5. *Mixing.*—Mixing shall preferably be done by power-driven batch-mixers of an approved type. The concrete shall be mixed until it is of even colour and of uniform consistency throughout. Any concrete which shows signs of initial setting before it is deposited shall not be used in work and shall be removed from the site.

The retempering of concrete which has partially hardened—that is, remixing with or without additional cement, aggregate, or water—shall not be permitted.

Hand mixing shall be done on a hard clean, impervious, and even surface of adequate size.

6. *Reinforcement.*—All mild-steel reinforcement shall comply with the conditions and tests laid down for Class A steel in the British Standard Specification No. 15, "Structural Steel for Bridges and General Building Construction," for the time being in force.

All reinforcement of hard-drawn steel wire shall comply with the conditions and tests laid down in the British Standard Specification No. 165 for the time being in force.

Steel which is found to have developed brittleness, cracks, or other imperfections, or which is found not to comply with the specified test requirements, shall be rejected and shall be removed from the works.

All metal for reinforcement shall, before depositing the concrete, be clean and free from all loose mill scale, dust, and loose rust, and coatings, such as paint, oil, or anything which will prevent a perfect bond.

Welding shall not be allowed in any main reinforcement, except where subject to adequate tests.

Bends shall be made cold, with an internal radius of at least twice and preferably two and a half times the diameter of the bar when of Class A, structural steel, and at least three and preferably four times the diameter when the bar is of hard-drawn steel wire.

Bars above $1\frac{1}{8}$ in. in diameter may be bent at a cherry-red heat, but the temperature shall be reduced slowly.

All reinforcing shall be placed and securely fixed strictly in accordance with the drawings.

7. *Formwork.*—All formwork shall be securely braced and supported to prevent any sagging or bulging during the depositing of the concrete, and all joints shall be close enough to prevent leakage of liquid from the concrete. All forms shall be fixed to proper level and trued up immediately before depositing the concrete.

Formwork shall be so designed and constructed that it can be removed without damage to the concrete.

8. *Concreting.*—Immediately before any concreting is commenced all formwork shall be carefully examined to see that all dirt, shavings, sawdust, and/or other refuse has been removed by brushing and/or washing with a hose. All traps and temporary doors shall be carefully made good before any concrete is put into place.

The concrete shall be poured so that the coarse aggregate will not be separated from the rest of the material, and it shall be thoroughly worked and consolidated round the steel reinforcement and into all parts of the formwork so that the steel is thoroughly coated and so that no voids or cavities are left. The concrete shall be poured in layers of sufficient thickness to enable this to be done.

Care shall be taken that the reinforcing-bars projecting from concrete which has been recently put into position shall not be shaken or disturbed.

Concrete shall be placed as rapidly as possible, but where cessation of work is essential or unavoidable the break shall be at right angles to the span and in the centre of same in the case of slabs and beams, but in all cases it shall be located where the presence of the joint is least liable to lead to damage to the work during construction by uneven settlements and least liable to affect adversely the ultimate strength of the finished work. The plane of the joint shall be square to the main reinforcement. The concreting of the ribs of L or T beams, if done separately from the slab, shall stop not less than 1 in. below the soffit of the slab. Similarly, in columns it shall stop not less than 1 in. below the under-side of any connecting beam or slab.

Before depositing fresh concrete upon or against any concrete which has already hardened, the surface of the hardened concrete shall be thoroughly roughened and cleaned from all loose and foreign matter and well washed with clean water. Before concreting is commenced, the hardened surface shall be covered, preferably with freshly made mortar, composed of one part of cement to two parts of sand, about $\frac{1}{2}$ in. thick, or, alternatively, with neat cement grout freshly made. Special care shall be taken to ram the mortar and fresh concrete thoroughly up against the hardened concrete.

Reinforcement shall in all cases be covered with not less than the minimum thickness of concrete specified or shown on the drawings.

The work shall be protected, where practicable, from the direct rays of the sun and from drying winds. After concrete has set sufficiently the exposed surfaces shall be kept continuously wet for such period as shall be directed by the engineer.

No concrete shall be deposited under unfavourable weather conditions.

Care shall be taken that no shock or vibration shall reach the concrete during the process of setting and preliminary hardening.

9. *Tests on completed Work.*—After ample time has been allowed for the hardening of the concrete, loading tests on the completed structure may be called for, and shall be conducted on portions to be selected and in manner as directed.

Not more than the superimposed load for which the work has been designed, plus 50 per cent., shall be applied as a test load.

When dead loads are applied for testing, the materials used for loading shall be put on in such manner that no arching action whatever can take place.