AFCAP

CROWN AGENTS

UKaid from the British people

ADDIS ABABA LVR WORKSHOP: Aggregate hardness/strength

Prof Phil Paige-Green
Paige-Green Consulting (Pty) Ltd
Pretoria, South Africa

AFCAP

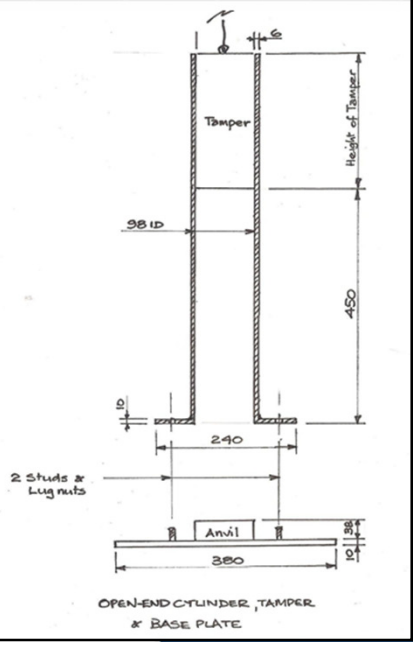
CROWN AGENTS

UKaid from the British people

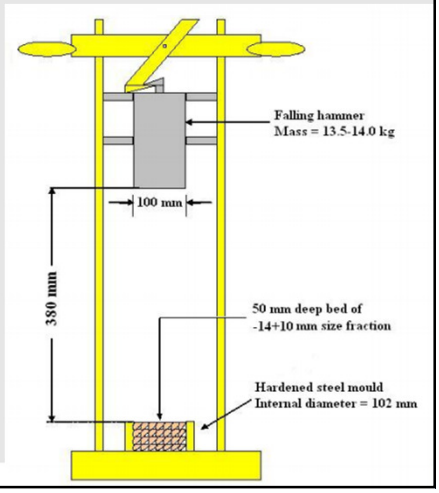
BACKGROUND

- The Treton Impact Value test was developed in the 1950s in SA
- Simple equipment can be constructed in a laboratory
- Almost indestructible – nothing to go wrong
- Was used to differentiate between materials that break down under traffic and materials that will not break under a grid roller (or traffic) for unpaved roads.
- Used instead of AIV because of caking effect of softer materials (Treton > 65)
- Modified AIV was not really standard at the time

AFCAP
TRETON TEST



AFCAP
AIV TEST



AFCAP

CROWN AGENTS

UKaid from the British people

ENERGY PER UNIT VOLUME

- AIV = $14*0.38*15*9.81/8.7*10^{-5}$ = 8 998 kJ
- Treton = $15*0.394*10*9.81/5*10^{-5}$ = 11 595 kJ
- = 29% more energy in Treton

METHOD	Falling mass, kg	Height of fall, m	Mass of the specimen, g (e.g. 2.7 g/cm³)	Number of blows, N
Aggregate impact value (AIV)	13.5-14.0	0.38	640	15
TRETON	15	0.412	135	10

5

AFCAP

CROWN AGENTS

UKaid from the British people

CORRELATION

- None done as far as I know
- Need to do it urgently
- Fairly straight forward, except for caking of softer materials
- Expect to be a linear relationship up to a certain point and then ??

6