TILES & SANITARYWARE
TESTING SYSTEMS

The Tailor Made VBCC

Accurate. Repeatable. ISO Compliant.

Not just a
Substitute for Imports
An Export-Grade
Standard

CERTIFIED ISO 9001:2015 COMPANY

CE

MAKE IN INDIA

Engineered in India. Matched Globally.

ABOUT US

VB Ceramic Consultants is a leading manufacturer of advanced ceramic testing and high-temperature research equipment, with strong expertise in ceramic engineering, materials science, and thermal processing.

The company is led by **Dr. V. Viswabaskaran,** Founder & Managing Director, a distinguished ceramic engineer with over two decades of experience in research, equipment development, and industrial consultancy.

Under his leadership, VBCC has emerged as a reliable technology partner delivering robust, standards-compliant, and application-driven testing solutions.

Dr. Anil Kaviraj – Johnson Memorial Award (2024)
Awarded to Dr. V. Viswabaskaran for his notable R&D contributions in the field of ceramics.

Dr. Anil Kaviraj - Johnson Award 2024 *conferred by the Indian Ceramic Society to Dr. V. Viswabaskaran (MD, VB Ceramic Consultants), presented by* ***Mr. Sudipta Saha, President – H&R Johnson***

ONE-STOP SOLUTION FOR TILE & SANITARYWARE TESTING

VB Ceramic Consultants (VBCC) offers a complete and integrated range of testing equipment for ceramic tiles and sanitaryware, enabling manufacturers and laboratories to perform all critical tests under one roof in accordance with ISO 10545 and related standards.

From raw material evaluation to finished product performance, our systems are designed for accuracy, repeatability, and long-term reliability, making VBCC a single trusted partner for quality assurance, R&D, and compliance testing in the ceramic industry.

