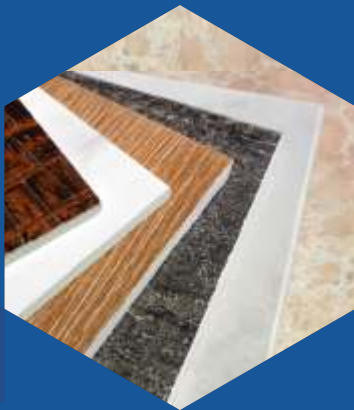


**eie** INSTRUMENTS PVT. LTD.

# Tiles & Ceramics

## Testing Instruments



**Manufacturer of  
World Class Laboratory  
Testing Instruments**



**eie** INSTRUMENTS PVT. LTD.

# Drying Oven



Drying oven is the most crucial instrument in the testing on tile and ceramic. Almost before starting every testing oven drying is compulsory @ 110° C

## Salient Features

- Body of construction, Inner S.S. and outer G.I (Fully S.S. model also available)
- Digital PID temperature controller with accuracy of 0.1° C
- Temperature range up to 250° C
- Soak timer to maintain the exact timing for conducting the experiment
- Unique arrangement to place the tiles vertically, with no contact between them
- Powder coated
- Table model suitable to use in laboratory
- Supplied completely with user manual and test procedure

## Technical Details of Different Sizes Ovens

Sr. No.	Working Chamber Size (Cms) (D X W X H)	Over all Dimensions (Cms) (D X W X H) Thermostatic Model	Over all Dimensions (Cms) (D X W X H) Digital Model	Ratings (kw)	Shelves	Approx. Weight (Inner SS, Outer MS, Thermostatic)	Approx. Weight (Inner SS, Outer MS, Digital)
1.	30 X 30 X 30	45 X 47 X 55	52 X 45 X 64	1.0	1	35 kg	45 kg
2.	35 X 35 X 35	50 X 52 X 63	57 X 50 X 72	1.0	1	41 kg	52 kg
3.	45 X 45 X 45	60 X 62 X 73	67 X 60 X 82	1.5	2	61 kg	72 kg
4.	45 X 45 X 60	60 X 62 X 88	67 X 60 X 97	2.0	2	68 kg	78 kg
5.	60 X 60 X 60	75 X 77 X 88	82 X 75 X 97	2.5	3	90 kg	110 kg

# Tile Autoclave

As per IS 13630 (part 9) craze means a crack, showing as a fine hairline, limited to glazed surface of tile. EIE make Tile autoclave is used for the determination of crazing resistance of glazed tiles.

## Salient Features

- Body of construction, Inner S.S and outer G.I (Fully S.S. model also available)
- Design to work @ temperature at 168 C and pressure of 750±20 Kpa.
- Digital PID temperature controller with accuracy of 0.1° C
- Triple safety against accidental over pressure.
- Safety Valve / Pressure control switch/ Digital Temp. indicator cum controller
- Chamber Size : 350 X 450 MM
- Maximum Tile Size : 12" X 16"
- Soak timer to maintain the exact timing for conducting the experiment
- Unique arrangement to place the tiles vertically, with no contact between them
- Powder coated
- Supplied completely with user manual and test procedure



# Water Absorption

The water absorption and bulk density of the ceramic tile is measured in accordance with IS 13630 (part 2)

## Salient Features

- Body of construction, Inner S.S. and outer G.I (Fully S.S. model also available)
- Digital PID temperature controller with accuracy of 0.1° C
- Soak timer to maintain the exact timing for conducting the experiment
- Unique arrangement to place the tiles vertically, with no contact between them
- Powder coated
- Table model suitable to use in laboratory
- Supplied completely with user manual and test procedure

# MOR Testing Machine

As per IS 13630 (part 6) modulus of rupture and breaking strength of the whole tile is the curtail parameters of the ceramic tiles. EIE make M.O.R testing machine is cable to calculate M.O.R. value and breaking value of ceramic tiles.

## Salient Features

- Variable speed to control the rate of loading
- Vibration free
- Direct reading in MOR value and Breaking strength
- MOR value and Breaking strength for different shapes of tile
- Table top model
- Least count of 0.1 Kg, Capacity up to 5000 Kg
- Computer driven machine is also available with different auto generated reports
- Powder coated
- Supplied completely with user manual and test procedure



# Surface Flatness

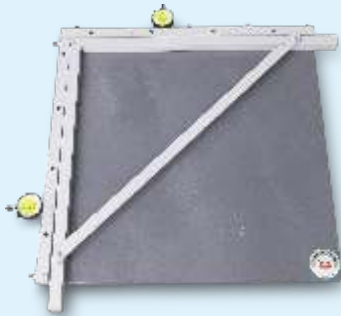
As per IS 13630 (part 1) measurement of straightness of sides and rectangularity is very fundamental test of the ceramic tiles.

