

Laboratory	Independent Testing Laboratories, National Council for Cement and Building Materials, NCB Bhavan, Old Bombay Road, Hyderabad, Telangana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	26.08.2014
Certificate Number	T-0953	Valid Until	25.08.2016
Last Amended on	-	Page	1 of 11

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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I. BUILDING MATERIALS

1. Cement / Clinker OPC 33 Grade, OPC 43 Grade, OPC 53 Grade, SRPC, PSC, PPC, WPC, Masonry Cement	LOI		IS 4032-1985, RA 2009	0.2 to 15%
	SiO ₂		IS 4032-1985, RA 2009 IS 12803-1989, RA 2004 (XRF)	16 to 40%
	Fe ₂ O ₃		IS 4032-1985, RA 2009 IS 12803-1989, RA 2004 (XRF)	0.1 to 10%
	Al ₂ O ₃		IS 4032-1985, RA 2009 IS 12803-1989, RA 2004 (XRF)	2 to 15%
	CaO		IS 4032-1985, RA 2009 IS 12803-1989, RA 2004 (XRF)	45 to 70%
	MgO		IS 4032-1985, RA 2009 IS 12803-1989, RA 2004 (XRF)	0.2 to 10%
	SO ₃		IS 4032-1985, RA 2009 IS 12803-1989, RA 2004 (XRF)	0.2 to 10%
	IR		IS 4032-1985, RA 2009	0.2 to 40%
	Na ₂ O		NCB Monograph MS- 13-2010	0.02 to 1%

Laboratory	Independent Testing Laboratories, National Council for Cement and Building Materials, NCB Bhavan, Old Bombay Road, Hyderabad, Telangana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	26.08.2014
Certificate Number	T-0953	Valid Until	25.08.2016
Last Amended on	-	Page	2 of 11

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Cement / Clinker OPC 33 Grade, OPC 43 Grade, OPC 53 Grade, SRPC, PSC, PPC, WPC, Masonry Cement	K ₂ O	NCB Monograph MS- 13-2010	0.05 to 1%
		Sulphide Sulphur	IS 4032-1985, RA 2009	0.02 to 2%
		MnO	IS 4032-1985, RA 2009	0.02 to 2%
		Cl	IS 4032-1985, RA 2009	0.002 to 0.5%
		Mn ₂ O ₃	IS 12423-1988, RA 2005	0.02 to 2 %
		TiO ₂	IS 12423-1988, RA 2005	0.02 to 2%
		P ₂ O ₅	IS 12423-1988, RA 2005	0.02 to 2%
		Free Lime	IS 4032-1985, RA 2009	0.02 to 20%
2.	Limestone	LOI	IS 1760 (Part 1)-1991, RA 2001	25 to 44%
		SiO ₂	IS 1760 (Part 2)-1991, RA 2001	5 to 25%
		Fe ₂ O ₃	IS 1760 (Part 3)-1992, RA 2001	0.2 to 5%
		Al ₂ O ₃	IS 1760 (Part 3)-1992, RA 2001	0.2 to 5%
		CaO	IS 1760 (Part 3)-1992, RA 2001	30 to 55%
		MgO	IS 1760 (Part 3)-1992, RA 2001	0.5 to 15%

Laboratory	Independent Testing Laboratories, National Council for Cement and Building Materials, NCB Bhavan, Old Bombay Road, Hyderabad, Telangana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	26.08.2014
Certificate Number	T-0953	Valid Until	25.08.2016
Last Amended on	-	Page	3 of 11

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Limestone	Cl	IS 1760 (Part 5)-1991, RA 2001	0.005 to 1%
		Free silica	IS 1760 (Part 6)-2001	2.0 to 25%
		Na ₂ O	NCB Monograph MS- 13-2010	0.02 to 2%
		K ₂ O	NCB Monograph MS- 13-2010	0.02 to 2%
		Mn ₂ O ₃	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.02 to 2%
		TiO ₂	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.02 to 2%
		P ₂ O ₅	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.02 to 2%
3.	Clay / Bauxite	LOI	IS 2000 (Part 1)-1985, RA 2001	5.0 to 25%
		SiO ₂	IS 2000 (Part 2)-1985, RA 2001	25 to 70%
		Fe ₂ O ₃	IS 2000 (Part 4)-1985, RA 2001 & NCB Validated Method/ ITL/TP/04/2002	5.0 to 20%

