



National Council for Cement and Building Materials

Independent Testing Laboratories

Testing Services

Sl. No.	Type of Test
CLINKER, HYDRAULIC CEMENT, SLAG (IS:4031 & IS:4032)	
1.	Consistency
2.	Specific Gravity
3.	Fineness (Blaine)
4.	Retention on 45 micron sieve(Wet Sieving)
5.	Retain on 10 mm Sieve(Dry Sieving)
6.	Retain on 50 mm Sieve(Dry Sieving)
7.	Retain on 90 micron Sieve(Dry Sieving)
8.	Setting Time
9.	Le-Chatelier Expansion
10.	Autoclave Expansion
11.	Compressive Strength -24 ±½h
12.	Compressive Strength -72 ±1h
13.	Compressive Strength -168 ±2h
14.	Compressive Strength -672 ±4h
15.	Drying Shrinkage
16.	Heat of Hydration-per age
17.	Degree of Whiteness
18.	Transverse Strength-24 ±½h
19.	Transverse Strength-72 ±1h
20.	Transverse Strength-168 ±2h
21.	Transverse Strength-672 ±4h
22.	Granulometric Composition of Clinker
23.	Determination of Loss on Ignition
24.	Determination of Silica
25.	Determination of Iron Oxide (Fe ₂ O ₃)
26.	Determination of Alumina (Al ₂ O ₃)
27.	Determination of Combined Iron& Alumina (R ₂ O ₃)
28.	Determination of Calcium Oxide (CaO)
29.	Determination of Magnesium Oxide (MgO)
30.	Determination of Sulphate (SO ₃)/ Sulphur
31.	Determination of Insoluble Residue
32.	Determination of Chlorides
33.	Determination of Alkalis/ Water Soluble Alkalis
34.	Determination of Titanium Dioxide
35.	Determination of Phosphorus Pentoxide
36.	Determination of Manganic Oxide(Mn ₂ O ₃)/ Manganese Oxide(MnO)
37.	Determination of Free Lime
38.	Determination of Sulphur as Sulphide
39.	Cement Preparation with procured Gypsum (IS:16353) Customer's Gypsum
MASONRY CEMENT (IS: 3466)	
1.	Air Content
2.	Water Retention
SULPHATE RESISTING CEMENT(IS: 12330)	
1.	Potential Expansion of Cement Mortar exposed to Sulphate at 14 days
POZZOLANIC MATERIALS (IS: 1727)	
1.	Specific Gravity
2.	Oversize % retained on 45µ
3.	Oversize % retained on 45µ(10 Preceding Test)



Sl. No.	Type of Test
4.	Fineness, Retention % (Dry Sieving) per sieve
5.	Specific Surface Area (BET-Nitrogen Adsorption Method)
6.	Cement Reactivity Compressive Strength (28 Days)
7.	Lime Reactivity
8.	Pozzolanic Reactivity
9.	Determination of Available Alkalis
10.	Determination of Reactive Silica
11.	Determination of Reactive Lime
12.	Determination of Water Soluble Materials(CCP)
13.	Burnt Clay Pozzolana-(SS+DS+LR+CR) IS:1344
MISCELLANEOUS TESTS	
1.	Determination of Fluoride
2.	Determination of Chromium Oxide(Cr₂O₃) by ASTM C 572
3.	Determination of Moisture (Slag, Iron Ore etc)
4.	Determination of Free Silica
5.	Determination of Total Carbonate/ CO ₂
6.	Determination of Combined Water
7.	Determination of Pyritic Sulphur- ASTM C 25
8.	Heavy Elements by ICP-OES / per Element
9.	Slag Activity Index
	NC(Blend+Control)
	CS@ 7Days(Blend+Control)
	CS@ 28Days(Blend+Control)
10.	Compressive Strength of Rock (after cutting to size)
11.	Grindability Index as per IS 10218
12.	Particle Size Distribution(PSD) by Laser Beam
13.	Bleeding Test-(Microfine OPC)-IS:16993:2018
14.	Technical Comments onChemical/ Physical Tests Results- per sample
15.	Firing of Raw Mix at different temp. (°C)
AGGREGATES (IS: 383/ IS: 2386)	
1.	Sieve Analysis
2.	Specific Gravity
3.	Water Absorption
4.	Bulk Density
5.	Bulking of Sand
6.	Aggregate Impact Value
7.	Aggregate Crushing Value
8.	Aggregate Abrasion Value -Los Angeles
9.	10% Fines Value in Co.Aggregate
10.	Silt Content
11.	Deleterious Materials
12.	Organic Impurities
13.	Flakiness and Elongation Index
14.	Combined Flakiness and Elongation Index- IS:383
15.	Soundness Na ₂ SO ₄ or MgSO ₄
16.	Alkali-Agg. Reactivity- (Chemical Method)- IS: 2386
17.	Alkali-Agg. Reactivity- (Mortar Bar Method - One Year) at Single Temperature Regime as per IS: 2386
18.	Alkali-Agg. Reactivity- (Accelerated Mortar Bar Method) as per IS: 383
19.	Alkali-Agg. Reactivity- (Accelerated Mortar Bar Method) as per ASTM 1260
20.	Mortar Making Properties of Fine Aggregate
COAL/ PET COKE (IS: 1350,IS:16612& IS:16609)	
1.	Total Moisture/Surface/ Inherent Moisture (ARB/ ADB)
2.	Ash Content
3.	Volatile Matter



