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**DE / LEG Design exclusion clauses & covers  
in construction insurance**

# Agenda

- 1** History and purpose
- 2** Cover or Exclusion?
- 3** DE / LEG Similarities and differences
- 4** Underwriting considerations
- 5** Interaction with other covers / sections
- 6** Historic example
- 7** Questions

# History and purpose



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- First CAR policy - 1929 construction of Lambeth Bridge in London.
- Mid 1930's, German insurers created their own local version of the CAR policy.

# History and purpose

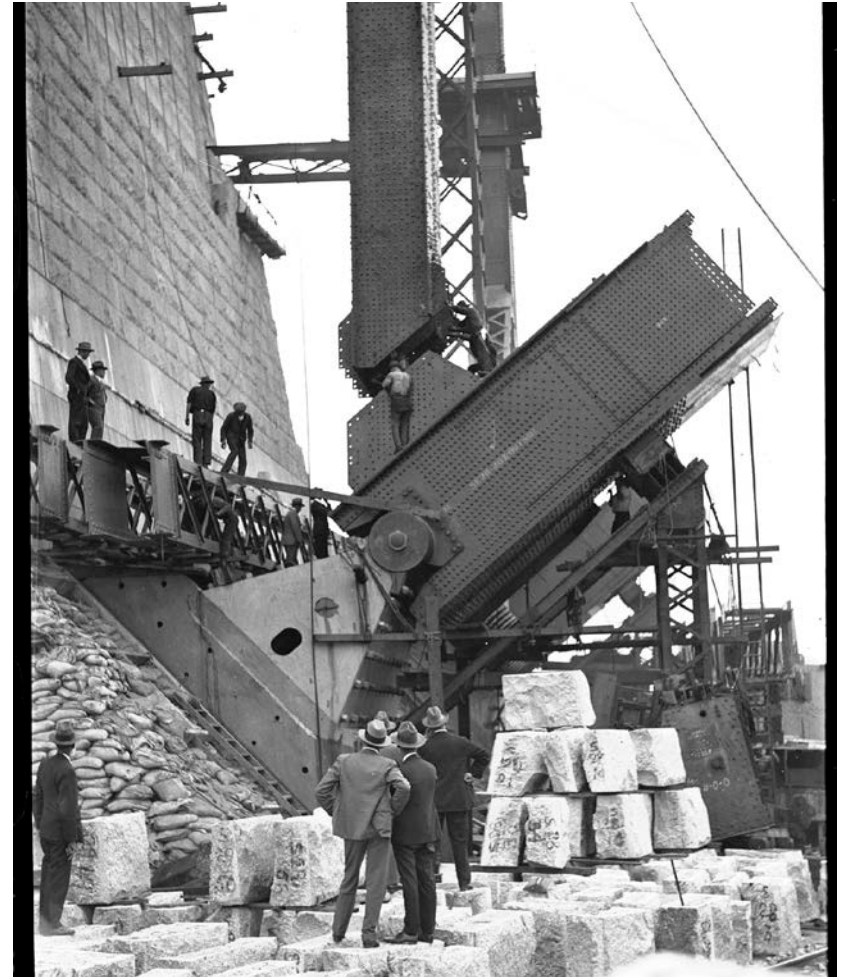


Picture courtesy of sheilaellen <https://www.flickr.com/photos/sheilaellen/>

- Increase in construction coverage during economic recovery after World War II.
- Back then, construction insurance was generally written by property underwriters.

## History and purpose

- Property underwriters aimed to give the same cover for construction as for completed buildings.
- Usually on a specified perils basis
- Damage had to occur – no cover for imminent damage / loss avoidance.

