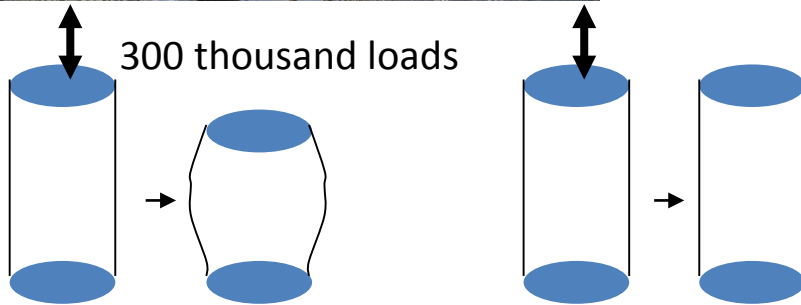


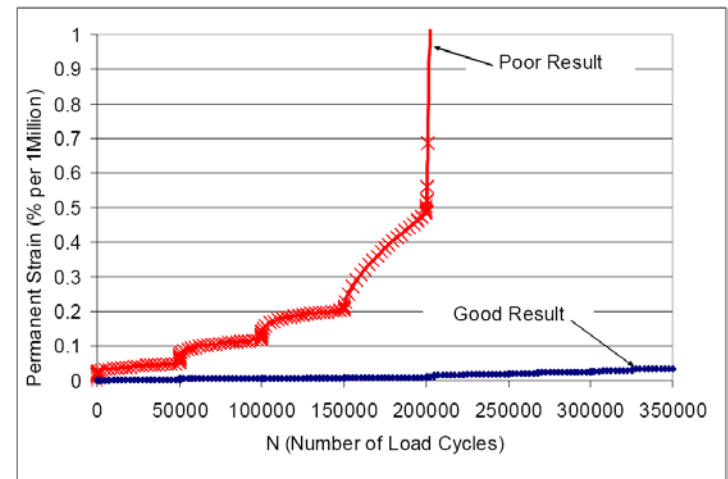
# Repeated Load Triaxial Tests on test pit aggregate – East Waikato Hybrid

## - How good is the existing material in the road?

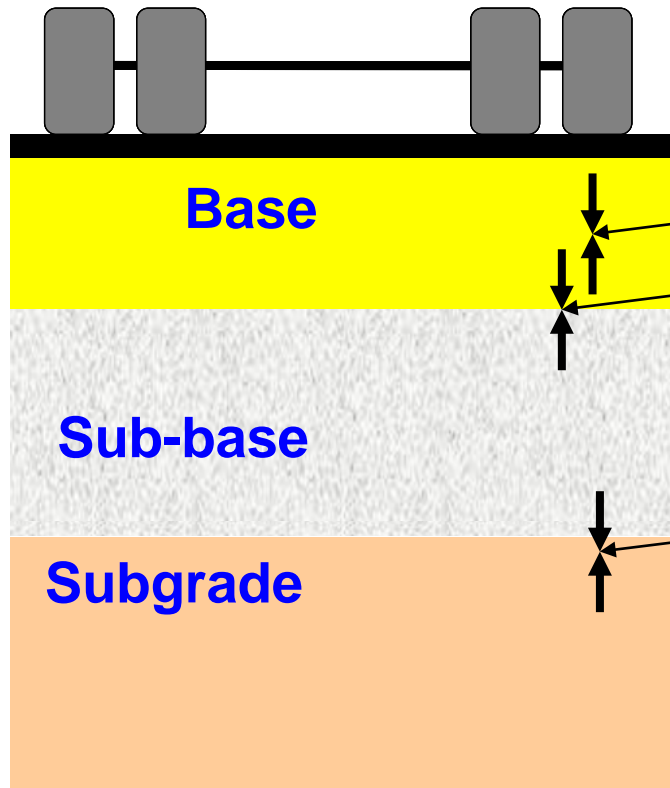


**Poor result existing**  
 - Needs cement and,  
**Flexural Beam Test**

**Good result**  
 -Traditional  
 treatment



## 2. RLT – Interpretation (design criteria)



- Base and Sub-base aggregate –
  - An **additional** (derived from RLT) design strain criterion
  - $N = (k/\epsilon)^n$

