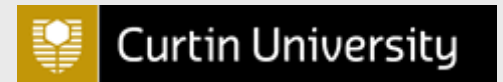


# Sustainable Use of Crushed Concrete Waste as A Road Base Material



**Komsun Siripun**  
**Department of Civil Engineering**



**Questions**



**Solutions**

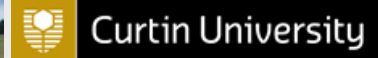
**1. What happens?**

**2. Why it happens?**

**3. How to solve?**

**Sustainable Use of Crushed Concrete Waste  
as A Road Base Material**

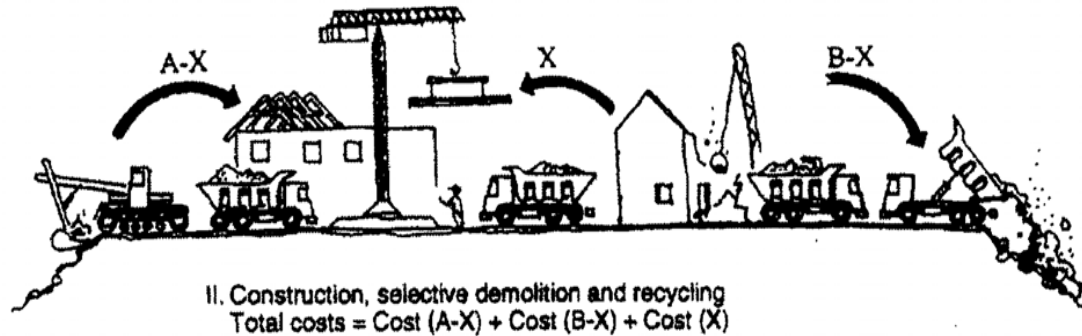
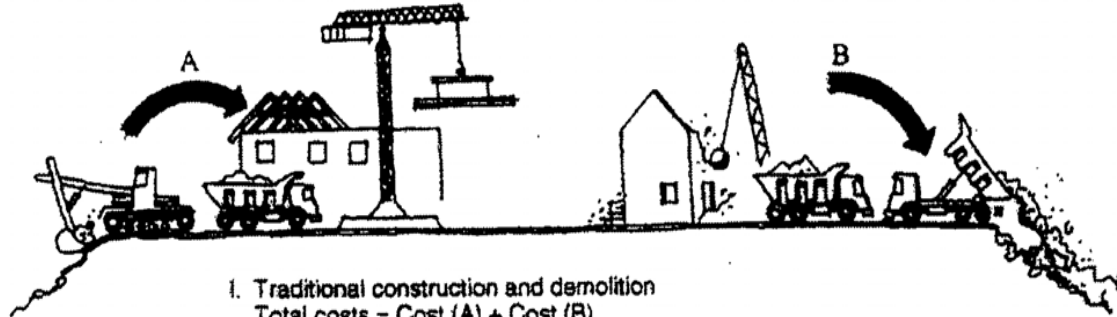
**Aims**



# Questions



# Solutions



## Construction and Demolition Materials

### What happens?



**Questions**



**Solutions**

## **Construction and Demolition Materials**

- Structure Concrete**
- Other Concrete and pavers**
- Timber**
- Brick and Tile**
- Reinforced Steel**
- Plastic**