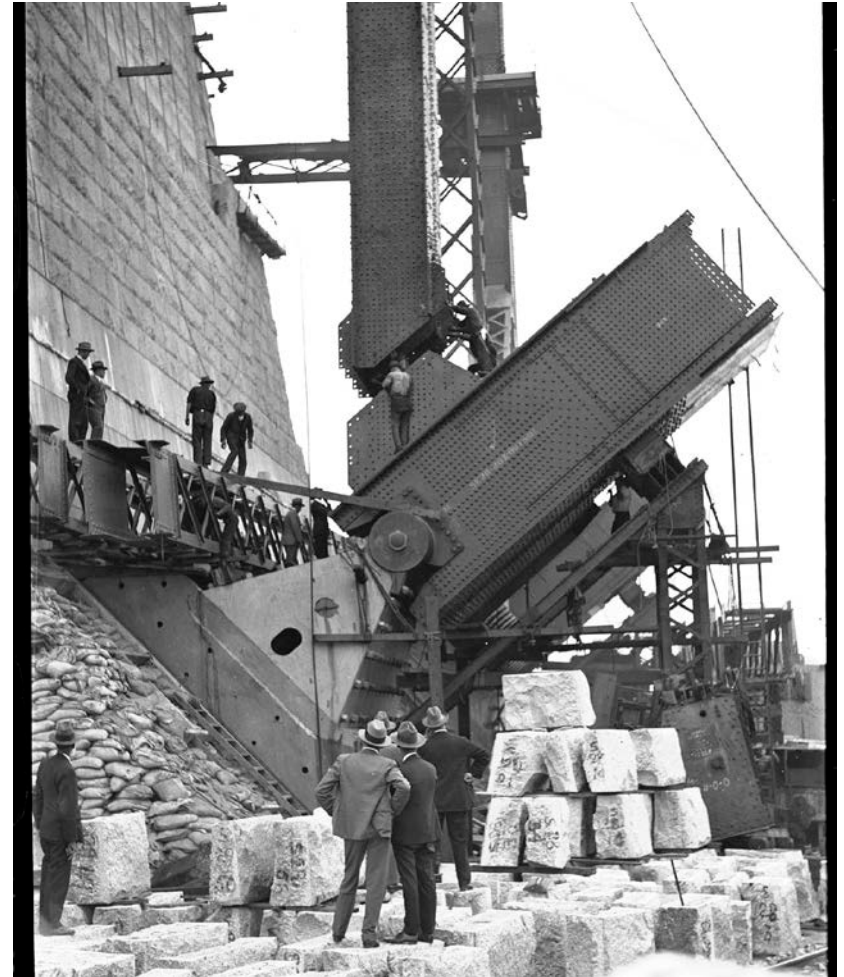


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## History and purpose

- All losses arising from or caused by defective design, workmanship or material, were excluded.
- Defects and losses arising were viewed as a “business risk” for the contractor



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# History and purpose



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- Principals and contractors were uncomfortable with a total exclusion because
  - a relatively small or minor defect could result in a larger catastrophic occurrence
  - responsibility could lie with the architect, not them