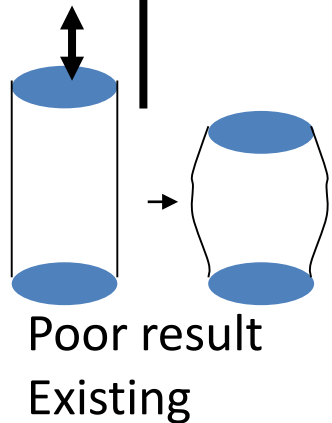
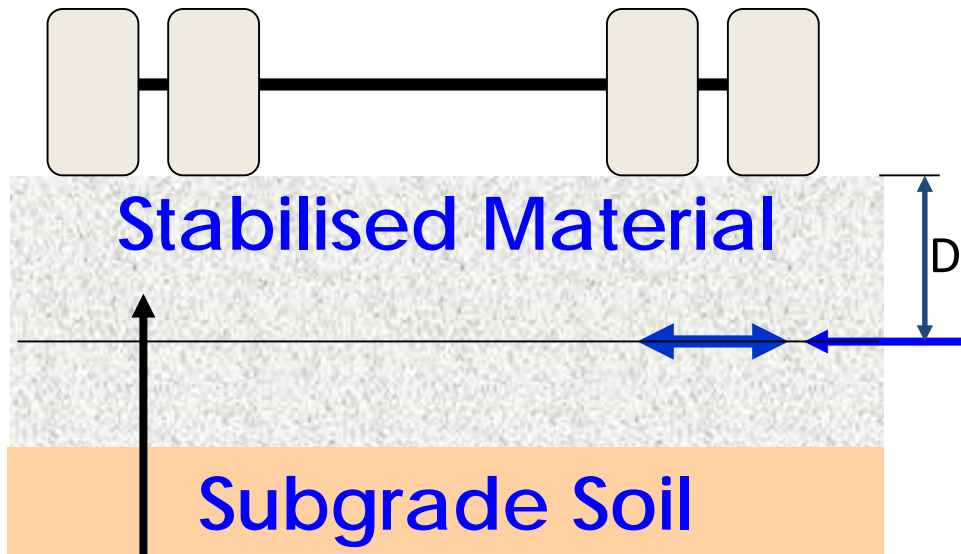
***And for subbase aggregates too!***

- Subgrade - natural ground
  - Austroads design strain criterion
  - $N = (8810/\epsilon)^7$
  - ***CURRENT DESIGN RULES ONLY CHECK SUBGRADE STRAIN***

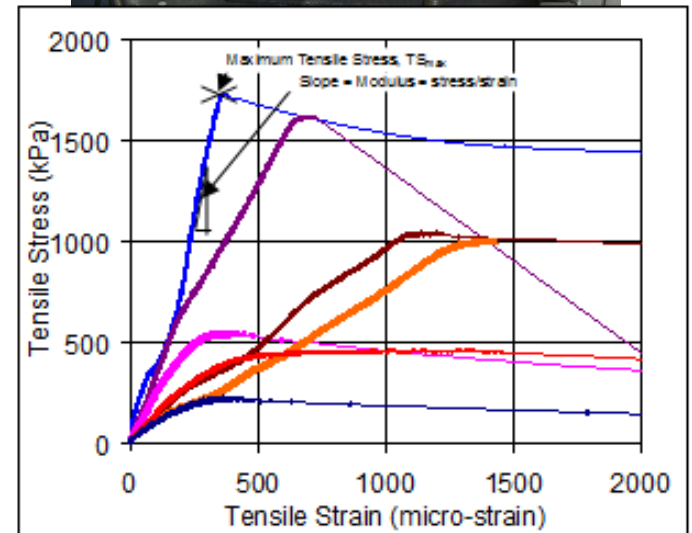
$\epsilon$  = vertical compressive strain (micro-strain)

