
Standard Method of Test for

**Resistance to Degradation of
Small-Size Coarse Aggregate
by Abrasion and Impact in the
Los Angeles Machine**

AASHTO Designation: T 96-22

Technically Revised: 2022

Technical Subcommittee: 1c, Aggregates

ASTM Designation: C131-01



**American Association of State Highway and Transportation Officials
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Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine

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AASHTO T 96-22 is identical to ASTM C131-01 except for the following provisions:

1. All references to the ASTM standards contained in ASTM C131-01, listed in the following table, shall be replaced with the corresponding AASHTO standard.

<i>Referenced Standards</i>	
ASTM	AASHTO
C136/C136M	T 27
C702/C702M	R 76
D75/D75M	R 90

2. Add references in Section 2 for AASHTO.
 - M 231, Weighing Devices Used in the Testing of Materials
 - M 339M/M 339, Thermometers Used in the Testing of Construction Materials
3. Add references in Section 2 for ASTM standards.
 - E1, Standard Specification for ASTM Liquid-in-Glass Thermometers
 - E230/E230M, Standard Specification for Temperature-Electromotive Force (emf) Tables for Standardized Thermocouples
 - E2877, Standard Guide for Digital Contact Thermometers
4. Add references in Section 2 for International Electrotechnical Commission standard.
 - IEC 60584-1:2013, Thermocouples - Part 1: EMF Specifications and Tolerances
5. Add a new Section after Section 3.1 of ASTM C131-01 as follows:

3.2 DESCRIPTION OF TERMS

Constant Mass—Test sample dried at a temperature of $110 \pm 5^\circ\text{C}$ ($230 \pm 9^\circ\text{F}$) to a condition such that it will not lose more than 0.1 percent moisture after an additional 2 h of drying at $110 \pm 5^\circ\text{C}$ ($230 \pm 9^\circ\text{F}$). Such a condition of dryness can be verified by determining the mass of the sample before and after successive 2-h drying periods. In lieu of such a determination, samples may be considered to have reached constant mass when they have been dried at a

temperature of $110 \pm 5^{\circ}\text{C}$ ($230 \pm 9^{\circ}\text{F}$) for an equal or longer period than that previously found adequate for producing the desired constant mass condition under equal or heavier loading conditions of the oven.

6. Add to the first sentence in Section 6.1 of ASTM C131-01 as follows:

...machine “equipped with a counter and” conforming...

Also replace the seventh sentence of this section as follows:

“A removable steel shelf shall extend along the length of the cylinder to within 5 mm (0.2 in.) of the full inside length of the cylinder, project inward 89 ± 2 mm (3.5 ± 0.1 in.) and shall be mounted on the interior cylindrical surface of the cylinder, or on the inside surface of the cover, in such a way that a plane centered between the large faces coincides with an axial plane.”

Also, the third from the last sentence of Section 6.1 of ASTM C131-01 is not included in AASHTO T 96-22.

7. Changes to Figure 1 of ASTM C131-01 are as follows:

- a. The phrase “NOT LESS THAN 1270 mm MEASURED ON OUTSIDE OF DRUM” is not included in AASHTO T 96-22.

- b. The steel wall thickness shall be changed from “12.7 mm THICK” to “ 12.7 ± 3.2 mm ($1/2 \pm 1/8$ in.) THICK.”

8. Add the following after Note 2 in ASTM C131-01:

“NOTE—Due to its mass, the location of the shelf relative to the opening influences the “at rest” position of the opening. The shelf location should be chosen to provide a convenient position of the opening to facilitate the loading of aggregate and spheres and to avoid impact of the charge on the cover.”

9. Add the following new section after Section 6.3 of ASTM C131-01:

“6.4 *Oven*—The oven shall be capable of maintaining a uniform temperature of $110 \pm 5^{\circ}\text{C}$ ($230 \pm 9^{\circ}\text{F}$). Oven(s) for heating and drying shall be capable of operation at the temperatures required, between 100 to 120°C (212 to 248°F), within $\pm 5^{\circ}\text{C}$ ($\pm 9^{\circ}\text{F}$), as corrected, if necessary, by standardization. More than one oven may be used, provided each is used within its proper operating temperature range. The thermometer for measuring the temperature, regardless of drying apparatus used, shall meet the requirements of M 339M/M 339 with a temperature range of at least 90 to 130°C (194 to 266°F), and an accuracy of $\pm 1.25^{\circ}\text{C}$ ($\pm 2.25^{\circ}\text{F}$) (see Note 1).

Note 1—Thermometer types suitable for use include ASTM E1 mercury thermometers; ASTM E2877 digital metal stem thermometer; ASTM E230/E230M thermocouple thermometer, Type J or K, Special Class, Type T any Class; IEC 60584 thermocouple thermometer, Type J or K, Class 1, Type T any Class; or dial gauge metal stem (bi-metal) thermometer.”

10. Replace Section 6.3 of ASTM C131-01 with the following:

“*Balance*—The balance shall conform to AASHTO M 231, Class G 5.”