

# LOB-3 Commercial Lines

## A Potpourri of Reserving Issues

### Construction Defects

Presented by:

Scott Anderson

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# Agenda

- Main causes, issues and examples
- Coverage issues
- Basic Projection techniques
- Specific Estimation techniques



# Main Causes



# Improper Site Selection and/or Soil Preparation



# Structural Design



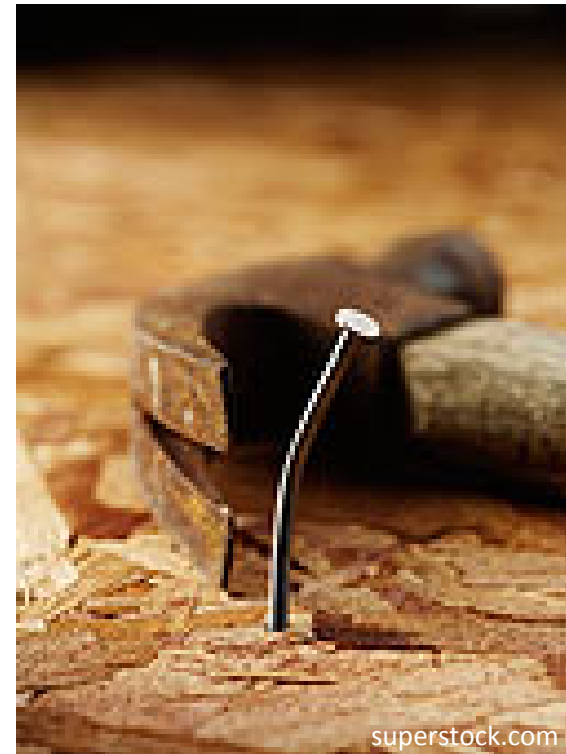
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# Defective Building Materials



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# Negligent Construction





# Main Issues



# Water Damage



# Structural Failure



# Mechanical



# Specific Examples



# EIFS

- Exterior Insulation and Finish Systems
- EIFS is an exterior wall covering system designed as an alternative to stucco.
- It uses three layers bonded together to form a barrier designed to completely seal out water.
- However, if water does seep in, it does not allow the water to drain and can lead to rotting.



# Kitec

- Kitec brass pipe fittings were used to connect flexible composite pipe in homes throughout the western United States.
- When water runs through these fittings, a chemical reaction called dezincification occurs, causing corrosion which eventually blocks the pipe. This can lead to leaks and even bursting pipes.



plumbingdefect.com



# Chinese Drywall

- During the housing boom from 2004 to 2007, drywall was imported to the US from China due to a shortage of American made drywall.
- The drywall has been found to emit sulfurous gases which smell like rotten eggs and can cause copper pipes, wiring, and air conditioner coils to corrode.





# Coverage Issues



# Triggers Differ by Jurisdiction

- Manifestation
  - The date of occurrence is when the property damage manifests is apparent.
- Exposure
  - All policy periods during which the property has been exposed. (often found in claims involving long-term bodily injury claims like asbestosis)
- Continuous
  - All policies in effect from the date of exposure through manifestation including all policies from construction through discovery and potentially further.
- Injury-in-Fact
  - All policies in effect when injury can be demonstrated without regard to when the damage is discovered.



# Claims Made or Occurrence

- Completed Operations Coverage
  - Like Products Liability, provides insurance for claims resulting after a construction project is completed.
- Issues
  - Different insurers over time
  - Different insurers for Primary versus Umbrella
  - Different policy conditions from year to year
    - ALAE within/without
    - SIR/Deductibles
    - Captives
    - Coverage wording



# Montrose

- 1995 the California Supreme Court ruled in *Montrose Chemical Corp. v Admiral Insurance Co.*
  - Continuous injury trigger governs coverage under the standard CGL policy.
  - Known losses can be insured as long as either the scope of damage occurring during the policy period or the insured's ultimate liability for that damage is undetermined.
- CG 00 57 adds a third condition to section b of the Coverage A insuring agreement.
  - (3) Prior to the policy period, no insured listed under Paragraph 1. of Section II-Who Is An Insured and no "employee" authorized by you to give or receive notice of an "occurrence" or claim, knew that the "bodily injury" or "property damage" had occurred, in whole or in part.
  - If such a listed insured or authorized "employee" knew, prior to the policy period, that the "bodily injury" or "property damage" occurred, then any continuation, change or resumption of such "bodily injury" or "property damage" during or after the policy period will be deemed to have been known prior to the policy period.
- Colorado HOUSE BILL 10-1394 (new)
  - Faulty workmanship constitutes an "occurrence" and that claims for faulty workmanship fall within a general liability policy's insuring agreement.



