

CEMENT

Portland Cement - ORDINARY GREY PORTLAND CEMENT 42.5 R - BS 12/1996 OR DIN EN 197-1:2000 OR ASTM C-15

Portland cement (often referred to as OPC, from Ordinary Portland Cement) is the most common type of cement in general use around the world because it is a basic ingredient of concrete, mortar, stucco and most non-specialty grout. It is a fine powder produced by grinding Portland cement clinker (more than 90%), a limited amount of calcium sulfate (which controls the set time) and up to 5% minor constituents as allowed by various standards

There are two types of gray Portland cement: TS EN 197-1-CEM I with 42.5R and 52.5N standards. The strength of these types depends

on the high amount of C3S in the cement. These are the most popular cement types, especially in the high strength concrete class and in the construction of tall buildings. It is popular in pre-stretched prefabricated applications in particular, tunnel mould systems and in the construction of mass housing.



TYPICAL PROPERTIES

PHYSICAL REQUIREMENTS	Requirement as per IS:12269:1987	Unit	Laboratory Test Result
Fineness Specific Surface	225 (Min)	m ² /kg.	325
STANDARD CONSISTENCY		%	31.50
Setting time (1) Initial (2) Final	30 (Min) 600 (Max)	Minutes Minutes	125 175
Soundness Expansion measured by (1) Le - chatelier Method (2) Auto Clave	10.0 (Max) 0.80 (Max)	m.m. %	1 0.12
Compressive Strength (1) 72 ± 1h (3 Days) (2) 168 ± 2h (7 Days) (3) 672 ± 4h (28 Days)	27 (Min) 37 (Min) 53 (Min)	Mpa Mpa Mpa	50 61 72
CHEMICAL REQUIREMENTS			
Lime Saturation Factor	0.80 to 1.02	Ratio	0.90
Alumina Iron Ratio	0.66 (Min)	Ratio	1.36
Insoluble Residue (by mass)	3.0 (Max)	%	0.89
Magnesia (by mass)	6.0 (Max)	%	1.32
Sulphuric Anhydride (by mass)	3.0 (Max)	%	1.76
Loss on ignition	4.0 (Max)	%	1.02
Chloride Content (by mass)	0.10 (Max)	%	0.035



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