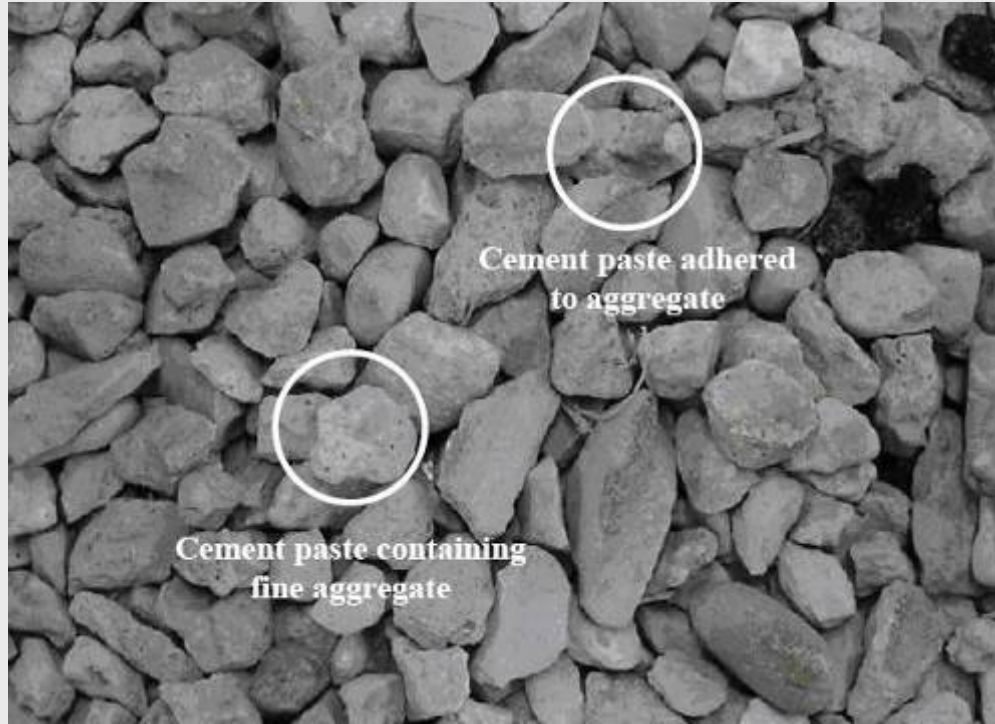
**Why it happens?**



# Questions



# Solutions

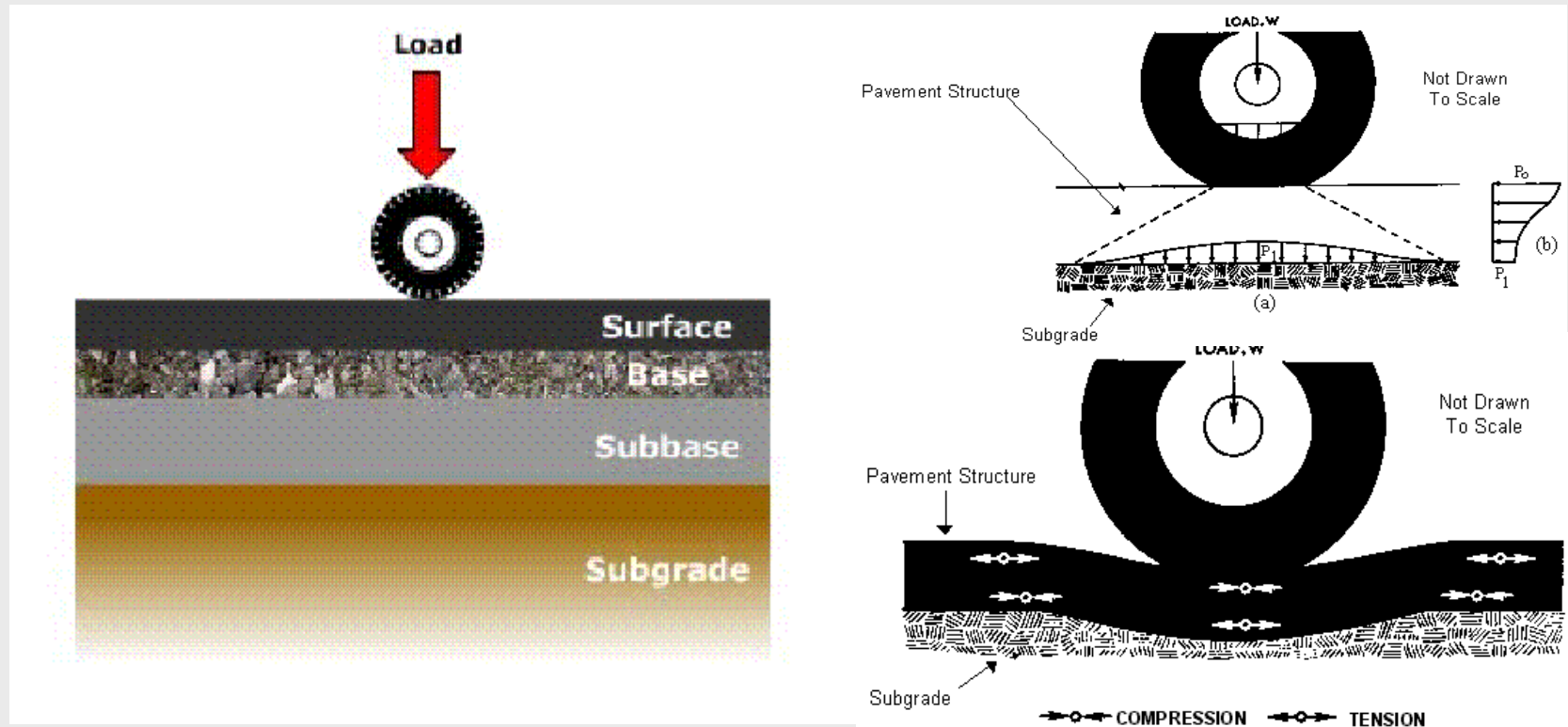