## Salient Features

- Range of 10 mm with accuracy of 0.1 mm
- Powder coated
- Tailor-made sizes available
- Provision for 3 gauges
- Supplied completely with user manual and test procedure



# Straightness of Sides and Rectangularity



As per IS 13630 (part 1) measurement of straightness of sides and rectangularity is very fundamental test of the ceramic tiles.

## Salient Features

- Range of 10 mm with accuracy of 0.1 mm
- Powder coated
- Tailor-made sizes available
- Provision for 2 gauges
- Supplied completely with user manual and test procedure

# Moisture Expansion Tester

EIE make moisture expansion tester is the fundamental instrument to measure moisture expansion of unglazed tiles as per IS 13630 (part 3)

## Salient Features

- Body of construction, Inner S.S. and outer G.I (Fully S.S. model also available)
- Digital PID temperature controller with accuracy of 0.1° C
- Soak timer to maintain the exact timing for conducting the experiment
- Unique arrangement to place the tiles vertically, with no contact between them
- Powder coated
- Table model suitable to use in laboratory
- Supplied completely with user manual and test procedure



## Chamber Size (cms.)

L	W	D
40	23.5	26.5
43	35	33.5

# Muffle Furnace



EIE make muffle furnace is the crucial instruments for refining work on the tile sample with a temperature rise @ 150° C / Hour and a soak @ 600° C

## Salient Features

- Body of construction, outer G.I (Fully S.S. model also available)
- Digital PID temperature controller with accuracy of 0.1° C
- Temperature range up to 1200° C
- Soak timer to maintain the exact timing for conducting the experiment
- Unique arrangement to place the tiles vertically, with no contact between them
- Powder coated
- Table model suitable to use in laboratory
- Supplied completely with user manual and test procedure
- Different size available



## Technical Details of Different Sizes of Furnace

Sr. No.	Working Chamber Size (Inches) (D X W X H)	Over all Dimensions Size (Inches) (D X W X H)	Ratings (kw)	Approximate Weight
1.	9 X 4 X 4	21 X 17 X 23	1.5	60 kg
2.	10 X 5 X 5	22 X 18 X 24	2.0	71 kg
3.	12 X 6 X 6	24 X 20 X 25	3.0	82 kg
4.	12 X 8 X 8	24 X 24 X 30	5.0	115 kg
5.	18 X 9 X 9	30 X 25 X 31	6.0	125 kg

## Other Crucial Instruments for Tile Testing

### Reflectance Meter



### Hydraulic Press



### Sieve Shaker "GYRATORY"



**Table Top Sieve Shaker**



**Rotap Sieve Shaker**

# Low Temperature Waterbath



EIE make Low temperature waterbath is used for the determination of resistance to thermal shock of ceramic tiles as per IS 13630 (part 5)

This test is to be conducted on temperature cycle of 15+/- 5 C and 145 C to 150 C

## Salient Features

- Body of construction, Inner S.S and outer G.I (Fully S.S. model also available)
- Digital PID temperature controller with accuracy of 0.1 C
- Temperature range from ambient to 10 C
- Soak timer to maintain the exact timing for conducting the experiment
- Unique arrangement to place the tiles vertically, with no contact between them
- Powder coated
- Table model suitable to use in laboratory
- Supplied completely with user manual and test procedure

	CLEAR WORKING SIZE	VOLUME (LTR)	SIZE	KW
A	20 X 25 X 20	32 X 25 X 25	20	1

# Deep Freezer

As per IS 13630 (part 10) frost resistance has to be measured for the acceptance of the of the ceramic tiles. To measure the frost resistance, EIE make Deep Freezer is absolutely necessity.

