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ADDIS ABABA LVR WORKSHOP: Aggregate durability


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BACKGROUND



- Is aggregate durability a problem in low volume roads ?
 1. We don't (or seldom) use aggregate -0 normally natural gravels
 2. Degradation is already well-advanced.
 3. Additional deterioration appears to have little effect
- The SA LVR investigation showed no correlation between durability (DMI) and long-term performance (DMI from 0 – 1356)



2

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DURABILITY TESTS

- Traditional tests include
 - Sodium Sulphate soundness test;
 - Secondary Mineral counts;
 - DMI,
 - Los Angeles Abrasion
 - Various glycol-soaked tests for basic igneous rocks
- What do these tests simulate ?

3



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DURABILITY TESTS

- Traditional tests include
 - Sodium Sulphate soundness test; (**tensile strength**)
 - Secondary Mineral counts; (**degree of weathering – poor reproducibility**)
 - DMI, (**hardness, abrasion resistance, quality and quantity of fines produced**)
 - Soaked strength (10% FACT) – (**softening effect of water**)
 - Los Angeles Abrasion (**hardness, abrasion resistance, quantity of fines produced**)
 - Various glycol-soaked tests for basic igneous rocks (**presence of smectite, weakening effect of smectite expansion**)

4

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WHERE TO NOW ?

- Don't worry about durability
- In situ strength is critical
- Concentrate on moisture control and good compaction.

5