



# CEMENT

## TEST EQUIPMENTS



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COMPRESSION & FLEXURAL MACHINE

Product Code

- TMM-2550 | Automatic Cement Compression and Flexural Testing Machine - 220-240 V 50/60 Hz
- TMM-2550/110 | Automatic Cement Compression and Flexural Testing Machine - 110 V 60 Hz
- TMM-2555 | Compression Jig Assembly to test 50 mm
- TMM-2558 | Compression Jig Assembly to test 70.7 mm
- TMM-2560 | Flexure Jig Assembly to test 40x40x160 mm

Standards

EN 196-1 | BS 3892 | ASTM C109 | NFP18-411 | DIN 1164 | UNE 80101 | EN ISO 679

Description

Automatic Cement Compression and Flexure Testing Machines have been manufactured for reliable and consistent testing of mortar samples. These machines are produced to capacity range of 250 kN compression and 15 kN flexural. Suitable for CE security norms and to international standards( EN 196-1, 459-2, 1015-11, 13454- 2; ASTM C 109, C348, C349, BS 3892-1, 4551-1).

Dual loading chamber:

- Compression Capacity : 250 kN
- Flexural Capacity : 15 kN

The user is choosing the compression or flexure frame by using the changeover valve. Pressing the START button on the control unit. The machine automatically starts and saves the test parameters and test results.

The automatic cement compression and flexure testing machines consist of;

- Double chamber frames
- Compression and flexure jigs
- Removable transparent front-rear safety doors
- Hydraulic power pack with data acquisition and control system TCM304.

Hardware

TCM304 LCD Graphic Display are controlled from the front panel consisting of a 240x120 pixel High resolution 65.000 points effective resolution LCD display and function keys. One analog channel for load cell and one analog channel for displacement transducer exists.

Firmware

TCM 304 LCD Graphic Display are controlled with function keys on the front panel. Two analog channel for load cell and two digital channels for displacement transducer exists. Simultaneous display of load-specific load, actual load rate and load/time graph; RS232 connection to PC; Multi coefficient calibration.

Safety Features

Maximum pressure valve to avoid machine overloading; piston travel limit switch; emergency stop button; front door and rear transparent plexi-glass guard.



Technical Specification

Test Type	Flexure	Compression
Capacity	15 kN	250 kN
Class 1 Measuring Range	0.5 to 15 kN	2.5 to 250 kN
Lower Platen Dimensions	165 mm	165 mm
Upper Platen Dimensions	165 mm	165 mm
Max. Vertical Clearance	263 mm	263 mm
Piston Diameter	80 mm	160 mm
Maximum Piston Movement	50 mm	50 mm
Horizontal Clearance	200 mm	300 mm
Power	750 W	
Oil Capacity	18 Liter	
Maximum Working Pressure	30 Bar	125 Bar
Rapid Approach Rate	80 mm	50 mm
Dimensions	1000x500x1500 mm	
Weight	380 kg	

COMPRESSION DEVICE

Product Code

- TMM-2555 | Compression Jig Assembly to test 50 mm
- TMM-2558 | Compression Jig Assembly to test 70.7 mm

Standards

EN 196-1 | BS 3892 | ASTM C109 | NFP18-411 | DIN 1164 | UNE 80101 | EN ISO 679



Description

Compression Device is used with cement compression machine for 40 mm, 50 mm and 70.7 mm cube moulds. Robust frame fitted with an upper bearer that moves vertically supported by springs. One of the two lower bearer can tilt horizontally and the distance between the two bearers are EN model and ASTM model.

Technical Specification

Standards	EN	ASTM
Distance between the two bearers	100 mm	119 mm
Total Height	188 mm	188 mm
Weight	8 kg	8 kg

FLEXURAL DEVICE

Product Code

- TMM-2560 | Flexure Jig Assembly to test 40x40x160 mm

Standards

EN 196-1 | BS 3892 | ASTM C109 | NFP18-411 | DIN 1164 | UNE 80101 | EN ISO 679



Description

Flexural Device is used with cement flexural machine for 40\*40\*160 mm prism moulds.

Technical Specification

Standards	EN	ASTM
Distance between the two bearers	100 mm	119 mm
Total Height	188 mm	188 mm
Weight	8 kg	8 kg

**LE CHATELIER FLASK**

**Product Code**

TMM-2605 | Le Chatelier Flask 250 ml

**Standards**

ASTM C188 | EN 196-6 | AASHTO T133 | UNE 83453rd



**Description**

Le Chatelier Flask is used to determine the density of hydraulic cement, ground granulated blast-furnace slag and fly ash for concrete, filler aggregates and lime. The glass flask has a 250ml capacity.

