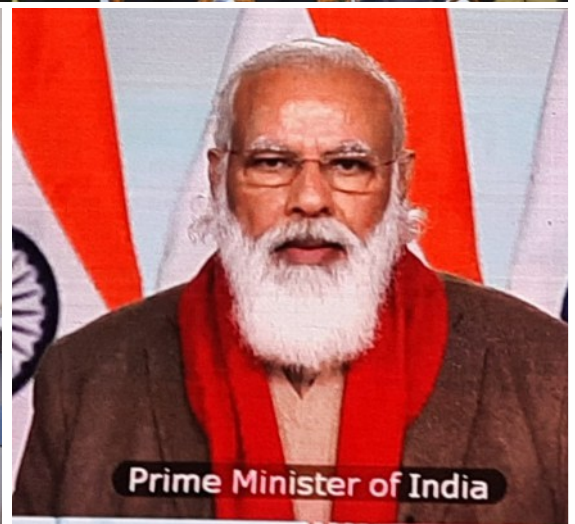


CENTRE FOR QUALITY MANAGEMENT, STANDARDS AND CALIBRATION SERVICES



भारतीय निर्देशक द्रव्य
Bharatiya Nirdeshak Dravya
(Indian Reference Materials)



BND® 5006
COMPOSITE CEMENT FINENESS STANDARD
SPECIFIC SURFACE AREA (BLAINE)

Traceable to SI Units through
CSIR-National Physical Laboratory (NMI of India)

राष्ट्रीय सीमेंट एवं भवन सामग्री परिषद्
34 कि०मी० स्टोन, दिल्ली-मथुरा रोड (राष्ट्रीय राजमार्ग-२) बल्लभगढ़-१२१००४ हरियाणा, भारत
NATIONAL COUNCIL FOR CEMENT AND BUILDING MATERIALS
34 KM Stone, Delhi-Mathura Road, (NH-2) Ballabgarh-121004 Haryana, INDIA

Valid Upto : December 31", 2021

Net Quantity: 10 g_{xy}

Purpose :
Quality Control and valid
results.

Caution :
Protect from ingress of

Disclaimer :
For "Quality Control" use
Not for reselling, or other



NATIONAL COUNCIL FOR CEMENT AND BUILDING MATERIALS
(Under the Administrative Control of Ministry of Commerce and Industry, Govt. of India)

CENTRE FOR QUALITY MANAGEMENT, STANDARDS AND CALIBRATION SERVICES – CQC

NCB's centre for Quality Management, Standards and Calibration Services (CQC) serves industry's needs through four programmes, namely: Calibration Services, Standard Reference Materials, Interlaboratory Services and Total Quality Management.

CALIBRATION SERVICES

ISO 17025 ACCREDITED (BY NABL)

NCB provides calibration services traceable to National / International Standards with measurement uncertainties as per ISO/IEC 17025 and NABL guidelines. The calibration laboratory also follows the dynamic Quality System Accredited as per ISO/IEC 17025 by National Accreditation Board for Testing and Calibration Laboratories (NABL). The Centre is committed for providing Quality and Timely Service and ensuring Total Customer Satisfaction in the following areas.

TEMPERATURE & RH

Sl. No.	Devices	Range
1	Liquid-in-glass thermometers, RTD / PRT / Temp. devices with Indicator	(-) 10 to 300°C
2	Thermo-couples / RTD with Indicator	300 °C to 600°C
3	Thermocouples with Indicator	600°C to 1200°C
4	Muffle Furnace	200°C to 1200°C
5	Hot Air Oven / Incubator	(-) 10°C to 200°C
6	Humidity Indicator	30-95% RH
7	Environmental Chamber	30-95% RH 15°C to 50°C

PRESSURE

Sl. No.	Devices	Range
1	Pressure gauge / Transducers / Switches	3-61.1 Kg/cm ² 61.1-1222 Kg/cm ²