## Construction and Demolition Materials

# How to solve?



# Pavement structure behaviour



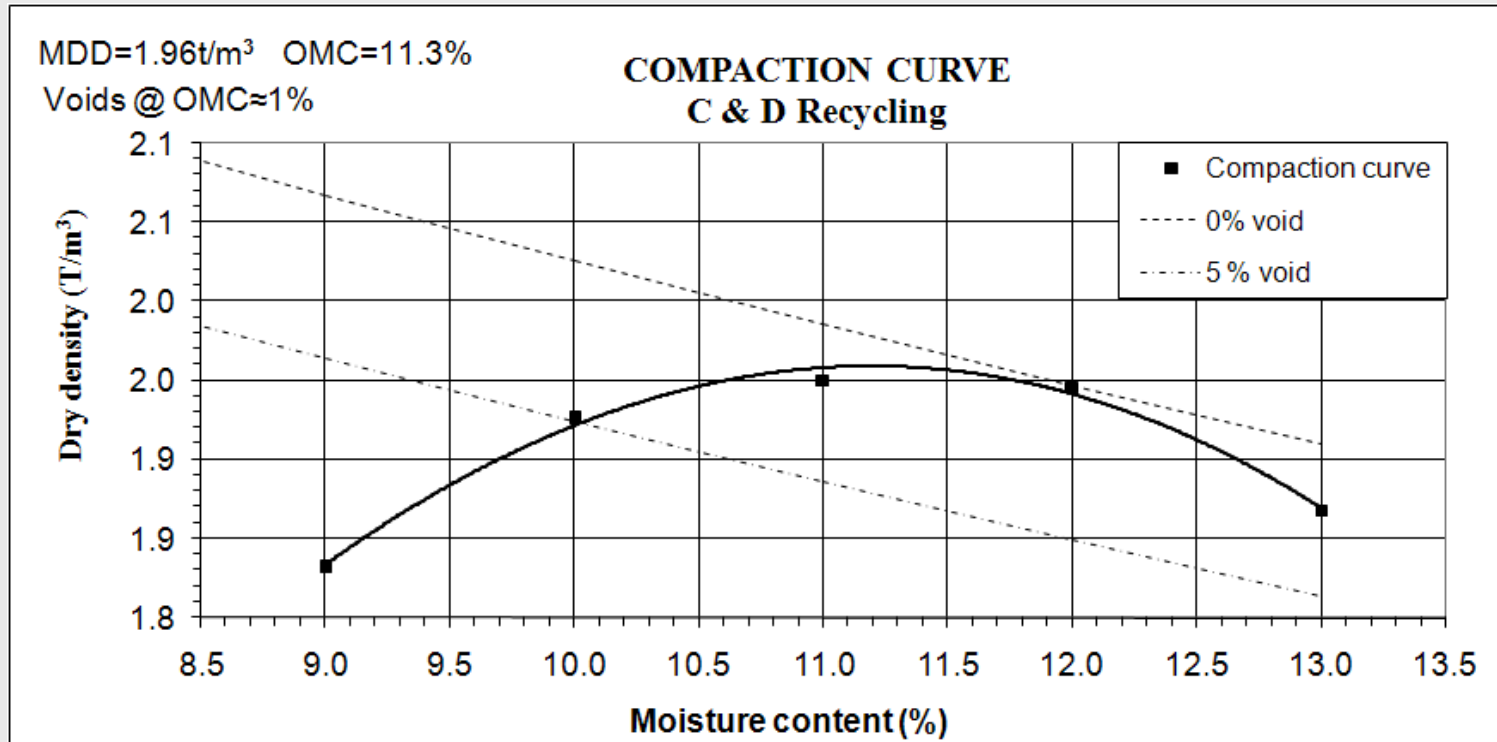
How to solve?