OUR ESTEEMED CLIENTS

JOHNSONTILES NOT JUST TILES, LIFESTYLES. | Kajaria | SOMANY

CERA | orientbell tiles

CONTENTS

ROLLER HEARTH KILN *(Pilot Scale)*

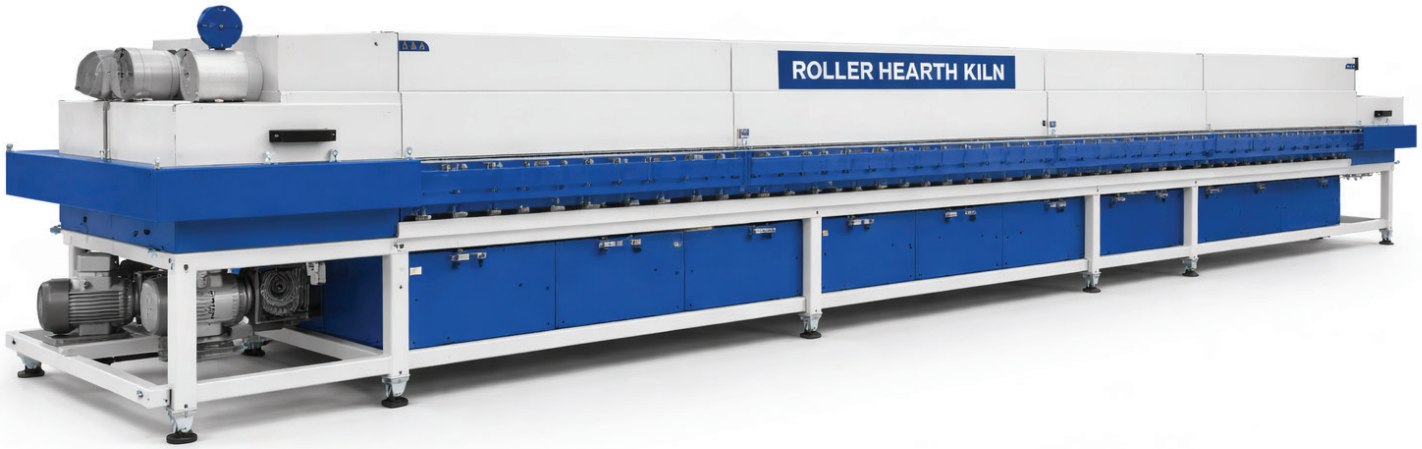
Specification

Useful Hot Zone	Approx. 250 × 50 × 2000 mm
Maximum Tile Width	150 mm
Shell Construction	Heavy-duty MS fabricated body with MS angle frame, reinforced with stiffeners and finished with powder coating
Insulation	Mechanically pressed zirconia-blend ceramic fibre insulation
Skin Temperature	Slightly above ambient under steady-state operation
Rollers	High-purity mullite rollers
Heating Elements	Silicon Carbide (SiC) heating elements
Electrical Power & Supply	4 kW, Two-phase AC supply
Temperature Range	Max. 1350 °C; Working temperature up to 1300 °C
Temperature Control	TAIE Digital Temperature Controller (18 × 8 = 144 segments)
Temperature Sensor	Type R (Pt–13%Rh / Pt) Thermocouple
Temperature Accuracy	±1 °C at steady state
Drive System	Variable-speed roller drive using suitable motor with chain transmission
Control Panel	Separate, floor-mounted control panel
Indications	Ammeter, Voltmeter, Mains ON indicator, Output ON indicator

ROLLER HEARTH KILN *(Production Scale)*

Specification

Useful Hot Zone	Approx. 350 x 100 x 6000 mm
Maximum Tile Width	300 mm
Shell Construction	Heavy-duty MS fabricated body with MS angle frame, reinforced with stiffeners and finished with powder coating
Insulation	Mechanically pressed zirconia-blend ceramic fibre insulation
Skin Temperature	Slightly above ambient under steady-state operation
Rollers	High-purity mullite rollers
Heating Elements	Silicon Carbide (SiC) heating elements
Electrical Power & Supply	20 kW, Three phase AC supply
Temperature Range	Max. 1350 °C; Working temperature up to 1300 °C
Temperature Control	TAIE Digital Temperature Controller (18 × 8 = 144 segments)
Temperature Sensor	Type R (Pt–13%Rh / Pt) Thermocouple
Temperature Accuracy	±1 °C at steady state
Drive System	Variable-speed roller drive using suitable motor with chain transmission
Control Panel	Separate, floor-mounted control panel
Indications	Ammeter, Voltmeter, Mains ON indicator, Output ON indicator



HYDRAULIC PRESS

Specification

Press Type	Four-pillar, Uniaxial Hydraulic Press
Maximum Capacity	20 Tonnes
Application	Ceramic Powder Compaction
Frame Construction	Heavy-duty MS fabricated structure with channel sections
Overall Size (Approx.)	1000 (H) × 500 (W) × 500 (D) mm
Loading Direction	Vertical (Up-acting)
Piston Stroke	100 mm (Max.)
Daylight	100 mm (Punch to Die)
Platen Size	Ø 150 mm
Control Mode	Automatic & Manual
Load Control & Display	Digital programmer with 0.1-tonne resolution
Drive & Power Pack	Electrically operated hydraulic power pack with VFD control
Motor	1 HP
Safety Features	Emergency stop & travel limit switches
Power Supply	3-Phase, 230 V AC, 50 Hz

DRYING OVEN

Specification

Maximum Temperature	300 °C
Hot Zone	Customizable
Temperature Uniformity	±5.0 °C @ 250 °C
Insulation	Low thermal mass fibre insulation
Temperature Controller	144 Segment TAIE PID Programmer
Power Control	Phase angle thyristor control using SCR block from SEMIKRON, Italy
Motor	0.25 HP (mounted on top side)
Fan	Heavy-duty fan with Inconel impeller
Inner Chamber	Stainless Steel
Outer Shell	Mild Steel with high-quality powder coating
Tray and Interior Material	Stainless Steel – 304L grade
Number of Trays	Customizable
Heater Configuration	Heating coils on three sides of the inner chamber

DILATOMETER

Specification

Max Temperature	1000° | 1400°| 1600°C
Heating Element	APM Kanthal | SiC | $MoSi_2$
Insulation	Low Thermal Mass Fibre Insulation
Power Control	Phase angle thyristor control using SCR block from SEMIKRON, Italy
Control Accuracy	±1°C
Power Supply	230V, 15 Amps, Single-phase AC
Furnace Movement	Linear bearings on SS rails
Expansion Measurement	LVDT (Massetron, Germany)
Measurement Accuracy	1 Micron
Measurement Range	-2000 to +2000 Microns
Sample Dimensions	10 × 10 × 30 mm ±2 mm

Highlights

NABL Calibrated | Fused Quartz / RCA Tube from Germany | Live Graph Generation | ±1µm Accuracy

JOHNSONTILES NOT JUST TILES, LIFESTYLES. · SOMANY · orientbell tiles · Kajaria · CERA

500+ UNITS
AROUND THE GLOBE

Unrivaled Precision for Leading Ceramic Industries including the Ceramic Capital, Morbi. Our Dilatometers, the backbone of thermal expansion analysis, empower the heart of India's Ceramic Capital, ensuring unparalleled accuracy for top-tier quality in tiles and sanitaryware production