FORCE

Sl. No.	Devices	Range
1	CTM / UTM / FTM (Compression Mode)	3 kN to 3000 kN

REVOLUTION

Sl. No.	Devices	Range
1	Tachometer (Contact)	20 to 12000 rpm
2	Tachometer (Non-Contact)	60 to 25000 rpm
3	Vibrating Machine / Table / Planetary Mixer	11600 to 12400
4	Planetary Mixer Low Speed High Speed	57 rpm to 67 rpm 115 rpm to 135 rpm
5	Flow Table	96 rpm to 104 rpm
6	Loss Angles Machine	30 rpm to 33 rpm

DIMENSION

Sl. No.	Devices	Range
1	Test Sieves (by Profile Projector)	45 μ m to 10 mm
2	Test Sieves (by Vernier Caliper)	> 10 mm to 150 mm
3	Vernier Caliper	Upto 300 mm
4	Dial Gauge	0 to 25 mm
5	Steel Scale	Upto 600 mm
6	Measuring Tape	Upto 5 m

MASS / VOLUME

Sl. No.	Devices	Range
1	Weighing Balances	0 to 200 g 0 to 5 Kg 0 to 150 Kg
2	Standard Weights	1 mg to 100 Kg
3	Blaine Cell	1.6 cm ³ to 2.0 cm ³
4	Volumetric Glassware (Pipette, Burette, Measuring Cylinder & Flasks)	3 ml to 1000 ml

MISCELLANEOUS (OUT OF NABL SCOPE)

Sl. No.	Devices	Range
1	Concrete Test Hammer	Type 'N' & 'NR'
2	Stop Watch	Upto 30 Minutes
3	Load Indicators	Upto 3000 kN
4	Proving Rings / Load Cells / Dynamometers	3 kN to 3000 kN
5	Batching / RMC Plant	Upto 450 Kg



Hygrometer Calibration



Calibration of Dial Gauge Tester



Calibration of Caliper Checker



Calibration of Weights

STANDARD REFERENCE MATERIALS

Certified Reference Materials, having known physical and chemical properties / composition, are required for calibration of analytical equipment, validation of testing procedures and standardization of analytical techniques. NCB has developed CRMs under its continuous programmed projects and so far more than 68 CRMs have been developed.

18 Bhartiya Nirdeshak Dravyas (BNDs), the Indian Certified Reference Materials (CRMs) have been developed by Centre for Quality Management, Standards and Calibration Services (CQC). These BNDs derive their traceability to SI units from CSIR-National Physical Laboratory (NPL), India, the custodian of national standards in India. Bhartiya Nirdeshak Dravya (BND) is an Indian Reference Material. BNDs would play key role in maintaining the quality infrastructure of the economy through testing and calibration with precise measurements traceable to SI units and also for evaluating proficiency of analysts, evaluating/comparing various test methods and calibration of equipment. The availability SI traceable BNDs will give a boost to “Make in India” programme and harmonize the quality infrastructure of the country.

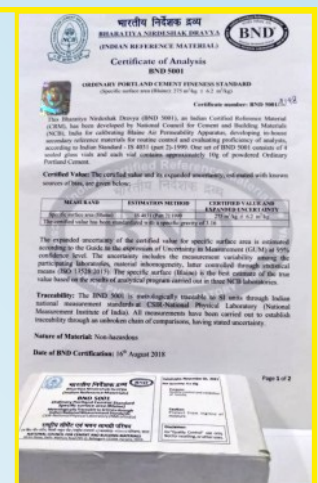
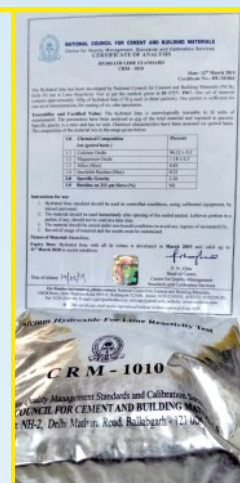
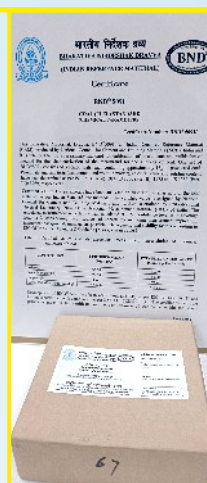
MATERIALS AVAILABLE

