Modern flat glass technology - History

1905-1914

In the production of flat glass (where molten glass had previously been poured onto large tables then rolled flat into "plates", cooled, ground and polished before being turned over and given the same treatment on the other surface), the first real innovation came in 1905 when a Belgian named Fourcault managed to vertically draw a continuous sheet of glass of a consistent width from the tank. Commercial production of sheet glass using the Fourcault process eventually got under way in 1914.
Around the end of the First World War, another Belgian engineer Emil Bicheroux developed a process whereby the molten glass was poured from a pot directly through two rollers. Like the Fourcault method, this resulted in glass with a more even thickness, and made grinding and polishing easier and more economical.

1910

An off-shoot of evolution in flat glass production was the strengthening of glass by means of lamination (inserting a celluloid material layer between two sheets of glass). The process was invented and developed by the French scientist Edouard Benedictus, who patented his new safety glass under the name "Triplex" in 1910.

1917

In America, Colburn developed another method for drawing sheet glass. The process was further improved with the support of the US firm Libbey-Owens and was first used for commercial production in 1917.

1928

The Pittsburgh process, developed by the American Pennvernon and the Pittsburgh Plate Glass Company (PPG), combined and enhanced the main features of the Fourcault and Libbey-Owens processes, and has been in use since 1928.

1959

The float process developed after the Second World War by Britain's Pilkington Brothers Ltd., and introduced in 1959, combined the brilliant finish of sheet glass with the optical qualities of plate glass. Molten glass, when poured across the surface of a bath of molten tin, spreads and flattens before being drawn horizontally in a continuous ribbon into the annealing lehr.

Although this brief history comes to a close nearly 40 years ago, technological evolution naturally continues. Not yet ready to be "relegated" to a history of glass are areas such as computerized control systems, coating techniques, solar control technology and "smart matter", the integration of micro-electronic and mechanical know-how to create glass which is able to "react" to external forces.