

# **Item Wise Specification**

**Name of Work : Providing, Supplying & Installation with testing demo of additional Laboratory Equipment for aggregate, cement & mix-design @Quality Control Sub Division, Rander, Dist. Surat**

**Item No: 1**

**Providing and Supplying & Installation with testing demo of Vicat Needle Apparatus for Testing of Initial, Final Setting time & Consistency of cement Test. One complete Set. Confirm to IS: 5513**

**General Description and Specifications:**

It consists one each of:

- Consist of a metallic frame bearing a movable rod with cap at one end and a vicat mould  $80 \pm 5\text{mm}$  in dia at the base,  $70 \pm 5\text{mm}$  at the top and  $40 \pm 0.5\text{mm}$  high & with a glass base plate consistency plunger, initial and final setting needles in a nice jewellery case with dashpot to facilitate the gentle lowering of the needle.
- It shall Confirm to IS : 5513.

**Item No: 2**

**Providing and Supplying & Installation with testing demo off Vicat Mould**

It consists one each of:

- The Vicat Mould will be in the form of frustum of a cone with an internal dia of  $70(\pm 0.5\text{mm})$  at the top,  $80(+/- 0.5\text{mm})$  at the bottom and height of  $40(\pm 0.5\text{mm})$ .
- The mould will have minimum wall thickness of 4mm.
- A Non porous base plate of glass or metal of 3mm thickness will also be provided.
- It shall Confirm to IS : 5513.

**Item No : 3**

**Providing and Supplying & Installation with testing demo of Vicat Glass Plate**  
**Technical Specifications:**

- Size of Plate :  $110 \times 110 \times 8\text{mm}$

**Item No: 4**

**Providing and Supplying & Installation with testing demo of Le-chatlier mould including Two Glass Plates and Lead Weight. as per IS - set of six.**

**General Description and Specifications:**

It consists one each of:

- The apparatus consist of a small split cylinder of spring brass metal of 0.5 mm thickness forming a mould of 30 mm internal diameter and 30 mm high.
- On either side of the split, two indicators are brazed suitably with pointed ends made of 2 mm diameter brass wire in such a way that the distance of these ends to the centre of the cylinder is 165 mm.
- Supplied complete with two glass plates and lead weight.
- Set of Six.
- It shall Confirm to Relevant IS.

**Item No: 5****Providing and Supplying & Installation with testing demo of Le-chatlier flask: confirming to IS : 4031 (Part XIII)****General Description and Specifications:**

It consists one each of:

- good quality glass
- Bulb capacity approximately: 250 ml
- Neck graduation from: 0 to 1 ml and 18 to 24 ml
- Accuracy: 0.1 ml

**Item No: 6****Providing and Supplying & Installation with testing demo of Slump test apparatus with Tamping Rod 16 mm Dia X 600 mm long graduated.****General Description and Specifications:**

It consists one each of:

- The apparatus will comprise of a slump cone with handles made of mild steel sheet, a chrome plated steel tamping rod of 16 mm diameter X 600 mm long, rounded off at one end, with a scale marked on it and a steel base plate with a carrying handle.
- The mould for the test specimen will be in the form of frustum of a cone having the following internal dimensions  
Bottom diameter: 20 cm  
Top diameter: 10cm  
Height: 30cm
- The mould will be constructed of metal of at least 1.6 mm (16 SWG) thickness and the top and bottom will be open and at right angles to the axis of the cone.
- The mould will have a smooth internal surface. It will be provided with suitable foot pieces to a base plate and also handles to facilitate lifting it from the molded concrete test specimen in a vertical direction as required by the test.
- The mould will be provided with a suitable guide attachment. Unit will be provided with cleats & swivel handle.
- The tamping rod will be of steel, 16 mm in diameter, 60 cm long and rounded at one end.
- Slump test Apparatus and Tamping Rod Shall Confirm to IS:1199 and IS:7320

**Item No: 7****Providing and Supplying & Installation with testing demo of Humidity Chamber Refrigerated-Inner S.S-45x45x45 CM-92 Liter for temperature and humidity control with over temperature protection audio alarm system - with Stand confirming to Indian Standard Codes.****Technical Specification:**