# Questions



# Solutions



## The C & D Recycling compaction curve

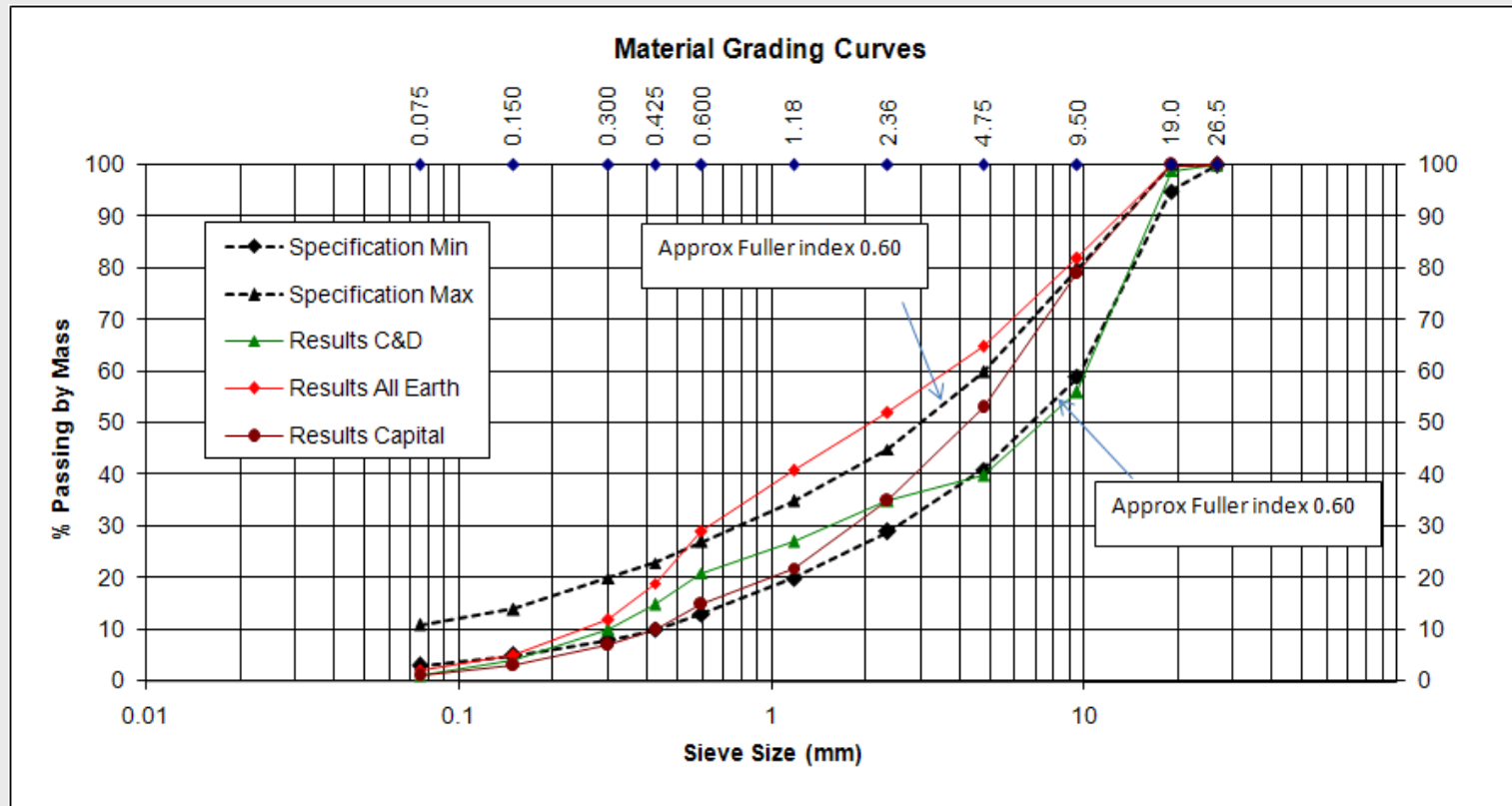
# How to solve?