# History and purpose



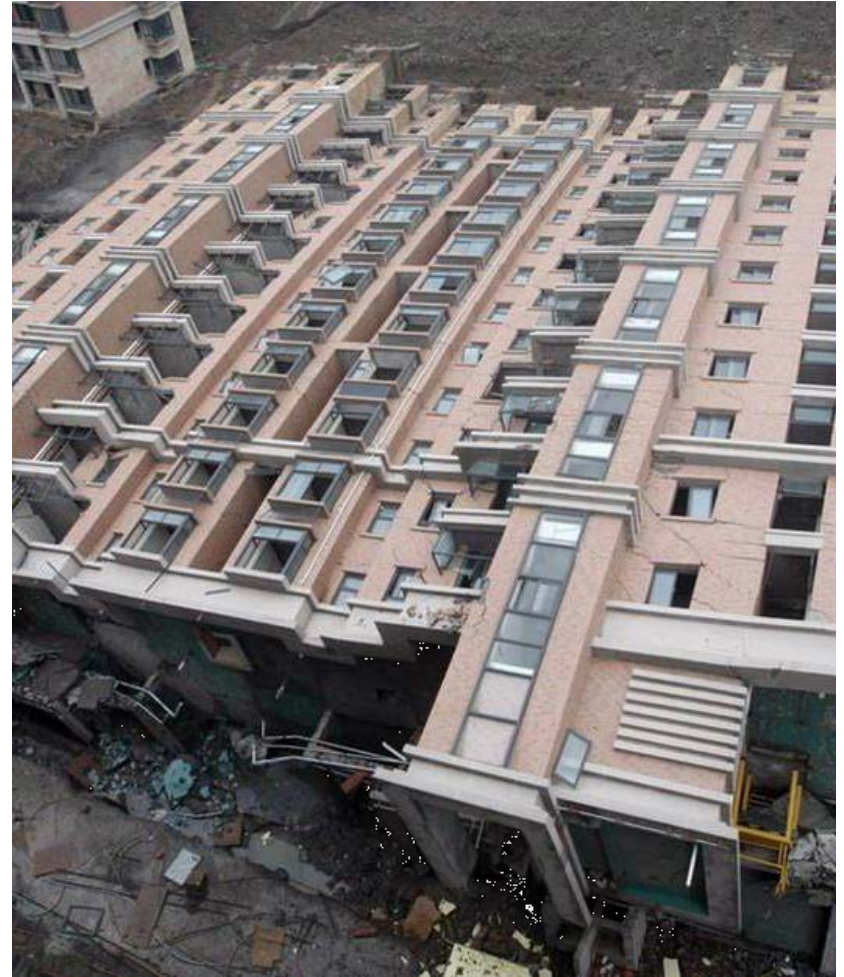
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- Principals & contractors were uncomfortable with a total exclusion because
  - even the best run business has accidents
  - techniques to determine whether a loss was due to a defect / what that defect was were very basic
  - insurers could find a defect in almost any situation and interpret that in their favour to exclude a loss



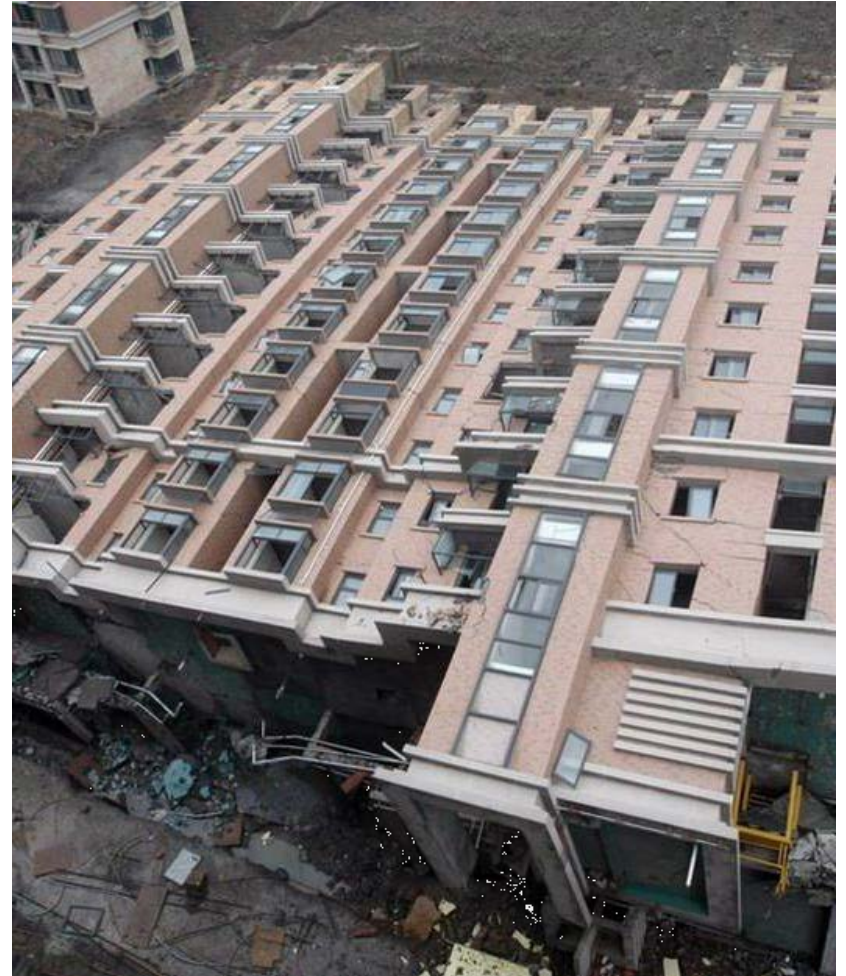
# History and purpose

- As the market matured
  - Subrogation rights became more formalised in case law
  - Professional indemnity and product liability covers evolved