Technical Specifications	
Capacity	250 ml
Dimensions	100x100x300 mm
Weight (kg)	0,1 kg

**LE CHATELIER SOUNDNESS TEST SET**

**Product Code**

TMM-2610 | Le Chatelier Soundness Test Set  
 TMM-2611 | Le Chatelier Mould  
 TMM-2612 | Le Chatelier Weight 300 g  
 TMM-2613 | Le Chatelier Weight 100 g  
 TMM-2614 | Le Chatelier Tamping Rod 17 mm dia. x 70 gr

**Standards**

EN 196-3 | EN ISO 9597



**Description**

Le Chatelier moulds are used to determine the volume stability of cement. 30 mm in diameter, with 30 mm height and 150 mm in length from a special alloy material is produced by combining the two branches.

The The Le Chatelier Soundness Test Set is supplied complete with;

- Le Chatelier moulds 3 pcs.
- 50x50 mm glass plates 6 pcs.
- 300 gr Weights 1 pcs.
- 100 gr Weight, 3 pcs.
- Tamping Rod 17 mm dia. x 70 gr
- Steel Ruler
- Plastic Carrying Case

Technical Specifications	
Dimensions	350x300x100 mm
Weight (kg)	2,5 kg

**LE CHATELIER WATER BATH**

**Product Code**

TMM-2600 | Le Chatelier Water Bath - 220-240 V 50-60 Hz

**Standards**

EN 196-3, 450-1, 459-2 | EN ISO 9597



**Description**

Le Chatelier Water Bath is used with Le Chatelier moulds for the determination of the soundness of cement paste fly ash for concrete and lime. Le Chatelier Water Bath in stainless steel, contains up to 12 moulds which are maintained at a height of approx 50 mm above water level. A device located beneath the lid prevents condensation from falling onto specimens. Two heating elements, 800 W and 200 W, guarantee that the water reaches boiling point within approx 30 minute. Supplied complete 12 Le Chatelier's capacity removable rack, Le Chatelier mould ordered separately.

Technical Specifications	
Dimensions	390x180x320 mm
Weight (kg)	7 kg
Power	1250 W

**MUFFLE FURNACE**

**Product Code**

TMA-1370 | Muffle Furnace 3 lt. 1000°C , 220-240 V 50-60 Hz  
 TMA-1371 | Muffle Furnace 5 lt. 1200°C , 220-240 V 50-60 Hz  
 TMA-1372 | Muffle Furnace 7 lt.,1600°C , 380 V 50 Hz

**Standards**

TS EN 196-2 | 196-21 | 459-2



**Description**

Muffle Furnaces are used for determining various properties of construction materials, and they cover a temperature range from 1100°C to 1600°C, they are all front loading for easy operation and are of a double skin construction to maintain a cool outer case. Excellent temperature control is provided by a PID digital control system. A vertical counter balanced door keeps the hot insulation away from the operator which opens in an upward movement. The Furnace has a safety switch which isolates the power when the door is opened.

P. Code	TMT-1370	TMT-1371	TMT-1372
Max. Temperature	1000°C	1200°C	1600°C
Temperature Deviation at Set Point	± 2°C	± 2°C	± 2°C
Heat Up Time to Max. Temperature	50 min.	50 min.	75 min.
Internal Volume	3 L	5 L	7 L
Internal Dimensions (mm)	100x135x200 mm	140x180x200 mm	170x150x250 mm
External Dimensions (mm)	430x330x360 mm	660x550x590 mm	680x580x620 mm
Weight (approx.)	24	58	70
Power	2000 W	2000 W	4900 W

LABORATORY MIXER

Product Code

- TMM-2430 | Laboratory Mixer - 220-240 V 50/60 Hz
- TMM-2430/110 | Laboratory Mixer - 110 V 60 Hz
- TMM-2421 | Stainles Steel Bowl 5 Liter Capacity
- TMM-2422 | Whisk for TMM-2430

Standards

ASTM C109, C305 | AASHTO T106, T162 | EN 196-1, 196-3:2005, 413-2, 459-2, 480-1



Description

The Laboratory mixer is has been designed to mix mortars and cement pastes primarily to the requirements of standards. The mixing paddle revolves at a rate of 140 and 285 (r.p.m. clockwise) with a planetary motion of 62 and 125(r.p.m. clockwise) in low speed.

