

## Appendix I

### Specifications:

The consolidation apparatus (three gang) shall conform with the requirements of IS: 2720 (part-xv), IS: 12287, BS 1377-06 and ASTM D 2435-11 having following features: -

The consolidation apparatus (three gang) facilitate the determination of consolidation properties for three soil specimens at a time. Three loading unit of capacity  $20 \text{ kg/cm}^2$  each with consolidation cell assembly shall mount on sturdy frame stand. The apparatus set-up will be suitable for standard consolidation specimens of 60 mm diameter. The consolidation apparatus (three gang) consists of [i.e. (1) to (5)]:-

Sr. no.	Name of the Instrument with specifications	Qty.
1.	<p><b>Loading unit :-</b></p> <p>Each loading unit shall consist of weight hanger, loading lever, counter weight, capstan screw, loading yoke, guide bracket, supports for dial gauges and water reservoir with pillar support.</p>	<b>3 Units</b>
2.	<p><b>Loading frame stand:-</b></p> <p>A loading frame stand shall accommodate three loading unit on thick top plate having sturdy base at suitable height.</p>	<b>1 No</b>
3.	<p><b>Consolidation cell Assembly:-</b></p> <p>Each fixed ring consolidation cell assembly for a 60 mm dia. and 20 mm thick Specimen confirming IS 12287 and <b>each cell</b> consist of [i.e.(1) to (9)]:-</p> <ol style="list-style-type: none"> <li>1. Fixed ring for 60 mm diameter x 20 mm thick soil specimen with guide ring made up of leaded brass and chrome plated - <b>1 No.</b></li> <li>2. Top porous stone - <b>3 Nos.</b></li> <li>3. Bottom porous stone - <b>3 Nos.</b></li> <li>4. Perforated pressure pad of leaded brass and chrome plated - <b>1 No.</b></li> <li>5. Steel ball - <b>6 Nos.</b></li> <li>6. Thrust piece - <b>2 Nos.</b></li> <li>7. Channeled base with water inlet of leaded brass and chrome plated - <b>1 No.</b></li> <li>8. Flanged water jacket with clamping screws of leaded brass and chrome plated. - <b>2 Nos.</b></li> <li>9. Sealing gasket - <b>6 Nos.</b></li> </ol>	<b>3 Cells</b>
4.	<p><b>Set of weights:-</b></p> <p>Each set of weights shall to give pressure on 60 mm diameter soil specimen up to <math>10 \text{ kg/cm}^2</math> comprising [i.e.(1) to (5)]:-</p>	<b>3 Sets</b>

	<ol style="list-style-type: none"> <li>1. Weight for 0.05 kg/cm<sup>2</sup> - 7 Nos.</li> <li>2. Weight for 0.1 kg/cm<sup>2</sup> - 5 Nos.</li> <li>3. Weight for 0.2 kg/cm<sup>2</sup> - 6 Nos.</li> <li>4. Weight for 0.5 kg/cm<sup>2</sup> - 6 Nos.</li> <li>5. Weight for 1.00 kg/cm<sup>2</sup> - 5 Nos.</li> </ol>	
5.	<p><b>Accessories</b> that consist of [i.e.(1) to (12)]:-</p> <ol style="list-style-type: none"> <li>1. <b>Dial gauge</b> for consolidation (as per IS: 2092) of 0.01 mm accuracy (Make: Mitutoyo/Baker) and 25 mm travel with all necessary fixtures. - 3 No.</li> <li>2. <b>Dial gauge</b> for consolidation (as per IS: 2092) of 0.001 mm accuracy (Make: Mitutoyo/Baker) and 10 mm travel with all necessary fixtures. - 3 Nos.</li> <li>3. Specimen <b>cutting ring</b> for 60 mm diameter and 20 mm thick specimen - 6 Nos.</li> <li>4. Digital Stopwatch with accuracy 1/10 second - 3 Nos.</li> <li>5. <b>T- Connection</b> - 9 Nos.</li> <li>6. <b>Pinch cock</b> - 9 Nos.</li> <li>7. <b>Plastic tube</b> for water reservoir - 6 m</li> <li>8. <b>Spirit level</b> (with magnetic base) at least 150 mm long to observe level of lever/yoke. - 3 Nos.</li> <li>9. <b>Spatula</b>, 100mm long blade of standard width with wooden handle. - 2 Nos.</li> <li>10. Pack of 100 <b>filter paper</b>. -1 Packet</li> <li>11. Necessary <b>tool kit</b> -1 Set</li> <li>12. Operating &amp; maintenance manual with copy of test form.-1 No.</li> </ol>	