Sl. No.	Type of Test	
4.	Proximate Analysis(M/C+A/C+VM)	
5.	Ash Content and Moisture Content	
6.	Carbon	
7.	Hydrogen	
8.	Nitrogen	
9.	Sulphur	
10.	Gross Calorific Value	
11.	Calorific Value (GCV+ H+ NCV)	
12.	Ultimate Analysis (C+H+N+S+A/C+M/C)	
13.	Hard grove Grindability Index (HGI) as per IS: 4433	
14.	Hard grove Grindability Index (HGI) as per ASTM D 409	
15.	Preparation of Ash for Chemical Analysis	
16.	Pre-conditioning of sample for testing at Equilibrated Basis (40°C & 60% RH)	
REFRACTORIES (IS: 1527/ IS: 1528)		
1.	Chemical Analysis-Major Oxides : (LOI, SiO ₂ , Fe ₂ O ₃ , Al ₂ O ₃ , CaO, MgO,Alkalies)	
2.	Specific Gravity/ Density	
3.	Cold Crushing Strength	
4.	Apparent Porosity	
5.	Bulk Density	
6.	Water Absorption	
7.	Resistance to Acid	
8.	Modulus of Rupture	Standard Specimen Specimen to be prepared
9.	Spalling Test	Air Quenching at 950°C (for 7 cycles)
		Water Quenching at 950°C (for 7 cycles)
10.	Permanent Linear Change (PLC)	
11.	Refractoriness Under Load (RUL)	
12.	Pyrometric Cone Equivalent (PCE)	
13.	Thermal Conductivity at Single Temperature	
14.	Deformation Temp./ Ash Fusion Temp. by Heating Microscope	
BUILDING BRICK (IS: 3495 / IS: 1077)		
1.	Compressive Strength	
2.	Water Absorption	
3.	Efflorescence	
4.	Dimension (20 Specimens)	
PULVERISED FUEL ASH BRICK (IS: 12894 / IS: 3495)		
1.	Compressive Strength	
2.	Water Absorption	
3.	Efflorescence	
4.	Dimension	
WATER (IS: 456)		
1.	pH Value	
2.	Inorganic Matter	
3.	Organic Matter	
4.	Suspended Matter	
5.	Chloride	
6.	Sulphate	
7.	Alkalinity	
8.	Acidity	
9.	Comparative Compressive Strength IS: 456	
WATER (IS: 3025)		
1.	pH	
2.	Sulphate	
3.	Chloride	



Sl. No.	Type of Test
4.	Fluoride
5.	Iron
6.	Color
7.	Nitrate
9.	Phosphate
8.	Nickel
10.	Total Dissolved Solids (TDS)
11.	Total Solids (TD)
12.	Copper (Cu)
13.	SiO ₂
14.	Alkalis (Sodium, Potassium)
ADMIXTURE (IS: 9103)	
1.	Dry Material Content
2.	Ash Content
3.	Relative Density
4.	Chloride Content
5.	pH Value
CONCRETE (IS: 516)	
1.	Compressive Strength (3 Specimen), up to 150 mm cubes
CONCRETE BLOCK (IS: 2185/ Hollow/ Solid)	
1.	Water Absorption
2.	Block Density
3.	Dimension
AUTOCLAVE AERATED CONCRETE BLOCK (IS:6441)	
1.	Block Density
2.	Moisture Content
3.	Compressive Strength
PAVER BLOCK (IS: 15658)	
1.	Water Absorption
2.	Dimension
3.	Aspect Ratio
4.	Leaching Studies- per age
5.	Compressive Strength (8 Specimens)
CEMENT CONCRETE FLOORING TILES (IS: 1237)	
1.	Water Absorption
2.	Dimension
3.	Wet Transverse Strength
MARBLE GRANITE (Stone / Tiles)	
1.	Water Absorption
2.	Dimension
3.	Specific Gravity
4.	Apparent Porosity
INTEGRAL CEMENT WATER PROOFING COMPOUND (IS: 2645)	
1.	Permeability to Water
2.	Setting Time
3.	Compressive Strength (3&7 days)
OPTICAL MICROSCOPY	
1.	Petrographic Examination Other of Limestone, Bauxite, Laterite and Cement Raw Materials with Quantitative Estimation
2.	Petrographic Examination of Coarse & Fine Aggregate including Granulometric Analysis, Strained quartz percentage & Undulatory Extinction Angle as per IS:2386- (Pt VIII)
3.	Glass Content of Fly ash and various types of Slags with Photomicrographs
4.	Granulometry and Mineralogy of Slag and Fly ash
5.	Petrographic Examination of Clinker & Refractories