TILE STRAIGHTNESS, SQUARENESS & WARPAGE TESTER

Specification

Measurements Covered	Length & width deviation, straightness of sides, rectangularity, surface flatness
Tile Size Range	100 × 100 mm to 800 × 800 mm
Measurement Method	Dial-gauge based measurement
Frame Construction	Heavy-duty mild steel fabricated structure, precision machined, powder-coated
Supporting & Locating Studs	Precisely positioned studs as defined in ISO 10545-2 apparatus requirements
Measuring Sensors	Digital Dial Gauges – 6 Nos.
Dial Gauge Range & Resolution	0–25 mm range, 0.01 mm (10 microns) resolution
Indication & Control	Central HMI for real-time display of all gauge readings
Data Display	Individual gauge values and max deviation values displayed digitally on HMI
Calibration Standard	Precision aluminium calibrating plates with straight, flat sides
Calibrating Plate Sizes	450 × 450 mm, 600 × 600 mm, 800 × 800 mm
Compliance Output	Results expressed as deviation in mm or % as specified in ISO 10545-2

POROSITY\DENSITY TESTER

Specification

Weighing Balance	0.01 g accuracy, 200 g max capacity, suspension setup
Immersion Beakers	200 ml quartz glass containers
Vacuum Oven Volume	300 x 300 x 300 mm
Oven Construction	SS inner body, MS panel board, powder coated
Insulation	Low thermal mass fibre insulation
Max Temperature	150°C
Temperature Control	144 Segment TAIE PID Programmer
Control Accuracy	±1°C
Vacuum Capacity	Up to 760 mmHg
Vacuum Indication	Analog dial vacuum gauge
Vacuum Pump	With oil trap
Vacuum Timer	Special timer provided
Desiccator	Standard laboratory desiccator

MODULUS OF RUPTURE (MOR)

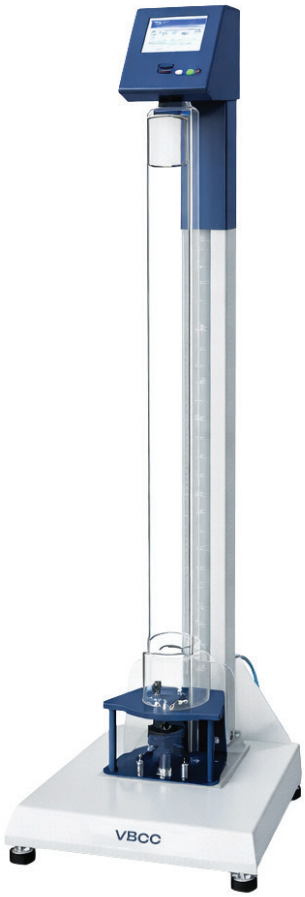
Specification

Test Method	Three-point bending test
Sample Size	Cross-section: 10–30 mm; Maximum span length: 150 mm
Span Length Adjustment	Adjustable from 20 to 200 mm using Ø15 mm hardened rollers
Load Capacity	50 kg and 500 kg (selectable as per test requirement)
Loading Direction	Vertical down
Cylinder Stroke	Up to 50 mm
Rate of Loading	Adjustable, as per ISO requirement
Daylight	100 mm
Load Application System	Special motorized loading system (oil-free, gear-less design)
Measurement & Control	PLC-based control with HMI interface
Display & Output	Automatic digital indication of Load and MOR with peak load hold (freezing)
Construction	Heavy-duty MS fabricated body with MS angle structure, stiffeners and epoxy powder coating
Operating Modes	Dedicated configurations for Dry MOR and Fired MOR testing
Power Supply	Single / Three Phase AC, 50 Hz (as specified)

IMPACT RESISTANCE

Specification

Test Principle	Determination of coefficient of restitution by dropping a steel ball from a fixed height and measuring rebound
Steel Ball	Chrome steel ball, Ø 19 ± 0.05 mm
Ball Release System	Electromagnetic release mechanism with vertical guide tube
Drop Height	1000 mm (as specified in ISO 10545-5)
Rebound Measurement	Electronic rebound sensing system (sensor-based detection of rebound height / time interval)
Detection Method	Sensor measures rebound height or time between successive impacts.
Specimen Mounting	Rigid clamping arrangement for tile test unit mounted on concrete block
Structure	Heavy-duty steel structure, epoxy powder-coated
Levelling Arrangement	Adjustable levelling screws for precise vertical alignment
Control & Indication	PLC-based system with HMI
Display Parameters	Drop height, rebound value, calculated coefficient of restitution (e)
Data Handling	Automatic calculation and digital display of coefficient of restitution
Power Supply	240 V AC, 50/60 Hz, single phase