# Statute of Limitations/Repose

- Statute of Limitation
  - A type of federal or state law that restricts the time within which legal proceedings may be brought. These vary by state.
- Statutes of Repose
  - Statutes of repose terminate a manufacturer's liability for defective products after a statutorily specified number of years. A person injured after the cut-off date has no recourse to hold the manufacturer of the defective product accountable. These also vary by state.
- A statute of limitation may apply to bar lawsuits a set number of years after the product causes an injury; but a statute of repose may also apply, barring an action after a certain number of years from the date when the product was initially delivered.



# Basic Projection Techniques



# Accident Year Paid

Data set for example purposes only – not to be considered typical

	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Period 11	Period 12
<b>1996</b>	25,369	86,065	51,945	100,907	134,002	243,134	1,161,570	1,789,010	3,779,962	9,202	(82,972)	(342,892)
<b>1997</b>	147,356	898,482	148,592	330,168	340,088	2,859,339	3,120,631	5,313,186	352,032	(553,026)	(923,688)	(123,415)
<b>1998</b>	59,035	70,993	299,221	1,127,660	3,884,804	1,233,673	2,313,874	306,318	830,652	1,602,887	293,047	(523,574)
<b>1999</b>	8,566	260,958	1,270,305	2,646,801	846,213	1,213,193	286,116	200,755	47,706	301,556	(310,222)	(313,318)
<b>2000</b>	309,699	798,535	1,593,150	1,511,533	814,792	126,107	106,613	28,215	263,993	180,106	(290,300)	(257,959)
<b>2001</b>	75,865	1,298,199	1,314,345	1,634,612	705,006	1,087,642	1,979,124	541,396	538,201	328,520	(432,655)	(405,198)
<b>2002</b>	66,774	541,523	760,461	981,527	1,123,766	2,472,774	1,043,015	322,381	418,455	262,735	(366,482)	(337,861)
<b>2003</b>	22,318	483,443	5,801,543	2,166,111	6,962,141	1,557,403	1,789,436	67,020	1,147,103	780,791	(1,253,975)	(1,115,244)
<b>2004</b>	54,932	231,109	363,626	3,441,249	2,030,100	609,621	707,006	25,009	454,519	309,489	(497,337)	(442,254)
<b>2005</b>	24,238	339,090	736,578	899,694	992,293	909,032	544,913	132,438	250,393	161,698	(237,755)	(216,166)
<b>2006</b>	64,213	160,879	1,344,904	1,284,217	1,416,391	179,634	413,125	(30,887)	305,765	211,738	(349,137)	(308,560)
<b>2007</b>	3,458	20,827	145,102	138,554	152,814	2,413,408	825,539	467,647	143,586	63,679	(16,751)	(33,278)



# Accident Year Incurred

Data set for example purposes only – not to be considered typical

	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Period 11	Period 12
<b>1996</b>	69,510	389,151	(14,435)	(29,762)	237,838	1,699,696	4,605,390	(495,133)	4,792,693	(2,089,187)	(919,002)	(532,648)
<b>1997</b>	290,917	916,101	114,804	542,401	2,483,263	5,063,282	1,104,405	6,079,857	(297,089)	(1,609,919)	(1,628,638)	(1,149,639)
<b>1998</b>	70,335	141,489	968,787	2,708,216	3,695,667	135,343	3,504,960	184,992	918,804	1,873,442	(1,852,226)	(851,218)
<b>1999</b>	52,018	489,799	2,247,098	2,835,012	522,971	1,281,336	32,963	(88,675)	32,364	203,045	(740,281)	(409,019)
<b>2000</b>	1,028,942	1,227,147	1,704,647	1,625,927	62,765	(125,904)	46,489	39,267	415,338	77,883	(592,047)	(325,971)
<b>2001</b>	641,247	2,858,694	535,646	2,279,219	1,417,451	3,299,632	2,414,901	80,231	(3,806)	(2,558,365)	(1,507,300)	(792,494)
<b>2002</b>	416,381	968,593	2,393,347	1,513,411	3,238,874	5,017,273	(1,329,579)	89,273	98,300	(2,566,609)	(1,669,047)	(881,148)
<b>2003</b>	1,022,277	4,240,643	7,038,443	12,401,110	5,005,774	5,851,008	(3,127,431)	268,934	512,418	(7,141,123)	(5,010,883)	(2,653,080)
<b>2004</b>	1,024,211	(114,240)	2,374,412	8,377,378	3,209,492	2,411,899	(2,292,505)	134,622	77,399	(4,063,888)	(2,522,502)	(1,329,210)
<b>2005</b>	317,392	731,361	1,241,078	2,149,730	1,244,550	1,416,218	(212,642)	52,203	196,638	(1,120,742)	(964,971)	(514,369)
<b>2006</b>	1,469,057	199,556	1,083,318	3,259,784	1,912,650	1,782,671	(880,568)	80,226	165,765	(2,095,030)	(1,493,782)	(791,362)
<b>2007</b>	21,465	1,190,459	382,304	179,018	59,493	750,723	950,320	2,495	246,031	592,762	(27,405)	(23,082)





