Cement

Cement is one of the ancient raw materials used in construction. It is uncertain where it was first discovered that a combination of hydrated non-hydraulic lime and a pozzolan produces a hydraulic mixture (e.g., Portland cement) harden because of hydration chemical reactions that occur independently of the mixture’s water content; they can harden even underwater or when constantly exposed to wet weather.

Cement is essentially a binder that binds other materials together, Modern cements are manufactured by a chemical process. Raw materials are crushed, ground and blended before being heated in a rotary kiln until they combine chemically. The clinker from the kiln is then ground with gypsum to form Portland cement.

Different types of cement with different strengths and characteristics can be produced depending on the composition and quality of clinker, fly ash, silica fume, retarders, waterproofers, colouring agents and other additives used in the mix. It is essential to test the physical and chemical parameters of each cement batch produced and to identify the unique characteristics of each composition. Such parameters include specific surface and gravity of cement articles, consistency, soundness, setting time, the heat of hydration, inorganic chemical analysis, loss on ignition, air content and strength.
**Blaine Apparatus**

**DESCRIPTION:**
The Blaine apparatus is used to determine the particle size of Portland cement, limes and similar powders, expressed as a function of their specific surface area.

It includes a stainless steel cell, a perforated disc and a piston. A U-tube glass manometer is mounted on the Manometer liquid steel support, 250 ml.

The set is complete with:
- a rubber vacuum cleaner and a pack of 100 filter papers

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>220x170x470 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (approx.)</td>
<td>8 kg</td>
</tr>
</tbody>
</table>

**Automatic Blaine Apparatus**

**DESCRIPTION:**
The automatic Blaine device provides more precision and accuracy than manual bluish devices. Calibration of this unit is performed using a sample reference, such as an NSIT.

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>170x300x410 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (approx.)</td>
<td>4.6 kg</td>
</tr>
<tr>
<td>Unit runs at</td>
<td>230 V/50 Hz</td>
</tr>
</tbody>
</table>

**ORDERING:**

**Blaine Apparatus complete**

**ACCESSORIES:**

- **CM 0101-1**: Liquid manometer, 250 ml
- **CM 0101-2**: Test bench
- **CM 0101-3**: Rubber vacuum cleaner
- **CM 0101-4**: Cell with perforated disc piston
- **CM 0101-5**: Plastic funnel
- **CM 0101-6**: Filter paper, 100pcs
- **CM 0101-7**: U-tube manometer

**Automatic Blaine Apparatus with Pc control**

**Semi-automatic Blaine Apparatus**

**ORDERING:**

**BS 1377:2; EN 196-6; 459-2; 13286-44; BS 4359-2; ASTM C204**

**EN 196; DIN 1164; BS 4550; ASTM C 204**

To obtain the most accurate results, the test must be performed in a temperature controlled environment.

The unit includes the unit with an electric pump and time recording; filter papers (12.8 mm, 1000, filling oil (50 ml), stopper, thermometer, brush, and funnel.
**Le Chatelier Mold**

**DESCRIPTION:**
Le Chatelier Mold is used to determine the expansion of the cement. The mold consists of a split cylinder stretched by a 30 mm internal diameter spring and 30 mm high, with two indicator rods whose rods measure 165 mm from the center points of the cylinder axis and the O-ring.

Two or three molds are needed for each test. To perform the test, a water bath is also required.

The kit includes all the accessories to carry out the test and check the conformity of the molds.

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th></th>
<th>Weight (approx.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Le chatelier mold</td>
<td>0.9 kg</td>
</tr>
</tbody>
</table>

**Le Chatelier Water Bath**

**DESCRIPTION:**
The Le Chatelier water bath is used with the Chatelier mold to determine the strength of fly ash in cement paste for concrete and lime.

The inner chamber and the insulted outer casing of the bathtub are made of stainless steel. The bath is able to reach the boiling point in 30 minutes using two heating units. There is a timer on the Chatelier water bath that is used to set the time needed to reach the boiling point.

After this time, the water temperature is regulated using a heating unit to convert energy.

Comes complete with:
- A removable rack that can hold up to 10 molds. A cover is provided as standard.

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>210x470x290 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (approx.)</td>
<td>8 kg</td>
</tr>
<tr>
<td>Power</td>
<td>1250 W</td>
</tr>
</tbody>
</table>
**Le Chatelier Flask, Specific Gravity**

**DESCRIPTION:**
The chatelier Flask is used to determine the specific gravity of hydraulic cement, dust sand and other fine materials. The body holds approximately 250 ml. The oval bulb in the neck contains 17 ml.

The volume below the bulb is graduated from 0 to 1.0ml in 0.1ml subdivisions, with an additional 0.1 subdivision below the 0 and above the 1.0 ml mark.

The neck is graduated from 18 to 24 ml in 0.1 ml subdivisions above the bulb (white graduations).

