IS 12269 : 2015

Ordinary Portland Cement, 53 Grade - Specification

Ask about IS 12269… e.g. "min cover for severe exposure"

IS 12269:2015 is the Indian Standard (BIS) for ordinary portland cement, 53 grade - specification. This standard specifies the manufacturing, chemical, and physical requirements for 53 Grade Ordinary Portland Cement (OPC). It is used in applications requiring high early and final strength, such as pre-stressed concrete, high-rise buildings, and infrastructure projects. The standard also covers provisions for packing, marking, and testing to ensure quality.

> *Specifies requirements for 53 Grade Ordinary Portland Cement.*

Quick Reference — Top IS 12269:2015 Values

Key physical and chemical requirements, strength criteria, setting times, and storage limits for 53 Grade Ordinary Portland Cement.

✓ Verified 2026-04-27

REFERENCE	VALUE	CLAUSE
Min Compressive Strength (3 days) — *On standard mortar cubes.*	**27 MPa**	Cl. 6.1 (Table 2)
Min Compressive Strength (7 days) — *On standard mortar cubes.*	**37 MPa**	Cl. 6.1 (Table 2)
Min Compressive Strength (28 days) — *On standard mortar cubes.*	**53 MPa**	Cl. 6.1 (Table 2)
Initial Setting Time	**≥ 30 minutes**	Cl. 6.1 (Table 2)
Final Setting Time	**≤ 600 minutes**	Cl. 6.1 (Table 2)
Fineness (Specific Surface) — *By Blaine's air permeability method.*	**≥ 225 m²/kg**	Cl. 6.1 (Table 2)

REFERENCE	VALUE	CLAUSE
Soundness (Le Chatelier) *— Un-aerated cement paste expansion.*	**≤ 10 mm**	Cl. 6.1 (Table 2)
Soundness (Autoclave) *— Un-aerated cement paste expansion.*	**≤ 0.8 %**	Cl. 6.1 (Table 2)
Loss on Ignition (LOI)	**≤ 4.0 %**	Cl. 5.1 (Table 1)
Insoluble Residue	**≤ 4.0 %**	Cl. 5.1 (Table 1)
Magnesia Content (MgO)	**≤ 6.0 %**	Cl. 5.1 (Table 1)
Total Sulphur Content (as SO_3) *— When C_3A > 5%; limit is 3.0% if C_3A ≤ 5%.*	**≤ 3.5 %**	Cl. 5.1 (Table 1)
Max Chloride Content	**≤ 0.1 %**	Cl. 5.1 (Table 1)
Max Chloride Content (Prestressed) *— For use in prestressed concrete & certain RCC.*	**≤ 0.05 %**	Cl. 5.1 (Table 1, Note 4)
Total Alkali Content (Na_2O eq.) *— Optional requirement, to be specified by purchaser.*	**≤ 0.6 %**	Cl. 5.1 (Table 1)
Standard Bag Weight *— Other smaller sizes (25kg, 10kg, etc.) also permitted.*	**50 kg**	Cl. 7.1.1
Bag Weight Tolerance (50 kg)	**± 2.5 %**	Cl. 7.2
Max Storage Stack Height *— To prevent lumping under pressure.*	**10 bags**	Cl. 8.1
Min Storage Aisle Width *— Clear space around stacks for inspection/handling.*	**600 mm**	Cl. 8.1
Recommended Shelf Life *— From date of packing; strength may reduce with time.*	**3 months**	Cl. 9.1 (k)