- Chamber size : 45x45x45cm (Inner chamber)
- Chamber volume : 92 litres
- Inner Chamber : Stainless Steel S.S.- 304
- Exterior body : Mild Steel
- Exterior Body Paint : Powder coated in attractive shades
- No of trays : 02 Shelves
- Temperature Range : 10° C to 60° C
- Temperature Accuracy :  $\pm 0.5^{\circ}\text{C}$  or better
- Temperature Resolution :  $0.1^{\circ}\text{C}$
- Temperature Uniformity :  $2^{\circ}\text{C}$
- Temperature Measurement : Through Pt - 100 type RTD sensor
- No. of Temperature Sensors : 01 number
- Humidity Range : 40% RH to 90% RH
- Humidity Accuracy :  $\pm 3\% \text{ RH}$
- Humidity Uniformity :  $\pm 5\% \text{ RH}$
- Humidity Measurement : Through Capacitance type RH Sensor

- No. of Rh Sensors : 01 number
- Chamber Illumination : With 1 LED lights for lesser power consumption
- Mobility : On castor wheels
- Overall Dimensions : 800 X 990 X 1300 (L X W X H) mm
- Power Consumption : 1.5 KW

#### **Item No: 8**

**Providing and Supplying & Installation with testing demo of servo voltage Stabilizer -3KVA-Single phase for Humidity Chamber.**

#### **General Description and Specifications:**

- Stabilized Input Voltage of 230 Volt, 50 Hz, 20 Amps, AC Supply. Use of Servo Controlled Stabilizer is recommended.

#### **Item No: 9**

**Providing and Supplying & Installation with testing demo of Humidifier with controller Digital-Confirming to Indian Standard Codes.**

#### **General Description and Specifications:**

It consists one each of:

- Humidifier is based on the rotating disc splash plate principle. Produces super fine particles which become part of the atmosphere, reaching every corner of the room, resulting in cool mist, which does not condense when.
- suspended in the air, thus achieving humidity up to 90 % RH in enclosed areas. This unit is capable of atomizing up to 3 ltr of water in an hour at full evaporation in the driest possible ambient conditions. 210 gm weight.
- Stainless Steel Body
- Evaporation 3 Liter per Hour approx.
- Water Pressure 5 PSG
- Atomizing Capacity : 30-50 ml/min
- With Float Valve
- Supplied with Digital Humidity indicator cum controller
- Uniform distribution
- Power Supply: 220-240 VAC/50 Hz
- Operating Load: 120W
- Water Capacity - 5 Litre
- Dimensions (L x W x H) (15" x 15" x 17") approx.
- Weight approx. 13 kg

#### **Item No: 10**

**Providing and Supplying & Installation with testing demo of Whatman Filter paper-40 for Blain Air Permeability Test Apparatus for Fineness of cement, Confirming to Indian Standard Codes.**

#### **General Description and Specifications:**

- Filter Paper Whatman no.40-12.7mm dia.
- 2 set of Pkt

**Item No: 11**

**Providing and Supplying & Installation with testing demo of Precision Electronic Balance -600 GM-0.01 GM (10MG)-Confirming to Indian Standard Codes.**

**Technical Specification**

- Capacity : 600gm
- Resolution : 0.01gm
- Pan Size  $\varnothing$  : 128mm Dia.
- Repeatability :  $\pm 0.01$  gm
- Linearity :  $\pm 0.015$  gm
- Response Time : < 3 second

**Item No: 12**

**Providing and Supplying & Installation with testing demo of Cement mortar cube mould-7.06 CM--for cement: Confirming to Indian Standard Codes (IS 10080, IS 4031)**

**General Description and Specifications:**

Made of Mild steel, with base plate.

**Technical Specification**

- Overall Dimensions : 100 X 100 X 75 (L X W X D) mm
- Weight (Approx) : 2.35 kg

**Item No: 13**

**Providing and Supplying & Installation with testing demo of 90 micron IS sieve :Confirming to Indian Standard Codes.**

**General Description and Specifications:****Salient Features**

- Test Sieve Brass
- 200mm diameter (20 cm)
- Made out of rolled Brass material
- Spun Body frame without any joint
- Folded bottom having beading at top
- Tight fitting with each other
- Mounted with stainless steel cloth.