**Cement Flow Table**

**DESCRIPTION:**
There are two models of Flow Table, both are used to determine the consistency of mortar, lime and cement samples.

The manual hand operated model is fitted with a hand wheel. While the motor operated model is driven by a motor speed reducer through a mechanical coupling at the rate of 1 revolution per second. The number of drops is preset on a counter and the machine stops automatically at the end of the cycle.

Two models are available. EN or ASTM model each is manufactured to standard specifications.

---

**ORDERING:**

**CM 0108**
Specific Gravity le Chatelier Flask

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>100x100x300 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (approx.)</td>
<td>0.1 kg</td>
</tr>
</tbody>
</table>

**EN 196-6, 450-1, 15617-1; ASTM C110, C128, C188; C989; AASHTO T133**

**Cement Flow Table EN**
220-240 V 50 Hz

**MAIN FEATURES:**
*The models are made of high quality brass*

**ORDERING:**

**CM 0109**
Cement Flow Table ASTM

**CM 0110**
Motorized Cement Flow Table ASTM, 220-240 V 50 Hz

**CM 0111**
Cement Flow Table EN

**CM 0112**
Motorized Cement Flow Table EN 220-240 V 50 Hz

**ACCESSORIES:**

**CM 0109-1**
Cement Flow Mold ASTM

**CM 0109-2**
Tamper ASTM

**CM 0109-3**
Cement Flow Mold EN

**CM 0109-4**
Tamper EN

---

**TECHNICAL SPECIFICATIONS:**

<table>
<thead>
<tr>
<th>Product code</th>
<th>CM 0109 / CM 0110</th>
<th>CM 0111 / CM 0112</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table diameter</td>
<td>254 mm</td>
<td>500 mm</td>
</tr>
<tr>
<td>Cone base/top diameter</td>
<td>100.0 mm / 70.0 mm</td>
<td>100.0 mm / 70.0 mm</td>
</tr>
<tr>
<td>Cone Height</td>
<td>50.0 mm</td>
<td>50.0 mm</td>
</tr>
<tr>
<td>Drop Height</td>
<td>12.7 mm</td>
<td>12.7 mm</td>
</tr>
<tr>
<td>Dimensions</td>
<td>260x260x270 mm</td>
<td>470x360x350 mm</td>
</tr>
<tr>
<td>Weight (approx.)</td>
<td>13 kg</td>
<td>36 kg</td>
</tr>
<tr>
<td>Power</td>
<td>180 W (Motorized)</td>
<td>180 W (Motorized)</td>
</tr>
</tbody>
</table>
Vicat Apparatus

DESCRIPTION:
Vicat apparatus is used for determining the setting time and consistency of cement by the Vicat method.

The Vicat Apparatus set complete with: Initial set needle, final set needle, Vicat mold, thermometer, glass plate, and consistency plunger.

TECHNICAL SPECIFICATIONS:

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>150x220x318 mm</td>
<td>3 kg</td>
</tr>
</tbody>
</table>

ORDERING:

CM 0113
Vicat Apparatus complete set.

ACCESSORIES:

CM 0113-1
Initial Set Needle 1.13 mm dia., EN
CM 0113-2
Final Set Needle 1.13 mm dia., EN
CM 0113-3
Initial Set Needle 1 mm dia., ASTM

Automatic Vicat Apparatus

DESCRIPTION:
The Automatic Vicat Apparatus is used to determine the setting time and consistency of the cement mortar by using the Vicat method. The penetration depth is measured by a sensor with a 0.1 mm resolution.

Along with hardening process development, the penetration depth decreases when it matches some thresholds pre-defined by standards initial and final setting times are measured and recorded.

The entire test is made in a fully automatic cycle and provides precise and repeatable results. The results are then printed on the integrated printer.

The Automatic Vicat Apparatus consists of: Windows Software and RS232 Cable, consistency plunger, initial needle, final needle, and mold.

TECHNICAL SPECIFICATIONS:

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Weight</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>300x355x610 mm</td>
<td>10 kg</td>
<td>200 W</td>
</tr>
</tbody>
</table>

MAIN FEATURES:

- Transfer each single control or function of the Vicat on the PC
- Verify in real time each phase of the test
- Automatically download the final results

EN 196-3; 13454-2; ASTM C187; C191; AASHTO T129; T131
The Plunger Penetration Apparatus is used to determine the consistency of fresh mortar, lime and masonry cement.

The Plunger penetration apparatus consists of a steel base, test cup, vertical column holding the penetration plunger assembly. The height of the plunger assembly is 90g.

Supplied complete with: test cup and tamper, both made from an iodized aluminum.

Gillmore Apparatus

The Gillmore Apparatus is used to determine the setting time of cement.

The apparatus consists of two horizontal arms that carry two-weight steel needles that are calibrated to meet the specifications.

The initial needle has 2.12mm dia and a weight of 113g, while the final setting needle has 1.06mm dia and weight of 453.6g.