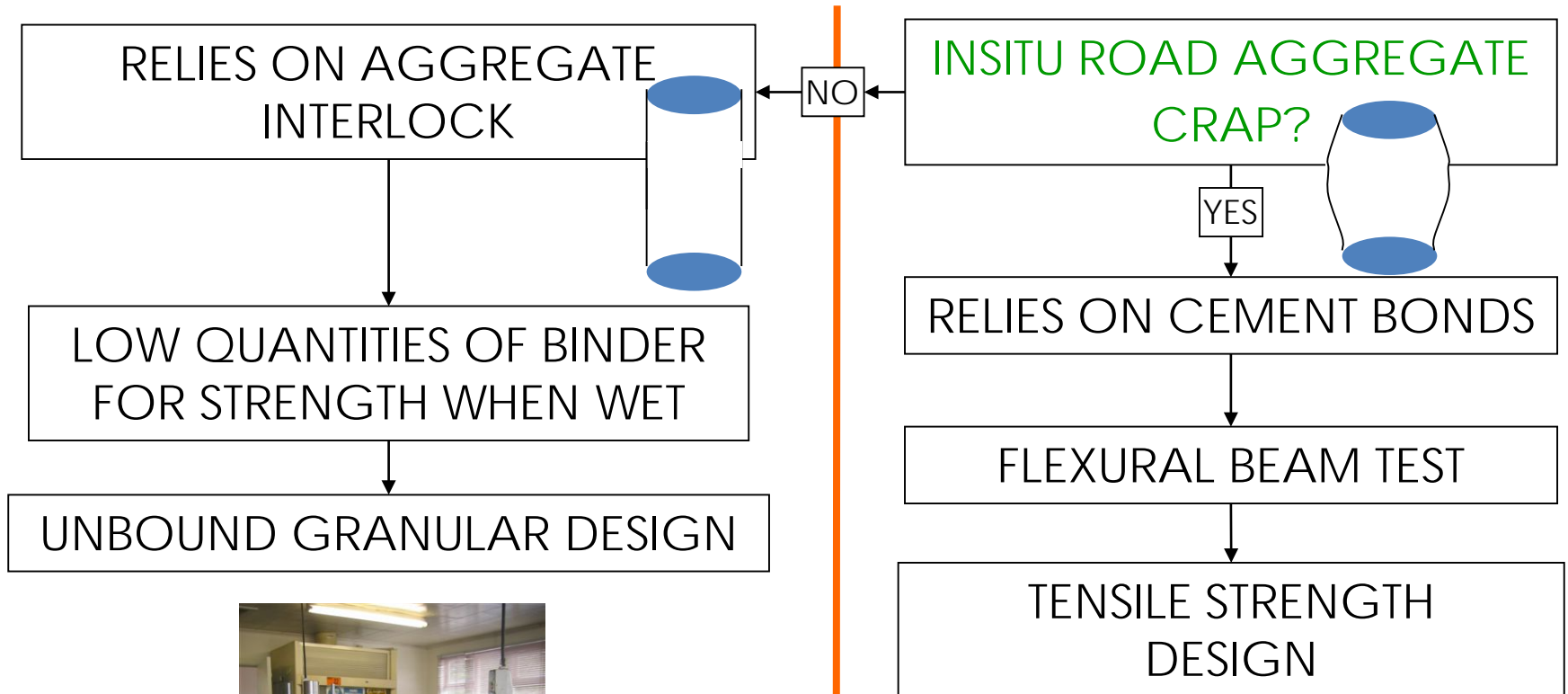
### 3. Design from Flexural Beam Test

Flexural beam tests optimises cement/binder content and depth



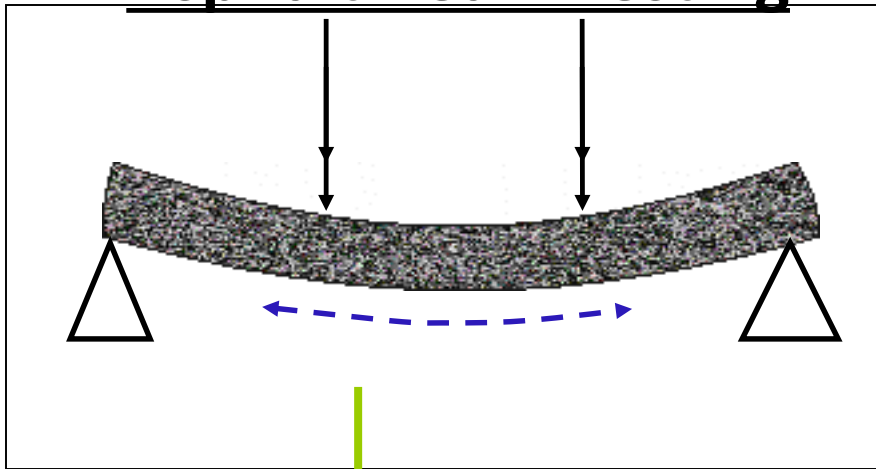
**Stabilisation:**  
 How deep (D)?  
 How much cement/binder?  
 To little cement – too weak  
 To thin – will break  
 To thick – uneconomic