Laboratory	Independent Testing Laboratories, National Council for Cement and Building Materials, NCB Bhavan, Old Bombay Road, Hyderabad, Telangana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	26.08.2014
Certificate Number	T-0953	Valid Until	25.08.2016
Last Amended on	-	Page	4 of 11

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Clay / Bauxite	Al ₂ O ₃	IS 2000 (Part 3)-1985, RA 2001 & NCB Validated Method/ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	5.0 to 70%
		CaO	NCB Validated Method/ITL/TP/06/2002 Issue No. 02, Issue date:12/06/2014	2.0 to 15%
		MgO	NCB Validated Method/ITL/TP/06/2002 Issue No. 02, Issue date:12/06/2014	1.0 to 5%
		Cl	NCB Monograph MS- 13-2010	0.005 to 1%
		Na ₂ O	NCB Monograph MS- 13-2010	0.02 to 2%
		K ₂ O	NCB Monograph MS- 13-2010	0.02 to 2%
		Mn ₂ O ₃	NCB Validated Method/ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.01 to 1%
		TiO ₂	NCB Validated Method/ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.01 to 7%

Laboratory	Independent Testing Laboratories, National Council for Cement and Building Materials, NCB Bhavan, Old Bombay Road, Hyderabad, Telangana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	26.08.2014
Certificate Number	T-0953	Valid Until	25.08.2016
Last Amended on	-	Page	5 of 11

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Clay / Bauxite	P ₂ O ₅	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.02 to 1%
4.	Pozzolanic material	LOI	IS 1727-1967, RA 2004	0.2 to 5%
		SiO ₂	IS 1727-1967, RA 2004	42.0 to 65%
		Fe ₂ O ₃	IS 1727-1967, RA 2004 & NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	2.0 to 10%
		Al ₂ O ₃	IS 1727-1967, RA 2004 & NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	20.0 to 40%
		CaO	IS 1727-1967, RA 2004 & NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.5 to 5%
		MgO	IS 1727-1967, RA 2004 & NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.20 to 5%
		SO ₃	IS 1727-1967, RA 2004	0.10 to 10%

Laboratory	Independent Testing Laboratories, National Council for Cement and Building Materials, NCB Bhavan, Old Bombay Road, Hyderabad, Telangana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	26.08.2014
Certificate Number	T-0953	Valid Until	25.08.2016
Last Amended on	-	Page	6 of 11

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Pozzolanic material	Cl	IS 4032-1985	0.005 to 1%
		Na ₂ O	NCB Monograph MS- 13-2010	0.05 to 2%
		K ₂ O	NCB Monograph MS- 13-2010	0.05 to 2%
		Mn ₂ O ₃	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.1 to 1%
		TiO ₂	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.1 to 10%
		P ₂ O ₅	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.1 to 3%
5.	Slag	LOI	IS 4032-1985, RA 2005	0.5 to 2%
		SiO ₂	IS 4032-1985, RA 2005	25.0 to 40%
		Fe ₂ O ₃	IS 4032-1985, RA 2005	0.20 to 10%
		Al ₂ O ₃	IS 4032-1985, RA 2005	5.0 to 20%
		CaO	IS 4032-1985, RA 2005	15.0 to 40%

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Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	26.08.2014
Certificate Number	T-0953	Valid Until	25.08.2016
Last Amended on	-	Page	7 of 11

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Slag	MgO	IS 4032-1985, RA 2005	5.0 to 20%
		IR	IS 4032-1985, RA 2005	0.10 to 10%
		Na ₂ O	NCB Monograph MS- 13-2010	0.03 to 1%
		K ₂ O	NCB Monograph MS- 13-2010	0.03 to 1%
		Sulphide sulphur	IS 4032-1985, RA 2005	0.2 to 5%
		MnO	IS 4032-1985, RA 2005	0.5 to 8%
		Mn ₂ O ₃	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.1 to 1%
		TiO ₂	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.1 to 2%
		P ₂ O ₅	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.1 to 1%
		Cl	IS 4032-1985, RA 2009	0.005 to 1%
6.	Aggregates	Alkali Aggregate Reactivity	IS 2386 (Part-7)-1963, RA 2002	2 to 500 millimoles/l

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Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	26.08.2014
Certificate Number	T-0953	Valid Until	25.08.2016
Last Amended on	-	Page	8 of 11

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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II. ORES & MINERALS

