

CONSTRUCTION DIVISION, MATERIALS & PAVEMENTS SECTION (CST-M&P)
AGGREGATE IN-HOUSE CALIBRATION PROCEDURE # 18
L.A. Abrasion Machine & Steel Balls

EQUIPMENT CHECKED: L.A. Abrasion Machine & Steel Balls (Tex-410-A/ASTM C 131)

1. SCOPE

- 1.1 This procedure provides instructions for verifying the critical dimensions of L.A. Abrasion Machines for determination of ABRASION OF COARSE AGGREGATE USING THE LOS ANGELES MACHINE, Tex-410-A (ASTM C 131).
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2. APPARATUS

Inspection Equipment Required:

1. Ruler / Measuring Tape readable to 0.1 mm
2. Balance, 10000g, readable to 0.1g
3. Stop watch / timer

Tolerance:

The equipment shall meet the tolerances specified in test procedure ASTM C 131.

3. PROCEDURE

3.1 *L.A. Abrasion Machine Dimensions and Rotation:*

1. Using a ruler or measuring tape, measure and record the inside diameter of drum, inside length (across drum), wall thickness and opening dimensions (L x W).
2. Using a ruler or measuring tape, measure and record the inside length of the drum (perpendicular to the face the diameter measurement was taken).
3. Using a ruler or measuring tape, measure and record the opening dimensions of the drum (L x W).
4. Using a ruler or measuring tape, measure and record the wall thickness of the drum.
5. Empty the L.A. Abrasion Machine, replace lid, and tighten screws to hold lid in place for test run. Record the initial revolutions or reset counter.
6. Simultaneously start the L.A Abrasion Machine and timer or stop watch and let it run for 5 minutes.

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7. At the end of 5 minutes, simultaneously stop the L.A. Abrasion machine and timer and record the counter reading for the number of revolutions. Record the elapsed time in minutes and seconds.
8. Calculate the Average Speed using the equation: Ave. Speed = $(60 \times (\text{Revolutions} \div \text{Time in seconds}))$.

3.2

Steel Balls (Spheres) Combined and Individual Weights:

1. At random, weigh the steel balls in combination to match the number of spheres for Grade A, B, C, and D. Compare each combination to the weights specified for each grade in ASTM C 131.
2. Weigh and record the weight of each individual steel ball (sphere).