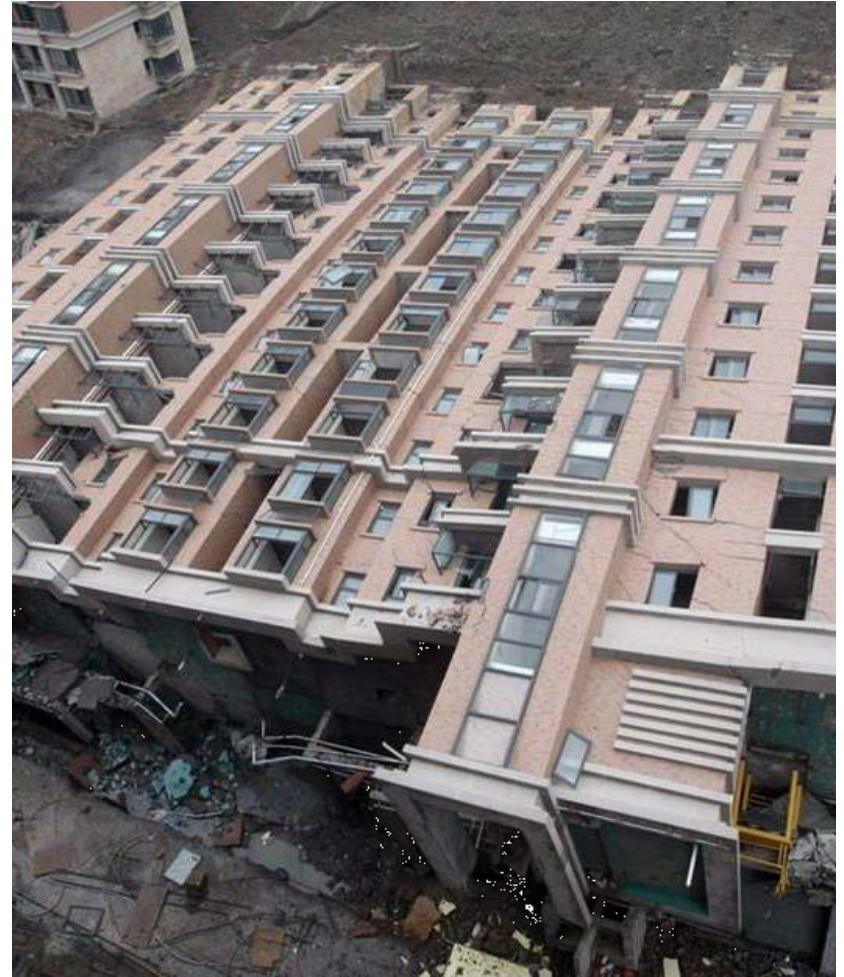
# History and purpose

- Insurers and brokers established the principles that
  - A defect is a condition, not a peril
  - Intent was to exclude the defect but to cover resultant damage



# History and purpose

- The key challenge at that time was differentiating between the defect, the defective part and the resultant damage





# History and purpose



Photo Courtesy of Padraic Ryan

- Wording challenges
  - Multiple differing versions of very similar wordings
  - Legal decisions varying because of minor differences often where (it was thought) that intent was the same
  - Differences in nature of exposure between CAR & EAR