The Laboratory Mixer is supplied complete with;

- Stainles Steel Bowl, 5 L (approx.)
- Whisk for TMM-2430

Technical Specifications	
Dimensions	325x375x550 mm
Weight (kg)	18 kg
Power	400 W

AUTOMATIC MORTAR MIXER

Product Code

- TMM-2420 | Automatic Mortar Mixer - 220-240 V 50/60 Hz
- TMM-2420/110 | Automatic Mortar Mixer - 110 V 60 Hz
- TMM-2421 | Stainles Steel Bowl 5 Liter Capacity
- TMM-2422 | Whisk for TMM-2420

Standards

ASTM C305 | EN 196-1 ,196-3,1015-2,413-2,459-2-EN 12687-35



Description

Automatic Mortar mixer is has been designed to mix mortars and cement pastes primarily to the requirements of standards. The mixer capacity is 5 liters. The mixing paddle has a planetary motion and is driven by a microprocessor based speed and custom designed programs or manual mode. The mixing paddle revolves at a rate of 140 and 285 (r.p.m. clockwise) with a planetary motion of 62 and 125(r.p.m. clockwise) in low speed. Can be set motor speed, sand dispenser position and duration with mixer program.

The Automatic Mortar Mixer is supplied complete with;

- Stainles Steel Bowl, 5 L (approx.)
- Whisk for TMM-2420

Technical Specifications	
Dimensions	370x500x540 mm
Weight (kg)	35 kg
Power	400 W

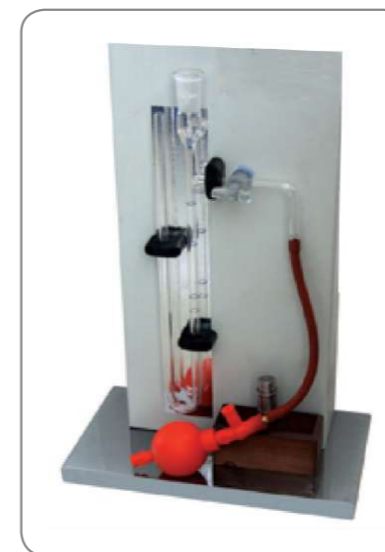
BLAINE AIR PERMEABILITY TEST APPARATUS

Product Code

- TMM-2470 | Blaine Air Permeability Test Apparatus Set
- TMM-2471 | Wood Test Stand
- TMM-2472 | U Manometer Tube
- TMM-2473 | Manometer Liquid 250 ml
- TMM-2474 | Cell with Perforated Disc and Plunger
- TMM-2475 | Filter Paper 100 pcs.
- TMM-2476 | Filter Paper 1000 pcs.
- TMM-2477 | Reference Cement 5 g
- TMG-0093 | Plastic Funnel 40x65 mm

Standards

EN 196-6 | ASTM C204 | AASHTO T153



Description

Blaine Air Permeability Apparatus is used to determine the fineness of Portland cement, limes and similar powders expressed in terms of their specific surface. Reference Cement should be ordered separately.

The TMM-2470 Blaine Air Permeability Test Apparatus Set is supplied complete with;

- Wood Test Stand,
- Rubber Aspirator,
- A Glass Connection Parts,
- Cell with Perforated Disc and Plunger,
- U Manometer Tube,
- Manometer Liquid
- Plastic funnel
- Filter paper (100 pcs of pack)

P. Code	Dimensions(mm)	Weight (kg)
TMM-2470	230x180x470 mm	6 kg

VICAT TEST SET

Product Code

- TMM-2450-EN | Vicat Test Set EN Standard
- TMM-2450-A | Vicat Test Set ASTM Standard
- TMM-2451 | Vicat Frame
- TMM-2452 | Vicat Mould EN Base ID 80 mm, Top ID 70 mm, Height 40 mm
- TMM-2453 | Vicat Mould ASTM Base ID 70 mm, Top ID 60 mm, Height 40 mm
- TMM-2454 | Initial Vicat Needle EN 1.13 mm diameter
- TMM-2455 | Vicat Needle ASTM 1 mm diameter
- TMM-2456 | Final Vicat Needle EN 1.13 mm diameter
- TMM-2457 | Consistency Plunger 10 mm diameter
- TMM-2458 | Supporting Glass Plate
- TMM-2459 | Additiniol Weight, 700 gr, EN

Standards

ASTM C187, C191 | AASHTO T131 | EN 196-3:2005 | EN 408-2



Description

Vicat Test Set is used to determine the amount of water required to produce a cement paste of standard consistency and the setting time. The frame is supplied complete with a 300 g consistency plunger (dia. 10 mm). The measurement of the movement is given by an indicator which moves along a scale graduated in millimetres. The apparatus is supplied complete with glass plate and EN Needle and mould.