Sl. No.	Type of Test
6.	Petrofabric Analysis of Rocks used in Geo-Technical investigation with Photomicrographs
7.	Quantitative Estimation of Minerals including Granulometric Analysis of Raw Meal and Powdered Raw Mix
8.	Pore(Voids) Analysis in Concrete by Stereo Microscope
9.	Mohs' Hardness Test
10.	Refractive Index of Minerals
XRD, XRF & THERMAL ANALYSIS	
1.	Routine Qualitative X-ray Diffractometry of Building Materials
2.	Routine Qualitative X-ray Diffractometry of Materials other than Building Materials
3.	Qualitative X-ray Diffractometry of Rings/ Coatings/ Build-ups/ Refractory etc.
4.	Semi Quantitative X-ray Diffraction Analysis of Cement, Clinker
5.	Study of Polymorphism of Clinker Phases and Semi Quantitative Analysis
6.	Simultaneous DTA/TG/DTG Analysis up to 1450°C of Clinker and related Building Materials
7.	X-ray Fluorescence Chemical Constituents of Cement, Raw Materials and Pulverized fuel ash
8.	Infrared Spectroscopic Analysis (FTIR)- per sample
SCANNING ELECTRON MICROSCOPY	
1.	SEM Study
MINERAL GYPSUM (IS: 1288)	
1.	Free Water
2.	Silica & Acid Insoluble Matter
3.	Iron & Alumina (as Oxide)
4.	Magnesium Oxide
5.	Calcium Sulphate dihydrate (Purity)
6.	Chloride (as NaCl)
7.	Carbon dioxide
BY PRODUCT GYPSUM (IS: 6046/ IS: 10170)	
1.	Calcium Sulphate dihydrate (Purity)
2.	Sodium Content as Na
3.	Fluorine Content
4.	Free Moisture
LIME (IS:712/ IS: 6932)	
1.	Chemical Analysis:(LOI, SiO₂, Fe₂O₃, Al₂O₃, CaO, MgO, IR-On Ignited Basis)
2.	Fineness
3.	Setting Time
4.	Soundness
5.	Compressive Strength
6.	Transverse Strength
7.	Available Lime as CaO
LIME POZZOLANA MIXTURE (IS: 4098)	
1.	Free Moisture
2.	Free Lime
3.	Carbon Dioxide
4.	Sulphate Content
5.	Magnesium Oxide
6.	Fineness
7.	Setting Time
8.	Water Retention



Sl. No.	Type of Test	
9.	Compressive Strength	
10.	Soundness by Autoclave	
SOIL TESTING (IS: 2720)		
1.	Sieve Analysis	
2.	Moisture Content	
3.	Free Swell Index	
4.	Water Content	
5.	Specific Gravity	
6.	CBR of Soil (with MDD and OMC)	
7.	CBR of Soil (without MDD and OMC)	
8.	Liquid Limit	
9.	Plastic Limit	
10.	Hydrometer Analysis	
11.	Relative Density	
12.	Sand Equivalent Value	
13.	Marsh Cone Velocity	
14.	Max Dry Density & Optimum Moisture Content (by Water Content- Dry Density Relation)	Using Light Compaction
		Using Heavy Compaction
15.	Permeability of Soil	
16.	Shrinkage Limit	
17.	Direct Sheer	
18.	pH Value	
19.	Organic Matter	
20.	Total Soluble Sulphate	
21.	Calcium Carbonate	
22.	Total Soluble Solids	
STEEL TESTING (IS: 1608/ IS: 1786/ IS: 1599)		
1	Up to 12mm dia.	Tensile Strength
		Yield Stress
		Elongation
		Mass per Meter
		Bend & Re-bend
2	More than 12 mm dia.	Tensile Strength
		Yield Stress
		Elongation
		Mass per Meter
		Bend & Re-bend

NOTE:

- Sufficient quality of samples shall be submitted with a test request letter addressed to mentioning the nature of samples, tests required, protocol to be followed and complete address with other contact details of the customer
- Quotation for testing charges, quantity required may be obtained from given below address/email
- Payment shall be made (100% in advance) through NEFT/ RTGS/ online BT
- Taxes as applicable would be charged extra at the prevailing rates
- Testing charges would be 1.5 times the amounts mentioned above for tests other than Indian Standards
- *For Express testing the charges would be twice the rates of normal testing*



- Laboratory reserves the right to revise and / or change the testing rates without any prior notice

For further details please contact us:

Head of Centre
Centre for Cement Research and Independent Testing
National Council for Cement and Building Materials
34 Km. Stone, Delhi-Mathura Road (NH-2)
Ballabgarh-121 004, Haryana, INDIA
Phone: +91-129-4192389 & 4192356
E-mail: ncbcr2@gmail.com / crtb@ncbindia.com