IS 10359 : 1982

Code of practice for manufacture and use of lime-pozzolana concrete blocks for paving

IS 10359:1982 is the Indian Standard (BIS) for manufacture and use of lime-pozzolana concrete blocks for paving. This standard provides guidelines for the manufacture and use of lime-pozzolana concrete blocks intended for paving applications. It covers material requirements, mix proportions, manufacturing processes, curing, and physical properties like compressive strength and water absorption. It also includes recommendations for laying the blocks.

Scope in the standard. Clause 1.1 covers manufacture and curing for paving use. The foreword refers to a separate specification for dimensions and strength. This code gives a standard block size in Clause 6.1.

Table 1 Recommended mix proportions

Clause 4.1 | Mix proportions by mass

Mix description	Lime-pozzolana mixture	Lime	Pozzolana	Fine aggregate	Coarse aggregate 20 mm graded	Water % of total material mass
1 Lime-pozzolana mixture, grade LP 20	1	—	—	1	2	11
1 Lime-pozzolana mixture, grade LP 40	1	—	—	2	4	10
2 Separate lime and pozzolana Lime reactivity 40 kgf/cm²	—	1	2	3	6	11
2 Separate lime and pozzolana Lime reactivity 80 kgf/cm²	—	1	2	6	12	10

Table 1 note

The proportions are for guidance and may be adjusted during manufacture to achieve the desired performance.

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IS 10359 : 1982 / CLAUSES 6–8

Manufacture and curing

Block construction and curing requirements

Clause	Requirement
6.1 Block size	Standard size is **300 × 300 × 100 mm**. The lower **90 mm** is lime-pozzolana concrete and the upper **10 mm** is a cement-sand wearing course. Amendment No. 1 adds Clause 6.1.1, allowing other sizes by agreement between supplier and purchaser.
6.2 Base layer (6.2.1)	Compact the lime-pozzolana concrete to **90 mm** in a wooden or steel mould. Use a pan-type surface vibrator, table vibrator or hand tamping. When hand tamping, compact the base in **two layers**.
6.3.1 Wearing course	Fill the remaining **10 mm** with cement-sand mortar in a **1:3 ratio by mass**, with a water–cement ratio of about **0.50–0.55 by mass**. Compact by pan-type vibrator, table vibrator or hand tamping.
6.3.2 Bond between layers	Place the wearing course **immediately after compacting the base** to achieve a good bond.
7 Initial curing (7.1)	Demould immediately and move each block with its base plate to a shed shielded from sun, strong wind and rain. Cover with polyethylene sheets until the blocks can be handled without damage. Allow at least **72 hours**.
8 Final curing (8.1)	After initial curing, stack and suitably cover the blocks. Keep them moist by spraying water at regular intervals. Allow at least **28 days of final curing**.

Source: BIS, IS 10359:1982, printed pages 5–6 and Amendment No. 1.

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IS 10360 : 1982 / PRODUCT SPECIFICATION

Specification for lime-pozzolana concrete blocks for paving

Dimensional tolerances, physical requirements and marking

Clause	Requirement	Test reference
5.2 Dimensional tolerances	Maximum variation by dimension Length **±5 mm** · Width **±5 mm** · Height **±1.50 mm**	See Clause 5.1 for the dimensional measurement procedure.
6.1 Compressive strength	Minimum average compressive strength **3.5 N/mm²** (35 kgf/cm²).	IS 2185 (Part 1):2005, cited per Amendment No. 4.
6.2 Drying shrinkage	Maximum drying shrinkage **0.1%**.	IS 2185 (Part I):1979, Appendix E.
6.3 Moisture movement	Maximum moisture movement of dried blocks on immersion in water **0.05%**.	IS 2185 (Part I):1979, Appendix F.
6.4 Abrasion resistance	Maximum abrasion loss **0.4%** on the wearing surface of 1:3 cement-sand mortar.	IS 9284:1979.
6.5 Flexural strength	Minimum average modulus of rupture **0.5 N/mm²** (5 kgf/cm²).	IS 2690 (Part 2):1992, cited per Amendments Nos. 2 and 4.

7.1 Marking

Mark each block clearly and permanently with the manufacturer’s name or trade mark, if any, and the year of manufacture, if required. Clause 7.1.1 also permits the Standard Mark, subject to the provisions referenced in Clause 7.2.

Source: BIS, IS 10360:1982, printed pages 5–6 and Amendments Nos. 2 and 4.

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Sampling and test allocation

A-2 Sample size

A-2.1 Select **15 blocks at random** from each lot using random number tables agreed by the purchaser and supplier. Under A-1.1, a lot consists of up to 1 000 blocks of the same size from the same manufacturing batch.

A-3 Number of tests

A-3.1 Check the dimensions of all 15 blocks under Clause 5, then inspect all 15 for visual defects under Clause 4.

A-3.2 Allocation of the 15 sampled blocks

Blocks	Test or purpose	Reference
3	Compressive strength	6.1
3	Drying shrinkage, followed by moisture movement on the same blocks	6.2 and 6.3
3	Abrasion resistance	6.4
3	Flexural strength	6.5
3	Reserve for retesting drying shrinkage and moisture movement if needed	A-3.2

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