# Questions



# Solutions



## Particle size distributions for recycled materials

### How to solve?

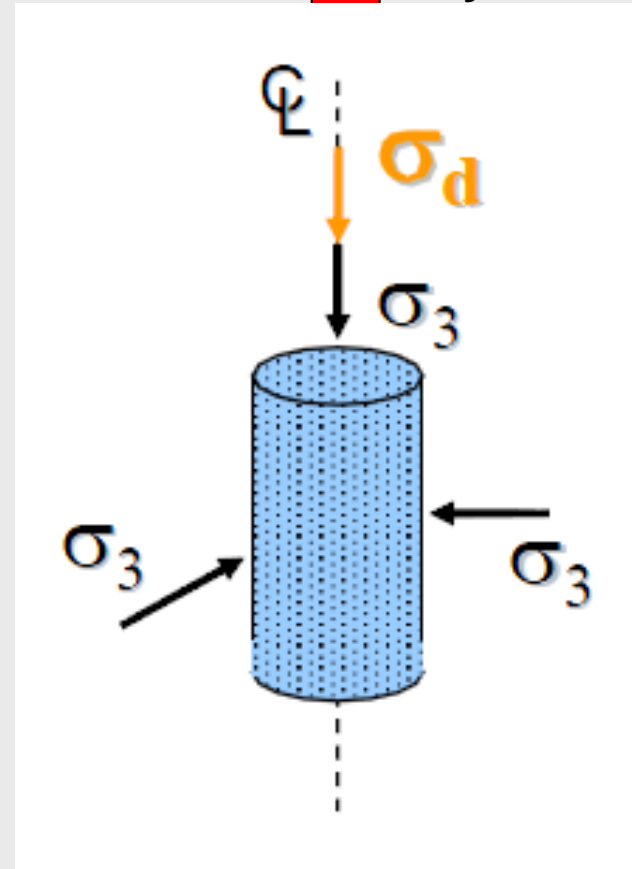




# Repeated load triaxial (RLT)



 Cyclic/static Load

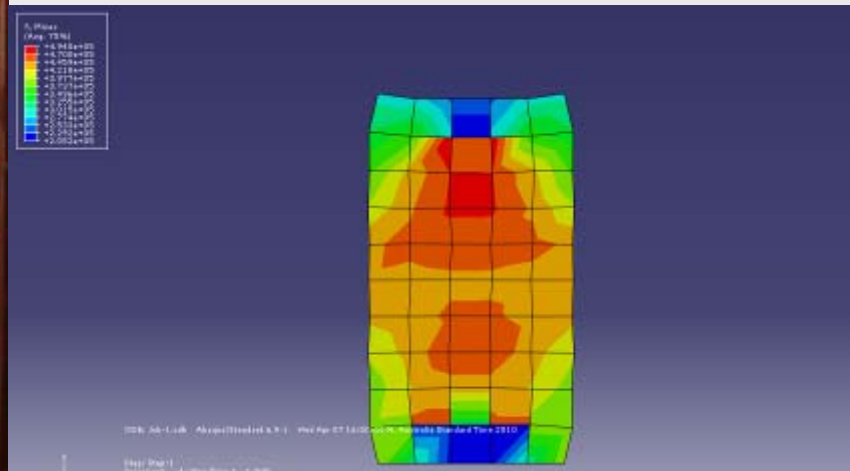


Static Load

How to solve?



# RLT finite element analysis



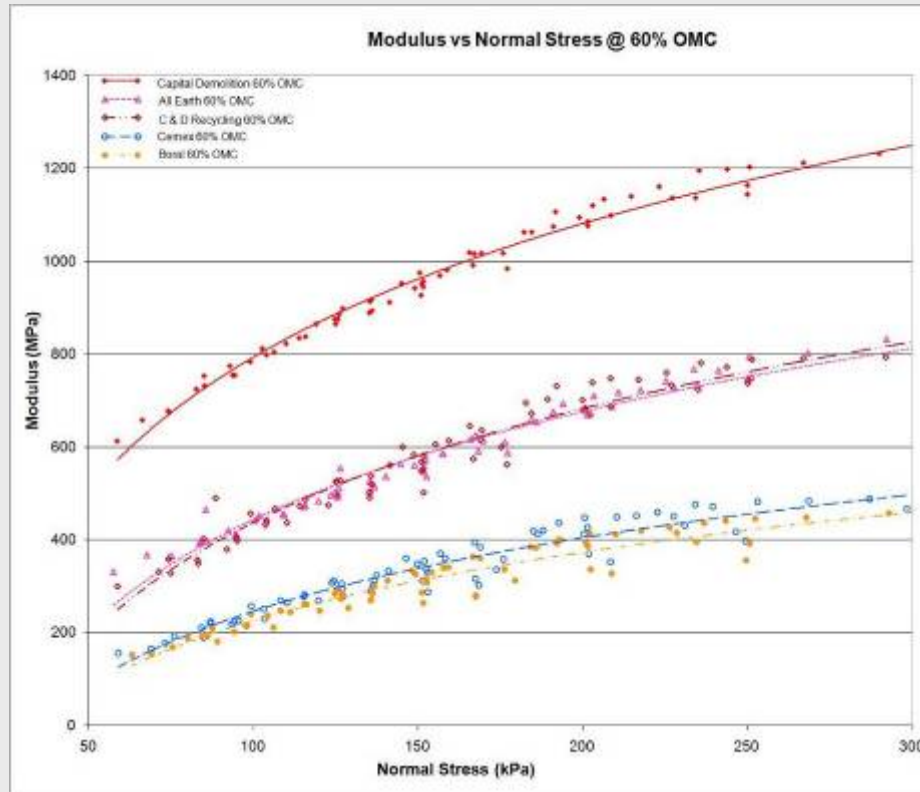
**How to solve?**



# Questions



# Solutions



## Modulus vs. quarried roadbase materials

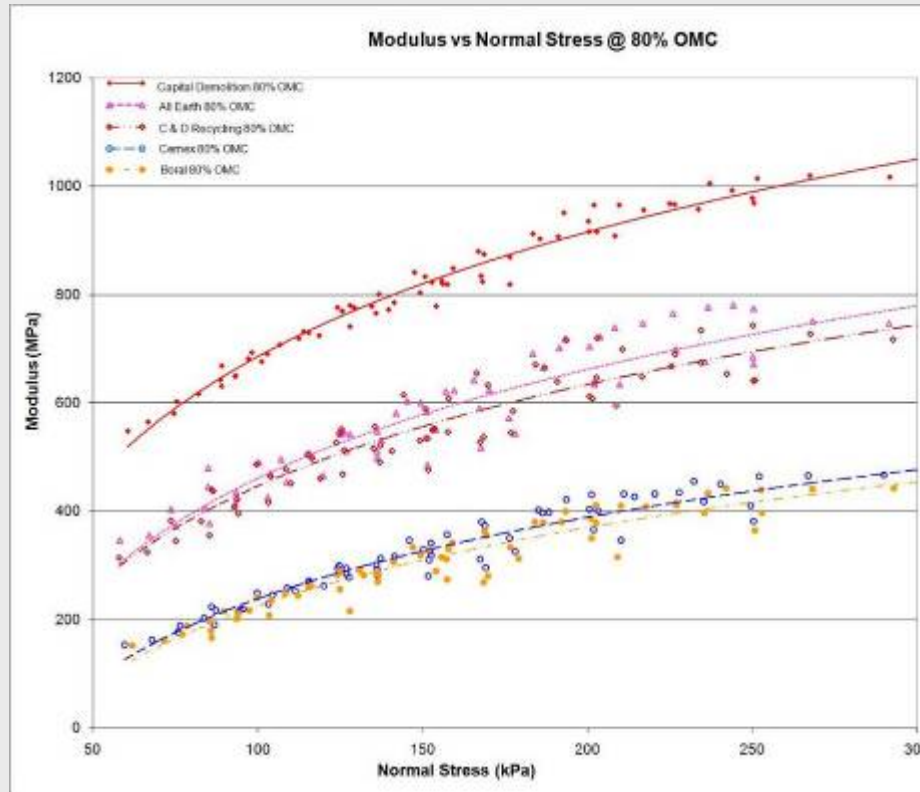
# How to solve?