The Vicat Test Set is supplied complete with;

- Vicat Mould
- Initial and final Needles (for EN )
- Vicat Needle (for ASTM)
- Consistency Plunger
- Supporting Plate
- Glass Thermometer 110°C
- Transfer Dish (for EN)

P. Code	Dimensions(mm)	Weight (kg)
TMM-2450-EN	260x250x450 mm	4kg

**MORTAR PRISM AND CUBE MOULD**

**Product Code**

TMM-2480 | Mortar Cube Mould 70.7 mm  
 TMM-2490 | Three Gang Prism Mould 50X50X50 mm  
 TMM-2500 | Three Gang Prism Mould 40X40X160 mm

**Standards**

EN 196-1 | ASTM C109 | BS 4550



**Description**

Three Gang Moulds are have been manufactured from steel and all internal surfaces are machined. Dimensions and specifications comply with the related standards. The moulds has the surface hardness of a minimum HV400.

P. Code	Dimensions(mm)	Weight (kg)
TMM-2480	100x125x90 mm	3 kg
TMM-2490	60x240x60 mm	4 kg
TMM-2500	200x300x70 mm	10 kg

**TWO GANG SHRINKAGE MOULD**

**Product Code**

TMM-2650 | Shrinkage Mould Two Gang 25x25x285 mm  
 TMM-2651 | Steel Inserts ( Pack of 10 pcs)  
 TMM-2652 | Reference Rod 160 mm

**Standards**

EN 196-1 | ASTM C109 | BS 4550



**Description**

Two Gang Mould is have been manufactured from steel and all internal surfaces are machined. Dimensions and specifications comply with the related standards. The moulds has the surface hardness of a minimum HV400.

P. Code	Dimensions(mm)	Weight (kg)
TMM-2650	70x320x35 mm	7 kg

**LENGTH COMPARATOR**

**Product Code**

TMM-2590 | Digital Length Comparator  
 TMM-2650 | Shrinkage Mould Two Gang 25x25x285 mm  
 TMM-2651 | Steel Inserts  
 TMM-2652 | Reference Rod 160 mm

**Standards**

EN 196-1 | ASTM C109 | BS 4550



**Description**

Digital Length Comparator is used to determine the length changes on different type of cement prisms. The apparatus consists of length measuring frame and measuring device. Digital dial gauge is 0.001 mmx12,7mm. Reference rod and moulds should be ordered separately according to test to perform.

P. Code	Dimensions(mm)	Weight (kg)
TMM-2650	180x180x410 mm	6 kg

**FLOW CONE APPARATUS**

**Product Code**

TMM-2580 | Flow Cone Apparatus Test Set  
 TMM-2581 | Flow Cone  
 TMM-2582 | Nozzle Ø 8 mm  
 TMM-2583 | Nozzle Ø 9 mm  
 TMM-2584 | Nozzle Ø 10 mm  
 TMM-2585 | Nozzle Ø 11 mm  
 TMM-2586 | Nozzle Ø 13 mm

**Standards**

EN 445 | NF P18-358 | NF P18-507



**Description**

Flow Cone Apparatus is used for determining the flow properties of grouts, mortars, muds and other fluid materials. Flow Cone Apparatus consists of a stainless steel cone with upper diameter of 150 mm height of 280 mm, 150 mm dia sieve with 1.5 mm opening for the upper cone, 5 interchangeable (8, 9, 10, 11 and 13 mm diameter) nozzles with fitting bush and a 1 liter capacity cup.

