</tr>
<tr>
<td>12–24</td>
<td>25%</td>
<td>1,250</td>
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<td>1,250</td>
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<td>1,000</td>
<td>1,000</td>
<td>800</td>
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<td>24–36</td>
<td>20%</td>
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<td>800</td>
<td>400</td>
<td>400</td>
<td>300</td>
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<tr>
<td>36–48</td>
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<td>96–108</td>
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<td>132–144</td>
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<td>2</td>
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| Total Written Premium | 100% | 5000 | 5000 | 5000 | 5000 | 4000 | 4000 | 3000 | 0    | 0    |
## Methodologies: Exposure Emergence Approach

### Exposure Count Method

#### Allocation of Exposure to Report Year

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<th>Report Year</th>
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<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>Total Exposure</th>
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<td>2002</td>
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Methodologies: Exposure Emergence Approach

Exposure Count Method

Selection of Ultimate Counts

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Methodologies: Exposure Emergence Approach

Exposure Method

Determination of IBNR Loss

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Important Legal Cases

Stonewall Insurance Co. vs. City of Palos Verdes Estates:
- Homeowners in Palos Verdes Estates sued the city for the damage to their homes due to sinking land
- First case to examine the duty to indemnify in the context of construction defect claims
- California Court found that all insurers whose policies were enforced during any portion of “accident period” covered the loss to the City arising out of the damage.

Presley Homes vs. American States Insurance Company:
- Presley Homes was sued by a homeowner for construction defect, and it tendered the claim to American States Insurance Co., which had issued additional insured endorsements in favor of Presley Homes under two separate subcontractor policies
- Duty to defend applies where there is a mere potential for coverage and applies to entire action
- Shifts ALAE costs from contractor to subcontractor
- As general contractors reached their policy limits or started to go bankrupt, began to look for coverage under subcontractor’s policies where they are listed as an “additional insured”
Important Legal Cases

Lamar vs. Mid-Continent:
- Insurer refused to defend Lamar Homes, Inc. under the theory that the construction errors harmed only Lamar's own product.
- The builder's allegedly defective construction or faulty workmanship in building the house foundation was an “occurrence,” and the resulting cracks in sheetrock and stone veneer were “property damage.”
- Texas Supreme Court decision determined that a construction defect claim was covered by the CGL policy

L-J Inc. vs. Bituminous Fire and Marine Ins. Company
- Insurer brought a declaratory judgment action seeking a determination as to whether a CGL policy it had issued to L-J, Inc. covered damage caused by the faulty workmanship of L-J, Inc. and its subcontractors on a road construction project
- No coverage provided to your own work (“your work” exclusion)
- South Carolina Court decision determined that premature deterioration of work as result of a contractor’s faulty workmanship is not caused by an “occurrence.”
Construction Defect as an Occurrence

The standard commercial general liability policy provides coverage for “property damage” that is caused by an “occurrence.” Courts across the nation have disagreed on whether property damage caused by defective construction constitutes an “occurrence” as defined in standard CGL policies. Despite policy language changes, the interpretation often varies widely from one jurisdiction to the next. Therefore, the debate over whether damage caused by construction defect constitute an “occurrence” continues. Recent cases have not agreed on a majority view or the current trend.

<table>
<thead>
<tr>
<th>Not an Occurrence</th>
<th>Occurrence</th>
</tr>
</thead>
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- Group Builders, Inc. ("Group Builders") installed synthetic stucco on a hotel. Following construction, the hotel owners discovered mold, and the hotel was forced to shut down. In the coverage litigation, the trial court ruled that damage resulting from the faulty installation of the stucco was not an “occurrence.”

- Hawaii Court of Appeals concluded that “under Hawaii law, construction defect claims do not constitute an ‘occurrence’ under a CGL policy”.

- The Court reasoned that allowing recovery for disputes over quality of work between parties to a contract would convert CGL policies into *de facto* performance bonds.

- Case arose out of water damage, including mold and decaying joists, to the interiors of homes built by Sheehan. Sheehan’s insurer sought a judgment that it was not liable for repair costs attributable to the defective work of Sheehan’s subcontractors.

- The Indiana Supreme Court concluded that coverage did exist because Sheehan did not intend for the subcontractor’s work to be defective. The essence of an accident is its lack of intentionality.

- Therefore, the subcontractor’s work constituted an “occurrence” under the policy.
Notice and Opportunity to Repair Legislation

• Calderon Act
  • Homeowners association must provide notice of a claim to the developer and to members of association before filing a lawsuit
  • Specifically, must give written notice to the builder against whom the claim will be made, including a list of defect
  • Final result is that filing of lawsuits was delayed, increasing lag time
  • Ineffective

• Steinberg Mandatory Negotiation Bill
  • Builders, subcontractors, insurers and suing homeowners will be required to negotiate a solution to specific alleged defect in a timely manner before a lawsuit can be filed
  • if cases go to trial, courts required to give these cases priority
  • Improvement over Calderon

• California Senate Bill 800
  • Established building standards to govern claims
  • Mandatory pre-lawsuit process