# Questions



# Solutions



## Modulus vs. quarried roadbase materials

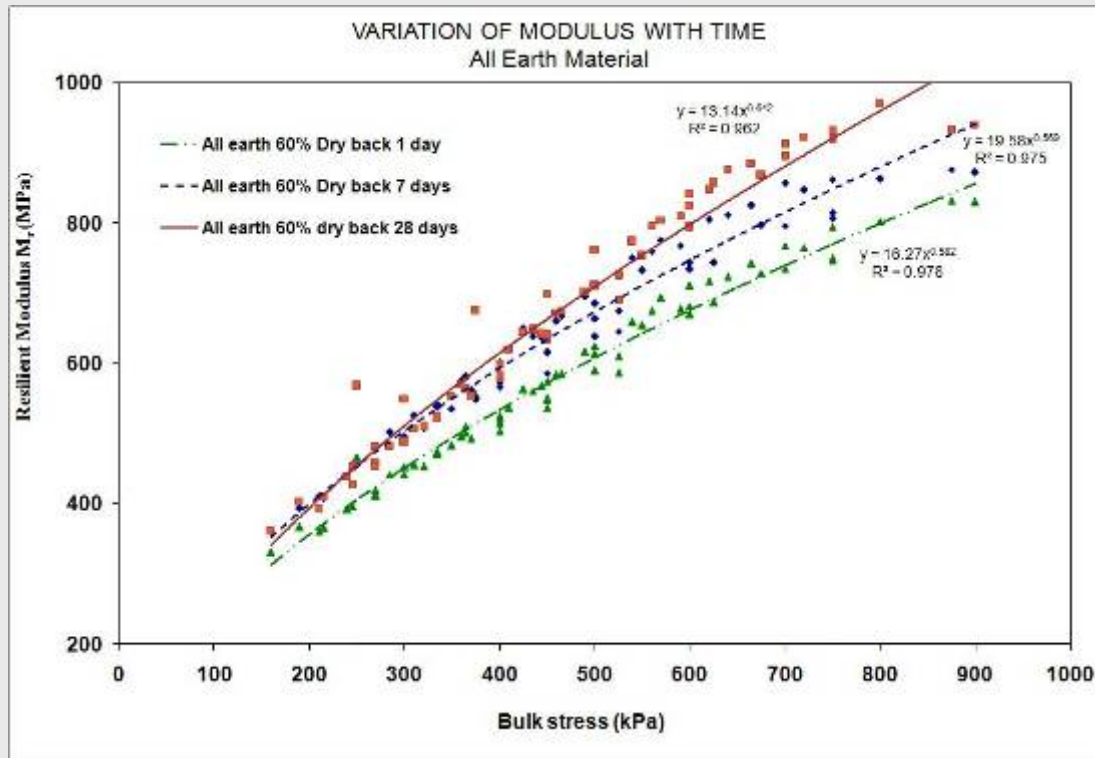
# How to solve?