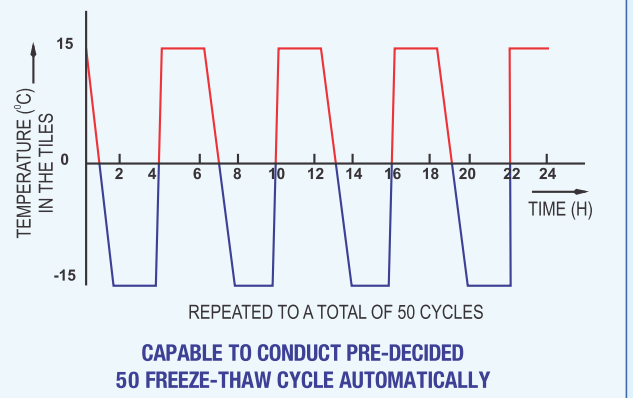
## Salient Features

- Body of construction, Inner S.S. and outer G.I (Fully S.S. model also available)
- Digital PID temperature controller with accuracy of 0.1° C
- Temperature range from +20° C to -20° C
- Soak timer to maintain the exact timing for conducting the experiment
- Unique arrangement to place the tiles vertically, with no contact between them
- Powder coated
- Table model suitable to use in laboratory
- Supplied completely with user manual and test procedure
- Capable to complete the freeze-thaw cycle in 6 hours (as required by IS 13630 (part 10))
- Capable to conduct pre-decided freeze-thaw cycle automatically (50 cycles as per IS 13630 (part 10))



## HORIZONTAL AND VERTICAL MODELS SIZES FOR DEEP FREEZER

	INNER DIMENSIONS W X H X D (CM)	VOLUME (LTR)
		—
A.	51 X 43 X 43	95
B.	61 X 66 X 48	195
C.	81 X 66 X 48	255
D.	110 X 66 X 48	349
E.	120 X 66 X 48	380



# Tile Surface Abrasion Test Apparatus

EIE make Low temperature waterbath is used for the determination of resistance to thermal shock of ceramic tiles as per IS 13630 (part 5)  
EIE make tile surface abrasion test apparatus confirms the requirement of IS 13630 (part 11)

## Salient Features

- Body of construction: M.S.
- Diameter of rotating disc: 580 mm
- Eccentricity of axis of rotation of the disc: 22.5 mm
- Speed of rotation of disc:  $300 \pm 10$  rpm
- Maximum number of test specimens that can be tested at a time: Eight
- Inside diameter of specimen holding ring: 83 mm
- Inside height of specimen holding rings: 25.5 mm
- Distance of center of test area from center of disc: 195 mm
- **Motor:** 1/4 HP Single-phase 230 Volts AC
- **Counter:** 4 digits pre-set type electronic counter with memory back up and key-lock reset.



# Deep Abrasion Machine for Unglazed Tiles

EIE make DEEP ABRASION MACHINE confirms the requirement of IS 13630 (part 12)

## Salient Features

- Diameter of steel disc :  $200 \pm 0.2$  mm
- Thickness of steel disc :  $10 \pm 0.1$  mm
- Material of steel disc : Mild steel
- Speed of rotation of disc:  $75 \pm 5$  rpm
- Force applied on test specimen: Adjustable between 5 and 20 kg in steps of 1 kg.
- **Motor :** 1/4 HP single-phase 230 volts AC
- **Counter :** 3 digit pre-set type electronic counter with memory back up and push button reset.
- Capacity of storage hopper : 5 liter



# Ball Release Apparatus

EIE MAKE BALL RELEASE APPARATUS meets with the requirement of the IS 13630 (part 14).  
IS 13630 (part 14) deals with the determination of impact resistance by measurement of coefficient of restitution.

## Salient Features

- Body of construction: M.S.
- Chrome steel balls :  $19 \pm 0.05$  mm diameter
- Free fall of the ball from the height of 1 meter
- Electrical timing device to measure time interval between first and second impacts
- Direct reading in coefficient of restitution



Mfg. by :

**vindish**  
instruments pvt. ltd.

B-14,15,16, Zaveri Industrial Estate, Opp. Shyam Villa,  
Singarva - Kathwada Road, Ahmedabad-382 430.  
Ph. : (079) 6604 0619, 6604 0660 • Fax : (079) 6604 0600



Mktd. by :

**EIE INSTRUMENTS PVT. LTD.**  
(An ISO 9001 : 2008 Certified Company)

1001-1002, Span Trade Centre, Opp. Kochrab Ashram, Paldi, Ahmedabad-380 006.  
Ph. : (079) 66211234, 09904301464 • Fax : (079) 26584099  
Email : chintan@eieinstruments.com; kunal@eieinstruments.com  
Website : www.eieinstruments.com