



Civil Engg. Lab-I

Sl. no	Name of experiment	Photo	List of Equipment
1	Determination of fineness of Cement by sieving.		1) Balance 2) Sieve of size 90 Micron confirming to IS 460 – 1985 (Part-1). 3) Brush 4) Trowel. 5) Tray
2	Determination of normal Consistency, initial and final setting time of Cement		1) Vicat's apparatus with mould and non-porous plate as per IS: 4031 (Part-V) 1988 2) Needle (C) for initial setting time and needle (F) for final setting time. 3) Balance 4) Trowel 5) Enamel tray 6) Standard spatula 7) Stopwatch 8) Thermometer 9) Measuring cylinder Materials used Cement (Ordinary Portland) and water
3	Determination of soundness of Cement by Le-Chatelier apparatus.		1. Le- chatelier mould 2. Cement 3. Glass sheets 4. Mixing pan 5. Trowel 6. Wight
4	Determination of Compressive Strength of cement.		1. Standard Size Mould. 2. Vibrating Machine 3. Weighing Balance. 4. Gauging Trowel. 5. Poking Rod. 6. Compression Testing Machine.
5	Grading of Fine & Coarse aggregate by sieving for concrete		1. Weight pan. 2. IS Sieve of sizes 3. Round pans to fit sieve 4. Brushes 5. Sieve Shaker
6	Determination of Specific Gravity and Bulking of sand.		1. Oven-dry (no water in the sample). 2. Saturated surface dry (water fills the aggregate pores). 3. Submerged in water (underwater).
7	Determination of Specific Gravity and Bulk density of coarse aggregate.		1. Given sample (usually 10Kg). 2. A weighing balance. 3. Measuring Cans with

			<p>1liter to 5-liter capability.</p> <p>4. A jar for measurement (1000 ml capacity).</p>
8	Determination of Flakiness, Elongation of Road aggregates.		<ol style="list-style-type: none"> 1. Standard thickness gauge. 2. Standard length gauge. 3. IS sieves 63mm, 50mm, 40mm, 25mm, 20mm, 16mm, 12.50mm 10mm and 6.30mm. 4. Balance 5. Thermostatically controlled oven
9	Determination of Crushing Value Test of aggregates.		<ol style="list-style-type: none"> 1. A steel cylinder 15 cm diameter with plunger and base plate. 2. A straight metal tamping rod 16mm diameter and 45 to 60cm long rounded at one end. 3. A balance of capacity 3 kg readable and accurate to one gram. 4. IS sieves of sizes 12.5mm, 10mm and 2.36mm 5. A compression testing machine. 6. Cylindrical metal measure of sufficient rigidity to retain its form under rough usage and of 11.5cm diameter and 18cm height. 7. Dial gauge
10	Los-Angeles Abrasion Test of aggregate.		<ol style="list-style-type: none"> 1. Los Angeles Machine 2. Abrasive charge: Cast iron or steel balls, approximately 48mm in diameter and each weighing between 390 to 445 g; six to twelve balls are required. 3. Sieve: 1.70, 2.36,

			<p>4.75, 6.3, 10, 12.5, 20, 25, 40, 50, 63, 80 mm IS Sieves.</p> <p>4. Balance of capacity 5 kg or 10 kg</p> <p>5. Drying oven</p> <p>6. Miscellaneous like tray</p>
11	Impact test of aggregate.		<p>1. An impact testing machine weighing between 45kgs to 60 kgs with a metal base.</p> <p>2. A cylindrical steel cup</p> <p>3. A metal hammer with the cylindrical lower end and weighing 13.5 to 14kgs.</p> <p>4. A cylindrical metallic measure with 75mm internal diameter and 50mm depth.</p> <p>5. A weighing balance with a capacity not less than 500g.</p> <p>6. A tamping rod of 10mm diameter and 230mm long.</p>
12	Determination of soundness test of road aggregates.		<p>1. IS Sieves</p> <p>2. Container</p> <p>3. Weighing machine</p> <p>4. Drying oven (105 to 110 degree)</p> <p>5. Sodium sulphate solution</p> <p>6. Magnesium sulphate solution</p>
	II. Concrete Laboratory		
13	Determination of Compressive Strength of concrete cubes.		<p>1. 150 mm Cube Moulds (with IS Mark)</p> <p>2. Electronic Weighing Balance</p> <p>3. G.I Sheet (For Making Concrete)</p> <p>4. Vibrating Needle & other tools</p> <p>5. Compressions Testing Machine</p>