# Selected Ultimate

Data set for example purposes only – not to be considered typical

Year	LR
1996	58%
1997	90%
1998	69%
1999	33%
2000	24%
2001	37%
2002	25%
2003	57%
2004	20%
2005	12%
2006	14%
2007	20%



# Report Year Paid

Data set for example purposes only – not to be considered typical

	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9
<b>1996</b>	25,369	14,133	1,265						
<b>1997</b>	219,288	370,352	68,102	35,701	16,915	179,113	8,746		
<b>1998</b>	637,845	179,265	24,191	161,042	(82,978)				
<b>1999</b>	81,692	636,614	714,468	1,622,300	1,841,635	1,162,997	198,955	(642,069)	(671,894)
<b>2000</b>	637,541	2,661,303	7,036,960	816,479	64,749	16,826	20,198	11,925	(1,160,396)
<b>2001</b>	301,860	3,656,083	3,382,040	9,749,487	87,987	(1,162,376)	43,578	(537,079)	(1,598,723)
<b>2002</b>	1,099,160	2,935,835	2,186,686	280,690	185,059	(112,582)	53,084	(221,670)	(659,845)
<b>2003</b>	1,394,511	2,169,530	5,683,455	470,577	(337,233)	(332,730)	73,053	(305,056)	(908,059)
<b>2004</b>	1,035,007	1,749,332	2,489,332	3,820,810		(322,573)	70,823	(295,743)	(880,340)
<b>2005</b>	805,953	3,702,087	8,946,494	5,522,264		(673,090)	147,781	(617,107)	(1,836,941)
<b>2006</b>	583,661	2,880,912	5,463,477	3,664,419		(446,644)	98,063	(409,495)	(1,218,943)
<b>2007</b>	1,586,422	4,873,691	10,187,310	6,832,750		(832,821)	182,851	(763,552)	(2,272,865)



