IS 8112 : 2013

Ordinary Portland Cement, 43 Grade - Specification

Ask about IS 8112… e.g. "min cover for severe exposure"

IS 8112:2013 is the Indian Standard (BIS) for ordinary portland cement, 43 grade - specification. This standard lays down the specifications for 43 Grade Ordinary Portland Cement (OPC), covering its chemical composition and physical properties. It details mandatory requirements for strength, setting time, soundness, and fineness to ensure the cement's quality and performance in concrete construction.

> *Specifies requirements for 43 Grade Ordinary Portland Cement.*

Quick Reference — IS 8112:2013 OPC 43-Grade Properties

43-grade OPC strength bands, fineness, soundness, setting times, chemistry caps and packaging — the workhorse cement for general RCC.

✓ Verified 2026-04-26

REFERENCE	VALUE	CLAUSE
28-day compressive strength (min)	**43 MPa**	Cl. 6.2 (Table 4)
28-day compressive strength (max) *— upper bound prevents over-strength control issues*	**58 MPa**	Cl. 6.2 (Table 4)
7-day compressive strength (min)	**33 MPa**	Cl. 6.2 (Table 4)
3-day compressive strength (min)	**23 MPa**	Cl. 6.2 (Table 4)
Fineness — Blaine specific surface (min)	**225 m²/kg**	Cl. 6.1.1
Soundness — Le Chatelier (max)	**10 mm**	Cl. 6.1.2
Soundness — autoclave (max)	**0.8 %**	Cl. 6.1.2

REFERENCE	VALUE	CLAUSE
Initial setting time (min)	**30 minutes**	Cl. 6.1.3
Final setting time (max)	**600 minutes**	Cl. 6.1.3
Drying shrinkage (max)	**0.15 %**	Cl. 6.1.4
Lime saturation factor (LSF)	**0.66 – 1.02**	Cl. 5.1 (Table 1)
Magnesia (MgO) — max	**6.0 %**	Cl. 5.1 (Table 1)
Sulphuric anhydride (SO_3) — max	**3.0 % ($C_3A \leq 5$ %); 3.5 % otherwise**	Cl. 5.1 (Table 1)
Insoluble residue (max)	**4.0 %**	Cl. 5.1 (Table 1)
Loss on ignition (max)	**5.0 %**	Cl. 5.1 (Table 1)
Total chloride (max, by mass of cement)	**0.05 % (PCC) / 0.10 % (RCC)**	Cl. 5.1 (Table 1)
Alkali (Na_2O equivalent, max — low-alkali option)	**0.6 %**	Cl. 5.1 (Table 1)
Standard bag mass	**50 kg ± 2 %**	Cl. 9.1
Shelf life — design value	**3 months from date of manufacture**	Cl. 10.3
Heat of hydration (typical 7 d)	**Higher than OPC 33 due to finer/clinker richness**	

⚠ Many provisions now folded into IS 269:2015. Where 8112 still ships separately, check amendment slips for the upper-bound strength clause.