**Technical Specification**

- Overall Dimensions : 200 X 200 X 60 (L X W X D) mm
- Weight (Approx.) : 0.500 Kg

**Item No: 14**

**Providing and Supplying & Installation with testing demo of Gauging Trovel 8 inch. (200 mm) - Confirming to Indian Standard Codes.**

**General Description and Specifications:**

- It consists one each of:
- Pointed type with approx.
- Fitted with best quality wooden handle.
- Relevant Standard IS:4031, BS 12

**Item No: 15****Providing and Supplying & Installation with testing demo of Concrete Temperature meter General Description and Specifications:****Salient Features**

- Wide measurement range
- Maximum/Minimum Temperature Memory
- Celsius and Fahrenheit Exchange
- Data Hold Function
- High/Low Temperature Alarm Setting
- Key Tone for Operation Confirmation
- Never Need Calibration
- Stainless Steel Probe
- Foldaway stand

**Technical Specification**

- Measurement range : -50 to +100°C
- Accuracy :  $\pm 1^{\circ}\text{C}$
- Display resolutions : 0.1 over full range
- Sampling Rate : 01 second
- Battery : 1.5 volt size AAA/UM4 or equivalent x1 piece (Included)
- Ambient Temperature : -10 to +50 °C/14 to +122 F

**Item No: 16****Providing and Supplying & Installation with testing demo of room temperature meter or thermo hygrometer TH 402/KT-908****General Description and Specifications:**

Digital thermo-hygrometer cum maximum-minimum thermometer and relative humidity meter

**Salient Features**

- Shows Min-Max Temperature and RH
- Measures In and outdoor Temperature
- Wall mount or Counter top stand
- C/F selectable by sliding switch
- Temp. measuring range from -50 °C to 70 °C
- RH measuring range from 20-99% RH
- Accuracy :  $\pm 1^{\circ}\text{C}$ ,  $\pm 3\%$  RH
- Battery : 1.5V AAA Pencil

**Item No: 17****Providing and Supplying & Installation with testing demo of TDS METER - PEN TYPE DIST 2 - HI 98302**

New DiST2, waterproof TDS tester with ATC, 10.00 ppt (g/L).

**Technical Specification**

- TDS Range : 10.00 ppt (g/L)
- TDS Resolution : 0.01 ppt (g/L)
- TDS Accuracy :  $\pm 2\%$  F.S.
- Calibration : Manual, one point
- Temperature Compensation : Automatic from 0 to 50°C (32 to 122°F)
- TDS Conversion Factor : 0.5
- Battery Type/Life : 1.5V (4) / approximately 200 hours of continuous use
- Environment : 0 to 50°C (32 to 122°F); RH max 95% non condensing
- Dimensions : 175 x 41 x 23 mm (6.9 x 1.6 x 0.9")
- Weight : 95 g (3.4 oz.)

**Item No: 18****Providing and Supplying & Installation with testing demo of PH METER - PEN TYPE MODEL HI 98107****General Description and Specifications:**

Hanna's HI98107 pHep® pH tester displays readings with 0.1 pH resolution,  $\pm 0.1$  pH accuracy, and a range from 0.0 to 14.0 pH. This rugged, reliable, ergonomic, pocket-sized tester is designed for use in the lab or fields while keeping things simple with a two-button operation.

1. Extractable Cloth Junction to Extend pH Electrode Life
2. Has Automatic Temperature Compensation
3. For Use in Fresh Water

**Features :**

1. Slim, ergonomic design that fits comfortably in the hand or pocket
2. Automatic temperature compensation, displays temperature in °C or °F
3. Automatic calibration with standard buffers (pH 4.01, 7.01, and 10.01)
4. Stability indicator confirms the reading has stabilized
5. Automatic shut-off with three user controlled settings to conserve battery life
6. Battery Error Prevention System (BEPS)

**Ordering Information :**

The HI98107 is supplied with protective cap, pH 4.01 buffer sachet, pH 7.01 buffer sachet (2), electrode cleaning sachet, CR2032 battery, instrument quality certificate and instructional manual.

