Operational and Technical Issues:

- Some common-sense things....

- Some practical videos.....
- Best practices in traffic accommodation;
- Pothole repairs using cold mix
- Patching using Slurry or Road Patch
- Patching using a walk-behind roller

24th July 2025

John Onraët - SAT

Some important facts…. The “fluff factor”

For a repair of 25 m long and 6 m wide, requiring a base of 150 mm compacted thickness, calculate required quantity (Q) as follows:

Q = 25 x 6 x (0.150 + 33%)

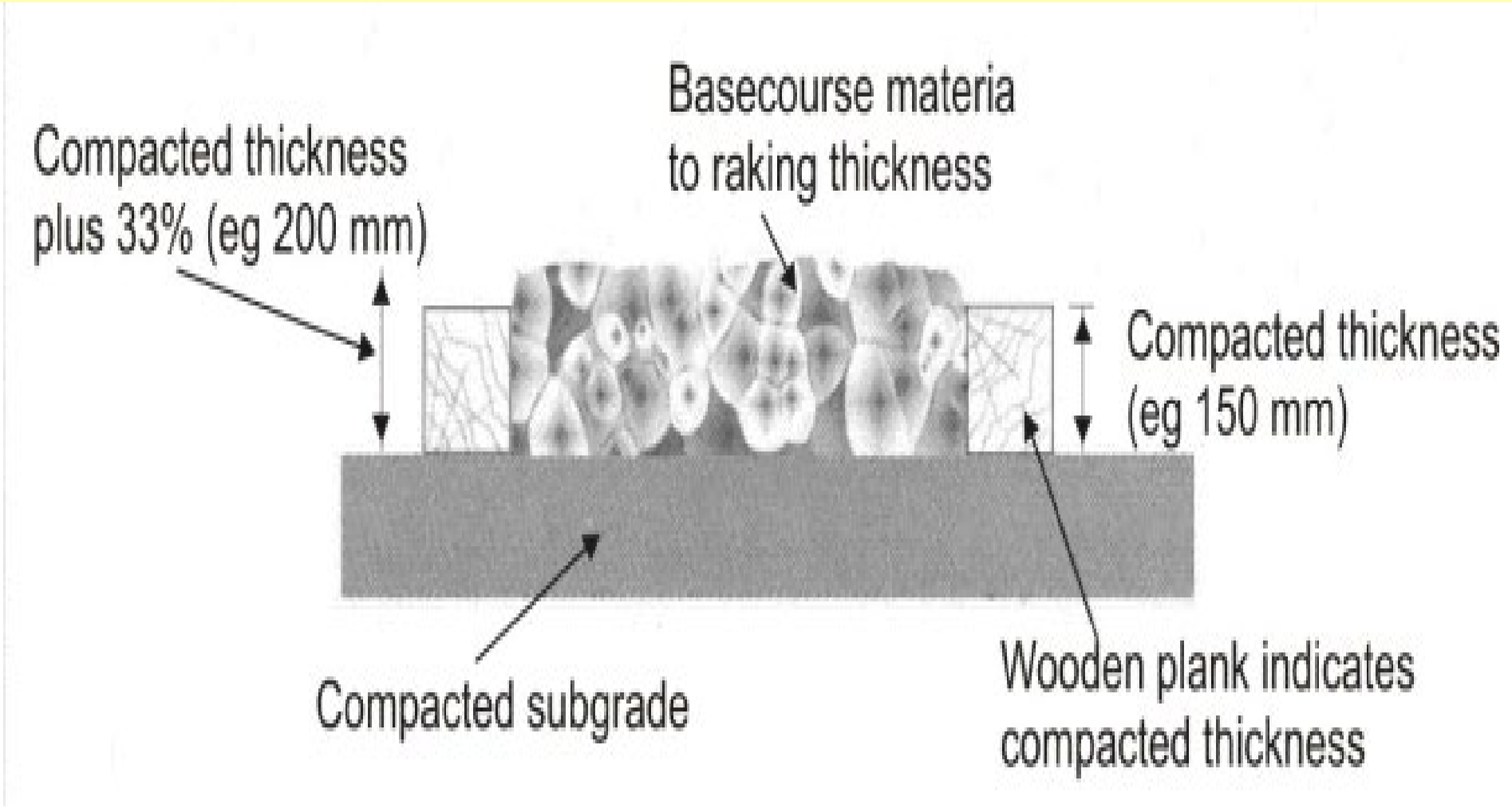
= 150 x (0.150 + 0.050)

= 150 x 0.200

= 30 m3 (loose)

$$\text{loose thickness} = \text{compacted thickness} + 33\%$$

Method to achieve even thickness of uncompacted base



Primer and tack coats

- difference between primer and tack
- selection criteria – prime and tack
- types, application and advantages

Hot / Warm / Cold mix asphalt

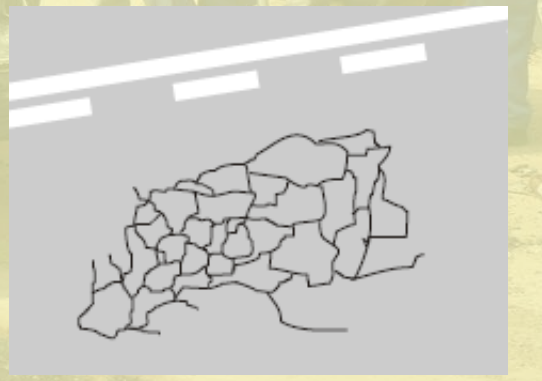
- Selection: the importance of high quality product
- Choice between 10mm Medium and 7mm Fine
- For most “minor” works use Fine
  - easier to work by hand
  - minimised segregation
  - compacts easier (especially thin layers)
  - usually has a higher bitumen content