FROST RESISTANCE

Specification

Number of Tiles	**10 tiles**
Tile Size Capacity	Up to 300 × 300 mm tiles
Chamber Configuration	Single integrated chamber for impregnation and freeze–thaw cycling
Inner Chamber	SS 304 stainless steel tank
Outer Body	Mild steel, epoxy powder-coated
Inner Chamber Size	350 × 350 × 300 mm
Tile Holding System	Stainless steel basket for vertical placement with spacing between tiles
Vacuum Pump	Rotary vacuum pump
Temperature Range	–20 °C to +20 °C
Temperature Uniformity	Motorized stirrer / air circulation for uniform temperature distribution
Temperature Sensor	PT100 RTD sensor
Temperature Control	Microprocessor-based auto-tune PID controller
Freeze–Thaw Cycling	Programmable automatic freeze–thaw cycles
Timing Control	Programmable soak and dwell timers
Water Handling	Provision for water spraying / immersion, drain valve, and water outlet
Power Supply	230 V AC, 50 Hz, Single-phase

THERMAL SHOCK RESISTANCE

Specification

Tile Size Capacity	Up to 500 × 500 mm
Cooling System	Dual-mode: Vertical immersion (THERMAL) & Horizontal indirect cooling (THERMAL-W)
Mode Selection Criteria	Based on water absorption of tiles (≤10% or >10% m/m)
Vertical Cooling Tank	SS 304 tank for vertical immersion without tile contact
Horizontal Cooling Tank	Stainless steel tank with internal aluminium heat transfer plate
Aluminium Interface (THERMAL-W)	5 mm aluminium plate with 5 mm aluminium granules (0.3–0.6 mm)
Cooling Water Temperature	15 ± 5 °C
Water Flow Rate	4 L/min with flowmeter
Temperature Control	Digital PID controller
Heating Medium	Hot air oven at 145 ± 5 °C
Test Cycle	10 thermal shock cycles with 5 min cooling dwell
Power Supply	230 V AC, 50 Hz, Single phase

MOISTURE EXPANSION

Specification

Test Specimens	Whole tiles or cut specimens as per ISO
Boiling Medium	Deionized / distilled water
Boiling Duration	24 h ± 30 min
Boiling Apparatus	Double-walled stainless steel boiling tank
Inner Chamber	Stainless steel
Outer Body	Mild steel, epoxy powder-coated
Temperature Range	Ambient to 100 °C
Heating System	Resistive Heaters
Temperature Control	TAIE Digital PID controller
Cooling System	Controlled cooling arrangement
Specimen Arrangement	Stainless steel basket / stand
Control & Timing	Programmable timer for boiling and cooling cycles
Power Supply	230 V AC, 50 Hz, Single Phase

DEEP ABRASION

Specification

Disc Material & Standard	Steel disc made of E235 A (Fe 360 A) conforming to ISO 630
Disc Dimensions	Ø 200 ± 0.2 mm × 10 ± 0.1 mm thickness
Disc Speed	75 ± 5 rpm
Load / Pressure System	Adjustable force mechanism
Abrasive Material	White fused aluminium oxide, grain size F80
Abrasive Feed Rate	100 ± 10 g per 100 revolutions
Abrasive Hopper	Integrated storage hopper with controlled dispensing outlet
Number of Revolutions	150 revolutions per test
Specimen Size Capacity	Up to 180 × 180 × 80 mm
Specimen Mounting	Rigid specimen support ensuring tangential contact with rotating disc
Measurement System	Groove chord length measured using gauge accurate to 0.1 mm
Result Expression	Abrasion resistance expressed as volume loss (mm^3), calculated from chord length
Drive Motor	¼ HP AC motor, single phase
Machine Structure	Heavy-duty mild steel fabricated body, epoxy powder-coated
Dust Handling	Provision for connection to external vacuum cleaner
Power Supply	230 V AC, 50/60 Hz, Single Phase

CRAZING RESISTANCE

Specification

Test Chamber	Cylindrical autoclave chamber
Chamber Material	Inner chamber SS
Lid Construction	Hard chrome plated autoclave lid with Viton gasket
Gasket Sealing	Special high-pressure, high-temperature resistant gasket fitted in precision grooves
Pressure Rating	Designed to operate at 750 ± 20 kPa
Heating System	Electrical resistance heating
Cooling System	Water cooling coil controlled through solenoid valve
Temperature Indication & Control	TAIE Digital temperature indicator cum PID controller
Pressure Indication	Calibrated analog pressure gauge
Safety Systems	Safety valve, pressure control switch, and digital temperature limiter
Insulation	Internal MS boiler with air gap insulation and glass wool insulation with outer MS cover
Timer Control	Independent soak timer
Chamber Sizes	Available in multiple chamber sizes (customizable)
Power Supply	230 V AC, 50/60 Hz, Single Phase