**Technical Specification**

- Range : 0.0 to 14.0 pH
- Resolution : 0.1 pH
- pH Accuracy :  $\pm 0.1$  pH
- Calibration : Automatic, one or two points
- PH range temperature Compensation : Automatic, 0 to 50 °C (32.0 to 122.0°F)
- Temperature Range : 0 to 50 °C (32.0 to 122.0°F)
- Temperature Resolution : 0.1°C / 0.1 °F
- Dimensions : 175 x 41 x 23 mm
- Temperature Accuracy :  $\pm 0.5^\circ\text{C}$  /  $\pm 1.0^\circ\text{F}$
- Automatic shut-off : 8 minutes, 60 minutes, or disabled
- Battery Type/Life : CR2032 3V Li-Ion (1 pc.) / approximately 800 hours of use

- Environment : 0 to 50°C (32 to 122°F); RH max 100%
- Dimensions. : 160 x 40 x 17 mm (6.3 x 1.6 x 0.7“)
- Weight (g) : 65 g (2.3 oz.) without battery

**Item No: 19**

**Providing and Supplying & Installation with testing demo of Measuring Cylinder - Borosilicate glass-100ml**

**General Description and Specifications:**

MEASURING CYLINDER - BOROSILICATE GLASS - "0" BOTTOM - 100 ML.

**Item No: 20**

**Providing and Supplying & Installation with testing demo of Measuring Cylinder - Borosilicate glass-250ml.**

**General Description and Specifications:**

MEASURING CYLINDER WITH SPOUT, HEXAGONAL OR ROUND BASE,

- Capacity : 250 ml
- Tolerance  $\pm$ ml.: 1 ml

**Item No: 21**

**Providing and Supplying & Installation with testing demo of Measuring Cylinder - Borosilicate glass-500ml**

**General Description and Specifications:**

Measuring Cylinders, Graduated, Single Metric Scale, with Pour Out with Base, accuracy as per IS:878:1975

- Capacity: 500 ml
- Tolerance  $\pm$  ml. 0.5ml

**Item No: 22**

**Providing and Supplying & Installation with testing demo of Measuring Cylinder - Borosilicate glass-1000ml**

**General Description and Specifications:**

MEASURING CYLINDER WITH SPOUT, HEXAGONAL BASE,

- Capacity : 1000 ml
- Tolerance  $\pm$ ml.: 10 ml

**Item No: 23**

**Providing and Supplying & Installation with testing demo of Standard Weight Box - S.S.- 1 MG - 200 GM - Class F1 (With NABL Calibration)**

**General Description and Specifications:**

- Set of weight from 1 mg to 200 gm.
- 1gm - 200 gm weights are made from Stainless steel material
- 1 mg - 500 mg weights are in the form of Fractional weights.
- Duly packed in velvet lined teak wood box
- Supplied complete with one Forceps and One rider.
- Also, supplied Complete with NABL Certificate of calibration.
- Total 23 pieces of weights will be supplied



**List of weights are narrated as under :**  
**Dimensions No of pieces :**

- 200 gm x 2 pc
- 100 gm x 1 pc
- 50 gm x 1 pc
- 20 gm x 2 pcs
- 10 gm x 1 pc
- 5 gm x 1 pc
- 2 gm x 2 pcs
- 1 gm x 1 pc
- 500 mg x 1 pc
- 200 mg x 2 pcs
- 100 mg x 1 pc
- 50 mg x 1 pc
- 20 mg x 2 pcs
- 10 mg x 1 pc
- 5 mg x 1 pc
- 2 mg x 2 pcs
- 1 mg x 1 pc

**Item No: 24**

**Providing and Supplying & Installation with testing demo of Buoyancy Balance  
With Electronic Balance - 10 KG X 0.1 GM**

**General Description and Specifications:**

- With Density basket, water tight cylinder and electronic balance of 10 kg x 0.1 gm sensitivity.
- The balance will be with under hook weighing arrangement and will be mounted on suitable table to facilitate the test.
- The Water tight container will be mounted on a mechanical jack, which will facilitate the up-down movement of the container for weight in air and water.  
As per EN 12390-7, BS 1881:114, IS:2386 (Part III).

**Item No: 25**

**Providing and Supplying & Installation with testing demo of 1.)Distance piece-50mm height-1nos 2.) Distance piece-30mm height-1nos for CTM Machine.**

**General Description and Specifications:**

- Distance piece-50mm height-1nos
- Distance piece-30mm height-1nos

**Item No: 26**

**Providing and Supplying & Installation with testing demo of Density Wire Basket - G.I. 20 x 20 cm, Confirming to IS 2386.**

**General Description and Specifications:**

**Details**

- Fabricated from stainless steel material
- Fitted With handle
- Diameter : 200 mm
- Height : 200 mm

**Technical Specification**

- Overall Dimensions in Inches (L x W x H) : 9 x 9.5 x 8.5
- Weight (Approx.) : 0.640 Kgs Approx

