Ever since civilizations first started to build, we've sought a material that would bind stones into a solid, formed mass. The Assyrians and Babylonians used clay for this purpose, and the Egyptians advanced to the discovery of lime and gypsum mortar as a binding agent for building such structures as the Pyramids.

The Greeks made further improvements and finally the Romans developed cement that produced structures of remarkable durability. Most of the building foundations of the Roman Forum were constructed by a type of concrete, placed in some locations to a depth of 12 feet. The great Roman baths built about 27 B.C., the Coliseum, and the huge Basilica of Constantine are examples of early Roman architecture in which cement mortar was used. The secret of Roman success in making cement was traced to the mixing of slaked lime with pozzolana, a volcanic ash from Mount Vesuvius. This process produced cement capable of hardening under water. During the Middle Ages this art was lost and it was not until the scientific spirit of inquiry revived that we rediscovered the secret of hydraulic cement that will harden under water.

Repeated structural failures of building the Eddystone Lighthouse, close to the coast of Cornwall, England, led John Smeaton, a British engineer, to conduct experiments with mortars in both fresh and salt water. In 1756, these tests led to the discovery that cement made from limestone containing a considerable proportion of clay would harden under water. Making use of this discovery, he rebuilt the Eddystone Lighthouse in 1759. It stood for 126 years before replacement was necessary.

Other men experimenting in the field of cement during the period from 1756 to 1830 include L. J. Vicat and Lesage in France and Joseph Parker and James Frost in England.

In 1824, Joseph Aspdin, a bricklayer and mason in Leeds, England, took out a patent on hydraulic cement that he called Portland cement because its colour resembled the stone quarried on the Isle of Portland of the British coast. The Aspdin's Method consisted in precise dosage of the baked limestone, mixed with clay slurry, followed by baking till the release of CO_2. The yielded product was then grinded and used as cement. The baking, however, was at comparatively low temperatures and the quality was not satisfactory.

At the same time, A. Ch. Johnson was trying to find the optimal proportion between clay and limestone in the mix. With the answer to this task (1851) started the spread of cement production.

An important moment in the cement technology development is the finding of the dependence between the baking temperature and the content and properties of the yielded product. The idea was developed that clinker, namely, should become the basic product of baking. The next stage in cement industry development is the implementation of the rotary kiln (patent of Ph. Ransom, 1885).

Portland cement today, as in Aspdin's day, is a predetermined and carefully proportioned chemical combination of calcium, silicon, iron, and aluminium.