# Questions



# Solutions

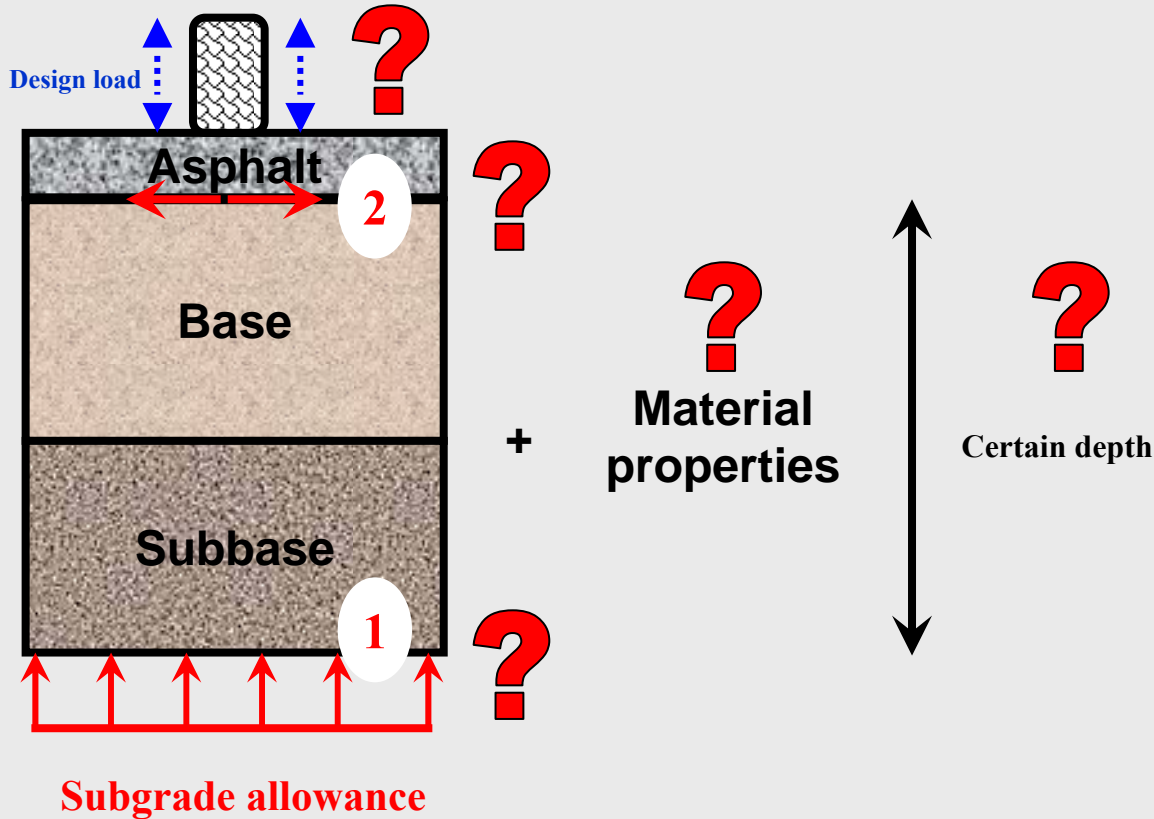


## Curing effect of C&D material

# How to solve?



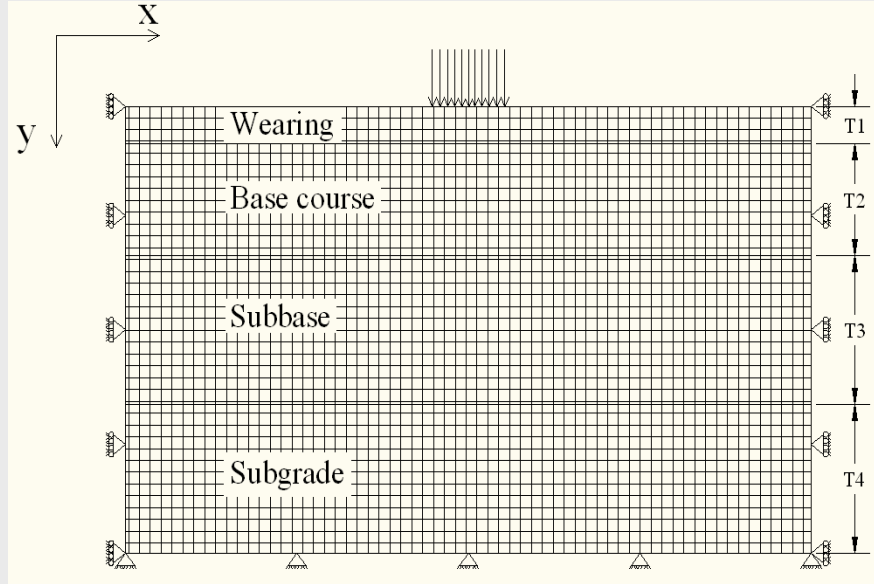
# Pavement structure modelling



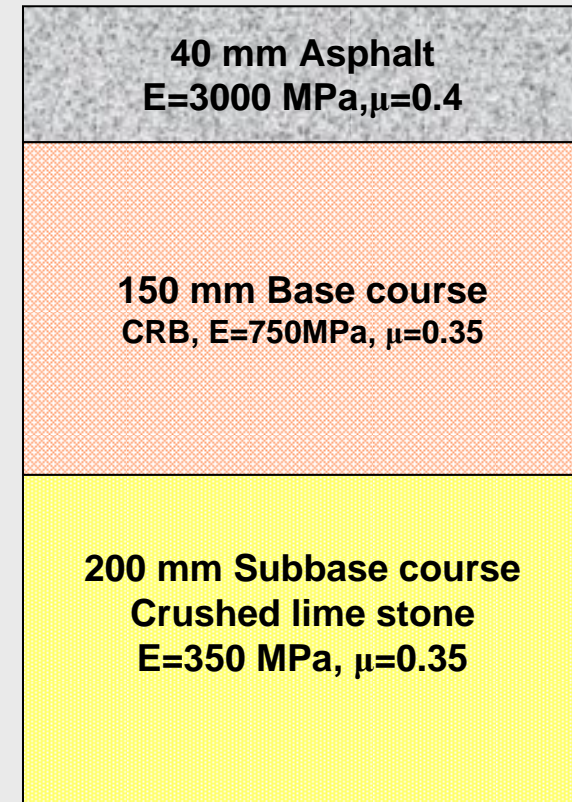
How to solve?