<table>
<thead>
<tr>
<th>TECHNICAL SPECIFICATIONS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
</tr>
<tr>
<td>200x50x250 mm</td>
</tr>
</tbody>
</table>
Dropping Ball Apparatus

DESCRIPTION:
Dropping ball apparatus is used to measure the consistency of cement mortars, this allows a 25mm diameter acrylic ball to fall freely from standard height of 250mm into a brass ring mold containing a mortar specimen with a carefully-prepared surface.

The Depth of ball penetration into the mortar gives the specimen consistency.

The apparatus consists of:
a dropping device mounted on a stand, acrylic ball and a 100mm diameter x 25mm deep mold. The base of the stand is machined with a chrome finish.

Cement Shrinkage Apparatus

DESCRIPTION:
Cement Shrinkage Test Machine Length Comparators are used to determine the length changes on different type of cement prism.

The set consists of a length measuring frame with measuring device attached to it. There are 2 models available either with dial gauge or with transducer and data logger.

Cement Shrinkage test set comprise of main apparatus, and reference rods.
Steel inserts, Reference rod and molds should be ordered seperatly according to standard.

ORDERING:
CM 0117 Dropping Ball apparatus
CM 0118 Ball Penetration measuring device with dial gauge 25x0.01mm

TECHNICAL SPECIFICATIONS:

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>250x250x450 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (approx.)</td>
<td>6 kg</td>
</tr>
</tbody>
</table>

Ordering:
CM 0119 Cement Shrinkage Test Set with dial gauge
CM 0120 Cement Shrinkage Test Set with transducer

ACCESSORIES:
CM 0119-1 Digital Dial gauge 0.001 mm x 20 mm
CM 0119-2 Reference Rod 160 mm EN 12617-4
CM 0119-3 Reference Rod 205 mm EN1367-4
CM 0119-4 Reference Rod 305 mm ASTM C490
CM 0119-5 Three gang Prism mold 40x40x160 mm EN 12617-4
CM 0119-6 Three gang Prism mold 50X50X200mm
CM 0119-7 Two gang Prism mold 25x25x285 mm to ASTM C490

CM 0119-8 Steel Inserts, 10 pieces
CM 0119-9 Transducer, 20mm
CM 0119-10 Data loger
**Water Retention Apparatus**

**DESCRIPTION:**
Used for determining the water retention value of cement and lime.

Two Models available:
- One fitted with aspirator pump and analog vacuum gauge with regulator
- The other with a portable vacuum pump and digital vacuum gauge with regulator

**ORDERING:**
- CM 0121 Water Retention Apparatus with aspirator pump vacuum regulator
- CM 0122 Water Retention Apparatus with vacuum pump digital vacuum regulator

**TECHNICAL SPECIFICATIONS:**
- Weight: 8 kg
- 230 V/50-60Hz/1ph

---

**Bulk Density of Cement**

**DESCRIPTION:**
Used to determine the Bulk Density of cement powder and non-cohesive materials.

It consists of:
- a sieve funnel with tripod, a unit weight measure 1 liter capacity, spatulas, straightedge and aluminum scoop.

**ORDERING:**
- CM 0123 Bulk Density of Cement Apparatus

**TECHNICAL SPECIFICATIONS:**
- Overall Dimensions: 350x350x520 mm
- Weight (approx.): 3 kg

---

**Autoclave Apparatus**

**DESCRIPTION:**
The Autoclave Apparatus is used to perform expansion tests on cement specimens caused by hydration of CaO and MgO.

This is done by determining the volume constancy of mortar prism samples. Test bars are exposed to high pressure steam compartment, which accept a sample holder for 10 specimens.

The specimens can be tested cementanlly at a maximum pressure of 360 psi (25bar) and a max temperature of (250°C)

**ORDERING:**
- CM 0124 Autoclave Apparatus complete

**ACCESSORIES:**
- CM 0124-1 O-ring lid sealing gasket
- CM 0124-2 Specimen Rack
- CM 0124-3 Lid sealing gasket

**TECHNICAL SPECIFICATIONS:**
- Dimensions: 114 mmID X 406.4 mm
- Pressure: up to 25 bar
- Overall Weight: 55 Kg
This Apparatus is used to determine the heat of hydration of low heat cement as expressed in calories per gram. When Portland or hydraulic cement is mixed with water, heat is generated as a result of an exothermic reaction.

The heat generated by cement's hydration raises the temperature of concrete and this temperature rise causes expansion while concrete is hardening.

The apparatus consists of:
- a Dewar flask housed in an insulated box, an electric stirrer, a filler funnel and a high resolution thermometer.