# Report Year Incurred

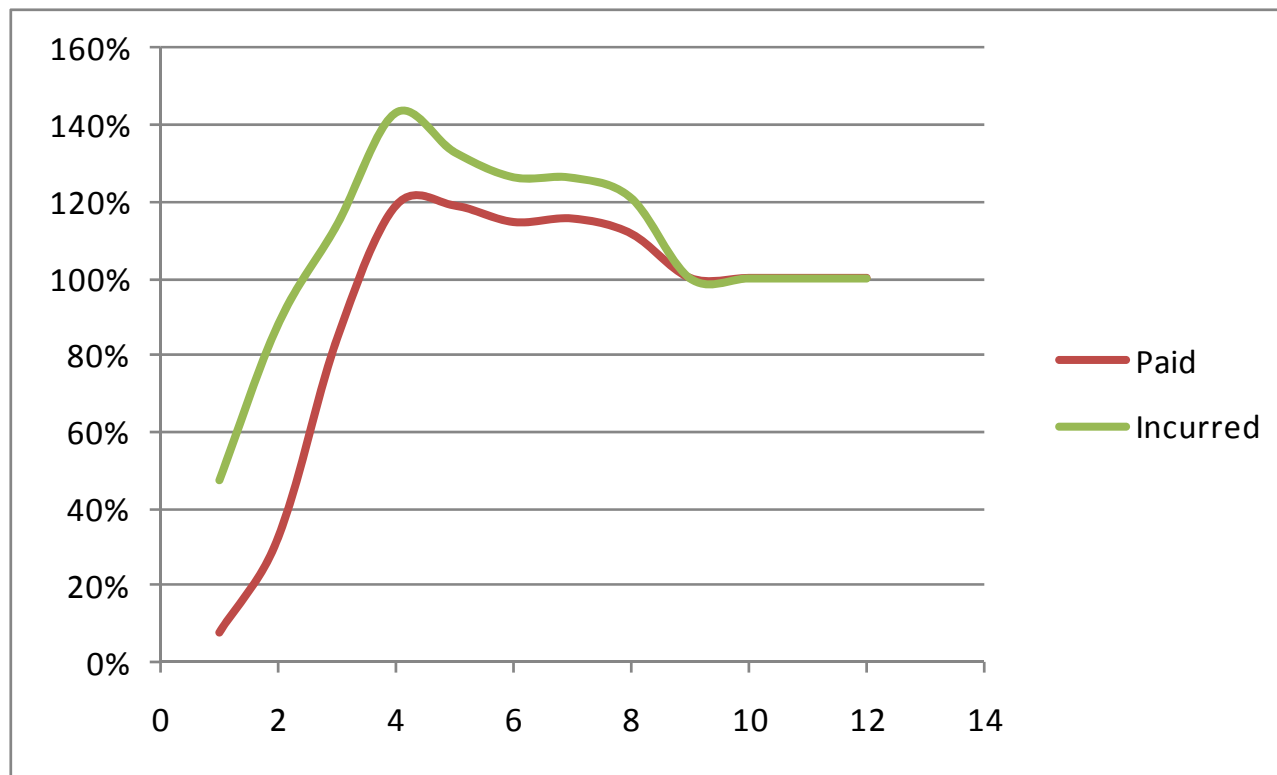
Data set for example purposes only – not to be considered typical

	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9
<b>1996</b>	69,510	(30,008)	1,265						
<b>1997</b>	710,076	183,861	(103,646)	103,873	56,407	111,508	(163,864)		
<b>1998</b>	786,874	65,418	193,499	(43,447)	(82,976)	(2)			
<b>1999</b>	316,777	1,064,823	1,177,244	3,799,047	(212,497)	875,359	(20,057)	(826,526)	(1,229,470)
<b>2000</b>	1,905,572	4,306,233	6,009,776	215,924	(1,189,270)	(14,376)	20,198	11,925	(1,160,397)
<b>2001</b>	5,510,231	7,344,647	(1,968,511)	9,708,239	(28,563)	(1,623,790)	(23,718)	(1,244,762)	(3,750,915)
<b>2002</b>	3,997,071	3,220,976	1,246,620	(739,463)	(591,151)	(273,760)	(8,662)	(156,015)	(949,200)
<b>2003</b>	4,328,003	5,880,104	1,281,063	967,041	(864,370)	(691,572)	(13,915)	(754,294)	(2,224,013)
<b>2004</b>	9,137,979	678,626	2,731,193	1,365,795	(999,114)	(940,183)	(15,502)	(1,248,193)	(3,043,953)
<b>2005</b>	6,721,004	12,264,300	7,468,232	2,144,900	(2,386,733)	(1,901,420)	(37,032)	(2,153,745)	(6,122,065)
<b>2006</b>	8,920,877	1,331,600	3,016,122	2,744,992	(1,197,141)	(816,870)	(18,575)	(751,404)	(2,614,151)
<b>2007</b>	14,274,979	6,681,320	7,795,864	5,741,997	(3,094,286)	(2,222,322)	(48,011)	(2,208,773)	(7,126,982)