# History and purpose



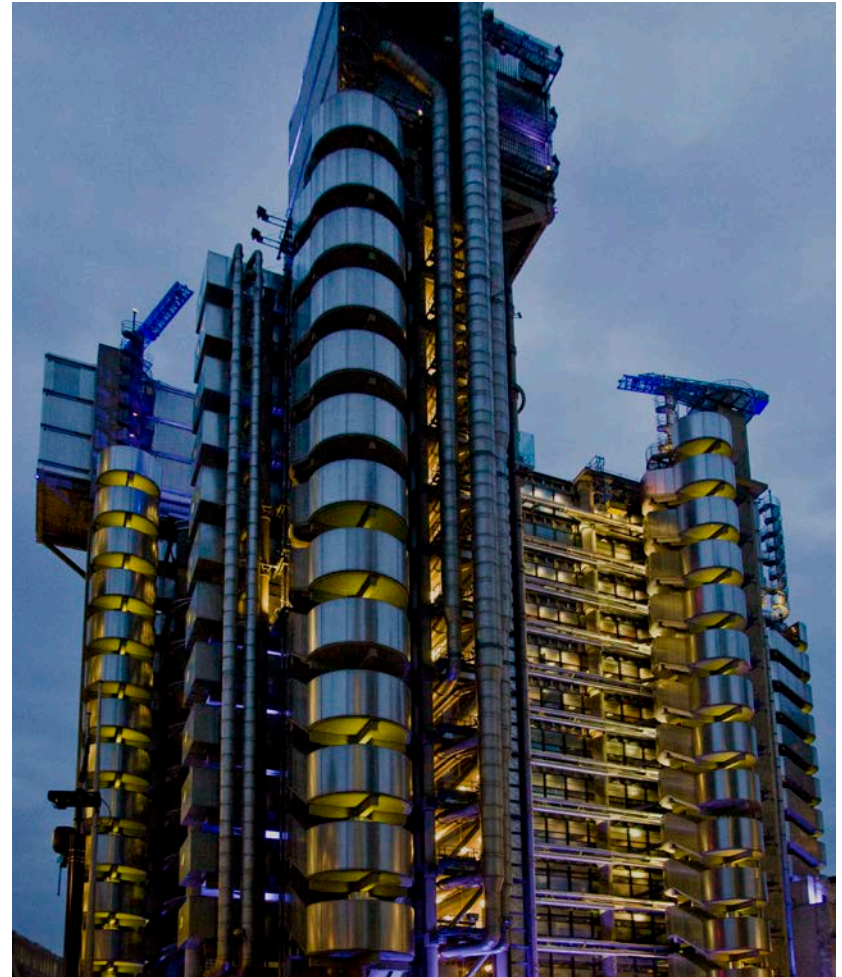
Photo Courtesy of Padraic Ryan

- Early 1980's a group of (mainly London Market) insurers drafted the DE clauses
  - 1985 DE1 – DE5 model clauses widely adopted by UK / European insurers
  - 1995 review further modified and improved these clauses



## History and purpose

- DE clauses were felt to be more suitable for CAR insurances
- 1995 – London Engineering Group drafted the LEG clauses to be more aligned to larger EAR exposures
- 1996 LEG1 – LEG3 (96) clauses widely adopted in the international EAR market. LEG3(06) later supplemented LEG3 (96)



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# Defects Cover or Defects Exclusion – which is it ?



- We speak about “Defects Cover”
- .... then we decide which Exclusion to use – why ?
- Modern construction wordings typically have an all risks operative clause
- In other words “all loss or damage is covered unless otherwise excluded”

# Defects Cover or Defects Exclusion – which is it ?



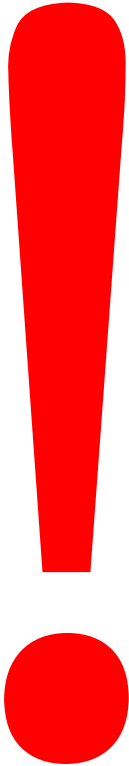
- If a policy had an outright exclusion, writing cover back in would require a wording which specified insured events and any specific exclusions to that event.
- Using an exclusion is shorter & more precise