**MAIN FEATURES:**
- Resolution 0.001°C
- Displays saves and prints Delta T min max and mean value
- PT100 probe measuring range -40 to +300°C

**ORDERING:**
- CM 0125
  - Heat of Hydration Apparatus complete.

**ACCESSORIES:**
- CM 0125-1
  - Beckman centesimal glass mercury thermometer
- CM 0125-2
  - Digital Thermometer. Resolution: 0.01°C. Complete with probe
- CM 0125-3
  - Digital Thermometer. Resolution: 0.001°C.
  - Memory for 10000 readings
  - Displays, stores and prints: min, max, mean values, delta T
  - Alarm if limit values are exceeded
  - Battery operated
- CM 0125-4
  - Propeller conforming to ASTM C186 Specifications
- CM 0125-5
  - Propeller, conforming to EN 196-8 Specifications.
- CM 0125-6
  - Paraffin wax with melting point 55°C to coat the glass parts which are in contact with the hydrofluoric acid.
- CM 0125-7
  - Dewar flask
- CM 0125-8
  - Filler glass funnel

**DESCRIPTION:**
This Apparatus is used to determine the heat of hydration of low heat cement as expressed in calories per gram. When Portland or hydraulic cement is mixed with water, heat is generated as a result of an exothermic reaction.

**TECHNICAL SPECIFICATIONS:**
<table>
<thead>
<tr>
<th>Dimensions</th>
<th>300x200x650 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (approx.)</td>
<td>13 kg</td>
</tr>
</tbody>
</table>
Langavant calorimeter for heat of hydration of cement

**DESCRIPTION:**
Langavant method consists of introducing a fresh cement specimen into an isolated Dewar Flak and monitoring the temperature changes within the specimen during the first early days. After a certain time, the heat of hydration of the cement content in the sample is equal to the sum of the heat accumulated in the flask and the heat emitted to the environment during the test period.

The temperature of the mortar is compared with the temperature of an inert sample placed in a reference calorimeter flask.

The amount of heat achieved by the cement mortar is mainly dependent on nature thereof and may reach values between 100°C and 500°C. The amount of heat is expressed in joules per gram of cement.

**ORDERING:**
CM 0126
Langavant calorimeter for heat of hydration of cement complete set

**ACCESSORIES:**
CM 0126-1
Set of 2 isolated calorimeter bottles
CM 0126-2
Set of 2 temperature probes type Pt-100, with 3 threads
CM 0126-3
Set of 50 disposable mortar box
CM 0126-4
Electronic console, with 4 measuring channels, and RS232 output interface for connecting up to 4 calorimeter bottles to the PC.

**TECHNICAL SPECIFICATIONS:**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>300x200x650 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (approx.)</td>
<td>13 kg</td>
</tr>
</tbody>
</table>

It consist of:
2 isolated calorimeter bottles set 2 temperature probes type PT-100 set with 3 threads, 50 disposable mortar box set and an electronics console with 4 measuring channels, and RS232 output interface for connecting up to 4 calorimeter bottles to the PC.
**Manual Mortar Mixer**

**DESCRIPTION:**
The manual mortar mixer is designed to mix mortar and cement paste to the required standard. The mixer is controlled by ON/OFF switch, it has two different speeds. The mixing paddle revolves at a rate of 140 rpm. with a planetary motion of 62 rpm, in low speed. In high speed, the paddle revolves at the rate of 285 rpm. with a planetary motion of 125 rpm. The user can choose the speeds easily by using the switch fitted to the machine.


**Automatic Mortar Mixer**

**DESCRIPTION:**
The Automatic Mortar Mixer is used to combine mortars and cement pastes to the requirement of standards. The mixing paddle has a planetary motion and is operated by a motor. The motor has microprocessor-based speed and preset programs to meet all listed EN and ASTM standards, custom-designed programs or manual mode.

The machine has a mode button, which the operator can use to switch between programs. The mixing paddle has a revolving rate of 140 r.p.m at low speed. In high speed the revolving rate of the paddle increases to 285 r.p.m and has a planetary motion of 125 r.p.m.

The mixer is supplied complete with: an automatic sand dispenser; After 30 seconds, the sand is automatically released. The operator can choose between 6 different programs, where the sand dispenser position, mortar speed and duration of the mix can all be set differently. The mixing time is shown on the display.

**EN 196-1, 196-3, 413-2, 459-2, 480-1, 1015-2, 12617-4
ASTM C187, C305, AASHTO T129, T131, T162**

**MAIN FEATURES:**
- It can operate on 2 different speeds
- It comes in 5ltrs / 10ltrs capacity

**SPECIFICATIONS:**
<table>
<thead>
<tr>
<th>Dimensions</th>
<th>300x555x610 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (approx.)</td>
<td>54 kg</td>
</tr>
<tr>
<td>Power</td>
<td>200 W</td>
</tr>
</tbody>
</table>

**ORDERING:**

- **CM 0127**
  Manual Mortar Mixer 5ltr
- **CM 0128**
  Manual Mortar Mixer 10ltr