The TMM-2580 Flow Cone Apparatus Test Set is supplied complete with;

- Stand
- Flow Cone,
- Sieve 1,5 mm,
- Nozzle 8, 9, 10, 11 and 13 mm
- Cup 1 lt,
- Fitting Bush

P. Code	Dimensions(mm)	Weight (kg)
TMM-2580	250x250x590 mm	12 kg

CEMENT FLOW TABLE

Product Code

TMM-2520-A | Manual Cement Flow Table ASTM Standards  
 TMM-2525-A | Motorized Cement Flow Table ASTM Standards - 220-240 V 50 Hz  
 TMM-2525-A/110 | Motorized Cement Flow Table ASTM Standards - 110 V 60 Hz  
 TMM-2523 | Tamper ASTM Hardwood 13x25x150 mm  
 TMM-2524 | Brass Mould ASTM - 100 mm base dia. x 70 mm top dia. x 50 mm height.

TMM-2520-EN | Manual Cement Flow Table EN Standards  
 TMM-2525-EN | Motorized Cement Flow Table EN Standards - 220-240 V 50 Hz  
 TMM-2525-EN/110 | Motorized Cement Flow Table EN Standards - 110 V 60 Hz  
 TMM-2521 | Tamper EN Ø 40x200 mm 250 gr  
 TMM-2522 | Brass Mould EN - 100 mm base dia. x 70 mm top dia. x 60 mm height.

Standards

ASTM C230 | EN 459-2, 1015-3

Description

Cement Flow Table are used for determining the consistency of mortar, lime and cement specimens. Cement Flow Table are produced in two models as manual and motorized.

The TMM-2520-A and TMM-2520-EN manual models are included with a hand wheel. The TMM-2525-A and TMM-2525-EN motor operated models are driven by a motor speed reducer coupling at the rate of one rev per second. The number of drops can preset on a counter and the machine stops automatically at the end of the cycle.

Cement Flow Tables consists of the following equipment;

- Bronze Flow Mould,
- Filling Hopper and Tamper.

	TMM-2520-A & TMM-2525-A	TMM-2520-EN & TMM-2525-EN
Table Dia.	254 mm	300 mm
Cone Top/Base Dia.	70 mm / 100 mm	70 mm / 100 mm
Cone Height	50 mm	60 mm
Drop Height	12.7 mm	10 mm

	TMM-2520-A & TMM-2520-EN	TMM-2525-A & TMM-2525-EN
Dimensions	270x270x280 mm	460x350x360 mm
Weight (kg)	14 kg	38 kg



JOLTING TABLE

Product Code

TMM-2400 | Jolting Table - 220-240 V 50/60 Hz  
 TMM-2400/110 | Jolting Table - 110 V 60 Hz

Standards

EN 196-1 | EN ISO 679 | NF P15-412 | BS 3892



Description

The Jolting Table is used to compact cement mortar prisms 40x40x160 mm in the three gang mould, as requested by the above specifications. The apparatus, consists of a table holding the mould, seated on a rotating cam driven at 60 revolutions per minute. The jolting group is connected to the table by bayonet joints for quick checking of the weights. The drop height 15,0 mm is adjustable to keep it correct also after intensive uses. The apparatus is supplied with control panel including main switch, automatic digital drop counter, start/stop push button.

Technical Specifications	
Dimensions	1000x380x420 mm
Weight (kg)	60 kg
Power	500 W

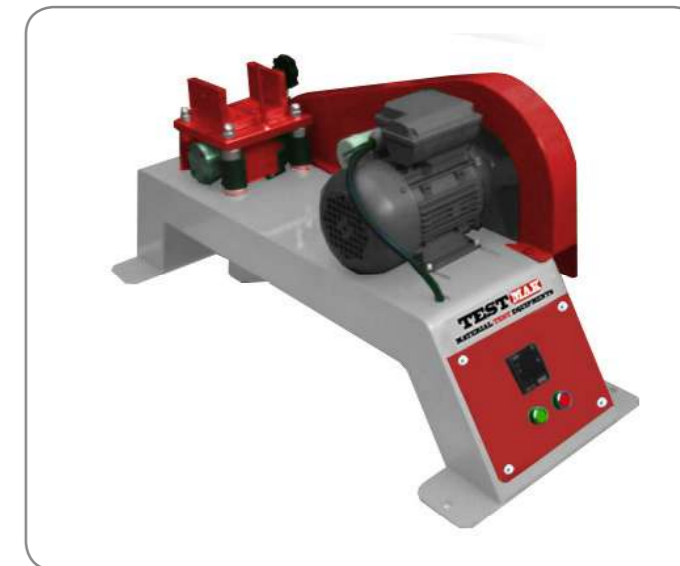
VIBRATING TABLE FOR MORTAR CUBE MOULD

Product Code

TMM-2680 | Vibrating Machine for 70.7 mm Cube Moulds - 220-240 V 50 Hz

Standards

BS 4550



Description

The Vibrating Machine is used for the preparation and compaction of 70.7 mm mortar cube specimens. The mould 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	
Dimensions	460x460x840 mm
Weight (kg)	100 kg
Power	1100 W

