Product Performance Testing Methodology

Edition: 01 March 2020

Requirements and Test Methods for Concrete Paving Blocks

Description:

The materials, properties, requirements and test methods for unreinforced cement bound concrete paving blocks and their complementary fittings are selected and determined in accordance with BS EN 1338:2003. It is applicable to precast concrete paving blocks and complementary fittings for pedestrian use, vehicular use and roof coverings, e.g. footpaths, precincts, cycle tracks, car parks, roads, highways, industrial areas (including docks and harbours), aircraft pavements, bus stations and petrol filling stations.

Concrete Paving Block
Precast concrete unit used as a surfacing material that satisfies the following conditions:

- at a distance of 50 mm from any edge, any cross-section does not show a horizontal dimension less than 50 mm;
- Its overall length divided by its thickness is less than or equal to four.

Performance Requirements:

- Permissible Deviations:
  The dimensions and deviations shall be measured according to annex C.

  Block Thickness < 100mm: Length ± 2mm; Width ± 2mm; Thickness ± 3mm

  Block Thickness ≥ 100mm: Length ± 3mm; Width ± 3mm; Thickness ± 4mm

- Weathering Resistance – Water Absorption:
  The weathering resistance is determined by tests according to annex E for water absorption.

  Class 2 – The mean water absorption shall not be more than 6% by mass.

- Tensile Splitting Strength:
  The characteristic tensile splitting strength shall be determined by testing according to annex F.

  The characteristic tensile splitting strength shall not be less than 3.6 MPa. None of the individual results shall be less than 2.9 MPa, nor have a failure load less than 250 N per mm of the splitting length.

- Abrasion Resistance:
  Abrasion resistance is determined by the Wide Wheel Abrasion test (annex G), or as an alternative by the Böhme test (annex H). The Wide Wheel Abrasion test is the reference test.

  When tested in accordance with the Wide Wheel Abrasion Test Method:
  No individual test result shall greater than 20 mm – Class 4
  No individual test result shall greater than 23 mm – Class 3

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When tested in accordance with the Böhme Test Method:
No individual test result shall greater than 18000 mm^3/5000 mm^2 – Class 4
No individual test result shall greater than 20000 mm^3/5000 mm^2 – Class 3

Note:
In areas subject to very heavy pedestrian and vehicular traffic Class 4 products should be used.
In areas subject to normal pedestrian and vehicle use, e.g. public pavements and roads etc., at least Class 3 products should be used.

- Slip/Skid Resistance:
  If in an exceptional case a value for slip/skid resistance is required, the test method as described in annex I shall be used and the minimum slip/skid resistance value shall be declared.

  Pendulum test value of 40 to 74 indicates low potential for slip
  Pendulum test value above 75 indicates extremely low potential for slip