1.	Gypsum	Free water	IS 1288-1982, RA 2006	0.2 to 15%
		Combined water	IS 1288-1982, RA 2006	0.2 to 25%
		Silica + Acid insoluble	IS 1288-1982, RA 2006	2.0 to 15%
		SiO ₂	IS 1288-1982, RA 2006	2.0 to 10%
		Fe ₂ O ₃	IS 1288-1982, RA 2006	0.2 to 2%
		Al ₂ O ₃	IS 1288-1982, RA 2006	0.2 to 2%
		CaO	IS 1288-1982, RA 2006	25 to 40%
		MgO	IS 1288-1982, RA 2006	0.2 to 1%
		SO ₃	IS 1288-1982, RA 2006	25 to 45%
		Cl	IS 4032-1985	0.005 to 1%
		Na ₂ O	NCB Monograph MS- 13-2010	0.03 to 5%
		K ₂ O	NCB Monograph MS- 13-2010	0.03 to 5%
		Mn ₂ O ₃	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.1 to 1%

Laboratory	Independent Testing Laboratories, National Council for Cement and Building Materials, NCB Bhavan, Old Bombay Road, Hyderabad, Telangana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	26.08.2014
Certificate Number	T-0953	Valid Until	25.08.2016
Last Amended on	-	Page	9 of 11

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Gypsum	TiO ₂	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.1 to 10%
		P ₂ O ₅	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.1 to 3%
2.	Iron ore / Laterite	LOI	IS 1493 (Part-1)-1981, RA 2001	0.5 to 15%
		SiO ₂	IS 1493 (Part-1)-1981, RA 2001	0.5 to 40%
		Fe ₂ O ₃	IS 1493 (Part-1)-1981, RA 2001 & NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	60 to 90%
		Al ₂ O ₃	IS 1493 (Part-1)-1981, RA 2001 & NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	10 to 25%
		CaO	IS 1493 (Part-1)-1981, RA 2001	0.2 to 2%
		MgO	IS 1493 (Part-1)-1981, RA 2001	0.2 to 2%
		Cl	NCB MONOGRAPH MS- 13-2010	0.005 to 1%

Laboratory	Independent Testing Laboratories, National Council for Cement and Building Materials, NCB Bhavan, Old Bombay Road, Hyderabad, Telangana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	26.08.2014
Certificate Number	T-0953	Valid Until	25.08.2016
Last Amended on	-	Page	10 of 11

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Iron ore / Laterite	Na ₂ O	NCB MONOGRAPH MS- 13-2010	0.02 to 2%
		K ₂ O	NCB MONOGRAPH MS- 13-2010	0.02 to 2%
		Mn ₂ O ₃	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.1 to 1%
		TiO ₂	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.1 to 5%
		P ₂ O ₅	NCB Validated Method/ ITL/TP/04/2002 Issue No. 02, Issue date:12/06/2014	0.1 to 2%
III. COAL, COKE & OTHER SOLID FUEL				
1.	Coal / Coke	Moisture	IS 1350 (Part-1)-1984, RA 2002	0.2 to 50%
		Ash	IS 1350 (Part-1)-1984, RA 2002	5.0 to 60%
		Volatile matter	IS 1350 (Part-1)-1984, RA 2002	30.0 to 50%
		Fixed carbon	IS 1350 (Part-1)-1984, RA 2002	By calculations
		Sulphur	IS 1350 (Part-3)-1969, RA 2005	1.0 to 10%
		Gross Calorific value	IS 1350 (Part-2)-1970, RA 2005	1500 to 10000 cal/gm

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Accreditation Standard ISO/IEC 17025: 2005

Discipline Chemical Testing **Issue Date** 26.08.2014

Certificate Number T-0953 **Valid Until** 25.08.2016

Last Amended on - **Page** 11 of 11

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
IV. WATER				
1.	Water for Construction Purpose	Alkalinity	IS 3025 (Part-23)-1986, RA 2003	0.1 to 50 ml
		Acidity	IS 3025 (Part-22)-1986, RA 2003	0.1 to 50 ml
		Inorganic Impurities	IS 3025 (Part-18)-1984, RA 2002	10 to 5000 mg/l
		Suspended Matter	IS 3025 (Part-23)-1984, RA 2002	10 to 5000 mg/l
		Organic Impurities	IS 3025 (Part-17)-1984, RA 2002	10 to 500 mg/l
		Chlorides	IS 3025 (Part-32)-1988, RA 2003	10 to 3000 mg/l
		Sulphates	IS 3025 (Part-24)-1986, RA 2003	10 to 600 mg/l
		pH	IS 3025 (Part-11)-1983, RA 2002	5 to 10

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