

2. When instructed by the Engineer concrete shall be tested for drying shrinkage and wetting expansion, for which 75x75mm prisms shall be prepared and tested in accordance with BS 812 Part 120. The maximum acceptable limits shall be:
 - a. Drying Shrinkage: 0.04%.
 - b. Wetting Expansion: 0.03%.
3. Cubes may be required and trials carried out to determine stripping times for formwork, the duration of curing and to check testing and sampling errors.
4. The air content of air-entrained concrete shall be determined in accordance with ASTM C231 for each batch produced until consistency has been achieved, when one in five batches may be tested. The maximum value shall not exceed 2%.
5. Compaction factor, slump, Vebe or other workability tests shall be carried out as required during concreting of permanent Works to control workability at the batching plant and at the site of the pour. For each sample the temperature of the concrete shall be measured and recorded with the time the test was performed. The degree of workability shall be as for the trial mixes; permitted tolerances shall be in accordance with BS 5328.

H. Minimum Test Requirements for Concrete

1. Samples shall be taken and 4 (four) cubes made for strength testing for each class of concrete and for each particular application at a frequency shown in Table 3-7:

Table 3-7: Rate of Sampling Concrete

Type of Structure	Element	Sampling To Represent a Volume of Concrete (m ³)	
		Cube Strength Tests	Durability Tests
Critical elements	Columns, piles	10	50
Normal structural elements	General	50	250
Heavy concrete construction	Raft	100	500

2. The point of sampling of fresh concrete shall be at delivery into the Works unless otherwise directed by the Engineer.
3. Cement: One 2 kg sample for quality testing to ensure compliance with Part 2 of the Specification shall be taken from each 1,500 bags or equivalent weight or one day's output of the cement plant for each class of cement, whichever is the lesser.
4. Water: One 5 litre sample shall be obtained prior to use from each source for quality testing in accordance with the "Water For Concrete" section of the Specification.
5. Samples of concrete, cement and water shall be taken and tested as described in the above sub-section at least once a week during concreting operations.
6. In addition to the cubes made for strength testing, samples shall be taken and