**EN 196-1, 196-3, 413-2, 459-2, 480-1, 1015-2, 12617-4; ASTM C187, C305; AASHTO T129, T131, T162**

**TECHNICAL SPECIFICATIONS:**
<table>
<thead>
<tr>
<th>Dimensions</th>
<th>300x555x610 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (approx.)</td>
<td>56 kg</td>
</tr>
<tr>
<td>Power</td>
<td>200 W</td>
</tr>
</tbody>
</table>

**ORDERING:**

- **CM 0129**
  Automatic Mortar Mixer 5ltr complete set
- **CM 0130**
  Automatic Mortar Mixer 10ltr complete set

**ACCESSORIES:**

- **CM 0129-1**
  Automatic sand dispenser
- **CM 0129-2**
  Mixing Bowl 5ltr
- **CM 0129-3**
  Mixing Bowl 10ltr stainless steel complies with EN 196
- **CM 0129-4**
  Paddle, 5 Hv
- **CM 0129-5**
  Paddle, 10 Hv
- **CM 0129-6**
  Scraper

**57**
The Muffle Furnaces are widely used for determining various properties of construction materials such as the loss of ignition. Vertical lift door directs heat away from the user and saves counter space. A safety interlock switch disconnects power when the door is open. Vertical lift door has maximum access with minimum headroom for easy loading and unloading.

In principle, it is a controlled flame test with the intensity of the flame color quantified by photoelectric circuitry.

The instrument is fitted with: automatic flame failure detection for user safety, making it ideal for use in laboratory, industrial sites, and educational applications.

**TECHNICAL SPECIFICATIONS:**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>420x360x300 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (approx.)</td>
<td>8 kg</td>
</tr>
</tbody>
</table>

---

Flame Photometer

**DESCRIPTION:**

The Flame Photometer is a device used in inorganic chemical analysis to determine the concentration of certain metal ions, among them Sodium, Potassium, Lithium, Barium, and Calcium.

In principle, it is a controlled flame test with the intensity of the flame color quantified by photoelectric circuitry.

The instrument is fitted with: automatic flame failure detection for user safety, making it ideal for use in laboratory, industrial sites, and educational applications.

**MAIN FEATURES:**

- Designed for industrial analysis
- Supplied with Na, K, Li, Ba and Ca filters
- Low temperature, single channel
- Flame failure safety system
- Operates with propane, butane, natural gas or LPG

**ORDERING:**

**CM 0131**
Flame Photometer supplied complete with Na, K, Ba, Ca and Li filters, connecting hoses and clips, compressor plug and drain trap.

**ACCESSORIES:**

- **CM 0131-1** Calcium filter
- **CM 0131-2** Lithium filter
- **CM 0131-3** Barium filter

---

Muffle Furnace

**DESCRIPTION:**

The Muffle Furnaces are widely used for determining various properties of construction materials such as the loss of ignition.

Vertical lift door directs heat away from the user and saves counter space. A safety interlock switch disconnects power when the door is open.

Vertical lift door has maximum access with minimum headroom for easy loading and unloading.

**MAIN FEATURES:**

- It is front loading for easy operation
- Double skin constructed to maintain a cool outer case.
- Temperature control by a PID digital system.
- Available in several sizes.

**ORDERING:**

| CM 0132 | Muffle furnace, 1100°C, 3L |
| CM 0133 | Muffle furnace, 1100°C, 8.2L |
| CM 0134 | Muffle furnace, 1100°C, 13L |
| CM 0135 | Muffle furnace, 1100°C, 22L |
| CM 0136 | Muffle furnace, 1100°C, 39L |
| CM 0137 | Muffle furnace, 1300°C, 8.6L |

---

www.Geotechnical-equipment.com  Tel: +441908 766 400, 401
### Vibrating Machine

**DESCRIPTION:**
The Vibrating Machine is used for the preparation and compaction of 70.7mm mortar cube specimens.

The mold table is mounted on four springs attached to an eccentric shaft which allows each sample to be vibrated at 12000 cycles per minute. There is a timer on it to preset time and it stops automatically in every 120 seconds.

**TECHNICAL SPECIFICATIONS:**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>450x650x850 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (approx.)</td>
<td>80 kg</td>
</tr>
<tr>
<td>Eccentric Shaft Rotation</td>
<td>12000 r.p.m</td>
</tr>
<tr>
<td>Power</td>
<td>1100 W</td>
</tr>
</tbody>
</table>

**MAIN FEATURES:**
- The simple design of the machine facilitates easy assembly and dismantling of the cube molds.

**ORDERING:**
- CM 0138
  - Vibrating Machine

**ACCESSORIES:**
- CM 0138-1
  - Set of springs
- CM 0138-2
  - Cube Mold 70.7 mm
Jolting Table Apparatus

**DESCRIPTION:**
Jolting Table Apparatus is used for compacting cement specimens in a 40x40x160mm prism mold.

The Jolting Apparatus consists of a mold table seated on a rotating cam driven at 60 revolutions per minute. The Jolting Table is a 15.0mm drop equipped with a counter which provides automatic shut off at end of preset drop numbers. Rapid mold lock and release system allows easy and quick operation.

