STRUCTURES DATA SHEET 7
Initial Surface Absorption Test

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The ISAT test as specified in **BS 1881 part 5** was originally developed as a laboratory method of measuring the porosity of concrete.

The test consists of the measurement of water flow into the test specimen through a known surface area. The contact area is defined by a plastic cell sealed onto the surface. Measurement of the volume flow is obtained by measurement of the length of flow along a capillary of known dimension.

The cell is manufactured from clear acrylic to allow observation of the water level and ensure the complete renewal of air. A clear reservoir is connected to the 'inlet' of the cell. The 'outlet' of the cell is connected to a capillary tube with an affixed scale. A valve is fitted to the inlet side to isolate the reservoir.

The cell is clamped to the test surface so as to ensure an even pressure and good seal around the perimeter. If necessary the seal is improved with silicone sealant, 'Plasticine' or 'Blu-tack'. The capillary tube and reservoir are mounted 200mm above the cell.

After filling the cell completely the reservoir is closed off and measurements taken of flow along the capillary tube. Sets of readings are taken at 10 minutes, 30 minutes and 1 hour after the first wetting of the surface. There is also an optional 2 hour reading.

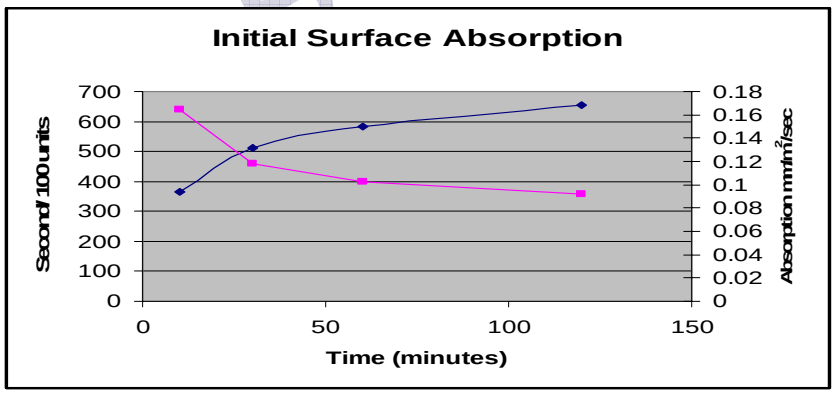
For each set of readings the reservoir is closed off and the flow distance along the capillary is measured for 5 seconds. The number of scale units determines the observation period.

Interpretation

The initial surface absorption is then simply the number of scale units moved in 1 minute. If readings are taken for a longer or shorter period they must be converted to 1 minute duration.

Where the samples have been oven dried the initial surface absorption of samples may be comparable. Under site conditions the existing moisture level in the concrete restricts the absorption under test.

Typical Test Results



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