LOSS ON IGNITION

Specification

Application	Loss on Ignition (LOI) testing of ceramic raw materials.
Heating Principle	Microwave heating with susceptor-assisted uniform thermal absorption
Microwave Frequency	2.45 GHz
Microwave Power Output	4 × 1.1 kW magnetrons (Total 4.4 kW), power adjustable
Magnetron Configuration	2 sets with automatic switching for continuous and safe operation
Susceptor Material	Modified SiC tiles (optimized for ceramic raw material heating)
Temperature Measurement	Non-contact IR sensor (Raytek, USA) measuring susceptor/sample surface temperature
Temperature Control	Eurotherm 3216 PID based digital temperature controller
Typical LOI Temperature Range	Ambient to 1200°C
Inner Chamber Size	Approx. 300 × 300 × 300 mm (SS 304)
Sample Handling	Ceramic / platinum crucibles suitable for LOI testing
Advantages for LOI	Faster test cycle, uniform heating, reduced energy consumption compared to conventional muffle furnaces

TORSION VISCOMETER

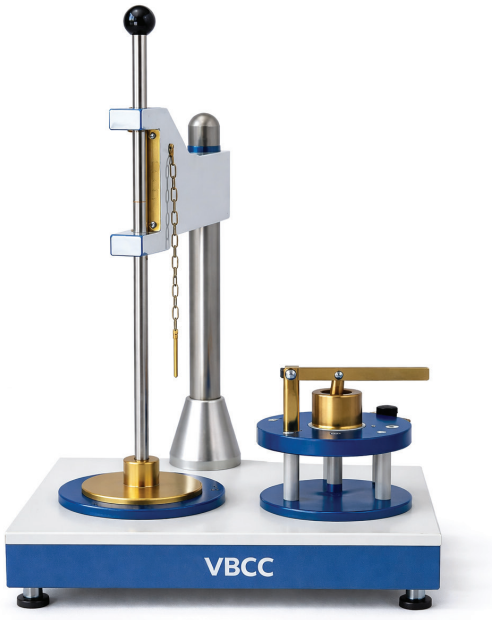
Specification

Application	Measurement of viscosity of ceramic slips, glazes, and similar suspensions
Design Concept	Developed for the ceramic industry; easily adaptable for other applications
Base Construction	Rigid Steel base
Levelling System	Three-point levelling arrangement for precise alignment
Graduated Disk	1 no. precision graduated disk
Sample Cup Support	Adjustable
Torsion Wire	1 no. standard **30 SWG torsion wire** (supplied)
Cylinder Bob	1 no. **11/16'' diameter cylinder bob**
Sample Cup	Stainless steel
Viscosity Range	Approximately **0.25 to 1000 poise**
Operation	Manual

PFEFFERKORN INDEX

Specification

Test Method	**Pfefferkorn Plasticity Index Method**
Specimen Dimensions	Diameter: **33 mm** Height: **40 mm**
Weight of Falling Ram	**1192 ± 5 g**
Height of Fall	**146 mm**
Ram Material	Hardened steel
Specimen Support Plate	Precision-machined, wear-resistant metal
Operation	Manual
Measurement	Deformation measured after ram impact
Application	Determination of plasticity of ceramic bodies and clay masses
Compliance	As per standard Pfefferkorn test methodology



WHY CHOOSE US?

VB Ceramic Consultants (VBCC) is a highly trusted manufacturer of high-quality ceramic instruments, equipment, furnaces, and kilns. Our clientele includes esteemed universities, renowned R&D organizations, and leading industries, all of whom rely on our superior offerings. With a dedicated team of experts, we offer a range of comprehensive services to ceramic industries, including product development and problem-solving solutions. Having successfully completed numerous projects, VBCC takes pride in its ability to deliver innovative ceramic products, many of which serve as import substitutes. We offer these products along with the corresponding technical know-how, providing our clients with ready-to-use solutions.

27A, 14th Link Road, 3rd Cross, Venkateswara Colony,
Nehru Nagar Industrial Estate,Kottivakkam, Chennai–600041.

9444012468 | 044 2454 0691 vbceramic@yahoo.com www.vbceramics.com