The supporting frame of the machine has been designed to ensure precise dimensions, table flatness, correct centering of the three gang mold on the table. The motor and gearbox assembly is enclosed in a protective housing, which promotes user safety (the moving parts are inaccessible) and long life for the gearbox. The feed hopper is used for filling three gang mold, feed hopper and soundproof safety cabinet should be ordered separately.

<table>
<thead>
<tr>
<th>TECHNICAL SPECIFICATIONS:</th>
<th>CM 0139</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>1050x350x500 mm</td>
</tr>
<tr>
<td>Weight (approx.)</td>
<td>55 kg</td>
</tr>
<tr>
<td>Motor Speed</td>
<td>60 r.p.m</td>
</tr>
<tr>
<td>Drop Height</td>
<td>15 mm</td>
</tr>
<tr>
<td>Power</td>
<td>250 W</td>
</tr>
</tbody>
</table>

**MAIN FEATURES:**
- The simple design of the machine facilitates easy assembly and dismantling of the prism molds.

**ORDERING:**
- **CM 0139**
  - Jolting Table Apparatus

**ACCESSORIES:**
- **CM 0139-1**
  - Prism mold 40x40x160 mm
- **CM 0139-2**
  - Feed hopper
- **CM 0139-3**
  - Glass plate
- **CM 0139-4**
  - Sound proof safety cabinet
- **CM 0139-5**
  - Standard reference sand. EN 196-1, 1350 gram per bag
**Prism Mold**

**DESCRIPTION:**
The Prism Mold is manufactured of steel with hardness over HV400 the surface is heat-treated to comply with the related standards.

**TECHNICAL SPECIFICATIONS:**

<table>
<thead>
<tr>
<th></th>
<th>Dimensions</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM 0140</td>
<td>40x40x160 mm</td>
<td>12.5 Kg</td>
</tr>
<tr>
<td>CM 0141</td>
<td>50x50x200 mm</td>
<td>8 Kg</td>
</tr>
<tr>
<td>CM 0142</td>
<td>25x25x250 mm</td>
<td>6 Kg</td>
</tr>
<tr>
<td>CM 0143</td>
<td>75x75x254 mm</td>
<td>9 Kg</td>
</tr>
<tr>
<td>CM 0144</td>
<td>25x25x285 mm</td>
<td>6 Kg</td>
</tr>
</tbody>
</table>

**Three Gang Cube Mold 50x50x50**

**DESCRIPTION:**
The Three Gang Cube Mold is manufactured of cast iron all internal surfaces are machined. All the dimensions and specifications comply with the related standards.

CM 0145 This case iron three gang mold is diagonal arrangement 50mm mortar cube, molds with a detachable brass base plate.

Wingnut clamp locks the mold to the base white stainless steel thumbscrews secure the halves tightly together.

The large screed of upper surface area makes this mold a preferred choice.

**TECHNICAL SPECIFICATIONS:**

<table>
<thead>
<tr>
<th></th>
<th>CM 0145</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>110x230x60 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>3 Kg</td>
</tr>
</tbody>
</table>

**Briquette Mold**

**DESCRIPTION:**
The briquette mold is used for casting cement briquettes for tensile strength testing. Manufactures of brass it is a two-part split mold with thumbscrews for quick assembly and dismantling of the mold.

The minimum cross-section of the briquettes cast is 25.4mm x 25.4mm. Supplied complete with a steel base plate.

**TECHNICAL SPECIFICATIONS:**

<table>
<thead>
<tr>
<th></th>
<th>CM 0147</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>25.4x25.4 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>2 Kg</td>
</tr>
</tbody>
</table>

**Ordering:**

- **CM 0140** Prism mold 3 Gangs, 40x40x160 mm
- **CM 0141** Prism mold 3 Gangs, 50x50x200 mm
- **CM 0142** Prism mold 2 Gangs, 25x25x250 mm
- **CM 0143** Prism mold 2 Gangs, 75x75x254 mm
- **CM 0144** Prism mold 2 Gangs, 25x25x285 mm

**Accessories:**

- **CM 0140-1** Steel inserts 6pcs
- **CM 0140-2** Feed hopper
- **CM 0140-3** Standard reference sand. EN 196-1 2006, 1350 gram per bag

**Ordering:**

- **CM 0145** Three Gang Cube Mold 50x50x50 Brass
- **CM 0146** Three gang Cube Mold 50x50x50 stainless steel

**Ordering:**

- **CM 0147** Briquette Mold

**Ordering:**

- **BS 3892-1; 4551-1; EN 196-1; 413-2; 459-2; 1744-1; 1015-10,11; 13454-2**

**Ordering:**

- **BS 1881-131; ASTM C109; EN 196-1**

**Ordering:**

- **BS 4450**
Air Content Meter for Mortar, Masonry Cement and Lime

**DESCRIPTION:**
The Air content Meter for mortar is designed to determine the air content in cement mortar, cement paste, and lime mortar.