- Development and supply of Certified Reference Materials (CRMs), including plant specific standards, for calibration and Quality Control
- OPC, PPC, PSC, Fly ash, CCP, WPC, Blast furnace slag – Blaine fineness & specific gravity (as per IS methods)
- OPC & PPC – Normal consistency, Setting time, Compressive Strength (as per IS methods)
- OPC, PPC, PSC, WPC – Chemical parameters (as per IS methods)

- Gypsum, Limestone, Clay, Raw meal, Clinker, Fly ash and Blast furnace slag – Chemical parameters (as per IS methods)
- Coal & Pet Coke – Moisture content, Ash content, Volatile matter, Fixed carbon, Sulphur and Calorific value (as per IS methods)
- Hydrated lime (for LR Test) – (as per IS method)
- OPC, Fly ash & Sand – for checking residue on sieve (as per IS methods)
- Composite Cement – Blaine fineness & Chemical Parameters (as per IS methods)
- Laterite, Silica fume, Bauxite – Chemical Parameter, etc. (as per IS methods)

Following BNDs are now commercially available:

Sl. No.	BND No.	Material Description	Sl. No.	BND No.	Material Description
1.	5001	OPC-Blaine fineness	10.	5052	PPC-Chemical
2.	5002	PPC-Blaine fineness	11.	5053	PSC-Chemical
3.	5003	PSC-Blaine fineness	12.	5054	Fly ash-Chemical
4.	5004	Fly ash-Blaine fineness	13.	5091	Coal-Chemical
5.	5006	Composite cement	14.	5055	Composite Cement-Chemical
6.	5007	WPC-Blaine fineness	15.	5056	Limestone-Chemical
7.	5011	OPC higher fineness	16.	5057	Raw Meal-Chemical
8.	5021	OPC-Blaine Middle Fineness	17.	5058	Clinker-Chemical
9.	5051	OPC-Chemical	18.	5059	Blast Furnace Slag-Chemical



Release of BNDs by Honourable Minister Dr Harsh Vardhan on National Metrology Conclave on 4th January 2021

View of Coal BND with Certificate

View of Hydrated Lime Powder with Certificate

View of BND OPC Sample with Certificate

INTERLABORATORY SERVICES

ISO 17043 ACCREDITED (BY NABL) PROFICIENCY TESTING SERVICES

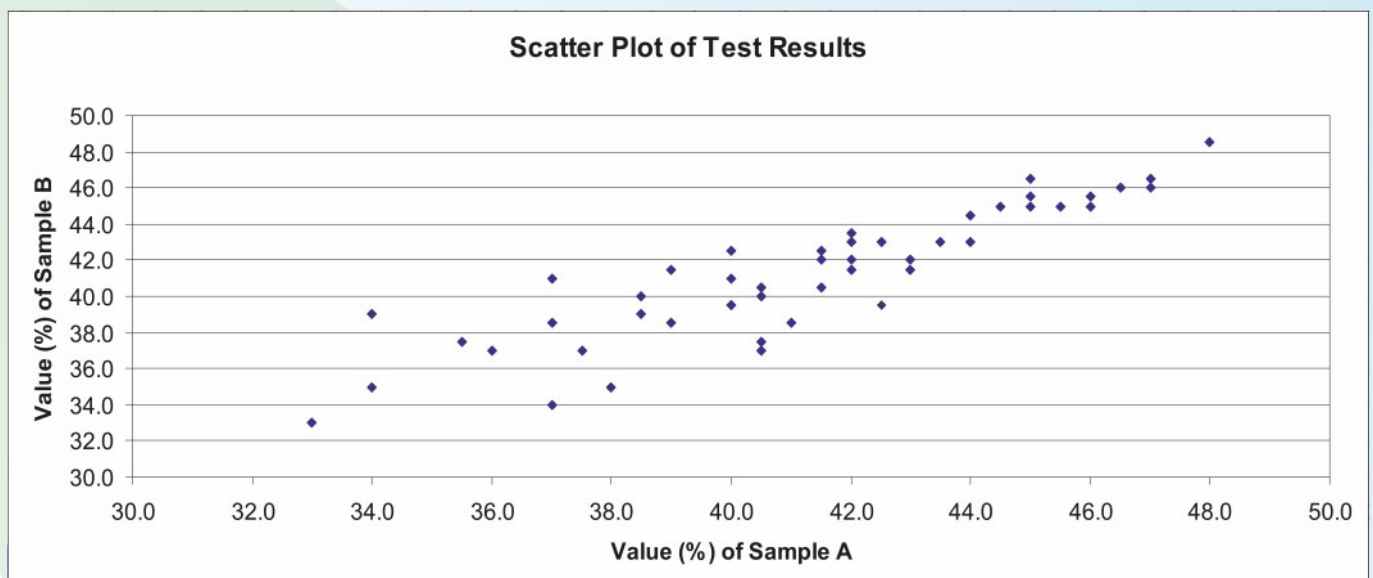
PT schemes are conducted by CQC through Interlaboratory Services (ILS) programme in accordance with ISO/IEC 17043:2010. Introduction of ISO 17043:2010, which lays down the requirements for proficiency testing providers, has galvanized the testing and calibration laboratories in all sectors to look for accredited PT providers. It is a matter of pride that National Council for Cement and Building Materials (NCB) has become the first NABL accredited PT provider in the country, in accordance with ISO 17043:2010. The scope of accreditation in chemical and mechanical field is given below.

