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ENGINEERING SERVICE CENTER
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METHOD OF TEST FOR FLOW OF GROUT MIXTURES (FLOW CONE METHOD)

CAUTION: Prior to handling test materials, performing equipment setups, and/or conducting this method, testers are required to read "**SAFETY AND HEALTH**" in Section G of this method. It is the responsibility of the user of this method to consult and use departmental safety and health practices and determine the applicability of regulatory limitations before any testing is performed.

A. SCOPE

The procedure to be used for determining the flow of grout mixtures is described in this test method.

B. APPARATUS

1. Flow cone and supporting ring conforming to the dimensions indicated in Figure 1.
2. Stop watch having a least reading of not more than 0.1 s.
3. Rubber stoppers, size 00.
4. Sample container of 4 L minimum capacity.
5. Suitable stand for supporting ring. A 19 L paint bucket may be used. See Figure 2.

C. SAMPLE

The test sample shall be approximately 4000 mL of grout.

D. DETERMINATION OF EFFLUX TIME

1. Dampen flow cone and allow any excess water to drain. Place the cone in the supporting ring and insert the rubber stopper.
2. Level the cone, then pour the grout from the sample container into the cone until the grout surface is level with the bottom of the three holes in the side of the cone.

3. Remove the stopper and start the stopwatch simultaneously.
4. Stop the stopwatch at the first break or change in the continuous flow of grout from the discharge tube. Record the indicated time of efflux to the nearest 0.1 s.
5. Dispose of the grout sample and rinse the equipment.

E. DETERMINATION OF EFFLUX AFTER QUIESCENCE

1. Fill cone with grout, as previously described, using remainder of 4000 mL sample.
2. Allow grout to rest in cone for 20 min \pm 15 s from the instant the cone is filled to the time the efflux time is to be measured. After the 20-min quiescent period, determine efflux time as described previously in Section "D."
3. Record efflux time of the grout to the nearest 0.1 s.

F. PRECAUTIONS

The cone must be placed in a location that is free from vibration.

The cone must be kept clean from cement buildup, especially in or near the orifice and nozzle.

G. SAFETY AND HEALTH

Prior to handling, testing or disposing of any waste materials, testers are required to read: Part A (Section 5.0), Part B (Sections: 5.0, 6.0 and 10.0) and Part C (Section 1.0) of Caltrans Laboratory Safety Manual. Users of this method do so at their own risk.

End of Text (California Test 541 contains 2 pages)

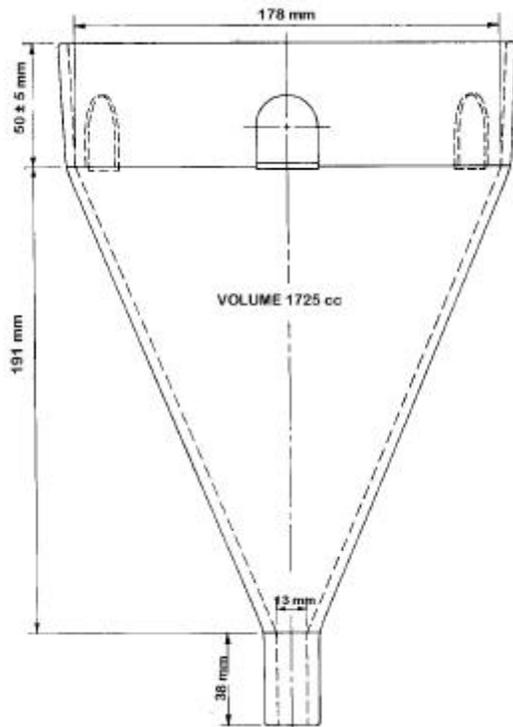


Figure 1
FROUT FLOW CONE



Figure 2
GROUT EQUIPMENT