**Item No: 27**

**Providing and Supplying & Installation with testing demo of G.I. tray - 450 x 300 x 50 mm Confirming to Indian Standard Codes.**

**General Description and Specifications:**

- ENAMEL TRAY - 450 x 300 x 50 MM (18" x 12" x 2")

**Item No: 28**

**Providing and Supplying & Installation with testing demo of G.I. tray - 650 x 600 x 75 mm Confirming to Indian Standard Codes.**

**General Description and Specifications:**

- G.I.Tray - 650 x 600 x 75 mm (26"x24"x 3")

**Item No: 29**

**Providing and Supplying & Installation with testing demo of G.I. tray - 1000 x 1000 x 50 mm : Confirming to Indian Standard Codes.**

**General Description and Specifications:**

- G.I.Tray - 1000 x 1000 x 50 mm (40" x 40" x 2")

**Item No: 30**

**Providing and Supplying & Installation with testing demo of Electronic Platform Balance-100 KG-10 GM Platform Size 600 X 600 MM**

**General Description and Specifications:**

**Feature :**

- Inbuilt battery and auto charging feature.
- Automatic voltage regulator.
- Durable mechanism with overload protection.

**Technical Data :**

- Designed On Advanced Micro Controller Technology.
- Power 230V AC + 10% 50 HZ.
- Temperature Range - 10°C to 50°C
- 12.5 MM LED Display.
- 100,000 Internal Resolution.

- Sensor - High Quality Load Cell.
- Safe Overload Up to 200% of Rated Capacity.
- Ultimate Overload Up to 300% of Rated Capacity.

#### **Technical Specification**

- Capacity : 100 kg
- Accuracy : 10 gm
- Plate Size : 600 x 600 mm
- Calibration System : External Calibration

#### **Item No: 31**

#### **Providing and Supplying & Installation with testing demo of BND- Ordinary Portland Cement Standard specific surface area(Blaine) One Set General Description and Specifications:**

- The Certified Reference Material CRM has been developed by National Council for Cement and Building Materials (NCB), India to calibrate Blaine Air Permeability Apparatus according to Indian Standard - IS 4031 (Part - 2) - 1999. One set of CRM-1002A9 consists of 4 sealed glass vials and each vial contains approximately 10g of powered Portland Pozzolana Cement.

#### **Item No: 32**

#### **Providing and Supplying & Installation with testing demo of Wash Bottle 1000ml**

A 1000ml (1 Litre) laboratory wash bottle is a flexible squeeze bottle designed for rinsing glassware, cleaning equipment, or dispensing solvents.

#### **Technical Specifications:**

- Capacity: 1000 ml (approx. 33.81 fl oz).
- Material: Low-Density Polyethylene (LDPE) or Polypropylene (PP).
- Characteristics: Translucent, flexible, unbreakable, and leak-proof.

#### **Item No: 33**

#### **Providing and Supplying & Installation with testing demo of Spatula**

#### **Technical Specifications:**

- Material: High-quality stainless steel (304/316L) for corrosion resistance, or autoclavable Polypropylene (PP).
- Design: Typically dual-ended, featuring a spoon at one end and a flat blade or knife edge at the other.
- Length: Commonly ranges from 120 mm to 225 mm (approx. 4.5 to 9 inches).
- Dimensions (Small/Micro): Often 140 mm in length with 0.35 cm diameter.

**Item No: 34**

**Providing and Supplying & Installation with testing demo of Filter paper for specific gravity test**

**Technical Specifications**

- Composition: 100% cotton linters,  $\alpha$ -cellulose content  $(\geq 98\%)$ .
- Ash Content: Extremely low, often  $(<0.007\%)$  (ashless grade), crucial for gravimetric analysis.
- Retention/Pore Size: Fine (e.g., Whatman 42 has a very small pore size, typically  $2.5 \mu m$ ), to retain fine material during vacuum/gravity filtration).
- Wet Strength: High wet strength is necessary to ensure the paper does not disintegrate when removing saturated samples.
- Absorption Rate: Fast to moderate capillary action for quick water removal from surfaces (e.g., for reaching Saturated Surface Dry - SSD condition).
- Diameter: Typically 70mm, 90mm, 100mm, or 110mm depending on the funnel or beaker size.
- Thickness: Generally around 0.15mm to 0.22mm.

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