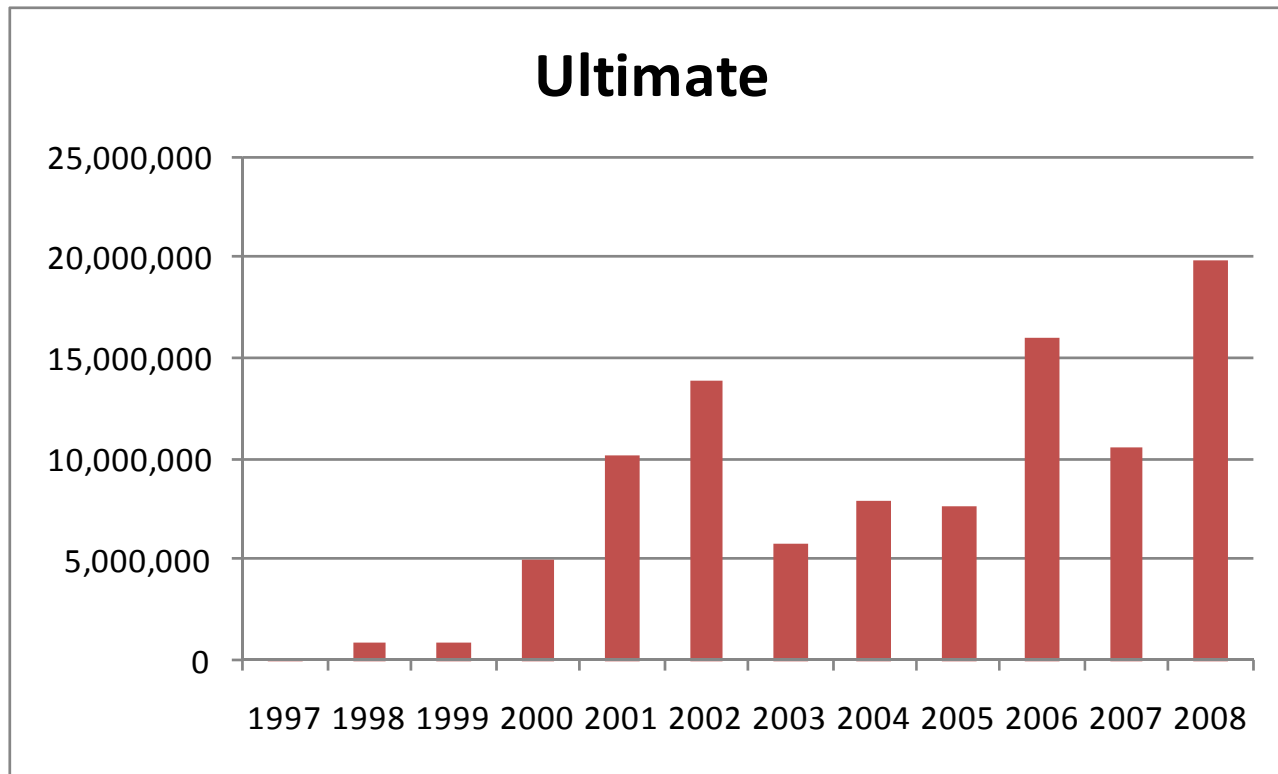
# Paid and Incurred to Ultimate

Data set for example purposes only – not to be considered typical



# Ultimate by Report Year

Data set for example purposes only – not to be considered typical



# Report Year Closed Counts

Data set for example purposes only – not to be considered typical

	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10
<b>1996</b>		5	1							
<b>1997</b>	8	6	10	1		2	2			
<b>1998</b>	11	12	1	4	-1					
<b>1999</b>	6	6	8	9	2	-1	2		6	
<b>2000</b>	12	7	7	4	6	10			2	
<b>2001</b>	6	26	24	8	4	1	3		9	
<b>2002</b>	19	34	17	7	4	7	5		8	
<b>2003</b>	20	18	30	13	8	6	4		7	
<b>2004</b>	18	43	20	20	9	8	11		16	
<b>2005</b>	25	41	37	18	8	10	2		7	
<b>2006</b>	20	67	46	22	10	12	3		9	
<b>2007</b>	51	49	38	15	7	10	-2		2	



# Report Year Reported Counts

Data set for example purposes only – not to be considered typical

	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10
<b>1996</b>	9	-3								
<b>1997</b>	30	-5	3		1					
<b>1998</b>	28	-1	2	-1		-1				
<b>1999</b>	35	8	-1		-5	-1			3	
<b>2000</b>	50	3	-5	-2	-1	1			2	
<b>2001</b>	87	-3	-11	4			1		3	
<b>2002</b>	106	-2	-4	-6	1	1	1		3	
<b>2003</b>	135	-17	-10	-8	1	1	1		3	
<b>2004</b>	191	-53	3	-3	1	1	1		5	
<b>2005</b>	225	-65	-13	-7	1	1	1		5	
<b>2006</b>	273	-75	-9	-9	1	2	1		6	
<b>2007</b>	247	-69	-9	-8	1	1	1		5	



