

**CONSTRUCTION DIVISION, MATERIALS & PAVEMENTS SECTION (CST/M&P)
AGGREGATE IN-HOUSE CALIBRATION PROCEDURE # 19B
MICRO DEVAL ABRASION MACHINE AND APPARATUS (DISTRICTS)**

**EQUIPMENT CHECKED: MICRO DEVAL ABRASION MACHINE AND APPARATUS
([Tex-461-A](#))**

1. SCOPE

- 1.1 This procedure provides instructions for verifying the critical elements and calibration of the micro deval abrasion machine, micro deval rolling mill (revolution verification), stainless steel ball (dimensional verification), stainless steel jar (dimensional verification), and the timer verification (Tex-461-A).
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2. APPARATUS

2.1 Inspection Equipment Required

1. Gauges, calipers, or other measuring devices with a precision of at least 2.5 μm or 10% of the tolerances listed in AASHTO M-92, Table 1, Column 4.
2. Calibrated timer with an accuracy of \pm one (1) second per 120 minutes run time.
3. Balance with a minimum capacity of 10,000g, accuracy of 0.1 g or 0.01% of the test sample, whichever is greater.
4. Steel Ruler readable to 0.1 mm

Tolerance:

The equipment shall meet the tolerances specified in test procedure Tex-461-A.

3. PROCEDURE

3.1 Micro Deval Rolling Mill – Revolution Requirement:

1. Measure revolutions at one (1) minute with a requirement of 100 ± 5 RPM; record the results on the worksheet.
2. Measure revolutions at 120 minutes with a requirement of $12,000 \pm 600$ RPM; record the results on the worksheet.

3.2 Stainless Steel Ball - Dimension Verification:

1. Measure 10 stainless steel spheres at random with a dimension verification requirement of 0.3750 ± 0.02 in. (9.5 ± 0.5 mm); record each measured diameter on the worksheet.

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2. Verify all the stainless steel spheres DO NOT PASS the 9.0 mm machined gauge sieve provided by CST/M&P. Discard all spheres passing the 9.0 mm gauge. Replace spheres as needed to meet the testing requirements in Tex-461-A.

3.3 Stainless Steel Jar Dimension Verification:

1. Measure the internal diameter of the stainless steel jar with a requirement of 7.6 ± 0.1 in. (193 ± 2.5 mm); record the measured dimension on the worksheet.
2. Measure the internal height of the stainless steel jar with a requirement of 6.7 ± 0.1 in. (170 ± 2.5 mm); record the measured dimension on the worksheet.

3.4 Timer Verification:

1. Conduct run time of 120 minutes (7,200 seconds) for the micro deval timer; record the reading in seconds. (**NOTE:** Run 3.4 steps 1 and 2 simultaneously).
2. Conduct run time of 120 minutes (7,200 seconds) for the standard timer; record the reading in seconds.
3. Compare the results of both runs and note any variation on the worksheet.