Made from cast aluminum, the test pot one-liter capacity and the upper part air-tight sealed using two quick action spring clamps. The whole is connected to a dial gauge directly indicating the air entrainment in percentage, with range 0-50%.

A built-in operated air pump is also included. The push-buttons TEST and CORRECTION are arranged to perform the test in a simple and quick system.

**TECHNICAL SPECIFICATIONS:**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>CM 0148</th>
<th>CM 0149</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (approx.)</td>
<td>0.5 kg</td>
<td>3.5 kg</td>
</tr>
</tbody>
</table>

**ORDERING:**
- CM 0150
  Mortar, Manual Air Content Meter, 1 ltr.
- CM 0151
  Motorized Mortar Air Content Meter, 1 ltr.
  With an electric mini-compressor to keep the air pressure constant.
- CM 0152
  Motorized Mortar Air Content Meter, 0.75 ltr.
  With an electric mini-compressor to keep the air pressure constant.

**ACCESSORIES:**
- CM 0150-1
  Mini Compressor
The humidity curing cabinet is used for curing cement test samples. The curing cabinet provides from -25°C to +70°C temperature and up to 98% humidity of cement specimens by immersion heater and refrigerator units which are supplied complete with the cabinet.

The internal chamber and racks are made of stainless steel. The cabinet is equipped with: a digital control unit to monitor the temperature and humidity and recording chart.

**TECHNICAL SPECIFICATIONS:**

<table>
<thead>
<tr>
<th>Net Interior volume</th>
<th>130 L</th>
<th>370 L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net weight of the unit</td>
<td>70 kg</td>
<td>95 kg</td>
</tr>
</tbody>
</table>

**Interieur Dimension**

<table>
<thead>
<tr>
<th>Width</th>
<th>450 mm</th>
<th>500 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth</td>
<td>535 mm</td>
<td>580 mm</td>
</tr>
<tr>
<td>Height</td>
<td>520 mm</td>
<td>1250 mm</td>
</tr>
</tbody>
</table>

**Shelf Dimension**

<table>
<thead>
<tr>
<th>Width</th>
<th>400 mm</th>
<th>460 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth</td>
<td>500 mm</td>
<td>570 mm</td>
</tr>
<tr>
<td>Number of Interior Shelves</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Main door</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Energy consumption at 37 °C**

| 1.55 kWh/h | 1.92 kWh/h |

**Temperature range**

-25°/+70°C / 0°/+70°C

**Temperature fluctuation**

±0.1°C

**Humidity range**

10 to 98% RH

**Humidity fluctuation**

≤ 3 ± % RH

**Controller**

Cycle monitoring touch screen programmer

**Program**

1

**Steps**

20

**Exterior and interior structure**

White plastic coated galvanized steel or Stainless steel AISI 304

**Insulation**

CFC and HCFC free

**Door**

Reversible self closing door with magnetic gaskets plug

**Grids**

Removable and height adjustable plastic-coated steel

**Type alarm**

Audio-visual

**Alarm parameter**

Hot temperature

**Security device**

Safety device with manual reset class 1 (DIN 12880)

**MAIN FEATURES:**

- Product Control relative Humidity 10% to 98% ±3%
- Temperature stability of ±0.1°C
- Programmable model available

**ORDERING:**

**CM 0153**

Constant Climate Chamber PRO Series 130 ltr with digital control unit

**CM 0154**

Constant Climate Chamber limited series 130 ltr

**CM 0155**

Constant Climate Chamber PRO Series 370 ltr

**CM 0156**

Constant Climate Chamber limited series 370 ltr
The Cement Compression and Flexural Machine 25/250 kN is Fully Automatic and has been designed for testing the compression on the 50x50x50mm cube molds, 40x40mm and the flexural on the 40.1x40x160 mm prism molds according to the related standards.

The machine consists of a very rigid two column frame with a double test chamber, automatic closed-loop controlled hydraulic power pack and an LCD graphic digital control readout unit. The very silent power pack can load a specimen between 1 kN/sec to 20 kN/sec.

On the dual-stage pump, a high delivery low-pressure pump is used for a rapid approach and low delivery high-pressure radial piston pump is used for test execution. On all power packs, the maximum pressure valve is used to avoid machine overloading.

On both frames, the load is measured by the load cell to get accurate test results. The machine is supplied with safety doors and can test samples up to 250kN.

The LCD graphics data acquisition and controls system is designed to control the machine and processing of data from load cells.