# High level comparison DE vs LEG

DE	LEG
<p><b>DE1</b> Excludes all loss or damage due to defective design, materials or workmanship.</p>	<p><b>LEG1/96</b> Excludes all loss or damage due to defective design, plan, specification, materials or workmanship.</p>
<p><b>DE2</b> Excludes property which is defective and property which relies for its support on the defective property and access costs but gives cover for other insured property which is free of defect but is damaged as a consequence of the defect.</p>	<p>No equivalent LEG Clause.</p>
<p><b>DE3</b> Excludes property that is defective and access costs but gives cover for other insured property which is free of defect and is damaged as a consequence of the defect.</p>	<p><b>LEG2/96</b> Excludes any component part or individual item which is defective and access costs but gives cover for damage to property containing the defects and other parts of the insured property which are free from defect provided there is damage to the defective portion. Indemnity would exclude the costs of correcting the defect, which would have been incurred, had this been carried out immediately prior to the damage occurring.</p>
<p><b>DE4</b> Excludes any component part or individual item which is defective and access costs but gives cover for other parts or items of the insured property which are free of defect and damaged as a consequence of the defect</p>	
<p><b>DE5</b> Provides cover for both defective and non-defective property provided that there is damage to non-defective insured property as a result of the defect. There is no cover for costs of improvements to the original design, plan, specification, workmanship or materials.</p>	<p><b>LEG3/06</b> Provides cover for defective and non-defective property provided there is damage to any portion of the property containing the defects as a result of the defect. There is no cover for costs of improvements to the original design, plan, specification, workmanship or materials. **</p>

**\*\* LEG3 now qualifies "damage" such that it includes "any patent detrimental change in the physical condition of the insured property".**

## Similarities and Differences DE vs LEG



- People often speak of “equivalents” between DE & LEG levels
- The **ONLY** real equivalents are LEG 1 / DE1 and DE5 / LEG3
- Other levels are **SIMILAR** but not the same in terms of their operation



# Similarities and differences DE vs LEG

## Similarities in operation

- Both are exclusions applied to an all risks wording
- Damage must occur
- Both (apart from DE1 / LEG1 specify that existence of a defect without damage does not constitute damage
- Both speak of the same types of defect
  - Design, plan, specification
  - Materials, workmanship
- DE3 / LEG 2 are regarded as “Standard”

## Differences in operation

- DE has 5 levels, LEG has 3
- DE focuses on the exclusion of the defective part from the loss
- LEG focuses on what it would have cost to replace the defective part prior to the loss
- Application
  - DE more likely to be used in CAR policies (DE4 is an attempt to make DE more relevant to EAR)
  - LEG most often used for EAR
  - Civils projects – selection can vary according to preference

# Historic example – Tacoma Narrows Bridge Collapse



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Construction began September 1938, bridge opened 1<sup>st</sup> July 1940, collapsed 7<sup>th</sup> November 1940.

- Complete destruction of centre span, irreparable damage to side spans, cables and towers. Damage to dampers
- Substructure, anchorages, pedestals undamaged

# Historic example – Tacoma Narrows Bridge Collapse



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## ■ Cause

- Aeroelastic flutter induced by 60 Km/h wind
- Defective design of structure supporting the bridge deck which captured rather than diverted wind ( “I” beams instead of open lattice work)
- Defective workmanship - Hydraulic dampers ineffective because seals were damaged by sandblasting prior to painting

# Excluded Elements

(Assume loss occurred either during construction or during Guarantee Maintenance period)

DE1 / LEG1	DE2	DE3	DE4	DE5 / LEG3
<ul style="list-style-type: none"><li>All damage excluded</li></ul>	<ul style="list-style-type: none"><li>Deck support structure, bridge deck &amp; defective dampers excluded</li></ul>	<ul style="list-style-type: none"><li>Deck support structure and dampers excluded</li></ul>	<ul style="list-style-type: none"><li>The “I Beams” forming part of the deck support structure and damper <u>seals</u> excluded.</li></ul>	<ul style="list-style-type: none"><li>All damage covered</li><li>Cost of design improvement excluded</li></ul>
		<b>LEG2</b> <ul style="list-style-type: none"><li>Cost to replace damper seals &amp; deck support with one of sound design excluded</li></ul>		

Note the difference between LEG2 & DE3/4 : DE3 / 4 exclude the damage and hence cost of Reinstatement, LEG2 excludes the amount it would have cost to replace the defective parts immediately prior to the loss occurring.