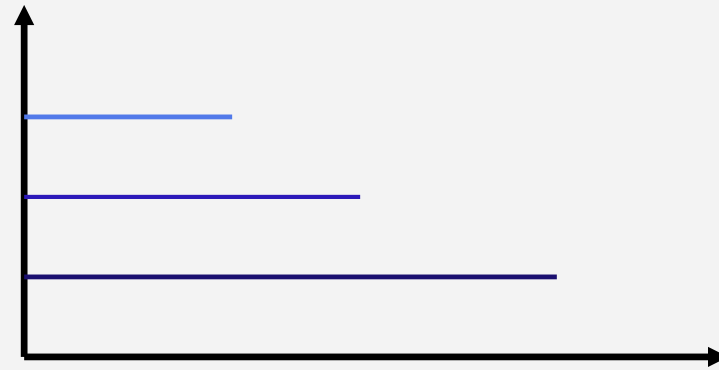




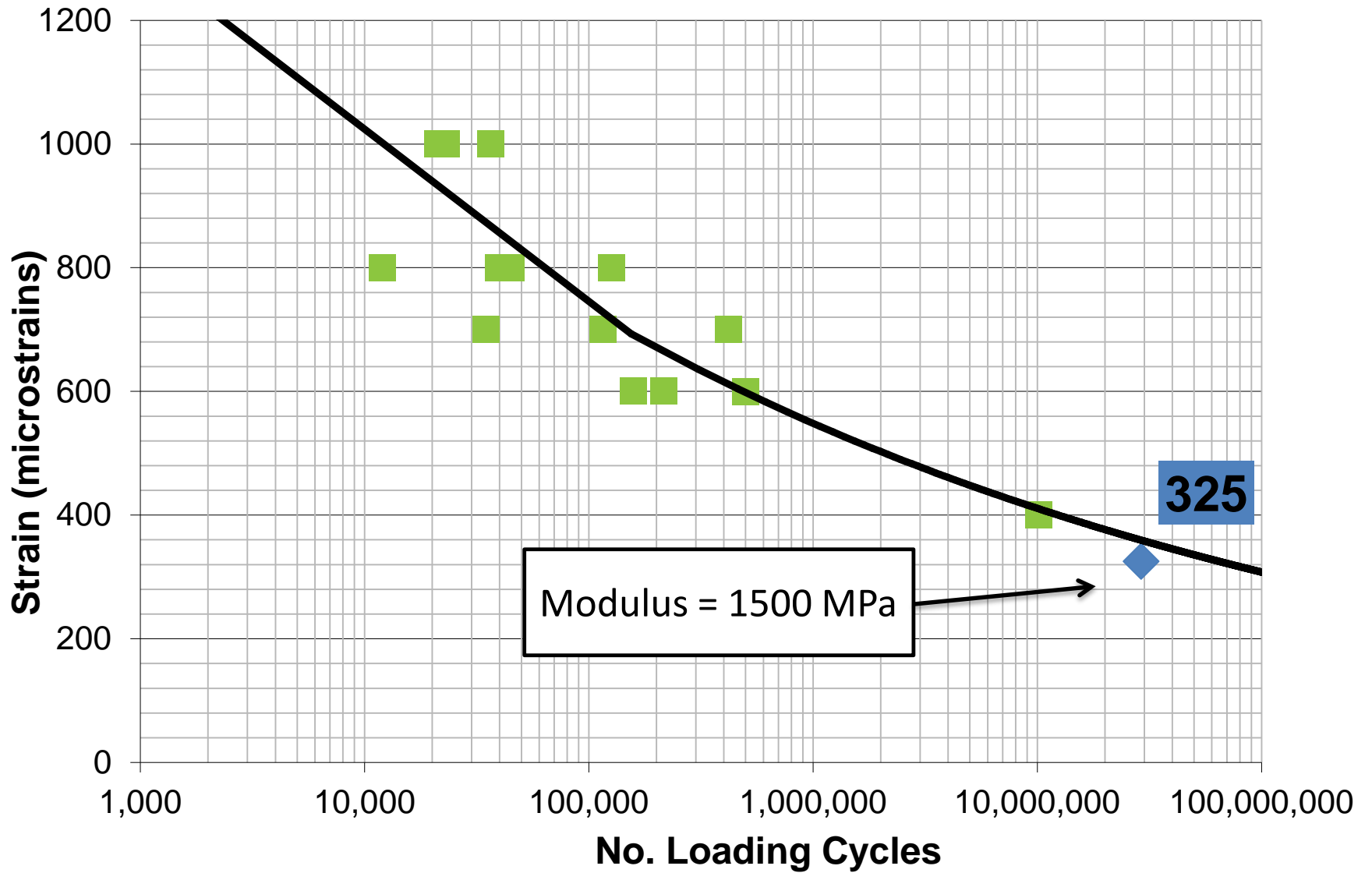
## Asphalt Beam Testing



Strain/  
Stress



Load cycles





ORIGINAL DESIGN

30 mm Asphalt Wearing Layer  
PA14 PMB NZTA P11

155 mm Asphalt Base Layer  
AC 20 40/50

50 mm Asphalt Fatigue Layer  
AC 14 High Bitumen 60/70

200 mm Granular Sub Base  
Either existing pavement or imported AP65

400 mm Layer Granular Sub Base  
Either existing pavement or imported AP65



30 mm Asphalt Wearing Layer  
PA14 PMB NZTA P11

120 mm Asphalt Base & Fatigue Layer  
NZTA Mix15 RS 3 High strength polymer

400 mm Granular Sub Base  
Either existing pavement or imported AP100



PROPOSED DESIGN

**Road Science**  
Leading Transport Technology | A Downer Company

Wellington Memorial Park Alliance  
Pavement Cross Section