# Report Year Statistics

Data set for example purposes only – not to be considered typical

## Ultimate by Report Year

Year	Count	Dollars	Severity
1996	6	40,767	6,795
1997	29	898,216	30,973
1998	27	919,365	34,051
1999	39	4,944,698	126,787
2000	48	10,105,585	210,533
2001	81	13,922,857	171,887
2002	100	5,746,417	57,464
2003	106	7,908,048	74,604
2004	146	7,666,647	52,511
2005	147	15,997,441	108,826
2006	189	10,615,451	56,166
2007	170	19,793,786	116,434





# Accident Year Closed

Data set for example purposes only – not to be considered typical

	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Period 11	Period 12	tail
1996		6	3	10	3	4	9	11	7	12	7	2	4
1997	7	12	9	4	5	4	13	1	10	7	8	1	3
1998	3	4	2	5	7	4	3	14	11	19	26	5	10
1999	5	5	4	7	3	9	6	3	6	12	-6		2
2000	6	6	16	5	10	7	2	3	-16	16	2	2	5
2001	1	17	31	23	20	14	27	11	16	22	13	4	9
2002	2	17	4	20	15	20	7	13	12	25	14	4	9
2003	2	5	14	11	37	13	10	15	16	28	16	5	11
2004	4	15	18	40	23	19	50	16	50	34	27	7	14
2005	3	9	23	10	23	14	3	16	11	31	16	5	11
2006	2	12	14	10	19	12	5	13	11	26	14	4	10
2007	2	5	9	7	12	8	4	9	8	17	9	3	7



# Accident Year Reported

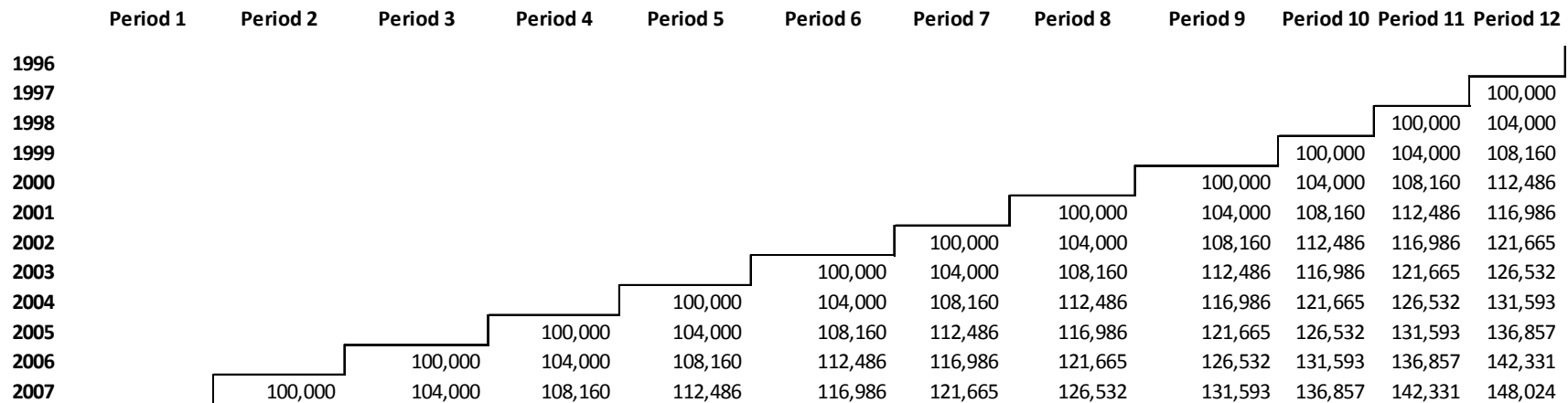
Data set for example purposes only – not to be considered typical

	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Period 11	Period 12	tail
<b>1996</b>	9	9	2	7	10	10	16	15	9	-2	-5	-2	0
<b>1997</b>	18	14	10	4	17	8	7	5	4	-1	-2		0
<b>1998</b>	7	7	7	10	7	4	28	14	26	3			0
<b>1999</b>	13	10	8	5	6	8	3	2		1			0
<b>2000</b>	29	15	9	1	4	3	1		1	1			0
<b>2001</b>	29	34	30	28	26	43	4	10	2	2			0
<b>2002</b>	19	30	29	9	25	25	14	8	2	2			0
<b>2003</b>	21	33	41	16	18	26	15	9	2	2			0
<b>2004</b>	28	30	60	69	37	45	27	15	3	3			0
<b>2005</b>	29	19	21	21	18	21	14	7	21	2	1		0
<b>2006</b>	18	22	30	19	18	22	13	7	1	1			0
<b>2007</b>	4	5	7	10	6	5	6	2	54	1	1	1	0