The digital graphic display allows real-time load vs time graph. At the end of the test cycle, the results can be stored in memory (up to 250 test results) or downloaded to a PC using the software format.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>CM 0157</th>
<th>CM 0158</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type</td>
<td>Full-Auto compression</td>
<td>Semi-Auto compression</td>
</tr>
<tr>
<td>Capacity</td>
<td>250 kN</td>
<td>250 kN</td>
</tr>
<tr>
<td>Class 1 Measuring range</td>
<td>25 to 250 kN</td>
<td>25 to 250 kN</td>
</tr>
<tr>
<td>The roughness value for texture of loading and auxiliary platens</td>
<td>≤ 3.2 μm</td>
<td>≤ 3.2 μm</td>
</tr>
<tr>
<td>Lower Platen dimensions</td>
<td>165 mm</td>
<td>165 mm</td>
</tr>
<tr>
<td>Upper Platen dimensions</td>
<td>165 mm</td>
<td>165 mm</td>
</tr>
<tr>
<td>Maximum vertical clearance between platens</td>
<td>263 mm</td>
<td>263 mm</td>
</tr>
<tr>
<td>Piston diameter</td>
<td>160 mm</td>
<td>160 mm</td>
</tr>
<tr>
<td>Maximum piston movement</td>
<td>50 mm</td>
<td>50 mm</td>
</tr>
<tr>
<td>Horizontal clearance</td>
<td>300 mm</td>
<td>300 mm</td>
</tr>
<tr>
<td>Power</td>
<td>550 W</td>
<td>550 W</td>
</tr>
<tr>
<td>Oil capacity</td>
<td>20 L</td>
<td>20 L</td>
</tr>
<tr>
<td>Maximum working pressure</td>
<td>125 bar</td>
<td>125 bar</td>
</tr>
<tr>
<td>Rapid approach rate</td>
<td>50 mm/min</td>
<td>50 mm/min</td>
</tr>
<tr>
<td>Dimensions</td>
<td>760x500x1650 mm</td>
<td>760x500x1650 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>395 kg</td>
<td>250 kg</td>
</tr>
</tbody>
</table>
## Cement Compression and Flexural Machine

### TECHNICAL SPECIFICATIONS:

<table>
<thead>
<tr>
<th>Product Code</th>
<th>CM 0159</th>
<th>CM 0160</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type</td>
<td>Full-Auto compression</td>
<td>Semi-Auto compression</td>
</tr>
<tr>
<td>Capacity</td>
<td>250/25 kN</td>
<td>250/25 kN</td>
</tr>
<tr>
<td>Class 1 Measuring range</td>
<td>2.5-25 kN / 25-250 kN</td>
<td>2.5-25 kN / 25-250 kN</td>
</tr>
<tr>
<td>The roughness value for texture of loading and auxiliary platens</td>
<td>≤ 3.2 μm</td>
<td>≤ 3.2 μm</td>
</tr>
<tr>
<td>Lower Platen dimensions</td>
<td>165 mm</td>
<td>165 mm</td>
</tr>
<tr>
<td>Upper Platen dimensions</td>
<td>165 mm</td>
<td>165 mm</td>
</tr>
<tr>
<td>Maximum vertical clearance between platens</td>
<td>263 mm</td>
<td>263 mm</td>
</tr>
<tr>
<td>Piston diameter</td>
<td>160 mm</td>
<td>160 mm</td>
</tr>
<tr>
<td>Maximum piston movement</td>
<td>50 mm</td>
<td>50 mm</td>
</tr>
<tr>
<td>Horizontal clearance</td>
<td>300 mm</td>
<td>300 mm</td>
</tr>
<tr>
<td>Power</td>
<td>550 W</td>
<td>550 W</td>
</tr>
<tr>
<td>Oil capacity</td>
<td>20 L</td>
<td>20 L</td>
</tr>
<tr>
<td>Maximum working pressure</td>
<td>30 bar / 125 bar</td>
<td>30 bar / 125 bar</td>
</tr>
<tr>
<td>Rapid approach rate</td>
<td>50 mm/min / 80 mm/min</td>
<td>50 mm/min / 80 mm/min</td>
</tr>
<tr>
<td>Dimensions</td>
<td>1050x500x1650 mm</td>
<td>1050x500x1650 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>410 kg</td>
<td>250 Kg</td>
</tr>
</tbody>
</table>

### ORDERING:

- **CM 0157**
  - Full Automatic Cement Compression Testing Machines 250 kN
- **CM 0158**
  - Semi Automatic Cement Compression Testing Machines 250 kN
- **CM 0159**
  - Full Automatic Cement Compression & Flexural Testing Machines 250/25 kN
- **CM 0160**
  - Semi Automatic Cement Compression & Flexural Testing Machines 250/25 kN

### ACCESSORIES:

- **CM 0157-1**
  - Flexural jig assembly 40x40x160 mm EN 196-1
- **CM 0157-2**
  - Flexural jig assembly 40x40x160 mm ASTM C109
- **CM 0157-3**
  - Compression jig assembly for EN 196-1
- **CM 0157-4**
  - Compression jig assembly for ASTM C109