CHEMICAL TESTING

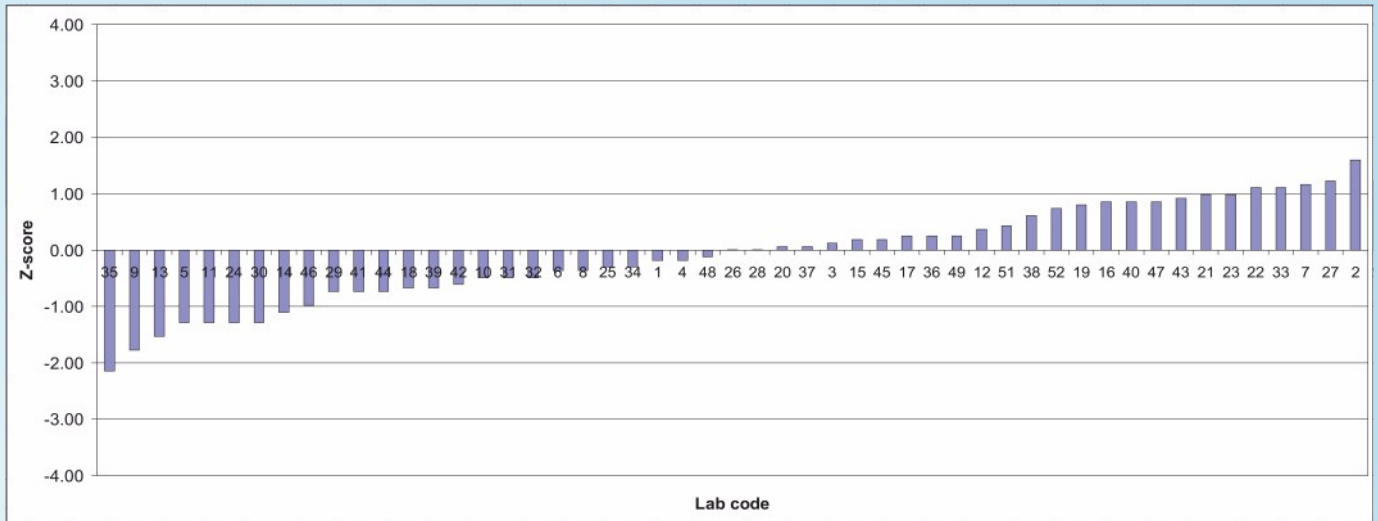
Sl. No.	Proficiency Testing Item	Parameter
1.	Limestone	Loss on ignition, Silicon dioxide, Iron oxide, Aluminium oxide, Calcium oxide, Magnesium oxide, Sodium oxide, Potassium oxide, Free silica
2.	Clinker	Loss on ignition, Silicon dioxide, Iron oxide, Aluminium oxide, Calcium oxide, Magnesium oxide, Sulphur trioxide, Insoluble residue, Sodium oxide, Potassium oxide, Chloride
3.	Cement	Loss on ignition, Silicon dioxide, Iron oxide, Aluminium oxide, Calcium oxide, Magnesium oxide, Sulphur trioxide, Insoluble residue, Sodium oxide, Potassium oxide, Chloride
4.	Fly ash	Loss on ignition, Silicon dioxide, Iron oxide, Aluminium oxide, Calcium oxide, Magnesium oxide, Sulphur trioxide, Sodium oxide, Potassium oxide
5.	Concrete admixture	Dry material content, Ash content, pH, Chloride
6.	Water for concrete	Organic (volatile) filterable residue, Inorganic (fixed) filterable residue, Suspended (non-filterable) matter, Sulphates, Chlorides, pH, Acidity / Alkalinity
7.	Coal/coke/pet coke	Moisture, Ash, Volatile matter, Sulphur, Calorific value