VXD434 GP

Patching & repairs

Cracks, Potholes & Failures

- crocodile cracks
  - named after look of crocodile skin
  - mostly in the wheel tracks
  - fatigue caused by traffic

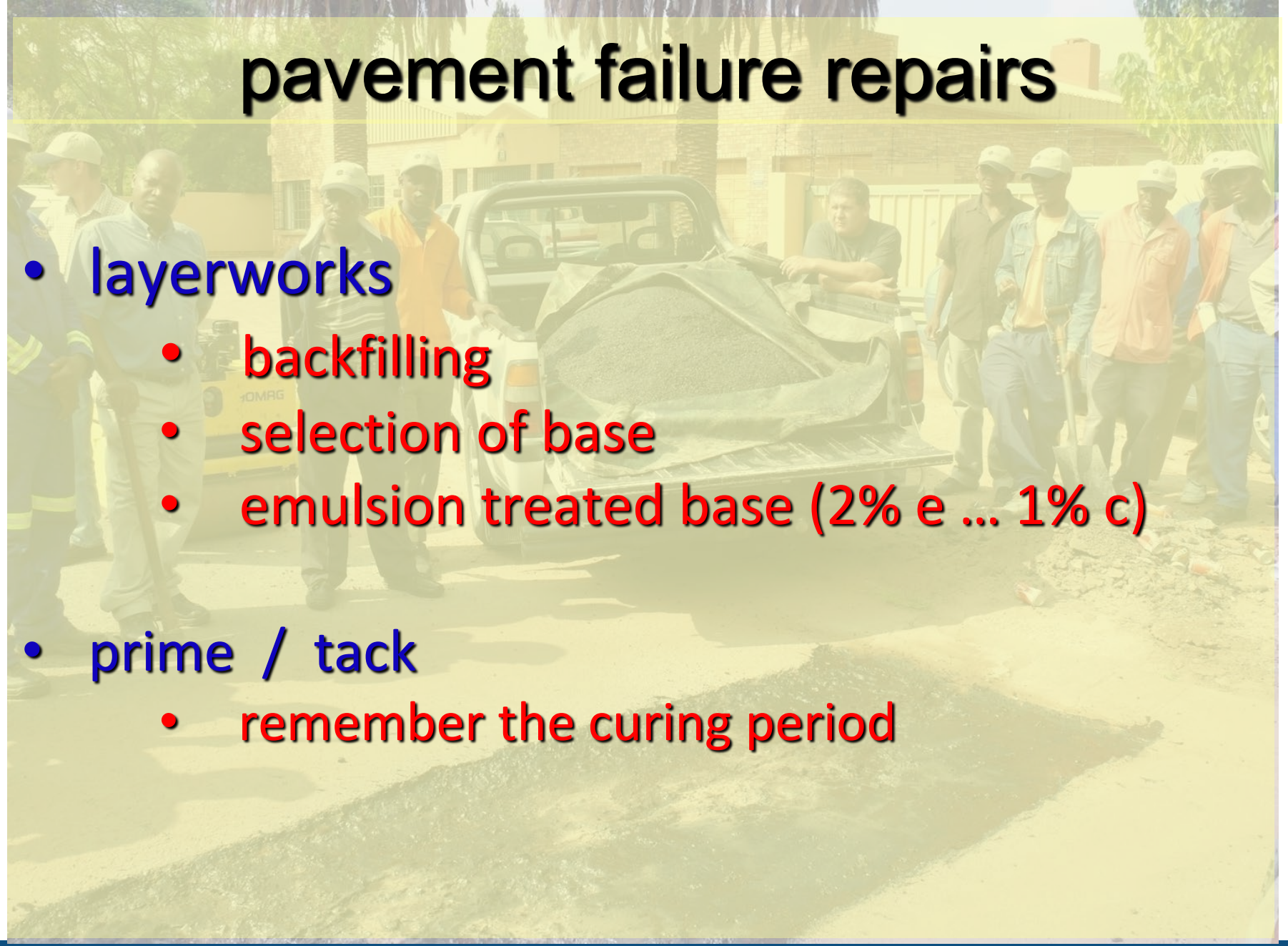


- random cracks
  - no regular pattern
  - often open
  - surrounding surface in good condition

- is surrounding surface sound?
- remove loose material & neaten edges
- check underlying material (base?)
- asphalt backfill


Neat excavation to sound material
Sloped sides

pavement failure repairs



- layerworks
  - backfilling
  - selection of base
  - emulsion treated base (2% e … 1% c)
- prime / tack
  - remember the curing period

pavement failure repairs

- asphalt
  - remember the bulking factor
  - remember the optimum MC when compacting layer
- compaction
  - remember the bulking “fluff” factor
  - importance of level control
  - compact until flat

Comptacted thickness	Pre-compaction thickness	Coverage (m^2/ton)
20 mm	25 mm	20
25 mm	30 mm to 35 mm	16
30 mm	40 mm	14
35 mm	40 mm to 50 mm	12
40 mm	50 mm to 55 mm	10

pavement failure repairs

- cold mix asphalt
  - either too stiff & difficult to compact …
  - … is porous & fails during wet weather
  - or too soft & compactible …
    … soft in hot weather & shoves
  - prefer too stiff but must seal with eg Water Block

pavement failure repairs

- sealing
  - edges
  - surface (particularly cold mix)
- traffic control on public roads
  - very very important

Thank you

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