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Methods of testing soils for engineering purposes

Method 3.7.1: Soil classification tests—Determination of the sand equivalent of a soil using a power-operated shaker

1 SCOPE This Standard describes the procedure for the measurement of the sand equivalent of road-making aggregates for quality control purposes. It provides an empirical measure of the quantity and type of the fines in the aggregate tested (see Note 1).

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS
1152 Specification for test sieves

1289 Methods of testing soils for engineering purposes
1289.0 Part 0: General requirements and list of methods

3 APPARATUS The following apparatus is required:

(a) Test cylinder, made of transparent plastic material of adequate strength and having outside diameter of 40 ±0.5 mm, inside diameter of 32 ±0.5 mm and height of 430 ±0.25 mm (see Figure 1). The cylinder shall be graduated in 5 mm intervals from the bottom to a height of 380 mm. A rubber stopper is required for the cylinder.

(b) Irrigator tube (see Figure 2) consisting of a hard-drawn stainless steel or hard brass tube 6.3 mm in external diameter and 0.9 mm to 1.6 mm in wall thickness. The lower end shall be shaped in the form of a wedge, each face of the wedge being pierced with a hole 1 mm in diameter.

(c) Working solution container—a transparent glass or plastic bottle of 5 L capacity, fitted at the bottom with a stopcock to control the flow of solution. The bottom of the bottle is placed 1 m ±150 mm above the workbench.

(d) Flexible tube made of rubber or plastic, approximately 1.5 m long and approximately 5 mm internal diameter, used to connect the irrigator tube to the working solution container.

(e) Piston, made of brass or stainless steel (see Figure 3) comprising a rod, a base and collar, a sleeve to fit the test cylinder and a mass fixed to the top of the rod.

(f) Shaking machine, power operated, capable of horizontally holding the test cylinder described in Item (a) above and applying to it a horizontal rectilinear periodic and sinusoidal movement of between 199 mm and 204 mm amplitude at between 173 and 177 cycles per minute.

(g) Separation sieve, 300 mm diameter, 4.75 mm aperture size, and receiver complying with AS 1152.

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