# Severity by Report Year/Accident Year

Data set for example purposes only – not to be considered typical



# Incremental Ultimates

Data set for example purposes only – not to be considered typical

	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Period 11	Period 12
1996												
1997												
1998												
1999												
2000									100,000	104,000		
2001								1,000,000	208,000	216,320		
2002							1,400,000	832,000	216,320	224,973		
2003						2,600,000	1,560,000	973,440	224,973	233,972		
2004					3,700,000	4,680,000	2,920,320	1,687,296	350,958	364,996		
2005			2,100,000	1,872,000	2,271,360	1,574,810	818,901	2,554,971	253,064	131,593		
2006		3,000,000	1,976,000	1,946,880	2,474,701	1,520,816	851,657	126,532	131,593			
2007	500,000	728,000	1,081,600	674,918	584,929	729,992	253,064	7,106,032	136,857	142,331	148,024	



# Accident Year Ultimate

- Current Case Incurred
- Case Development from the Report Year analysis – allocate to Accident Year
- True IBNR from Frequency-Severity process



# New Specific Issues



# Early Days

- No known claims
- Severity may be determinable/homogeneous
- Potential for lack of coverage
- Hits the entire diagonal at once
- Do you include in overall data in the future



# Exposures – Home Counts

Adjustment:	20%	40%	60%		Adjusted
	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>Total</u>	<u>Total</u>
State 1	1,096	2,103	1,734	4,933	2,101
State 2	4	9	6	19	8
State 3	1,448	1,466	582	3,496	1,225
State 4	3,572	5,180	3,115	11,867	4,655
State 5	3,613	4,408	2,566	10,587	4,025
<u>State 6</u>	<u>2,389</u>	<u>4,275</u>	<u>2,425</u>	<u>9,089</u>	<u>3,643</u>
Total	12,122	17,441	10,428	39,991	15,658





# Industry Data

- Method 1: CPSC.gov Drywall Information Center
- Method 2: Import data (100,000 total homes)
- Method 3: Import data (36,000 total homes)

	Method One			Method 2		Method 3	
	Industry Reported <u>Incidents</u>	Allocate Impacted <u>Home #</u>	Company Market <u>Share</u>	# Homes Imported <u>by State</u>	Company Market <u>Share</u>	# Homes Imported <u>by State</u>	Company Market <u>Share</u>
State 1	669	19,060	381		-	3,431	69
State 2	227	6,467	129		-	1,164	23
State 3	194	5,527	111		-	995	20
State 4	249	7,094	142	14,500	290	3,887	78
State 5	2,031	57,863	1,157	85,000	1,700	25,715	514
<u>State 6</u>	<u>140</u>	<u>3,989</u>	<u>80</u>	<u>500</u>	<u>10</u>	<u>808</u>	<u>16</u>
Total	3,510	100,000	2,000	100,000	2,000	36,000	720



# Frequency / Severity

	Average of Three <u>Methods</u>	Total <u>Adjustment</u>	Adjusted Market <u>Share</u>	Per Claim <u>Cost</u>	Estimated Gross of <u>Ded Claims</u>
State 1	150	43%	64	100,000	6,400,000
State 2	51	42%	21	100,000	2,100,000
State 3	43	35%	15	100,000	1,500,000
State 4	170	39%	67	100,000	6,700,000
State 5	1,124	38%	427	100,000	42,700,000
<u>State 6</u>	<u>35</u>	<u>40%</u>	<u>14</u>	100,000	<u>1,400,000</u>
Total	1,573	39%	608		60,800,000



# Added Adjustments

- Coverage triggers
  - Manifestation states with expiring/new policies
- How does the Pollution Exclusion apply
  - There may only be LAE in some states
- How does ALAE apply
- How do policy deductibles apply
- How do claims/claimants work in these states and for this policy
- How do policy aggregates apply
- Potential for BI Exposure



# Statute of Limitations?



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