# Material parameter input



## Pavement Cross-section



**Subgrade**  
E=150MPa,  $\mu=0.35$

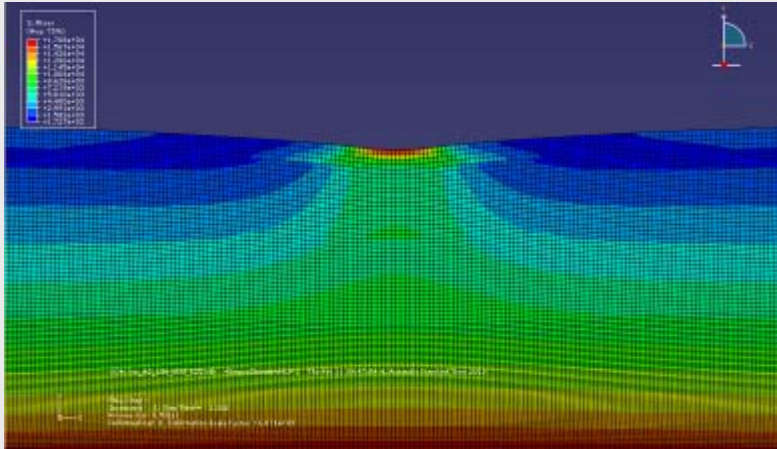
Layer No.	Material ID	Modulus (MPa)	Layer thickness (mm)
1	Asphalt	3000	40
2	C&D material	750-1000	150-350
3	Crushed limestone	350	200
4	Subgrade CBR 15	150	Vary

## How to solve?

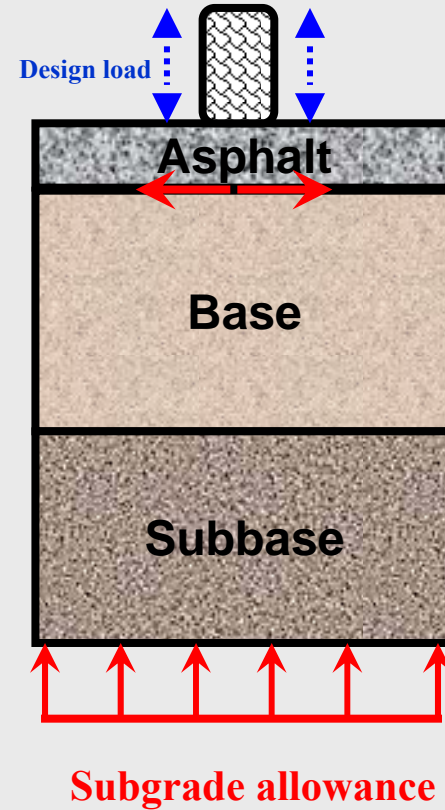
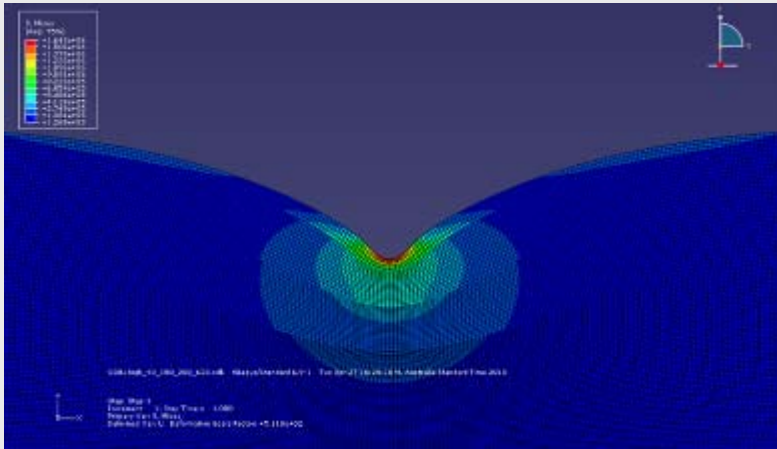


# Multi-layer Finite element analysis

Applied load of 75 kPa



Applied load of 750 kPa



How to solve?





# Thank you



Thank you for your attention!