# Risk considerations

- Who are you insuring?
  - Multiple Insureds clauses / cover?
  - Would you want to give DE5/LEG3 to designers / architects?
- Is the level of cover requested the same as is relevant to the loss history you have seen ?
- What level of **maintenance** cover are you giving?
  - DE5 / LEG3 + Guarantee Maintenance?
  - The two together aggregate and almost give a warranty
- Is the contract “standard” build / technology ?
- Are the designers / architect / structural engineers / contractors all experienced?



# Underwriting considerations

- In general, DE3 / LEG2 are considered “standard”
  - Rate discounts often available for DE1/DE2/LEG1
  - Rate increases often applied for DE4 / 5 & LEG3
  - Excesses for DE1/2/3 & LEG2 tend to be the same as for the general works covers / minimum levels
  - Excesses for DE4 / DE5 / LEG 5 often significantly increased

# Underwriting considerations

- Significantly higher risk where
  - projects are complex
  - there are multiple parties insured
  - the contractor is also the manufacturer

## Interaction with other covers / cover sections

### Key areas of consideration

#### Maintenance Cover

- Combination of Guarantee Maintenance and DE5 / LEG3
  - Gives cover for damage in maintenance period arising from a defect present during construction AND includes cover for the (damaged) defective item

#### DSU / ALOP

- DSU / ALOP Loss trigger is damage under the works cover
- DE5 / LEG3 extend the loss trigger to include damage to the defective item itself
- Significant increase in DSU risk for both CAR and EAR.

# “Drop Down” Cover



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By Tony Webster from Portland, Oregon, United States - Falling Over, CC BY 2.0, <https://commons.wikimedia.org/w/index.php?curid=39881728>



- Excesses for DE5 / LEG3 are considerably higher than those for DE3 / LEG2
- “Drop Down” often requested to a lower level of cover *at the time of a loss at the Insured’s option*
- If the defective item or repair / replacement of the defective item is of low value, Insurers do not get the benefit of the higher excess.

- Only DE1 / LEG1 and DE5 / LEG3 are direct equivalents all others are similar

- Combining DE4/5 or LEG 3 & Guarantee maintenance or DSU cover significantly increases the level of risk.

- DE4/5 & LEG3 unproven technology / prototype building methods significantly increase risk.

- DE excludes cost of reinstating defective elements post loss, LEG excludes pre loss rectification of the defect

- DE5 / LEG3 where contractor is inexperienced at using a technology / method they have not done or used before increases risk

- Risk control surveys are important at the early stages of a project. A stitch in time saves nine...



Thank you  
for your kind  
attention.



### **DE1: Outright Defects Exclusion (1995)**

This Policy excludes loss of or damage to the Property Insured due to defective design plan specification materials or workmanship.

### **DE2: Extended Defective Condition Exclusion (1995)**

This Policy excludes loss of or damage to and the cost necessary to replace repair or rectify

- a) Property Insured which is in a defective condition due to a defect in design plan specification materials or workmanship of such Property Insured or any part thereof
- b) Property Insured which relies for its support or stability on a) above
- c) Property Insured lost or damaged to enable the replacement repair or rectification of Property Insured excluded by a) and b) above

Exclusion a) and b) above shall not apply to other Property Insured which is free of the defective condition but is damaged in consequence thereof.

For the purpose of the Policy and not merely this Exclusion the Property Insured shall not be regarded as lost or damaged solely by virtue of the existence of any defect in design plan specification materials or workmanship in the Property Insured or any part thereof.

### **DE3: Limited Defective Condition Exclusion (1995)**

This Policy excludes loss of or damage to and the cost necessary to replace repair or rectify

- a) Property Insured which is in a defective condition due to a defect in design plan specification materials or workmanship of such Property Insured or any part thereof
- b) Property Insured lost or damaged to enable the replacement repair or rectification of Property Insured excluded by a) above

Exclusion a) above - shall not apply to other Property Insured which is free of the defective condition but is damaged in consequence thereof.