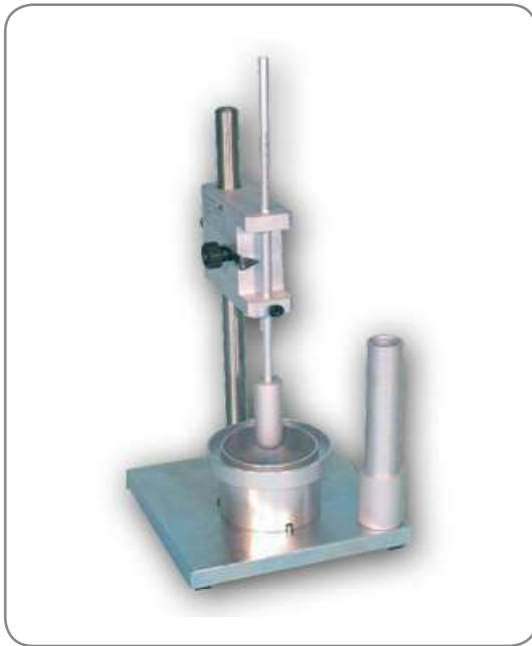
**PLUNGER PENETROMETER**

**Product Code**

TMM-2530 | Pluger Penetration Apparatus

**Standards**

EN 413-2, 459-2



**Description**

Pluger Penetration Apparatus is used to determine the consistency of fresh mortar, lime and masonry cement. This apparatus consists in a base, a vertical support, a graduated rod with 25 mm dia plunger, a test cup dia. 80 mm x 70 mm deep and a 40 mm dia tamper. Drop height 100 mm. Overall weight of plunger assembly is 90 g.

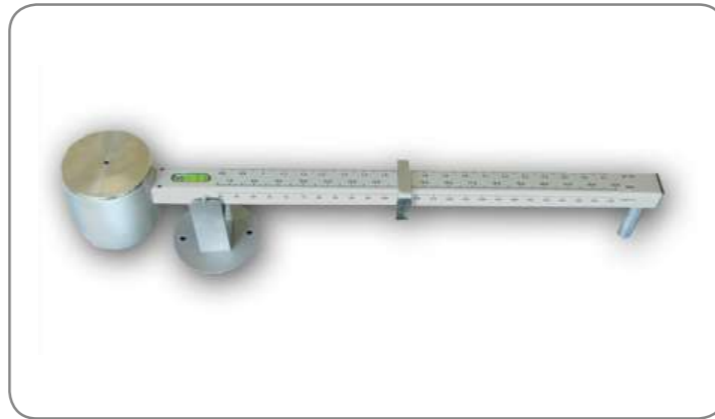
**Technical Specifications**

Technical Specifications	
Dimensions	260x250x450 mm
Weight (kg)	5 kg

**MUD BALANCE**

**Product Code**

TTMM-2510 | Mud Balance



**Description**

Mud Balance, provides an accurate and easy method for determining the mud density. The accuracy of the readings is not affected by the temperature of the drilling mud. The Mud Balance consists of a base and a graduated arm with an integral spirit level, counter weight, cup, lid, rider, knife-edge. Supplied with plastic carrying case.

**Technical Specifications**

Technical Specifications	
Dimensions	550x120x100 mm
Weight (kg)	1 kg

**MARSH FUNNEL VISCOSITY SET**

**Product Code**

TMM-2640 | Marsh Funnel Viscosity Set

**Standards**

ISO 2431



**Description**

Marsh Funnel Viscosity Set is used for the determination of flow time by the use of flow cups of fluid materials such as paint, varnish. Manufactured from break resistant rugged plastic to avoid deformations on temperature changes so the volumetric accuracy is maintained. Accurate measurements are taken using the metal orifice. Supplied complete with 1 liter capacity plastic measuring cup.

**Technical Specifications**

Technical Specifications	
Internal Diameter	5 mm
Top Diameter	150 mm
Nozzle Length	50 mm
Pack. Dimensions	250x200x150 mm
Weight (kg)	0,6 kg

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