MECHANICAL TESTING

Sl. No.	Proficiency Testing Item	Parameter
1.	Cement	Specific surface (Blaine fineness), Normal consistency, Setting time, Compressive strength, Residue on 90 μm sieve
2.	Fly ash	Retention on 45 μm sieve, Blaine fineness, Lime reactivity, Compressive strength
3.	Aggregate	Sieve analysis, Apparent specific gravity, Water absorption, Bulk density, Crushing value, 10% Fines value, Impact value, Abrasion value, Flakiness index, Elongation index
4.	Mortar/concrete	Compressive strength
5.	Tile (Ceramic)	Water absorption
6.	Burnt clay building brick	Water absorption, Compressive strength
7.	Steel bar	Mass per meter run, Yield stress 0.2% proof stress, Elongation, Tensile strength



Scatter Plot of (168±2 hrs.) Compressive Strength Results in OPC



Bar Chart of - (168±2 hrs.) Compressive Strength in OPC

TOTAL QUALITY MANAGEMENT (TQM)

- Laboratory Assessment and Proficiency Improvement services for testing laboratories.
- Assistance in NABL accreditation of laboratories.
- Application of TQM tools and techniques for Quality Improvement.
- Benchmarking Studies
- Evaluation of Quality Performance and National Awards



Training Programme on ISO17034:2016 for Scientist at National Physical Laboratory, New Delhi



4-day Training Programme on Laboratory Quality Management System and Internal Audit as per ISO/IEC 17025:2017 for Senior Executives at J K Lakshmi Cement



ABOUT THE COUNCIL

The six corporate Centres of the Council guide the activities at the different units. The Centres and their main areas of activity are:

Centre for Cement Research and Independent Testing (CRT) - Fundamental and Basic Research, Cement and Other Binders, Wastes Utilisation, Refractories & Ceramics and Testing Services.

Centre for Mining, Environment, Plant Engineering and Operations (CME) - Geology, Mining & Raw Materials, Process Optimisation & Productivity Enhancement, Energy Management, Plant Maintenance, Project Engineering & System Design, Environmental Management.

Centre for Construction Development and Research (CDR) - Structural Optimisation & Design, Structural Assessment & Rehabilitation, Concrete Technology, Construction Technology and Management.

Centre for Industrial Information Services (CIS) - Industrial Information and Data Bank, Integrated IT Solution, Publication, Seminars & Conferences, International & National Linkages, Image Building.

Centre for Continuing Education Services (CCE) - Long Term & Short Term Courses, Special Group Training Programmes, Simulator Based Courses, Distance Learning Correspondence Courses, Workers' Development Programmes.

Centre for Quality Management, Standards & Calibration Services (CQC) - Total Quality Management, Calibration Services, Standard Reference Materials, Inter laboratory Services.

FOR FURTHER DETAILS, PLEASE CONTACT

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