For the purpose of the Policy and not merely this Exclusion the Property Insured shall not be regarded as lost or damaged solely by virtue of the existence of any defect in design plan specification materials or workmanship in the Property Insured or any part thereof.

#### **DE4: Defective Part Exclusion (1995)**

This Policy excludes loss of or damage to and the cost necessary to replace repair or rectify

- a) Any **component part or individual item** of the Property Insured which is defective in design plan specification materials or workmanship
- b) Property Insured lost or damaged to enable the replacement repair or rectification of Property Insured excluded by a) above

Exclusion a) above - shall not apply to other parts or items of the Property Insured which are free from defect but are damaged in consequence thereof.

For the purpose of the Policy and not merely this Exclusion the Property Insured shall not be regarded as lost or damaged solely by virtue of the existence of any defect in design plan specification materials or workmanship in the Property Insured or any part thereof.

#### **DE5: Design Improvement Exclusion (1995)**

This Policy excludes:

- a) The costs necessary to replace repair or rectify any Property Insured which is defective in design plan specification materials or workmanship
- b) Loss or damage to the Property Insured caused to enable replacement repair or rectification of such defective Property Insured.

But should damage to the Property Insured which is free of such defective condition (other than damage as defined in b) above) result from such a defect this exclusion shall be limited to the costs of additional work resulting from and the additional costs of improvements to the original design plan specification materials or workmanship.

For the purpose of the Policy and not merely this Exclusion the Property Insured shall not be regarded as lost or damaged solely by virtue of the existence of any defect in design plan specification materials or workmanship in the Property Insured or any part thereof.

SAMPLE ALTERNATIVE DEFECTS EXCLUSION OPTION (DE5 WITH DE3 DROPDOWN)

It is understood and agreed that it is at the option of and for the benefit of the Insured named in the Schedule to this Policy to delete Exclusion XX of Section YY of the Policy and substitute the following Exclusion XX

This Policy excludes

- a) the cost necessary to replace repair or rectify any Property Insured which is defective in design, plan, specification, materials or workmanship
- b) Damage to the Property Insured caused to enable replacement repair or rectification of such defective Property Insured.

But should Damage to Property Insured (other than Damage as defined in (b) above) result from such a defect this Exception shall be limited to the costs of additional work resulting from and the additional costs of improvements to the original design, plan, specification, materials or workmanship.

For the purpose of this Policy and not merely this Exclusion, the Property Insured shall not be regarded as damaged solely by virtue of the existence of any defect in design, plan, specification, materials or workmanship in the Property Insured or any part thereof.

It is further understood and agreed that the Excess in respect of each and every event of Damage to which this Endorsement applies is increased to £ZZZ,ZZZ

**LEG 1/96: The London Engineering Group Model “Outright” Defects Exclusion.**

The Insurer(s) shall not be liable for loss or damage due to defects of material workmanship design plan or specification.

**LEG 2/96: The London Engineering Group Model “Consequence” Defects Exclusion.**

The Insurer(s) shall not be liable for: All costs rendered necessary by defects of material workmanship design plan or specification and should damage occur to any portion of the Insured Property containing any of the said defects the cost of replacement or rectification which is hereby excluded is that cost which would have been incurred if replacement or rectification of the Insured Property had been put in hand immediately prior to the said damage.

For the purpose of this policy and not merely this exclusion it is understood and agreed that any portion of the Insured Property shall not be regarded as damaged solely by virtue of the existence of any defect of material workmanship design plan or specification.

**LEG 3/06: The London Engineering Group Model Design Improvement Exclusion**

The Insurer(s) shall not be liable for: All costs rendered necessary by defects of material workmanship design plan or specification and should damage (which for the purposes of this exclusion shall include any patent detrimental change in the physical condition of the Insured Property) occur to any portion of the Insured Property containing any of the said defects the cost of replacement or rectification which is hereby excluded is that cost incurred to improve the original material workmanship design plan or specification.

For the purpose of the policy and not merely this exclusion it is understood and agreed that any portion of the Insured Property shall not be regarded as damaged solely by virtue of the existence of any defect of material workmanship design plan and specification.