

VISUAL INSPECTION OF CORES

1.0 SCOPE

- 1.1 This test method describes the procedures used in visually evaluating pavement cores.
- 1.2 This test method assumes that the technologist is familiar with the appearance of normal mix so that all observations can be evaluated relative to the normal mix.

2.0 APPLICABLE DOCUMENTS

- 2.1 ASTM D3549 Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixture Specimens
- 2.2 Journal of Sedimentary Petrology, Appendix 3, charts for estimating percentage composition of rocks and sediments (TLT-113)

3.0 PROCEDURE

- 3.1 Determine thickness of each lift.
 - 3.1.1 Thickness of specimens with relatively horizontal surfaces or layers with well defined lines may be measured using a ruler or callipers. Where core walls are smeared from overheated core barrels or where lift lines are not well defined the core may be rolled to make lift lines more noticeable.
 - 3.1.2 Make four measurements at approximately quarter points on the outside edge of the core.
 - 3.1.3 Record the average of these measurements to the nearest 0.5 cm as the lift thickness.

Note: When cores are to be separated into layers the lift lines should be marked with a paint pen, where lift lines are well defined and the layers may be separated by shearing with a 100 mm chisel. Where lines are poorly defined, a diamond saw should be used.

- 3.2 Record the type of material that each lift is composed of ACP, ASBC, CSBC or GBC. (The top lift is identified as "A", 2nd lift as "B", etc.).
- 3.3 Note the appearance of the top surface of the core as Sealcoat, Pitted, Ravelled, Smooth, Rough or any other relevant observation.
- 3.4 If density measurements are not required, split each lift vertically or the entire core by placing it horizontally in a hydraulic press and apply enough pressure

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until the core begins to split. (Then pry apart without damaging the exposed face).

- 3.5 Note the appearance of the mix (using exposed face of core) as Shiny, Normal or Dull.
- 3.6 Estimate the relative size of the voids:
 - Tight mixture, small voids.
 - Void size, 1 to 2 mm as medium.
 - Open graded mixture, large voids.
- 3.7 Estimate the Asphalt Content of the mixture as:
 - Bleeding, excessive free asphalt, slick appearance.
 - Rich, excessive asphalt, shiny to slick appearance.
 - Normal, well coated aggregate, shiny appearance.
 - Lean, poorly coated aggregate, shiny to dull appearance.
 - Dry, very lightly coated aggregate, dull appearance.
- 3.8 Note any evidence of stripping and estimate the amount as:
 - Slight, less than 5 percent.
 - Slight to Moderate, 5 to 10 percent.
 - Moderate, 10 to 15 percent.
 - Moderate to Severe, 15 to 25 percent.
 - Severe, greater than 25 percent.
- 3.9 Visual description of aggregate:
 - Note shape of aggregate as Angular, Subangular or Subround.
 - Note if the mixture contains Excessive Coarse or Fine aggregate.
 - Note any evidence of iron nodules, clay balls, etc.
 - Estimate any amounts of deleterious material as:
 - Trace, up to 1 percent
 - Low, 1 to 3 percent
 - Medium, 3 to 5 percent
 - High, greater than 5 percent

4.0 CALCULATE

- 4.1 Record all measurements and observations on the TLT-315 Visual Inspection of Cores worksheet as shown in [Figure 1](#).

VISUAL INSPECTION OF CORES - TLT-315

Project No.																								
Sample No.																								
Km																								
Location																								
LIFT	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F						
Lift thickness (mm)																								
Type of Material (**)																								
SURFACE APPEARANCE																								
Sealcoat																								
Pitted																								
Revelled																								
Smooth																								
Rough																								
MIX APPEARANCE																								
Shiny																								
Normal																								
Dull																								
VOIDS																								
Small																								
Medium																								
Large																								
AC CONTENT																								
Bleeding																								
Rich																								
Normal																								
Lean																								
Dry																								
STRIPPING																								
Slight > 5%																								
Slight to Moderate 5 – 10%																								
Moderate 10 – 15%																								
Moderate to Severe 15 – 25%																								
Severe > 25%																								
AGGREGATE																								
Angular																								
Subangular																								
Subround																								
Excessive Coarse																								
Excessive Fine																								
Iron Nodules (*)																								
Soft Sandstone (*)																								
Clay Balls (*)																								
Segregation (*)																								

*** LEGEND**

T – Trace up to 1%
 L – Low 1 to 3 %
 M – Medium 3 to 5%
 H – High > 5%

**** LEGEND**

1 – ACP
 2 – ASBC
 3 – CSBC
 4 – GBC